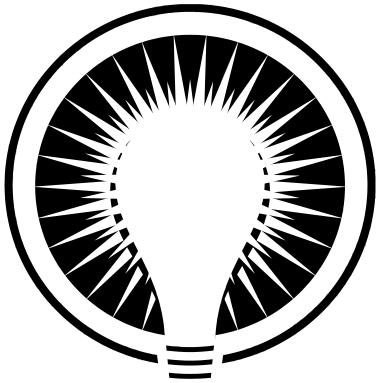

READING MUNICIPAL LIGHT DEPARTMENT

BOARD OF COMMISSIONERS

REGULAR SESSION

THURSDAY NOVEMBER 19, 2020

APPROVAL OF BOARD MINUTES
MARCH 19, 2020
ATTACHMENT 1

CY 2021 CAPITAL BUDGET
ATTACHMENT 2

READING MUNICIPAL LIGHT DEPARTMENT

2021 BUDGET

October 1, 2020

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TABLE OF CONTENTS

2021 OPERATING BUDGET

2021 POWER SUPPLY

READING MUNICIPAL LIGHT DEPARTMENT

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.

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SYSTEM PROFILE
(based on CY19)

SERVICE TERRITORY	51 square miles serving Reading, North Reading, Wilmington, and part of Lynnfield
TOTAL OPERATING REVENUES	$88,311,977
POWER PURCHASED	$61,027,184
NUMBER OF CUSTOMERS/ ACTIVE METERS	31,620
ANNUAL PEAK DEMAND	155,117 kW on July 30, 2019, at 2:00 pm
ANNUAL SALES	647,214,654
PLANT VALUE	Gross $157,906,000 Net $80,350,000
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 444 miles
UNDERGROUND PRIMARY LINES	All 230 miles
DISTRIBUTION TRANSFORMERS	4,074 transformers – 315.05 MVA Capacity
STATION TRANSFORMER CAPACITY	370 MVA Capacity
UTILITY POLES	18,088 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	
	ChargePoint Cloud Services CMARS Constant Contact EFI (Energy Federation) eRequester ESRI eTrack Facility Dude Filezilla Forecast Pro Forecasting Futura Great Plains/Cogsdale Home Energy Audits Hootsuite ISO-NE Key Accounts LexisNexis LogMein ManagerPlus MIlsoft - WindMil/LightTable NEPOOL GIS Office 365 E3 PoleForeman Replicon SagLine SharePoint SpryPoint Survalent (OMS) Tangent AMP VMware Windows 10 Windows Server 2016, 2012
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 and Technology	Wendy Markiewicz email: wmarkiewicz@rmld.com
Director of Engineering and Operations	Hamid Jaffari email: hjaffari@rmld.com
Director of Human Resources	Janet Walsh email: jwalsh@rmld.com
Director of Integrated Resources	Charles Underhill email: cunderhill@rmld.com
GOVERNING BODY	
	Robert Coulter David Hennessy Philip B. Pacino John Stempeck David Talbot
Number of Employees	74
Year Founded	1894

2021 CAPITAL BUDGET

PLANNED PROGRAMS

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READING MUNICIPAL LIGHT DEPARTMENT

Capital Improvements CY21 thru CY26

$ Shown in thousands

LINE #	PAGE #	TOWN	PROJ #	FERC #	PROJECT NAME	CY20 BUDGET	CY20 EST.	CY21 PLAN EST.	CY22	CY23	CY24	CY25	CY26	BRIEF DESCRIPTION
1	**n/a**	A	129	390	Master Facilities Site Plan (ON-HOLD)									Town economic development plan impact. Master-hold. Evaluate maintenance only.
2	**17**	R/NR/W	104	361/373	RMLD Lighting (LED) Upgrade Program			125						Upgrade Ash Street and other RMLD facilities including substations with new interior/exterior LED fixtures. A designer will perform an energy audit and provide guidance with a bid spec. Installation of fixtures by an electrical contractor.
3	**19**	R/NR/W	095	390	Building Upgrades	215	**493**	270	125	125	125	50	50	CY20: OSHA remediation: deck ($172K) completed; Station 1 back-up generator ($241K unbudgeted) completed. CY20/21: transformer storage unit at Station 3, cooling unit at Station 4, and back-up generator at Station 3.
4	**21**	R	098	391	Office Upgrades -230 Ash Street	95	15	105	30	30	30	30	30	Create offices for Tech Services and Materials Management, and Tech Services/Facilities Conference Room; camera/projection system for AV room.
5	**23**	A	119	398	Security Upgrades All Sites	300	56	250	30	30	30	30	30	Implement security recommendations as per comprehensive security review scheduled for 2020.
6	**25**	A	118	392	Rolling Stock Replacement	650	**362**	620	350	350	350	350	350	Scheduled vehicle replacement, following Fuel Efficiency OP 19-07 FM, is based on Fleet Assessment and the Electrification Program. Carry-over (from 2020) for digger derrick ($285K) to be delivered in CY21; purchase bucket truck and small dump truck w/sander attachment.
7	**31**	A	099	392	Electric Vehicle Supply Equipment (EVSE)	199	144	100	100	100	100	100	100	Installation of L2 chargers in all four communities to encourage the development of EV charging infrastructure.
8	**33**	A	127	382	Hardware Upgrades	114	93	89	119	119	119	119	119	General hardware upgrades; EMC data domain install; new firewalls for SCADA.
9	**35**	A	128	383	Software and Licensing	295	50	438	239	239	239	239	239	General software purchases/custom programming. Migrate metering to cloud; customer relationship management software, Meter Data Management (MDM), work order management system, cloud-based phone system, customer portal.
10	**41**	A	110	370	Primary Metering Inspection and Upgrade Program			516	320	60				A condition assessment program has been established for all RMLD primary metering equipment. This project will consist of the purchase, upgrade, and construction associated with replacing all primary equipment that is in need of repair or replacement.
11	**43**	R	130	362	Relay Protection Upgrades - Station 4			100	120					Northeast Power Coordinating Council (NPCC) Directory 1 requires installing high speed, relay protection upgrades between National Grid's Tewksbury Station #17 and Reading Station #494.
12	**45**	W/R/ NR	102	367	Pad-mount Switchgear Upgrade at Industrial Parks	528	528	799	411	212	212			Starting in FY18, replace all 15 kV pad-mounted switchgear at industrial parks (i.e., River Park Drive, Jonspin Road, Haven Street, etc.). Ten units have been replaced as of 9/20/2020. Three additional switches will be replaced in the fall of 2020. In CY21 we will purchase the next five units and install eight units (three units purchased in CY20 and five purchased CY21).
13	**47**	W	105		**NEW WILMINGTON SUBSTATION**									
				360	Purchase Land in Wilmington	570	5	599						Land purchase. Other associated appraisal and permitting costs are included with Wilmington Substation Construction & Commissioning (see below).
				361/362/ 366/367	Wilmington Substation Construction & Commissioning	185		195	4,696	4,975				Conceptual design, permitting, procurement of materials, construction, commissioning, and all required materials and labor to bring the proposed Wilmington substation online. Estimated Total Cost: $10.5m
14	**n/a**	W	124	364/365	MA-125 Pole Line Installation for New Wilmington Substation	5	0		371	200	171			This project covers an ~3,000 foot proposed 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.
15	**n/a**	W	TBD	365	Distribution Improvements Associated with New Wilmington Substation					158	158			The proposed Wilmington substation's main objective will be to transfer the existing Station 5 circuits to the new Wilmington Substation. 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 modifications to provide load relief to Stations 3 and 4.
16	**51**	A	103		**GRID MODERNIZATION & OPTIMIZATION**									**Fifteen-year plan to implement Technology Road Map for grid efficiency, reduction of losses, etc.**
				365	*Scada- Mate Switches*	282	282	297	306	315	325	334	344	Installation of 4 switches/year plus IntelliTeam licenses
				365	*IntelliRupter®*	131	131	138	142	146	150	155	159	Installation of 2 switches/year plus IntelliTeam licenses
				365	*ABB Reclosers*			225	100		115	110		Installation of new/replacement of older reclosers on the system.
				383	*Cap Bank Automation*	20	20	36	36	36	36	36	36	Adding feeder cap banks and making them SCADA controlled
				383	*Software Integration*	15	15	21	21	21	21	21	21	Integration of AMI/Scada-Mate switches/OMS
					Meter Data Management (MDM)	150								This project will be a carry-over and included in the IT Software budget for 2021
					OUTAGE MANAGEMENT SYSTEM (OMS)									Outage Management System and supplemental modules to automate outage response and customer/public communication during outage events.
				383	OMS Module: Integrated Voice Response (IVR)		50							Installation of Integrated Voice Response (IVR) in progress - scheduled for completion in CY20.
				383	OMS Module: Crew Management	49	0	136						From the OMS, field crews can receive job notifications, view work orders, display the network model and outage map in real-time, report their progress, and close job tickets.
				383	OMS Module: Power Factor Correction/VVR	171	171							Installation of new SCADA module that computes and presents phase voltages, currents, and losses on the entire distribution network. License for Volt/VAR optimization which coordinates the control of reactive power and voltage. Includes installation and training for both applications - scheduled for completion in CY20.
17	**59**	A	112	361/370	AMI Mesh Network Expansion & Meter Replacement	2,078	228	2,000	2,000	2,000	100			The RMLD has hired an AMI consultant to help us assess current and future AMI and MDM needs. This evaluation and assessment will be completed in the fourth quarter of 2020.
18	**61**	A	117	370	Meters and Primary Meters (for stock)	173	51	40	40	40	40	20	20	Purchase primary meters and meters (with disconnect option as available) for new construction, upgrades and failures.

READING MUNICIPAL LIGHT DEPARTMENT

Capital Improvements CY21 thru CY26

$ Shown in thousands

LINE #	PAGE #	TOWN	PROJ #	FERC #	PROJECT NAME	CY20 BUDGET	CY20 EST.	CY21 PLAN EST.	CY22	CY23	CY24	CY25	CY26	BRIEF DESCRIPTION
19	**n/a**	R	214	364/365/373	Force Account (MassDOT): Main & Hopkins, R	174	**0**							Widen Main Street and install traffic lights at the intersections of Hopkins and Main, and Summer and Main: project has been delayed.
20	**n/a**	W	TBD	364/365/373	Force Account (MassDOT): Lowell at Woburn Street, W				**237**					Widen Lowell Street and Woburn Street; upgrade traffic signals. Up to 21 poles to be relocated, RMLD to set 17 poles, VAZ to set 6.
21					**GETAWAY UPGRADES**									
22	**63**	NR	TBD	364/367	3W18 Getaway Improvements			211						Improvements to result in significant added capacity to 3W18 and moderate increase in capacity to remaining Station 3 circuits.
23	**n/a**	R	TBD	364/367	4W28 Getaway Replacement						316			Station 4: Replace 3,400 feet of underground getaway to 750 mcm cu for increased reliability.
24	**n/a**	W	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.
25	**n/a**	R	TBD	364/367	4W7 Getaway Replacement						177			Station 4: Replace 1,900 feet of underground getaway to 750 mcm cu for increased reliability.
26	**n/a**	R	TBD	364/367	4W10 Getaway Replacement						177			Station 4: Replace 1,900 feet of underground getaway to 750 mcm cu for increased reliability.
27	**n/a**	R	TBD	364/367	4W4 Getaway Replacement							156		Station 4: Replace 3,400 feet of underground getaway to 750 mcm cu for increased reliability.
28	**n/a**	R	TBD	364/367	4W24 Getaway Replacement								350	Station 4: Replace 3,725 feet of underground getaway to 750 mcm cu for increased reliability.
29		R	TBD	364/367	4W30 Getaway Replacement								225	Station 4: Replace 2,300 feet of underground getaway to 750 mcm for increased reliability.
30	**65**	A	116	365/366/367/368	Transformers and Capacitors Purchase (Stock and Projects)	602	698	418	431	444	457	471	485	Purchase units for stock, new construction and reliability projects including Aged/Overloaded Transformer Replacement, Secondary and Main Replacement , 13.8kV Upgrades (Step-down Areas), and Underground Facilities Upgrades (listed below). Refer to Project Cost Sheet and Summary for details including labor and additional materials for these reliability programs.
					LONG-TERM UPGRADE RELIABILITY PROJECTS (NO TRANSFORMERS)									
31	**67**	A	458	365	Secondary and Main Replacement Program - All Towns	221	490	257	264	272	280	289	298	Repair as necessary secondary/main services and connectors prioritized by age as determined by system-wide inspection. CY21 targeted areas: Middlesex Avenue area in Reading, Central Street area in North Reading, and Linda Lane area in Wilmington.
32	**69**	A	107	365	13.8kV Upgrade (Step-down Area, etc.) - All Towns	390	526	506	313	367	423	449	449	Convert step-down areas to 13.8kV. Remove antiquated equipment and step-downs to lower losses and improve system efficiency. CY21 targeted areas: Middlesex Avenue area in Reading, Central Street area in North Reading, and Linda Lane area in Wilmington.
33	**71**	A	106	366/367/368	UG Facilities Upgrades (URDs, Manholes, etc.) - All Towns	564	500	525	500	400	412	424	437	Replace primary and neutral cables and pad-mount transformers as needed in various aging URDs. Improved reliability. For the next five years, 2-3 subdivisions are planned to be upgraded per year.
34	**73**	A	668	366/367/368	Aged/Overloaded Transformer Replacement Program	713	419	443	456	470	484	499	514	Labor associated with aged transformer replacements.
35	**75**	NR/R	175	364	Pole Replacement Program, R and NR	307	3	336	346	357	367	378	390	Replace poles identified through the Pole Inspection Program (700 poles/year inspected). This will include transfers and replacement of secondary services as necessary. To replace 50 poles per year.
36	**77**	R/NR/W	111	362	Substation Equipment Upgrade	13	73	10	30	30	30	30	30	Upgrade various equipment at substations. CY21: Replace 35 Kv lightning arresters for 115/35 Kv Transformers at Station 4
37	**79**	A	126	397	Communication Equipment (Fiber Optic)	49	25	49	49	49	49	49	49	Materials to accommodate expanded use of fiber optic network for distribution automation and Eaton AMI system.
38	**81**	A	115	394/395	Power/Lab and Tool Equipment	81	68	156	30	30	30	30	30	Power tools and equipment as necessary including phasing meter /hi-pot units (6); four-point battery hydraulic presses (2), shop meter tester, Cibano 500 breaker test equipment (2020 carry-over), floor scrubber for Ash Street, and miscellaneous items.
39	**83**	A	various	369	Service Connections (Residential and Commercial) - All Towns	148	148	151	155	160	165	170	175	Install new and upgraded residential and commercial services as requested.
40	**85**	A	various	various	Routine Construction - All Towns	1,468	2,032	1,488	1,518	1,549	1,580	1,611	1,643	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)
41	**n/a**	W	TBD	364/365	Industrial Way, Wilmington - Pole Line Upgrade						226	226		Replace approximately twenty-five (25) 55' poles and upgrade to H1 class poles to accommodate pole loading. Poles are under classed and are over 40 years old. There are currently 4 circuits on the Industrial Way pole line, 4W4, 4W12, 4W24 and 4W28.
42	**n/a**	R	TBD	364/365	4W24 Partial Circuit Reconductoring						356	30		Station 4: Upgrade main feeder of overhead circuit 4W24 to 556 to address voltage and conductor capacity issues.
43	**n/a**	W	TBD	364/365	Butters Row, Wilmington - Pole Line Upgrade								378	Verizon to replace/upgrade 25 aged/under-class poles on Butters Row between Main Street and Chestnut Street. Replace cable, upgrade transformers, and transfer secondary cable, services and street lights. Benefit to long-term reliability.
44	n/a	R	140	390	Parking Lot Upgrade - 230 Ash Street		65							Reconfigure parking lot at 230 Ash Street to include accommodations for future connection for EV charging stations.
45	**n/a**	W	120	367	Marion Street Line Extension, W (Phase I & II)	368	368							Phase I (2019): Upgrade existing line from single-phase to three-phase feeding Eleanor Drive (to be completed by the end of 2019); Phase II (2020): Extend the underground line on Marion Street in Wilmington to create a backup feed meeting with the three-phase URD.
46	**n/a**	NR	125	364/367	3W15 Getaway Improvements	192	123							Improvements to result in significant added capacity to 3W15 and moderate increase in capacity to remaining Station 3 circuits.
47	**n/a**	R	135	361/364/367	4W16 Getaway Replacement		5							Station 4: Upgrade to approximately 2,250 circuit feet of underground cable on Causeway Road/Lowell Street, Reading, to 750 mcm cu for increased reliability and capacity.
					TOTAL	**11,513**	**8,238**	**11,648**	**13,887**	**13,283**	**7,849**	**6,525**	**6,950**	

COMPLETED OR SCHEDULED TO BE COMPLETED BY 12/31/20

Year-end Estimate Includes Carry-over

READING MUNICIPAL LIGHT DEPARTMENT

Capital Improvements CY21 thru CY26

$ Shown in thousands

	CY20 BUDGET	CY20 EST.	CY21 PLAN EST.	CY22	CY23	CY24	CY25	CY26
Total Additions:	**11,513**	**8,238**	**11,648**	**13,887**	**13,283**	**7,849**	**6,525**	**6,950**
	CY20 BUDGET	**CY20 EST.**	**CY21 PLAN EST.**	**CY22**	**CY23**	**CY24**	**CY25**	**CY26**
TABLE 1: PLANT VALUES & DEPRECIATION EXPENSE:								
Plant in Service (Beginning)	159,058	157,906	165,144	175,792	188,679	200,961	207,811	213,335
Additions	**11,513**	**8,238**	**11,648**	**13,887**	**13,283**	**7,849**	**6,525**	**6,950**
Adjustments (Property Retirement)	-1,000	-1,000	-1,000	-1,000	-1,000	-1,000	-1,000	-1,000
Plant in Service (Ending)	169,572	165,144	175,792	188,679	200,961	207,811	213,335	219,285
Less Land and Land Rights	-1,266	-1,266	-2,007	-2,007	-2,007	-2,007	-2,007	-2,007
Depreciable Plant in Service	168,306	163,878	173,785	186,672	198,955	205,804	211,329	217,278
Accumulated Reserve For Depreciation	-82,909	-82,255	-87,171	-92,385	-97,985	-103,954	-110,128	-116,467
Net Plant in Service	86,663	82,889	88,620	96,294	102,977	103,857	103,208	102,818
TABLE 2: DEPRECIATION FUND BALANCES:								
Beginning Balance	7,098	8,335	9,397	7,765	4,429	2,346	5,565	6,315
Depreciation Rate (3%)	3%	3%	3%	3%	3%	3%	3%	3%
Depreciation Expense	**4,734**	**4,699**	**4,916**	**5,214**	**5,600**	**5,969**	**6,174**	**6,340**
Bond Proceeds and Other Fund Sources	274	100	100	337	100	100	100	100
Operating Fund Transfer	6,000	4,500	5,000	5,000	5,500	5,000	1,000	1,000
	18,106	17,634	19,413	18,316	15,629	13,415	12,839	13,755
Capital Improvements	-11,513	-8,238	-11,648	-13,887	-13,283	-7,849	-6,525	-6,950
Ending Balance	**6,592**	**9,397**	**7,765**	**4,429**	**2,346**	**5,565**	**6,315**	**6,805**
TABLE 3: BOND PROCEEDS & OTHER FUND SOURCES:								
Force Account (MassDOT): Main & Hopkins, R	174	0	0	0	0	0	0	0
Force Account (MassDOT): Lowell at Woburn Street, W	0	0	0	237	0	0	0	0
Interest Income	100	100	100	100	100	100	100	100
	274	100	100	337	100	100	100	100

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CAPITAL PROJECTS

Facilities

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CAPITAL PROJECT SUMMARY

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

Project Schedule: 2021 **Project Manager:** Paul McGonagle, Facilities Manager

Reason for Expenditure:
Energy conservation.

Brief Description/Scope:
RMLD started replacing the old and obsolete lights with LED bulbs and fixtures. To complete this effort, RMLD will replace the site lighting on the 230 Ash Street campus and Substation 3 and 4.

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:
Station 5 is complete.

CAPITAL PROJECT COST SHEET

PROJECT NAME: RMLD Lighting (LED) Upgrade Program **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0	LED upgrade for campus and substation lighting				$125,000
			$0	$0	$0					$0
			$0	$0	$0					$0
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$0**	**$0**	**$0**	**TOTAL MATERIALS/OTHER**				**$125,000**

PROJECT TOTAL: $125,000

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:

The backup generator at Station 3 needs to be replaced due to age. The existing generator will be replaced with a similar generator. This is a proactive approach to eliminate the possibility of a significant failure of the equipment. In 2020, a design specification will be developed and ready to put out to bid. The replacement project should commence in the spring of 2021.

Also, the transformer storage project at Station 3 is in the conceptual design phase. A design specification is being developed in 2020, and in 2021 the storage rack will be constructed and installed at Station 3. This project will reduce the amount of space required at the Barbas warehouse.

At Station 4 the control house is experiencing high temperatures. An air conditioning/ cooling design will be completed in 2020, and the project construction will be scheduled in the spring of 2021.

Barriers:
None anticipated at this time.

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

Status Update:
The deck replacement project has been completed, and the customer parking lot project has been completed. The backup generator at 230 Ash Street broke down and needed to be replaced. The generator replacement project was capitalized, but was not included in the 2020 Capital Budget.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Building Upgrades **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0	Station 3 Backup Generator				$80,000
			$0	$0	$0	Shelving racks for transfomrer storage at Station 3 (2020 carry-over)				$110,000
			$0	$0	$0	Station 4 AC Cooling Project (2020 carry-over)				$80,000
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$0**	**$0**	**$0**	**TOTAL MATERIALS/OTHER**				**$270,000**

PROJECT TOTAL: $270,000

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 2021, the following office upgrades will be carried over from 2020 due to COVID-19 delays:

- create an additional office in the Tech Services area;
- create a conference room in the Facilities area to accommodate both Facilities and Tech Services;
- install a new camera and projection system in the AV Room; and
- create an additional office for the Assistant Materials Manager.

Barriers:
None anticipated at this time.

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

Status Update:
In 2020, the office cubicles were modified with plexi-glass construction to further protect employees from the spread of the COVID-19 virus.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Office Upgrades - 230 Ash Street **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0	Facilities/Tech Services Conference Room				$30,000
			$0	$0	$0	Tech Services Office				$30,000
						AV Room (camera and projection system)				$20,000
			$0	$0	$0	Assistant Materials Manager Office				$25,000
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$0**	**$0**	**$0**	**TOTAL MATERIALS/OTHER**				**$105,000**

PROJECT TOTAL: $105,000

CAPITAL PROJECT SUMMARY

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

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

Reason for Expenditure:

This project represents an annual allotment for security upgrades as needed at all RMLD facilities. A physical security consultant has been hired to review and assess the RMLD properties and provide recommendations to improve the existing security systems and equipment. Once the recommendations have been reviewed and approved, equipment and systems will be procured and installed, as necessary.

Brief Description/Scope:
The scope of work will be determined based on the results of the consultant's recommendations.

Barriers:
None anticipated at this time.

Change in Scope of Work from Prior Fiscal Year:

Not applicable.

Status Update:
Rekeyed substation control houses and perimeter fencing in accordance with NERC requirements.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Security Upgrades - All Sites **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0	Procurement and installation of security consultant's recommended security systems.				$250,000
			$0	$0	$0					$0
			$0	$0	$0					$0
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$0**	**$0**	**$0**	**TOTAL MATERIALS/OTHER**				**$250,000**

PROJECT TOTAL: $250,000

CAPITAL PROJECT SUMMARY

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

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

Reason for Expenditure:
Scheduled vehicle replacement, following Fuel Efficiency OP 19-07 FM, and based on the Electrification Program and the “8 to 10” 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 2020 delivery of the following:

- small dump truck with sander
- bucket truck (electric as available)

Barriers:
None anticipated at this time.

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

Status Update:

- The pole trailer was received in July 2020.
- The underground utility vehicle was received in August 2020.
- The 2019 pickup truck was canceled due to the Electrification Program.
- The 2020 pickup truck was received in September 2020.
- Four 2020 hybrid SUV’s were received in September 2020.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Rolling Stock Replacement **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0	Heavy Duty Vehicle: Bucket Truck (electric as available)	each	$300,000.00	1	$250,000
			$0	$0	$0	Small Dump Truck (w/Sander Attachment)	each	$85,000.00	1	$85,000
			$0	$0	$0	Digger Derrick (2020 Carry-over)	each	$284,956.00	1	$284,956
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$0**	**$0**	**$0**	**TOTAL MATERIALS/OTHER**				**$619,956**

PROJECT TOTAL: $619,956

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CAPITAL PROJECTS

Integrated Resources

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CAPITAL PROJECT SUMMARY

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

Project Schedule: On-going **Project Manager:** Tom Ollila, Resource Engineer

Reason for Expenditure:

The goal of the EVSE project is to establish a plug-in electric vehicle infrastructure within RMLD's service territory. While this program offers a means to offset declining electric sales, it also provides a highly visible pathway for customers who would like to support efforts to reduce carbon emissions in both the transportation and energy sectors.

Brief Description/Scope:

RMLD will work with each town to determine the level of interest and best location for the installation of dual-port charging stations in parking areas owned by the towns. All charging stations will be owned by RMLD.

Barriers:

None anticipated at this time.

Change in Scope of Work from Prior Fiscal Year:

Not applicable.

Status Update:

A public charging station was installed in the new RMLD customer parking lot at 230 Ash Street. There are now two public charging stations available at 230 Ash Street.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Electric Vehicle Supply Equipment (EVSE) **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0	Purchase and install public EV charging units, including required software	each	$10,000.00	4	$40,000
			$0	$0	$0	Contractor installation of public chargers	each	$15,000.00	4	$60,000
			$0	$0	$0					
			$0	$0	$0					$0
			$0	$0	$0					$0
			$0	$0	$0					$0
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$0**	**$0**	**$0**	**TOTAL MATERIALS/OTHER**				**$100,000**

PROJECT TOTAL: $100,000

CAPITAL PROJECTS

Information Technology

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CAPITAL PROJECT SUMMARY

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

Project Schedule: Annual **Project Manager:** Tyler Abegg, Operational Technology Engineer

Reason for Expenditure:
Each year RMLD must replace failed or obsolete computers and related equipment, as well as purchase equipment for new users. Additionally, miscellaneous new hardware may be purchased at the request of various operating units. This item includes these purchases as well as more specific items outlined below.

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

- Replace old/obsolete user workstations with Windows-10 laptops and purchase new machines for new employees as necessary.
- New EMC data domain to replace six-year old DD160. The current data domain (DD160) will be used as a backup.
- New firewalls for SCADA domain to replace current firewall with “mainstream” brand with more robust security features.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:
Two projects scheduled for 2020 (new EMC data domain and new firewalls for SCADA) have been pushed out to 2021.

Status Update:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Hardware Upgrades **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0	EMC Unity Data Domain	each	$26,000	1	$26,000
			$0	$0	$0	Firewalls for SCADA	each	$1,000	4	$4,000
			$0	$0	$0	Dell Monitors	each	$177.50	20	$3,550
			$0	$0	$0	Laptops/Docking Stations	each	$1,500.00	10	$15,000
			$0	$0	$0	Miscellaneous Hardware				$40,000
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$0**	**$0**	**$0**	**TOTAL MATERIALS/OTHER**				**$88,550**

PROJECT TOTAL: $88,550

CAPITAL PROJECT SUMMARY

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

Project Schedule: Annual **Project Manager:** Tyler Abegg, Operational Technology Engineer

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 licenses and ad hoc purchases as well as more specific items (outlined below).

Brief Description/Scope:

In addition to the standard software and licensing and ad hoc purchases described above, we anticipate the following projects:

- *Yukon AMI Metering System:* Migrate Yukon (Cooper-Eaton) metering system (application server and database servers) to Cooper-Eaton's data center. The system is growing too large for RMLD's hardware to house and it is not cost-effective to keep upgrading.
- *Customer Relationship Management (CRM):* Cloud-based CRM software that is fully integrated with Great Plains/Cogsdale
- *Meter Data Management (MDM):* MDM software to monitor status of meters and gain key metrics on their use.
- *Cloud Based Phone System:* Cloud based phone system to replace the current in-house option. This will be a fully managed and supported system.
- *Work Order Management System (WOMS):* Implement WOMS to have a fully integrated system for operations and management.
- *Customer Portal:* Portal for customers to view billing history, usage, etc.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

Two projects scheduled for 2020 (Yukon AMI Metering System and Customer Relationship Management) have been pushed out to 2021.

Status Update:

Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Software Upgrades **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0	Miscellaneous/Ad Hoc Software				$100,000
			$0	$0	$0	Yukon AMI Metering to Cloud	project	$53,000	1	$53,000
			$0	$0	$0	Customer Relationship Management (CMR) Software	project	$20,000	1	$20,000
			$0	$0	$0	Meter Data Management (MDM)	project	$150,000.00	1	$150,000
			$0	$0	$0	Work Order Management System	project	$75,000.00	1	$75,000
			$0	$0	$0	Cloud Based Phone System	project	$30,000.00	1	$30,000
			$0	$0	$0	Customer Portal	project	$10,000.00	1	$10,000
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$0**	**$0**	**$0**	**TOTAL MATERIALS/OTHER**				**$438,000**

PROJECT TOTAL: $438,000

CAPITAL PROJECTS

System

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CAPITAL PROJECT SUMMARY

Project Name: Primary Metering Inspection and Upgrade Program **Project #:** 110

Project Schedule: 2021-2023 **Project Manager:** Nick D'Alleva, Technical Services Manager

Reason for Expenditure:
RMLD has initiated an inspection program of all primary metering revenue equipment. It is predicted that many of these installations will need to be replaced due to age and/or condition. This project will cover the cost of any necessary upgrades.

Brief Description/Scope:
Equipment will be repaired, upgraded and/or replaced as necessary based on the results of the assessment.

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: Primary Metering Upgrade and Replacement Program **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
Primary metering make ready and installation	12.0	6.0	$85,081	$41,299	$16,560	Potential Transformers	each	$1,000.00	80	$80,000
			$0	$0	$0	Current Transformers	each	$1,000.00	100	$100,000
			$0	$0	$0	Miscellanous equipment (racks, secondary control wire, meter sockets, and test switches)	each	$500.00	40	$20,000
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews	100.0		$10,189	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
Primary metering installation coordination and design	160.0	80.0	$14,918	$7,242						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
Primary metering construction	960.0		$81,773	$0	$20,160					$0
Primary metering installation coordination and design		160.0	$0	$13,232	$3,360					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management	160.0	40.0	$17,490	$4,245		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$209,451**	**$66,017**	**$40,080**	**TOTAL MATERIALS/OTHER**				**$200,000**

PROJECT TOTAL: $515,548

CAPITAL PROJECT SUMMARY

Project Name: Relay Protection Upgrades – Station 4 **Project #:** 130

Project Schedule: 2021-2022 **Project Manager:** Nick D'Alleva, Technical Services Manager

Reason for Expenditure:
NSTAR is replacing existing static wires with optical ground wire 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 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:
Replace existing relay protection on the 211-503 and 211-504 transmission lines. The primary and secondary relay protection scheme will be a fully functional three terminal line protection scheme between Station 4, Woburn Substation and Tewksbury. This protection scheme will communicate over fiber installed on the 115Kv transmission lines.

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: Relay Protection Upgrades - Station 4 **SCHEDULE:** CY2021 - 2022

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0					$0
			$0	$0	$0					$0
			$0	$0	$0					$0
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
Installation of equipment	200.0		$17,036	$0	$4,200	Engineering services to design new protection scheme				$70,000
Wiring and testing	140.0		$11,925	$0	$2,940	Testing services				$25,000
						Communication equipment				$20,000
						Relays	each	$10,000.00	4	$40,000
						Associated equipment for relays	per relay	$1,250.00	4	$5,000
						Misc. materials				$8,000
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management	150.0		$16,397	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$45,358**	**$0**	**$7,140**	**TOTAL MATERIALS/OTHER**				**$168,000**

PROJECT TOTAL:	**$220,498**

2021 ESTIMATED SPENDING	**$100,000**
2022 ESTIMATED SPENDING	**$120,498**

CAPITAL PROJECT SUMMARY

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

Project Schedule: FY18-CY24 **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 2021 we will replace three units which were purchased in 2020 (received August 2020) and an additional five units will be purchased and replaced.

Barriers:
Delivery of three switchgear ordered in FY18 was significantly delayed, which has pushed back the installation schedule for all switchgear.

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

Three of the five switches received in 2020, will be installed in 2021.

Status Update From Prior Fiscal Year:
Installation of ten switchgear has been completed (as of September 23, 2020):

- *Jonspin Road, Wilmington*: Switch-1 (FY18), Switch-2 and Switch-3 (CY19), Switch-4 and Switch-5 (CY19), and Switch-6 (CY20)
- *River Park Drive, North Reading*: Switch-2 in (FY18)
- *Concord Street, North Reading*: Switch-2 and Switch-3 in (FY18)
- *Reading Square (Haven Street), Reading: Switch-1 (CY20)*

CAPITAL PROJECT COST SHEET

PROJECT NAME: Pad-Mount Switchgear Upgrade at Industrial Parks **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
Replace pad-mount switchgear (with contractor assist)		3.2	$0	$22,026	$2,944	Innovative Switchgear	each	$70,710.00	8	$565,680
Make up t-bodies and LB elbows (with contractor assist)	3.2		$22,688	$0	$2,944	T-bodies, LB elbows, reducers, caps, inserts, fused elbows, miscellaneous connectors per switchgear	per switch	$3,000.00	8	$24,000
Splice out line and load side primary cables (with contractor assist)		1.6	$0	$11,013	$1,472	Splices for line and load side primaries (up to 12 per switchgear)	per switch	$3,000.00	8	$24,000
						Primary cable for piece outs	foot	$20.00	960	$19,200
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
Replace pad-mount switchgear (assist RMLD crews)	3.2		$21,825		$1,152					$0
Make up t-bodies and LB elbows (assist RMLD crews)	3.2		$21,825		$1,152					$0
Splice out line and load-side primary cables (assist RMLD crews)	1.6		$10,913		$576					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews	60.0	40.0	$6,113	$3,956						$0
Engineering: unit rate in hours			**$93**	**$91**						
Prepare switching order, coordinate outages, ad modifications, order materials, etc.	80.0	96.0	$7,459	$8,690						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
Test cable, switchgear and rotation (2 techs)	120.0		$10,222	$0	$2,520					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Energize and test switchgear and relays	60.0		$6,559	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$107,604**	**$45,685**	**$12,760**	**TOTAL MATERIALS/OTHER**				**$632,880**

PROJECT TOTAL: $798,930

CAPITAL PROJECT SUMMARY

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

Project Schedule: FY17-CY23 **Project Manager:** Emmanuel Agouridis, Senior 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 the substation operational. The new Wilmington substation will be a replacement for Substation 5, while also providing added benefit 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. RMLD is still in pursuit of land on MA-125 in Wilmington, MA.

CAPITAL PROJECT COST SHEET

PROJECT NAME: New Wilmington Substation
Land Purchase

SCHEDULE: CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
			$7,090	$6,883	$920					
			$0	$0	$0					$0
			$0	$0	$0					$0
			$0	$0	$0					$0
Overhead Contractor 2-man crew - unit rate in weeks			$10,526	N/A	$1,387					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			$6,820	N/A	$360					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			$102	$99						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			$93	$91						
			$0	$0		Land Purchase				$599,000
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			$85	$83	$21					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			$55	$53	$21					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			$109	$106						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$0**	**$0**	**$0**	**TOTAL MATERIALS/OTHER**				**$599,000**

PROJECT TOTAL: $599,000

CAPITAL PROJECT COST SHEET

PROJECT NAME: New Wilmington Substation
Construction and Commissioning

SCHEDULE: CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0					$0
			$0	$0	$0					$0
			$0	$0	$0					$0
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
Oversite and Management of Project	285.0		$26,573	$0		National Grid system impact study				$42,000
			$0	$0		Engineering consultant for permitting, interconnection, procurement, etc.				$73,500
			$0	$0		Survey, Civil, Permit, etc.				$52,500
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$26,573**	**$0**	**$0**	**TOTAL MATERIALS/OTHER**				**$168,000**

PROJECT TOTAL: $194,573

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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 the Grid Modernization/Optimization Road Map including installation and integration of smart switches, IntelliRupters, and capacitor banks and controls. 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:

In 2021, RMLD will add Crew Manager to the Survalent OMS system to help streamline the dispatching of crews during storm situations.

The purchase and installation of five reclosers (4 for installation and 1 spare) was added to this project. These will be replacements for existing reclosers as well as for new locations.

The Meter Data Management System originally planned for 2020 has been pushed back to 2021, and has been moved into the IT Software budget.

Status Update:
Four Scada-Mate switches and two Intellirupters were received in 2020 and all should be installed by the end of the year. This will bring the total number in the field to 20 Scada-Mate Switches, and six IntelliRupters.

Integration of the outage management system (OMS) and Power Factor Correction/VVR modules should be complete in 2020. The outage management system (OMS), customer portal and outage dashboard, and WebSurv have been installed and are operational internally.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Grid Modernization & Optimization
Scada-Mate Switches

SCHEDULE: CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
Install Scada-Mate switches and controls	1.0		$7,090	$0	$920	Scada-Mate CX Switch	each	$30,139.10	4	$120,556
Replace pole, install bypass disconnects, transfer primary, secondary, etc.	7.0		$49,631	$0	$6,440	55' pole, x-arms, brackets, guys, anchors, miscellaneous hardware, etc.	per switch	$2,000.00	4	$8,000
			$0	$0	$0	6801 IntelliTeam License	per switch	$2,500.00	4	$10,000
Install three (3) repeaters/radios per switch	0.4		$2,836	$0	$368	S&C repeaters/radios	each	$3,000.00	12	$36,000
install antennas	1.5		$10,635	$0	$1,380	Antennas for radios	each	$600.00	6	$3,600
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews	120.0		$12,227	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
PoleForeman, construction drawings, etc.	40.0		$3,730	$0						$0
Prepare switching orders, order materials, establish communication	40.0		$3,730	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
Controls, programming, commissioning, etc.	64.0		$5,452	$0	$1,344					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Controls, programming, commissioning, etc.	32.0		$3,498	$0		**Police Details**	**weeks**	**$2,427**	**4.0**	**$9,710**
TOTAL LABOR/VEHICLES			**$98,828**	**$0**	**$10,452**	**TOTAL MATERIALS/OTHER**				**$187,866**

PROJECT TOTAL: $297,146

CAPITAL PROJECT COST SHEET

PROJECT NAME: Grid Modernization & Optimization IntelliRupters

SCHEDULE: CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
Install IntelliRupter Switches	1		$7,090	$0	$920	IntelliRupter Switches	each	$37,289.50	2	$74,579
Replace pole, install bypass disconnects, transfer primary, secondary, etc.	3		$21,270	$0	$2,760	55' pole, cross-arms, brackets, guys, anchors, miscellaneous hardware, etc.	per switch	$2,000.00	2	$4,000
			$0	$0	$0	IntelliRupter License/IntelliTeam License	each	$2,500.00	2	$5,000
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews	40.0		$4,076	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
PoleForeman, construction drawings, etc.	24		$2,238	$0						$0
Prepare switching orders, order materials, establish communication	24		$2,238	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
Controls, programming, commissioning, etc.	64		$5,452	$0	$1,344					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Controls, programming, commissioning, etc.	16		$1,749	$0		**Police Details**	**weeks**	**$2,427**	**2.0**	**$4,855**
TOTAL LABOR/VEHICLES			**$44,112**	**$0**	**$5,024**	**TOTAL MATERIALS/OTHER**				**$88,434**

PROJECT TOTAL: $137,570

CAPITAL PROJECT COST SHEET

PROJECT NAME: Grid Modernization & Optimization
ABB Reclosers

SCHEDULE: CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
Install reclosers and controls	1.0		$7,090	$0	$920	ABB Reclosers	each	$20,000.00	5	$100,000
Replace pole, install bypass disconnects, transfer primary, secondary, etc.	7.0		$49,631	$0	$6,440	55' pole, x-arms, brackets, guys, anchors, miscellaneous hardware, etc.	per recloser	$2,000.00	4	$8,000
			$0	$0	$0	Bypass disconnects	each	$350.00	12	$4,200
			$0	$0	$0	Contractor assist with recloser settings	per recloser	$1,500.00	4	$6,000
			$0	$0	$0					$0
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews	120.0		$12,227	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
PoleForeman, construction drawings, etc.	40.0		$3,730	$0						$0
Prepare switching orders, order materials, establish communication	40.0		$3,730	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
Controls, programming, commissioning, etc.	80.0		$6,814	$0	$1,680					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Controls, programming, commissioning, etc.	40.0		$4,372	$0		**Police Details**	**weeks**	**$2,427**	**4.0**	**$9,710**
TOTAL LABOR/VEHICLES			**$87,594**	**$0**	**$9,040**	**TOTAL MATERIALS/OTHER**				**$127,910**

PROJECT TOTAL: $224,544

CAPITAL PROJECT COST SHEET

PROJECT NAME: Grid Modernization & Optimization
Capacitor Bank Automation

SCHEDULE: CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0					$0
			$0	$0	$0					$0
			$0	$0	$0					$0
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
Install three CAP controllers	1.2		$12,632		$1,665	CBC 800 CAP Controller	each	$2,200.00	3	$6,600
						RFN 1200 radio	each	$800.00	3	$2,400
			$0		$0	Miscellaneous	per controller	$400.00	3	$1,200
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews	12.0		$1,223	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
Connecting to Eaton System and SCADA switching	48.0		$4,476	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
Controls, programming, commissioning, installation, etc.	24.0		$2,044	$0	$504					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Controls, programming, commissioning, installation, etc.	6.0		$656	$0		**Police Details**	**weeks**	**$2,427**	**1.2**	**$2,913**
TOTAL LABOR/VEHICLES			**$21,030**	**$0**	**$2,169**	**TOTAL MATERIALS/OTHER**				**$13,113**

PROJECT TOTAL: $36,312

CAPITAL PROJECT COST SHEET

PROJECT NAME: Grid Modernization & Optimization Software Integration

SCHEDULE: CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0	Services from vendor for integration of AMI and various devices				$10,000
			$0	$0	$0					$0
			$0	$0	$0					$0
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
Work with vendor for software integration	80.0		$7,459	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
Work with vendor for software integration	24.0		$2,044	$0	$504					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision	8.0		$874	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$10,378**	**$0**	**$504**	**TOTAL MATERIALS/OTHER**				**$10,000**

PROJECT TOTAL: $20,882

CAPITAL PROJECT COST SHEET

PROJECT NAME: Grid Modernization & Optimization
Crew Manager

SCHEDULE: CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
Training - Crew Manager	2.0		$14,180	$0	$1,840	Crew Manager software/hardware				$80,000
			$0	$0	$0	Contractor labor to configure firewall/VPN				$10,000
			$0	$0	$0					$0
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Training - Crew Manager	16.0		$1,630	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
Work with vendor for software integration	120.0		$11,189	$0						$0
Training - Crew Manager	80.0		$7,459	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
Work with vendor for software integration	24.0		$2,044	$0	$504					$0
Training - Crew Manager	24.0		$2,044	$0	$504					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
Training - Crew Manager	40.0		$2,191	$0	$840					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Training - Crew Manager	16.0		$1,749	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$42,487**	**$0**	**$3,688**	**TOTAL MATERIALS/OTHER**				**$90,000**

PROJECT TOTAL: $136,175

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CAPITAL PROJECT SUMMARY

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

Project Schedule: 2021-2024 **Project Manager:** Nick D'Alleva, Technical Services Manager

Reason for Expenditure:
The RMLD has ~28,600 non-AMI meters that are not capable of providing end-of-line voltage. End of the line voltage readings would provide the ability to monitor voltage, current, demand, power factor and power quality for these locations. Of these ~28,000 non-AMI meters, there are 3,600 commercial, industrial and time-of-use meters that are not capable of communicating with the RMLD Outage Management System. Customers with these meters are not able to receive outage and restoration notification.

Brief Description/Scope:
The RMLD has hired a consultant who will perform a system-wide evaluation of the current AMI mesh network and metering system and make recommendations for system upgrades to accommodate current deficiencies as outlined above, and address future metering needs. The RMLD will evaluate and proceed with a metering system upgrade based on the recommendations of this study.

Barriers:
None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)
The scope of work for 2021 will be determined based on the recommendations for the AMI mesh network and metering study.

Status Update From Prior Fiscal Year:
RMLD postponed the 2020 planned upgrades pending the outcome of the study referenced above.

CAPITAL PROJECT COST SHEET

PROJECT NAME: AMI Mesh Network Expansion and Meter Replacement **SCHEDULE:** CY2021 - 2024

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0	System upgrade per consultant recommendation				$6,100,000
			$0	$0	$0					$0
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
				$0						
TOTAL LABOR/VEHICLES			**$0**	**$0**	**$0**	**Police Details**	**weeks**	**$2,427**		**$0**
						TOTAL MATERIALS/OTHER				**$6,100,000**

PROJECT TOTAL: $6,100,000

2021 ESTIMATED SPENDING	**$2,000,000**
2022 ESTIMATED SPENDING	**$2,000,000**
2023 ESTIMATED SPENDING	**$2,000,000**
2022 ESTIMATED SPENDING	**$100,000**

CAPITAL PROJECT SUMMARY

Project Name: Meters & Primary Meters (for Stock) **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:

Four hundred residential meters as well as forty-eight current and potential transformers, and miscellaneous hardware will be purchased 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 and Primary Meters (for stock) **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0	Residential meters for stock (with disconnect option as available)	each	$300.00	80	$24,000
			$0	$0	$0	Primary potential and current transformers	each	$1,000.00	12.0	$12,000
			$0	$0	$0	Secondary current transformers	each	$250.00	16	$4,000
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$0**	**$0**	**$0**	**TOTAL MATERIALS/OTHER**				**$40,000**

PROJECT TOTAL: $40,000

CAPITAL PROJECT SUMMARY

Project Name: 3W18 Getaway Improvements **Project #:** 125

Project Schedule: 2021 **Project Manager:** Emmanuel Agouridis, Senior Distribution Engineer

Reason for Expenditure:
The objective of this project is to have the 3W18 circuit separated from the existing duct bank at Station 3. At a high level, the plan is to run the circuit out of Station 3 in a separate duct bank and ultimately to Chestnut Street via newly built overhead lines installed on the existing pole line running from Chestnut Street down the driveway to Station 3. This will improve the rating of the 3W18 circuit, while also improving the ratings of the remaining circuits in the duct bank due to reduced heating and inherent thermal relief.

Brief Description/Scope:
Install new underground cable from Station 3 to a new riser installed in 2020. Perform all overhead line work to tie the new 3W18 riser to the existing overhead 3W18 circuit located on Chestnut Street. After all new construction is in place, cutover from existing feed to new feed.

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: 3W18 Getaway Improvements **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
Replace five poles w/ 55' CL1 poles	2.0		$14,180	$0	$1,840	55' - class 1 poles	each	$800.00	5	$4,000
Frame 15 poles for added circuit	2.0		$14,180	$0	$1,840	15kV, 556 AL spacer cable	foot	$2.02	5280	$10,666
Set-up for (1,000') messenger wire	2.0		$14,180	$0	$1,840	0.052 messenger wire	foot	$1.23	1760	$2,165
Pull in and install (3,000') 556 spacer cable	2.0		$14,180	$0	$1,840	Riser pole hardware	per pole	$1,700.00	1	$1,700
Move 3W15-3W6 and 3W15-3W18 tie switches	2.0		$14,180	$0	$1,840	15 kV Hendrix brackets, misc. hardware, misc. primary connectors (spacers, insulators, etc.)	per pole	$300.00	15	$4,500
Install underground cable, splice, term (with contractor assist)	2.0		$14,180	$0	$1,840	Gang operated air break switch	each	$3,040.00	2	$6,080
Wreck out underground (with contractor assist)	1.0		$7,090	$0	$920	15kV cable, 750 MCM	foot	$14.43	1500	$21,645
						600V, 4/0 CU cable	foot	$3.08	500	$1,540
						Terminations	each	$70.64	6	$424
						Splices	each	$443.56	3	$1,331
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
Install underground cable, splice, term (assist RMLD crews)	2		$13,641		$720					$0
Wreck out underground (assist RMLD crews)	1		$6,820		$360					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews	100.0		$10,189	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
Design, work order, material procurement	80		$7,459	$0						$0
Oversight	40		$3,730	$0						$0
Switching: draft, review and execute	16		$1,492	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
Switching: review and execution	16		$1,363	$0	$336					$0
Test cable	4		$341	$0	$84					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Switching: review and execution	16		$1,749	$0		**Police Details**	**weeks**	**$2,427**	**2.0**	**$4,855**
TOTAL LABOR/VEHICLES			**$138,955**	**$0**	**$13,460**	**TOTAL MATERIALS/OTHER**				**$58,905**

PROJECT TOTAL: $211,320

CAPITAL PROJECT SUMMARY

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

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

Reason for Expenditure:
All transformers and capacitors for planned and ad hoc projects are purchased under this project.

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

These transformers and capacitors will be used for new construction, as well as reliability projects including Secondary and Main Replacement, 13.8kV Upgrade (Step-down Areas), Underground Facilities Upgrades, and Aged/Overloaded Transformer Replacement.

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:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0	Three-phase pad-mount transformers for proposed commercial services and stock	average per transformer	$9,200	10	$92,000
			$0	$0	$0	Single-phase pad-mount transformers for proposed subdivisions and stock.	average per transformer	$2,875	58	$166,750
						Three-phase pole-mount transformers for proposed commercial services and stock	average per transformer	$4,888	12	$58,656
						Single-phase pole-mount transformers for proposed residential services and stock	average per transformer	$2,300	42	$96,600
			$0	$0	$0	1,200 kVar capacitor banks	average per transformer	$1,400	3	$4,200
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$0**	**$0**	**$0**	**TOTAL MATERIALS/OTHER**				**$418,206**

PROJECT TOTAL: $418,206

CAPITAL PROJECT SUMMARY

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

Project Schedule: Annual **Project Manager:** Leo Keefe, 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. Pole replacements, primary cable replacement and transformer upgrades will be done in conjunction with the Stepdown Area Conversions. The Middlesex Avenue area in Reading, the Central Street area in North Reading, and the Linda Lane area in Wilmington will be targeted for upgrade in 2021 in conjunction with the 13.8kV Upgrade (Step-down Areas) – Project 107.

Barriers:

The Linda Lane area targeted for 2021 is in Verizon's 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:

The North Main Street/Lowell Street area in Lynnfield is currently being upgraded as part of 13.8 kV (Step-down) Upgrades. Secondary and Mains in these areas will be replaced as needed as part of this upgrade. These areas are expected to be completed by the end of 2020. The Kenwood Avenue, Redwood Terrace and Englewood Drive area in Wilmington was completed in 2020.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Secondary and Main Replacement Program **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
Frame up to 120 poles	6		$42,541	$0	$5,520	4/0-3/C secondary cable	foot	$2	10,000	$20,000
Install 10,000' of secondary cable	10		$70,901	$0	$9,200	Secondary hardware, brackets, connectors, etc.	per pole	$56	120	$6,720
Replace services	6		$42,541	$0	$5,520	120' of 1/0 - 3/C service wire for each service	per service	$100	80	$8,000
			$0	$0	$0					
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews	40.0		$4,076	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
Prepare construction documents, PoleForeman, outage set-up, GIS updates	160		$14,918	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**	**11.0**	**$26,702**
TOTAL LABOR/VEHICLES			**$174,976**	**$0**	**$20,240**	**TOTAL MATERIALS/OTHER**				**$61,422**

PROJECT TOTAL: $256,639

NOTE: Transformers for this project are purchased under Project 116.

CAPITAL PROJECT SUMMARY

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

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

Reason for Expenditure:
There are 27 step-down areas left in the RMLD service territory that can be converted. These areas on the RMLD distribution system were originally fed from 4.16 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. Areas targeted for 2021 include Central Street area in North Reading, Linda Lane area in Wilmington, and Middlesex Avenue area in Reading.

Barriers:
The Linda Lane area targeted for 2021 is in Verizon's set territory and could result in pole setting delays.

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

Status Update:
Green Street Apartments in Reading, and Carson Avenue in Wilmington, were converted in 2020. Also, the Kenwood Avenue, Redwood Terrace and Englewood Drive area in Wilmington was completed in 2020. The north Main Street, east Lowell Street areas in Lynnfield are currently underway and are expected to be completed by the end of 2020.

CAPITAL PROJECT COST SHEET

PROJECT NAME: 13.8kV Upgrades (Step-down Areas, etc.) **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
RMLD to set up to 65 poles and install required anchors (Verizon to set 24 poles)	12	2	$85,081	$13,766	$12,880	40' poles	each	$400.00	65	$26,000
RMLD to frame 120 poles for new primary cable	6	2	$42,541	$13,766	$7,360	Hardware, insulators, connectors, guys, cutouts, taps, brackets, ground rods, etc.	each	$180.00	120	$21,600
Install 11,000' of single-phase primary cable	10	2	$70,901	$13,766	$11,040	1/0 AAAC primary	foot	$0.87	11,000	$9,570
Replace thirty (30) pole-mount transformers	6		$42,541	$0	$5,520					
Remove old primary cable	4		$28,360	$0	$3,680					
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews	120.0		$12,227	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
PoleForeman, 605As, construction drawings, switching orders, etc.	400		$37,296	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
			$0	$0		**Police Details**	**weeks**	**$2,427**	**20.0**	**$48,550**
TOTAL LABOR/VEHICLES			**$318,947**	**$41,299**	**$40,480**	**TOTAL MATERIALS/OTHER**				**$105,720**

PROJECT TOTAL: $506,446

Note: Transformers for this project are purchased under Project 116.

CAPITAL PROJECT SUMMARY

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

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

Reason for Expenditure:

There are 210 +/- underground residential subdivisions in the RMLD service territory, of which, 80 +/- 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 preventing premature rusting and corrosion of the transformers. Manholes in the underground areas are also aging and may need repairs.

Brief Description/Scope:

Replace primary and neutral cables, and padmount transformers as needed in the various URDs. The precast transformer pads will be replaced with fiberglass box pads as needed for elevation requirements. Certain areas will be targeted each year. In 2021 we will continue with the inspection (and photograph) of approximately 35 manholes. Additional manhole repairs will be scheduled in 2022.

Barriers:

The outages needed to replace transformers may be difficult to schedule because of remote learning and customers working from home due to the COVID-19 pandemic.

Change in Scope of Work From Prior Fiscal Year:

No notable change.

Status Update:

A contractor has been hired and is currently working to repair 33 manholes. It is expected that the majority of this work will be completed by the end of 2020. Five manholes will remain for 2021 pending the repaving of Main Street in Reading.

Area upgrades expected to be completed by the end of 2020 include:

- Lynnfield: Pocahontas Way, Smith Farm Trail, Mohawk Lane, Lil's Way, Ostis Way.
- North Reading: Greenbriar Drive
- Lynnfield: Westover Estates

CAPITAL PROJECT COST SHEET

PROJECT NAME: Underground Facilities Upgrades (URDs, Manholes, etc.)

SCHEDULE: CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
Replace approximately 15,000 feet of underground and neutral cable (with contractor assist)	16		$113,442	$0	$14,720	#2 CU 15 kV cable and neutral	foot	$3.00	15,000	$45,000
Splice, terminate, elbows, grounding, etc. (with contractor assist)	5		$35,451	$0	$4,600	Splices, elbows, terminations, tape connectors, hardware, etc.	each	$200.00	54	$10,800
Transformer replacement and crabbing (with contractor assist)	5		$35,451	$0	$4,600	Transformer box pads	each	$310.00	35	$10,850
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
Replace approximately 15,000 feet of URD and neutral cables (assist RMLD crews)	16		$109,126		$5,760					$0
Splice, terminate, elbows, grounding, etc. (assist RMLD crews)	5		$34,102		$1,800					$0
Transformer replacement and crabbing (assist RMLD crews)	5		$34,102		$1,800					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews	160.0		$16,302	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
Switching, scheduling, notices, plans, etc.	280		$26,107	$0						$0
Inspection/photograph 35 manholes.	120		$11,189	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
Testing cables and transformers	40		$3,407	$0	$840					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management	8.0		$874	$0		**Police Details**	**weeks**	**$2,427**	**2.0**	**$4,855**
TOTAL LABOR/VEHICLES			**$419,553**	**$0**	**$34,120**	**TOTAL MATERIALS/OTHER**				**$71,505**

PROJECT TOTAL: $525,178

Note: Transformers for this project are purchased under Project 116.

CAPITAL PROJECT SUMMARY

Project Name: Aged/Overloaded Transformer Replacement Program **Project #:** 668

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

Reason for Expenditure:

In order to expedite the replacement of aged and over-loaded transformers on the system, the RMLD formalized the Aged/Overloaded Transformer Replacement Program as a separate capital project in 2020. RMLD plans to replace 120-150 aged or overloaded transformers annually either as part of this program or one of the other reliability programs (i.e., URD Upgrades, Stepdown Upgrades, Secondary and Main Upgrades). As of August, 71 aged transformers have been replaced in 2020. The chart below shows the current number of transformers 25-years or older system wide:

	SYSTEM-WIDE TOTAL	25-YEARS OR OLDER	% OF TRANSFORMERS 25-YEARS OR OLDER
OVER-HEAD			
Single-Phase	2,704	1,083	40.05%
Three-Phase	307	149	48.53%
PAD-MOUNT			
Single-Phase	802	239	29.80%
Three-Phase	261	62	23.75%
	4,074	1,533	37.63%

As of September 21, 2020

Brief Description/Scope:

All transformers over 25 years old have been prioritized for replacement based on age, physical condition, and load. Additionally, the transformer load management program will further identify transformers that need replacement. Any transformer replacement, which is not part of an area upgrade for one of the reliability programs, will be replaced under this project. RMLD crews, augmented by contract crews, will replace these transformers.

Barriers:
Difficulties scheduling outages with continued schooling and work from home due to the COVID-19 pandemic.

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

Status Update:
Not applicable.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Aged/Overloaded Transformer Replacement Program **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
Replace three-phase pad-mount transformers system wide.		2.5	$0	$17,208	$2,300	Miscellaneous underground connectors, elbows, hardware and pads.	per transformer	$1,400.00	10	$14,000
Replace single-phase pad-mount transformers system side.	1		$7,090	$0	$920					
Replace three-phase pole-mount transformers system wide.		4.2	$0	$28,909	$3,864	Miscellaneous overhead connectors, poles, and hardware	per transformer	$1,000.00	54	$54,000
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
Replace single-phase pole-mount transformers system side.	14.7		$154,738		$20,392					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
Replace three-phase pad-mount transformers system wide.		0.0	$0		$0					$0
Replace single-phase pad-mount transformers system side.	1.0		$6,820		$360					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews	172.0	102.0	$17,525	$10,089						$0
Engineering: unit rate in hours			**$93**	**$91**						
Prepare construction documents, PoleForeman, 605As, outage setup, outages, GIS updates	377.6	128.4	$35,207	$11,623						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
Test UG cable connections; commercial customers being off hours	53.3	128.4	$4,540	$10,619	$3,816					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
Test rotation of commercial application; commercial customers being off hours	159.0	104.0	$8,708	$5,530	$5,523					$0
Technical Services Manager: unit rate in hours			**$109.31**	**$106**						
Supervision/Project Management	11.5		$1,252	$0		**Police Details**	**weeks**	**$2,427**	**7.4**	**$18,060**
TOTAL LABOR/VEHICLES			**$235,881**	**$83,977**	**$37,175**	**TOTAL MATERIALS/OTHER**				**$86,060**

PROJECT TOTAL: $443,093

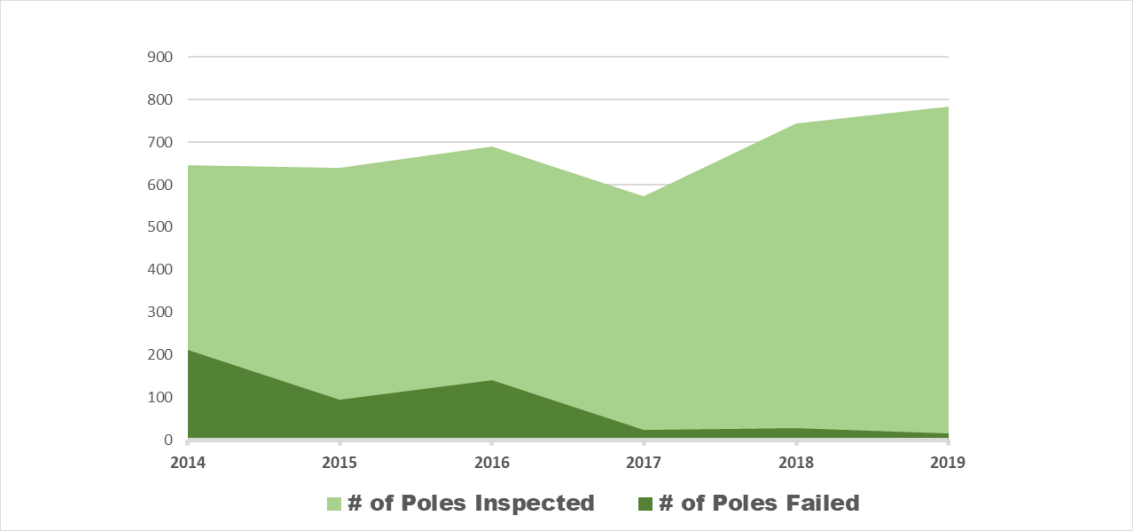
NOTE: Transformers for this project are purchased under Project 116.

CAPITAL PROJECT SUMMARY

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

Project Schedule: Annual **Project Manager:** Leo Keefe, General Line Foreman

Reason for Expenditure:
In 2014 RMLD initiated a Pole Inspection Program. Ten percent of RMLD-owned poles (Reading and North Reading) are inspected annually by an outside contractor using various technologies including resistorgraph technology. This Inspection Program provides RMLD with verifiable data on pole condition. Annual testing takes place each year in the fall. Testing (through 2019), has identified 518 poles that were recommended for replacement. The chart below shows the decline in the number of poles identified as "failed" over the past six years.



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 replacing 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 282 poles have been replaced, and 263 transfers have been completed (as of September 2020).

CAPITAL PROJECT COST SHEET

PROJECT NAME: Pole Replacement Program, R/NR **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0					$0
			$0	$0	$0					$0
			$0	$0	$0					$0
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
Set and transfer 50 poles.	20.0		$210,528		$27,744	Poles	each	$400.00	50.0	$20,000
			$0		$0	Miscellaneous hardware	per pole	$90.00	50.0	$4,500
Service upgrades as necessary	1.2		$12,632		$1,665	Connectors and wires (for service upgrades)	per service	$213.00	50.0	$10,650
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews	200.0		$20,378	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
Prepare PoleForemans and Digsafes	40.0		$3,730	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**	**10.0**	**$24,275**
TOTAL LABOR/VEHICLES			**$247,267**	**$0**	**$29,409**	**TOTAL MATERIALS/OTHER**				**$59,425**

PROJECT TOTAL: $336,101

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:

In 2021 the RMLD will replace the 35Kv lightning arresters for 115/35Kv transformers at Station 4.

Barriers:
Availability of replacement parts.

Change in Scope of Work From Prior Fiscal Year: Increase (Decrease)
Addition funding was required to replace six 35Kv potential transformers at Station 4 due to failure, and one 115Kv CCVT due to poor testing results. Spare units were also purchased.

Status Update From Prior Fiscal Year:
By the end of 2020, the Hydran Oil Monitoring units at Station 3 will be completed.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Substation Equipment Upgrades **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0	35 Kv lightning arresters for 115/35 Kv transformers at Station 4	each	$500.00	7	$3,500
			$0	$0	$0	Additional 35 Kv insulators	each	$150.00	12	$1,800
			$0	$0	$0					$0
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
Testing and installation of lightning arresters	48.0		$4,089	$0	$1,008					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$4,089**	**$0**	**$1,008**	**TOTAL MATERIALS/OTHER**				**$5,300**

PROJECT TOTAL: $10,397

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:
Not applicable.

Status Update:

It is anticipated that two new nodes will be installed by the end of 2020. The RMLD will be conducting a system device communication study in 2021 to determine the most cost effective means to expand and enhance communications to all field devices. This may result in additional nodes in the future and/or the expansion of radio communications.

CAPITAL PROJECT COST SHEET

PROJECT NAME: Communication Equipment (for Fiber Optic) **SCHEDULE:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0	Siemens RS900, nine-port managed ethernet switch	each	$1,500.00	12	$18,000
			$0	$0	$0	Fiber optic patch cords SC - SC	each	$5.00	72.0	$360
			$0	$0	$0	Pole-mount fiber optic cable enclosure with patch panel and UPS	each	$2,500.00	3.0	$7,500
			$0	$0	$0	ADSS fiber optic cable 72	foot	$1.00	10000.0	$10,000
			$0	$0	$0	Contractor: Fiber optic cable splicing and materials.	day	$1,600.00	5	$8,000
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**	**2.0**	**$4,855**
TOTAL LABOR/VEHICLES			**$0**	**$0**	**$0**	**TOTAL MATERIALS/OTHER**				**$48,715**

PROJECT TOTAL: $48,715

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 annually for purchase of power/lab and tool equipment.

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

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:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
			$0	$0	$0	Electric phasing meter/hi-pot	each	$3,000.00	6	$18,000
			$0	$0	$0	Four-point battery hydraulic press	each	$3,800.00	2	$7,600
			$0	$0	$0	Shop meter tester	each	$60,000.00	1	$60,000
			$0	$0	$0	Cibano 500 substation breaker test equipment (2020 carry-over)	each	$45,000.00	1	$45,000
			$0	$0	$0	Floor scrubber for Ash Street facilities	each	$15,000.00	1	$15,000
			$0	$0	$0	Miscellaneous equipment as needed				$10,000
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$0**	**$0**	**$0**	**TOTAL MATERIALS/OTHER**				**$155,600**

PROJECT TOTAL: $155,600

CAPITAL PROJECT SUMMARY

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

Project Schedule: Annual **Project Manager:** Leo Keefe, General Line Foreman

Reason for Expenditure:
Installation of 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 (Commercial and Residential)

SCHEDULE: CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
Install new and upgraded service connections at approximately 350 units.	12.0		$85,081	$0	$11,040	Secondary hardware, brackets, connectors, etc.	per service	$56.00	350	$19,600
			$0	$0	$0	120' of 1/0 - 3/C service wire for each service	per service	$100.00	350.0	$35,000
			$0	$0	$0					$0
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
			$0		$0					$0
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
			$0		$0					$0
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews			$0	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
			$0	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**		**$0**
TOTAL LABOR/VEHICLES			**$85,081**	**$0**	**$11,040**	**TOTAL MATERIALS/OTHER**				**$54,600**

PROJECT TOTAL: $150,721

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:** CY2021

	LABOR					MATERIALS/OTHER				
	# of Units		Labor Total (unit rate x labor units)		Vehicle (labor units x vehicle rate)					
ITEM/TASK	Straight Time	OT	Straight Time	OT		DESCRIPTION	Unit	Unit Rate	# of Units	TOTAL
RMLD Line Crews 2-man crew - unit rate in weeks			**$7,090**	**$6,883**	**$920**					
Capital Construction	30.0	10.0	$212,703	$68,832	$36,800	Materials as necessary				$300,000
Street Light Installations	4.0		$28,360	$0	$3,680	Materials as necessary				$50,000
			$0	$0	$0					$0
Overhead Contractor 2-man crew - unit rate in weeks			**$10,526**	**N/A**	**$1,387**					
Pole Setting/Transfers	30		$315,792		$41,616	Materials as necessary				$95,000
			$0		$0					$0
Underground Contractor 2-man crew - unit rate in weeks			**$6,820**	**N/A**	**$360**					
Underground Construction	5		$34,102		$1,800	Materials as necessary				$125,000
			$0		$0					$0
			$0		$0					$0
Line Operations Supervision: unit rate in hours			**$102**	**$99**						
Supervision of Line crews	110.0		$11,208	$0						$0
Engineering: unit rate in hours			**$93**	**$91**						
Project Management	400.0		$37,296	$0						$0
			$0	$0						$0
Senior Tech: unit rate in hours			**$85**	**$83**	**$21**					
			$0	$0	$0					$0
			$0	$0	$0					$0
Meter Tech: unit rate in hours			**$55**	**$53**	**$21**					
			$0	$0	$0					$0
Technical Services Manager: unit rate in hours			**$109**	**$106**						
Supervision/Project Management			$0	$0		**Police Details**	**weeks**	**$2,427**	**52.0**	**$126,229**
TOTAL LABOR/VEHICLES			**$639,462**	**$68,832**	**$83,896**	**TOTAL MATERIALS/OTHER**				**$696,229**

PROJECT TOTAL: $1,488,418

CY 2021 OPERATING BUDGET
ATTACHMENT 3

2021 OPERATING BUDGET

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SIX YEAR PLAN

CY21-CY26

	CY19 BUDGET	CY 19 ACTUAL	CY20 BUDGET	CY20 BUDGET REFORECAST 6/9/20	CY20 8 MOS ACTUAL 4 MOS BUDGET	CY21 BUDGET	CY22 BUDGET	CY23 BUDGET	CY24 BUDGET	CY25 BUDGET	CY26 BUDGET
FORECASTED kWh SALES	659,048,638	647,243,019	655,732,411	645,213,570	651,586,376	651,063,876	651,063,876	651,063,876	651,063,876	651,063,876	651,063,876
OPERATING REVENUES:											
SALES OF ELEC - BASE	$ 27,761,148	$ 27,025,379	$ 29,040,738	$ 25,975,909	$ 27,110,928	* $ 28,292,988	** $ 29,197,287	** $ 30,673,077	$ 31,759,415	$ 32,394,603	$ 33,042,495
SALES OF ELEC - FUEL	30,326,893	27,180,052	28,063,578	28,063,578	25,807,056	27,894,454	28,028,208	28,162,631	28,297,727	28,433,497	28,569,947
SALES OF ELEC - CAPACITY/TRANSMISSION	37,756,892	33,797,614	37,709,613	37,709,613	32,831,305	35,465,548	35,142,921	34,222,648	33,942,802	35,633,862	37,255,379
FORFEITED DISCOUNTS	832,834	808,092	871,222	779,277	975,720	929,005	844,067	886,270	952,782	971,838	991,275
ENERGY CONSERVATION	662,081	639,334	658,683	658,683	645,737	653,994	657,264	660,550	663,853	667,172	670,508
NYPA	(1,200,000)	(1,138,494)	(1,138,021)	(1,138,021)	(1,124,203)	(1,143,574)	(1,143,574)	(1,143,574)	(1,143,574)	(1,143,574)	(1,143,574)
TOTAL OPERATING REVENUES	96,139,849	88,311,977	95,205,813	92,049,039	86,246,543	92,092,414	92,726,173	93,461,603	94,473,006	96,957,399	99,386,030
OPERATING EXPENSES:											
PURCHASED POWER - FUEL	29,126,893	27,184,228	26,925,557	26,925,557	26,404,858	26,750,880	26,884,634	27,019,057	27,154,153	27,289,923	27,426,373
PURCHASED POWER - CAPACITY	22,789,837	21,079,872	22,457,141	22,457,141	18,705,355	17,687,368	16,181,271	14,057,084	12,461,850	12,638,208	12,638,208
PURCHASED POWER - TRANSMISSION	14,967,055	12,763,084	15,252,472	15,252,472	14,138,936	17,778,180	18,961,650	20,165,564	21,480,952	22,995,654	24,617,171
OPERATING & MAINTENANCE EXPENSE	5,836,044	4,600,966	6,074,243	6,074,243	4,841,481	6,021,752	6,202,405	6,388,477	6,580,131	6,777,535	6,980,861
GENERAL & ADMINISTRATIVE EXPENSE	12,224,071	12,001,054	12,259,247	12,259,247	12,498,543	12,794,325	13,178,155	13,573,499	13,980,704	14,400,126	14,832,129
DEPRECIATION EXPENSE	4,524,000	4,525,997	4,734,000	4,699,207	4,699,207	4,916,345	5,213,550	5,600,160	5,968,650	6,174,120	6,339,870
TOWN PAYMENTS - 2% NET PLANT	1,570,860	1,569,667	1,617,660	1,607,009	1,607,009	1,654,460	1,772,413	1,925,882	2,059,539	2,077,146	2,064,164
TOTAL OPERATING EXPENSES	91,038,760	83,724,868	89,320,320	89,274,876	82,895,389	87,603,310	88,394,077	88,729,723	89,685,979	92,352,711	94,898,776
TOTAL OPERATING INCOME	5,101,088	4,587,109	5,885,492	2,774,163	3,351,155	4,489,104	4,332,095	4,731,879	4,787,026	4,604,687	4,487,255
NONOPERATING REVENUES (EXPENSES):											
INTEREST INCOME	175,000	969,188	350,000	350,000	437,650	500,000	400,000	400,000	400,000	400,000	400,000
OTHER INCOME	850,000	1,354,503	850,000	850,000	1,293,000	1,185,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
VOLUNTARY PAYMENT TO READING	(2,480,506)	(2,480,506)	(2,480,506)	(2,480,506)	(2,480,506)	(2,480,506)	(2,518,612)	(2,523,547)	(2,522,873)	(2,522,873)	(2,522,873)
LOSS ON DISPOSAL OF ASSETS	(100,000)	(81,563)	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)
CUSTOMER DEPOSIT INTEREST EXP	(16,000)	(29,596)	(25,000)	(25,000)	(48,189)	(45,000)	(45,000)	(45,000)	(45,000)	(45,000)	(45,000)
TOTAL NONOPERATING REVENUES (EXPENSES)	(1,571,506)	(267,973)	(1,405,506)	(1,405,506)	(898,045)	(940,506)	(1,263,612)	(1,268,547)	(1,267,873)	(1,267,873)	(1,267,873)
NET INCOME	$ 3,529,582	$ 4,319,136	$ 4,479,987	$ 1,368,658	$ 2,453,111	$ 3,548,598	$ 3,068,483	$ 3,463,332	$ 3,519,154	$ 3,336,815	$ 3,219,382
RATE OF RETURN	7.29%	9.35%	7.69%	4.28%	7.12%	6.01%	5.18%	5.23%	5.24%	5.10%	5.00%

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.

*CY21 Entire Projected Increase Supplemented by Rate Stabilization Fund

**CY22-CY23 Portion of Projected Increase Supplemented by Rate Stabilization Fund

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

	CY 19 BUDGET	CY 19 ACTUAL	CY 20 BUDGET	CY 20 8 MOS ACTUAL 4 MOS BUDGET	CY 21 BUDGET
Operating Revenues					
Base Revenue	$ 27,761,148	$ 27,025,379	$ 29,040,738	$ 27,110,928	$ 28,292,988
Fuel Revenue	30,326,893	27,180,052	28,063,578	25,807,056	27,894,454
Purchased Power Capacity/Transmission	37,756,892	33,797,614	37,709,613	32,831,305	35,465,548
Forfeited Discounts	832,834	808,092	871,222	975,720	929,005
Energy Conservation Revenue	662,081	639,334	658,683	645,737	653,994
NYPA	(1,200,000)	(1,138,494)	(1,138,021)	(1,124,203)	(1,143,574)
Total Operating Revenues	96,139,848	88,311,977	95,205,813	86,246,543	92,092,414
Expenses					
Power Expenses:					
555 Purchased Power - Fuel	29,126,893	27,184,228	26,925,557	26,404,858	26,750,880
555 Purchased Power - Capacity	22,789,837	21,079,872	22,457,141	18,705,355	17,687,368
565 Purchased Power - Transmission	14,967,055	12,763,084	15,252,472	14,138,936	17,778,180
Total Purchased Power	66,883,785	61,027,184	64,635,170	59,249,149	62,216,428
Operating and Maintenance Expenses:					
580 Supervision and Engineering	1,083,959	942,608	1,127,868	1,097,467	1,143,193
581 Station/Control Room Operators	481,952	570,476	476,641	521,677	497,935
582 Station Tech	522,365	383,332	543,129	437,894	448,015
583 Line General Labor	30,309	374,311	395,885	605,163	1,058,760
585 Street Lighting	50,722	60,108	73,114	1,026	1,000
586 Meter General	217,383	131,210	145,492	147,133	184,132
588 Materials Management	442,061	464,445	504,493	461,367	455,963
593 Maintenance of Lines - Overhead	890,537	449,161	1,003,333	455,518	557,801
593 Maintenance of Lines - Tree Trimming	899,534	514,874	899,090	482,610	918,849
594 Maintenance of Lines - Underground	527,427	85,518	112,590	71,479	80,896
595 Maintenance of Line Transformers	406,496	167,830	223,438	150,146	227,331
598 Line General Leave Time Labor	283,300	457,091	569,169	410,000	447,878
Total Operating and Maintenance Expenses	5,836,044	4,600,966	6,074,243	4,841,481	6,021,752
General & Administrative Expenses:					
902 Meter Reading	34,100	2,834	21,240	1,239	7,885
903 Customer Collection	1,154,199	1,246,708	1,093,978	1,343,540	969,389
904 Uncollectible Accounts	105,000	58,066	105,000	105,000	105,000
916 Integrated Resources	504,550	550,450	647,519	613,620	601,419
916 Energy Conservation	984,118	689,535	958,765	834,460	1,214,035
920 Administrative and General Salaries	2,050,263	1,934,812	2,197,471	2,065,110	2,251,022
921 Office Supplies	20,000	14,991	20,000	7,285	20,000
923 Outside Services-Legal	532,900	455,160	498,400	348,230	497,000
923 Outside Services-Contract	385,700	212,593	361,250	354,858	508,400
923 Outside Services-Education	243,893	87,814	266,975	42,884	257,821
924 Property Insurance	426,200	348,688	437,500	429,696	489,700
925 Injuries and Damages	56,411	78,632	43,522	50,576	57,053
926 Employee Pensions and Benefits	3,581,615	4,643,364	3,666,547	4,016,810	3,666,005
930 Miscellaneous General Expense	493,477	149,665	317,286	253,046	506,290
931 Rent Expense	212,000	195,511	212,000	224,064	212,000
933 Vehicle Expense	311,200	338,838	333,600	221,591	388,600
933 Vehicle Expense - Capital Clearing	(253,362)	(311,430)	(225,125)	(328,309)	(354,544)
935 Maintenance of General Plant	385,000	436,075	394,440	635,911	463,775
935 Maintenance of Building & Garage	996,808	868,748	908,880	1,278,930	933,475
Total General & Administrative Expenses	12,224,071	12,001,054	12,259,247	12,498,543	12,794,325
Other Operating Expenses:					
403 Depreciation	4,524,000	4,525,997	4,734,000	4,699,207	4,916,345
408 Voluntary Payments to Towns	1,570,860	1,569,667	1,617,660	1,607,009	1,654,460
Total Other Expenses	6,094,860	6,095,664	6,351,660	6,306,215	6,570,805
Operating Income	5,101,088	4,587,109	5,885,492	3,351,155	4,489,104
Non Operating Revenues (Expenses):					
415 Contributions in Aid of Construction	-	338,448	-	387,000	300,000
419 Interest Income	175,000	969,188	350,000	437,650	500,000
419 Other Income	850,000	842,507	850,000	451,000	555,000
421 Intergovernmental Grants	-	173,550	-	455,000	330,000
426 Voluntary PILOT Payment to Reading	(2,480,506)	(2,480,506)	(2,480,506)	(2,480,506)	(2,480,506)
426 Loss on Disposal	(100,000)	(81,563)	(100,000)	(100,000)	(100,000)
431 Interest Expense	(16,000)	(29,596)	(25,000)	(48,189)	(45,000)
Total Non Operating Revenues (Expenses)	(1,571,506)	(267,973)	(1,405,506)	(898,045)	(940,506)
Net Income	$ 3,529,582	$ 4,319,136	$ 4,479,987	$ 2,453,111	$ 3,548,598

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

	CY21 BUDGET	CY20 BUDGET	Change in Budget %
Operating Revenues			
Base Revenue	$ 28,292,988	$ 29,040,738	(2.57%)
Fuel Revenue	27,894,454	28,063,578	(0.60%)
Purchased Power Capacity/Transmission	35,465,548	37,709,613	(5.95%)
Forfeited Discounts	929,005	871,222	6.63%
Energy Conservation Revenue	653,994	658,683	(0.71%)
NYPA	(1,143,574)	(1,138,021)	0.49%
Total Operating Revenues	92,092,414	95,205,813	(3.3%)
Expenses			
Power Expenses:			
547 Purchased Power - Fuel	26,750,880	26,925,557	(0.6%)
555 Purchased Power - Capacity	17,687,368	22,457,141	(21.2%)
565 Purchased Power - Transmission	17,778,180	15,252,472	16.6%
Total Purchased Power	62,216,428	64,635,170	(3.7%)
Operating and Maintenance Expenses:			
580 Supervision and Engineering	1,143,193	1,127,868	1.4%
581 Station/Control Room Operators	497,935	476,641	4.5%
582 Station Tech	448,015	543,129	(17.5%)
583 Line General Labor	1,058,760	395,885	167.4%
585 Street Lighting	1,000	73,114	(98.6%)
586 Meter General	184,132	145,492	26.6%
588 Materials Management	455,963	504,493	(9.6%)
593 Maintenance of Lines - Overhead	557,801	1,003,333	(44.4%)
593 Maintenance of Lines - Tree Trimming	918,849	899,090	2.2%
594 Maintenance of Lines - Underground	80,896	112,590	(28.2%)
595 Maintenance of Line Transformers	227,331	223,438	1.7%
598 Line General Leave Time Labor	447,878	569,169	(21.3%)
Total Operating and Maintenance Expenses	6,021,752	6,074,243	(0.9%)
General & Administrative Expenses:			
902 Meter Reading	7,885	21,240	(62.9%)
903 Customer Collection	969,389	1,093,978	(11.4%)
904 Uncollectible Accounts	105,000	105,000	0.0%
916 Integrated Resources	601,419	647,519	(7.1%)
916 Energy Conservation	1,214,035	958,765	26.6%
920 Administrative and General Salaries	2,251,022	2,197,471	2.4%
921 Office Supplies	20,000	20,000	0.0%
923 Outside Services-Legal	497,000	498,400	(0.3%)
923 Outside Services-Contract	508,400	361,250	40.7%
923 Outside Services-Education	257,821	266,975	(3.4%)
924 Property Insurance	489,700	437,500	11.9%
925 Injuries and Damages	57,053	43,522	31.1%
926 Employee Pensions and Benefits	3,666,005	3,666,547	(0.0%)
930 Miscellaneous General Expense	506,290	317,286	59.6%
931 Rent Expense	212,000	212,000	0.0%
933 Vehicle Expense	388,600	333,600	16.5%
933 Vehicle Expense - Capital Clearing	(354,544)	(225,125)	57.5%
935 Maintenance of General Plant	463,775	394,440	17.6%
935 Maintenance of Building & Garage	933,475	908,880	2.7%
Total General & Administrative Expenses	12,794,325	12,259,247	4.4%
Other Operating Expenses:			
403 Depreciation	4,916,345	4,734,000	3.9%
408 Voluntary Payments to Towns	1,654,460	1,617,660	2.3%
Total Other Expenses	6,570,805	6,351,660	3.5%
Operating Income	4,489,105	5,885,492	(23.7%)
Non Operating Revenues (Expenses):			
415 Contributions in Aid of Construction	300,000	-	100.0%
419 Interest Income	500,000	350,000	42.9%
419 Other Income	555,000	850,000	(34.7%)
421 Intergovernmental Grants	330,000	-	100.0%
426 Voluntary PILOT Payment to Reading	(2,480,506)	(2,480,506)	0.0%
426 Loss on Disposal	(100,000)	(100,000)	0.0%
431 Interest Expense	(45,000)	(25,000)	80.0%
Total Non Operating Revenues (Expenses)	(940,506)	(1,405,506)	(33.1%)
Net Income	$ 3,548,598	$ 4,479,987	(20.8%)

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READING MUNICIPAL LIGHT DEPARTMENT
CALENDAR YEAR 2021 OPERATING BUDGET
ACTUAL AND PROJECTED FIXED AND SEMI-VARIABLE COSTS

	CY 19	CY 19	CY 20	CY 20	CY 21	CY 21	
FIXED COSTS:	**OPERATING BUDGET**	**ACTUAL**	**OPERATING BUDGET**	**8 MOS ACTUAL 4 MOS BUDGET**	**OPERATING BUDGET**	**% OF BUDGET**	
Purchased Power - Fuel	$ 29,126,893	$ 27,184,228	$ 26,925,557	$ 26,404,858	$ 26,750,880		29.65%
Purchased Power - Capacity	22,789,837	21,079,872	22,457,141	18,705,355	17,687,368	**68.95%**	19.60%
Purchased Power - Transmission	14,967,055	12,763,084	15,252,472	14,138,936	17,778,180		19.70%
Depreciation Expense	4,524,000	4,525,997	4,734,000	4,699,207	4,916,345		5.45%
Voluntary Payment to Reading	2,480,506	2,480,506	2,480,506	2,480,506	2,480,506		2.75%
Town Payments - 2% of Net Plant	1,570,860	1,569,667	1,617,660	1,607,009	1,654,460		1.83%
Loss on Disposal of Assets	100,000	81,563	100,000	100,000	100,000		0.11%
SUB-TOTAL	75,559,151	69,684,917	73,567,336	68,135,870	71,367,739		79.10%
SEMI VARIABLE COSTS:							
Labor	7,890,211	7,651,341	8,787,642	8,245,373	8,352,246	**7.91%**	9.26%
Labor - Capital Portion	(1,227,368)	(1,780,445)	(1,167,165)	(1,833,704)	(1,216,814)		-1.35%
Overtime	1,072,400	1,104,793	1,051,800	1,012,303	1,066,200	**0.97%**	1.18%
Overtime - Capital Portion	(82,091)	(328,355)	(176,732)	(305,482)	(190,534)		-0.21%
Employee Benefits/Pension	4,309,674	5,129,888	4,413,754	4,533,861	4,448,490	**4.06%**	4.93%
Employee Benefits/Pension - Capital Portion	(728,059)	(486,524)	(747,207)	(517,051)	(782,485)		-0.87%
Other Operating and Maint Expenses	2,202,755	1,991,377	1,650,981	2,692,672	2,161,285		2.40%
Conservation Expenses	984,118	689,535	958,765	834,460	1,214,035		1.35%
Tree Trimming	899,534	561,923	899,090	482,610	918,849		1.02%
Contract Services	385,700	212,593	361,250	354,858	508,400		0.56%
Legal Expense	532,900	455,160	498,400	348,231	497,000		0.55%
Property Insurance	426,200	348,688	437,500	429,696	489,700		0.54%
Software/Hardware Maintenance	385,000	436,075	394,440	635,911	463,775		0.51%
Vehicle	311,200	338,838	333,600	221,591	388,600		0.43%
Vehicle Capital Clearing	(253,362)	(311,430)	(225,125)	(328,308)	(354,544)		-0.39%
Training/Tuition	243,893	87,814	266,975	42,884	257,821		0.29%
Transformer (hazardous material)	300,000	166,811	210,000	139,982	215,000		0.24%
Rent Expense	212,000	195,511	212,000	224,064	212,000		0.23%
Bad Debt Expense	105,000	58,066	105,000	105,000	105,000		0.12%
Injuries & Damages	82,600	88,332	70,400	60,051	85,200		0.09%
Injuries & Damages - Capital Portion	(26,189)	(9,700)	(26,878)	(9,475)	(28,147)		-0.03%
RMLB/CAB	30,000	17,918	30,000	11,402	30,000		0.03%
Office Supplies	20,000	13,408	20,000	7,285	20,000		0.02%
SUB-TOTAL	$ 18,076,115	$ 16,631,616	$ 18,358,491	$ 17,388,214	$ 18,861,077		20.90%
TOTALS	$ 93,635,266	$ 86,316,533	$ 91,925,826	$ 85,524,084	$ 90,228,816		100.00%

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2021 POWER SUPPLY

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Bulk Power Cost Projections
Reading Municipal Light Department
Total 2021 (Jan-Dec)

FCA8
System Peak Demand (KW)
System Energy Requirements (MWH) 685,027.83

		FIXED COSTS			ENERGY VARIABLE COSTS			TRANS. COSTS	TOTAL COSTS	
		Budget		CF		Budget		Budget	Budget	
RESOURCES	(KW)	($/KW-MO)	($)	(%)	MWH	($/MWH)	($)	($)	($)	($/MWH)
NYPA	379	44.59	$ 202,783.68		27,661.87	$ 4.92	$ 136,096.39	$ 349,673.01	$ 688,553.08	24.89
Millstone Mix 1	2,911	22.62	$ 790,132.89		24,835.01	$ 6.00	$ 149,009.54	$ 21,107.19	$ 960,249.63	38.67
Millstone Project 3	2,075	23.35	$ 581,333.66		17,700.33	$ 6.00	$ 106,202.26	$ 15,027.42	$ 702,563.34	39.69
Seabrook Mix 1	300	21.64	$ 77,768.83		2,366.17	$ 4.85	$ 11,487.52	$ 157.20	$ 89,413.55	37.79
Seabrook Project 4	6,801	14.91	$ 1,216,929.03		53,729.96	$ 4.85	$ 260,848.89	$ 3,576.95	$ 1,481,354.87	27.57
Seabrook Project 5	839	15.20	$ 153,043.56		6,627.36	$ 4.85	$ 32,174.47	$ 441.27	$ 185,659.31	28.01
SUBTOTAL - BASE	13,304		$ 3,021,991.65		132,920.70		$ 695,819.08	$ 389,983.04	$ 4,107,793.77	30.90
ISO FCM Costs			$ 9,079,896.17		-	$ -	$ -	$ -	$ 9,079,896.17	0.00
FCM Payments from LP			$ (441,368.72)		-	$ -	$ -	$ -	$ (441,368.72)	0.00
Saddleback Wind			$ -		14,728.40	$ 95.00	$ 1,399,197.64	$ -	$ 1,399,197.64	95.00
Indian River Hydro			$ -		2,548.50	$ 122.84	$ 313,049.03	$ -	$ 313,049.03	122.84
Pepperell Hydro			$ -		6,951.60	$ 123.07	$ 855,542.66	$ -	$ 855,542.66	123.07
Turners Falls Hydro			$ -		1,522.62	$ 122.58	$ 186,645.75	$ -	$ 186,645.75	122.58
Woronoco Hydro			$ -		2,365.70	$ 124.60	$ 294,765.19	$ -	$ 294,765.19	124.60
Collins Hydro			$ -		5,121.26	$ 88.25	$ 451,934.86	$ -	$ 451,934.86	88.25
Pioneer Hydro			$ -		6,318.06	$ 88.12	$ 556,752.05	$ -	$ 556,752.05	88.12
Silver St Hydro			$ -		3,756.68	$ 68.00	$ 255,454.42	$ -	$ 255,454.42	68.00
Wyre Wind Hydro			$ -		11,308.20	$ 57.79	$ 653,533.22	$ -	$ 653,533.22	57.79
Jericho Wind			$ -		7,366.09	$ 110.00	$ 810,269.42	$ -	$ 810,269.42	110.00
Exelon			$ -		-	$ -	$ -	$ -		0.00
NextEra			$ -		244,269.20	$ 42.29	$ 10,329,012.89	$ -	$ 10,329,012.89	42.29
Shepaug			$ -		13,666.84	$ 54.39	$ 743,309.62	$ -	$ 743,309.62	54.39
Stevenson			$ -		6,777.65	$ 53.35	$ 361,554.52	$ -	$ 361,554.52	53.35
Solar - Altus			$ -		1,518.30	$ 76.48	$ 116,123.47	$ -	$ 116,123.47	76.48
Solar - Marina			$ -		2,788.16	$ 75.47	$ 210,433.66	$ -	$ 210,433.66	75.47
Solar - Kearsarge			$ -		2,303.13	$ 75.00	$ 172,734.63	$ -	$ 172,734.63	75.00
Quinebaug Hydro			$ -		10,769.62	$ 80.00	$ 861,569.61	$ -	$ 861,569.61	80.00
RoxWind			$ -		-	$ -	$ -	$ -	$ -	0.00
Gravel Pit Solar III			$ -		-	$ -	$ -	$ -	$ -	0.00
Battery Storage			$ 274,464.00		-	$ -	$ -	$ -	$ 274,464.00	0.00
Coop / Resale			$ 25,200.00		-	$ -	$ -	$ -	$ 25,200.00	0.00
Watson	11,400		$ 1,336,195.78		-	$ -	$ -	$ -	$ 1,336,195.78	0.00
StonyBrook Inter	56,374		$ 2,006,487.56		11,197.40	$ 34.64	$ 387,921.65	$ 52,595.64	$ 2,447,004.85	218.53
SUBTOTAL - INTERMEDIATE	67,774		$ 12,280,874.79		355,277.42		$ 18,959,804.30	$ 52,595.64	$ 31,293,274.73	88.08
StonyBrook Peaking	33,705		$ 699,301.04		326.31	$ 147.66	$ 48,183.40	$ 25,253.12	$ 772,737.55	2,368.09
SUBTOTAL - PEAKING	33,705		$ 699,301.04		326.31		$ 48,183.40	$ 25,253.12	$ 772,737.55	2,368.09
ISO Energy Net Interchange			$ -		196,503.40	$ 35.86	$ 7,047,073.05	$ -	$ 7,047,073.05	35.86
ENE All Req/Short Supply			$ 303,552.00		-		$ -	$ -	$ 303,552.00	0.44
ISO Ancillary/Schedule Charges			$ 1,661,535.01		-		$ -	$ -	$ 1,661,535.01	2.43
ISO Annual Fee			$ -		-		$ -	$ -	$ -	0.00
			$ -		-		$ -	$ -	$ -	0.00
ISO RNS Charges			$ -		-		$ -	$ 16,995,473.77	$ 16,995,473.77	24.81
HQ Phase I-VEC			$ -		-		$ -	$ 13,230.00	$ 13,230.00	0.02
HQ Phase I-NEE			$ -		-		$ -	$ 37,044.00	$ 37,044.00	0.05
HQ Phase II			$ -		-		$ -	$ 264,600.00	$ 264,600.00	0.39
HQ Use Right Sale			$ (279,885.59)		-		$ -	$ -	$ (279,885.59)	-0.41
SUBTOTAL - OTHER CHARGES	0		$ 1,685,201.42		-		$ -	$ 17,310,347.77	$ 18,995,549.19	27.73
TOTAL	101,479		$ 17,687,368.90		685,027.83	$ 39.05	$ 26,750,879.83	$ 17,778,179.57	$ 62,216,428.30	90.82

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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. 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%).

On March 12, 2019, NextEra received an extension of its Seabrook operating license from the current license expiration of 2030 out to March 15, 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 – Millstone 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 Ms of capacity from this contract.

NextEra: TFA

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. The TFA has prompted RMLD to purchase on-peak and off-peak energy blocks out to the year 2023. Under the

TFA, RMLD secured around 107,000 MWHs for 2020, 40,000 MWhs for 2021, 31,000 MWhs for 2022 and 20,000 MWhs for 2023.

Eagle Creek Energy Holdings

In March, 2011 the RMLD signed 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.

Battery Energy Storage System – 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 Masssachusetts Department of Energy Resources (DOER). RMLD's project consists of a 5-megawatt Lithium Ion Battery unit with 10 MWhs of storage capacity 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 negotiating a Battery Energy Storage System (BESS) Agreement with NextEra. BESS was placed in service on June 1, 2019.

FirstLight Hydro

In March, 2019 the RMLD signed a purchase power agreement with FirstLight Power Resources Management, LLC. for the 10.3% of the output of the Sheqaug Hydroelectric Station and 7.3% of the output of the Stevenson Hydroelectric Station. The contract for Firstlight Hydro is effective from May, 2019 through December, 2023. The average annual generation is approximately 12,000 MWhs per year on-peak and 8,000 MWhs per year off-peak.

REVIEW OF BOARD POLICY
ATTACHMENT 4

Revision No. 3 RMLD Policy No. 30 Effective Date: _____ Review Date:

Clean Energy Policy

_____ Per Board Vote _____
General Manager Chairman/Date

I. PURPOSE

A. To develop a practical approach to addressing the need for clean (non-carbon) energy alternatives that are energy efficient while simultaneously balancing power supply costs and coordinating with electrification efforts.

B. To establish general guidelines that promote practical, cost effective energy alternatives.

C. To comply with the pending statutory requirements of Roadmap 2050 as they pertain to Massachusetts MLPs and come into effect.

II. RESPONSIBILITIES

A. RMLD Board of Commissioners

1. Responsible for approving this Policy.

2. Review all recommended clean energy alternatives and ensure that they meet or exceed the policy guidelines and legislative definitions.

B. General Manager

1. Responsible for implementing this policy.

III. POLICY ELEMENTS

A. The RMLD is striving to develop a practical approach to addressing the need for energy alternatives while simultaneously balancing power supply costs and electrification efforts. Clean energy meets the needs of the present without compromising future generations. For purposes of this Policy, clean energy shall be defined as energy produced by a Non-emitting Electricity Generator, as that term is defined in 310 Mass. Reg. 7.75 (hydro, nuclear, ocean, solar, or wind), or a “renewable energy generating source”, as that term is defined in G.L. c. 25A, §11F; RMLD’s definition “renewable energy generating source is one which generates electricity using any of the following: (1) solar photovoltaic or solar thermal electric energy; (2) wind energy; (3) ocean thermal, wave or tidal energy; (4) fuel cells utilizing renewable fuels; (5) landfill gas; (6) waste-to-energy which is a component

of conventional municipal solid waste plant technology in commercial use; (7) naturally flowing water and hydroelectric; or (8) geothermal energy." [review language red-lined under low emission advanced biomass power and determine if just wood waste or all biomass will be deemed not to meet the clean energy requirements by the RMLD Board of Commissioners].

B. RMLD will review the power supply portfolio quarterly with the intention of meeting specific clean energy target percentages from a combination of Non-emitting Electricity Generators and renewable energy generating sources. Specifically, RMLD will strive to reach 50 percent clean energy goals by 2030, 75 percent clean energy goals by 2040, and 100 percent clean energy goals by 2050. These target percentages and dates are detailed in Roadmap 2050, which was established by the legislature and is currently pending approval by Conference Committee. Once Roadmap 2050 is approved, the Policy will be revised to reflect any changes made as a result of legislative finalization of Roadmap 2050 and/or any changes deemed necessary by the RMLD Board of Commissioners

C. The RMLD will analyze power supply projects with a competitive average power supply cost and positive environmental/stewardship impacts. Only projects that meet this criterion will initially be brought to the General Manager for further review.

D. Massachusetts law does not currently require RMLD to participate in a Clean Energy Standard (CES) Program designated as Roadmap 2050. However, the RMLD seeks to work in a proactive manner to achieve the pending goals as they proceed to establish power supply coverage for its customers and to mitigate risk of exposure. Once Roadmap 2050 is approved or in the event the compliance standard changes over time, RMLD will review and make appropriate adjustments to this Policy and the resources in RMLD's power supply portfolio.

E. In the interest of providing RMLD ratepayers with a cost-effective clean energy portfolio, RMLD shall have the ability to market all or a portion of the RECs from any existing contract or potential project until such time that the Roadmap 2050 becomes effective through statutory law with delineated target dates, or if the Board of Commissioners votes for a more stringent approach and an earlier start date. At that determined target dates and at the determined target percentages by the Roadmap 2050 or as deemed by the Board of Commissioners, the RMLD will purchase Emissions Free Energy Certificates (EFECs) or retire RECs associated with resources in RMLD's power supply portfolio up to the target amount in the most cost-effective manner possible, while remaining in compliance with the statutory requirements or the Board Policy, whichever is deemed more stringent.

F. The General Manager will report quarterly on the composition and estimated value of any Renewable Energy Certificates and Emissions Free Energy Certificates in its power supply portfolio, whether optioned, sold, or retired.

BOARD MATERIAL AVAILABLE
BUT NOT DISCUSSED

From: Tracy Schultz
To: RMLD Board Group
Subject: AP and Payroll Questions for 11-19-20 Board Book
Date: Monday, November 16, 2020 12:27:00 PM

Good afternoon:

AP:
On October 23rd there were no Commissioner questions.
On October 30th there were no Commissioner questions.
On November 6th there were no Commissioner questions.
On November 13th there were no Commissioner questions.

Payroll:
On October 26th there were no Commissioner questions.
On November 9th there were no Commissioner questions.

This e-mail will be included in the 11-19-20 Board Book.

Tracy Schultz
Executive Assistant
Reading Municipal Light Department
230 Ash Street. Reading. MA. 0186
Tel: 781.942.6489