



Reading Municipal Light Department
RELIABLE POWER FOR GENERATIONS

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AGENDA

REGULAR SESSION

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

WEDNESDAY, APRIL 15, 2015

6:30 PM

at

Wilmington Town Hall
121 Glen Road, Room 9
Wilmington, MA

1. Call Meeting to Order – G. Hooper, Chair
2. Pole Line Upgrade – Lowell Street, Wilmington – H. Jaffari, Director of Engineering & Operations
3. FY16 Capital Budget – C. O'Brien, General Manager

Suggested Motion: Move that the Citizens' Advisory Board recommend to the RMLD Board of Commissioners the FY16 Capital Budget dated March 27, 2015, in the amount of \$10,596,000 as presented. Any significant changes are to be submitted to the CAB for review and recommendation.

4. Next Meeting – G. Hooper, Chair
5. Adjournment – G. Hooper, Chair

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

READING MUNICIPAL LIGHT DEPARTMENT

FY 2016 CAPITAL BUDGET

MARCH 27, 2015

Coleen O'Brien
General Manager

FY16 CAPITAL BUDGET

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Reading Municipal Light Department SYSTEM PROFILE

(based on CY 2014)

SERVICE TERRITORY	51 square miles serving Reading, North Reading, Wilmington and part of Lynnfield
TOTAL OPERATING REVENUES	\$88,216,289
NUMBER OF CUSTOMERS	29,661
ANNUAL PEAK LOAD	157,252 kW on July 2, 2014
ANNUAL SALES	682,401,652 kWh
PLANT VALUE	\$130,149,514 (Gross) \$69,697,353 (Net)
SUPPLY VOLTAGE	115 kV
SUPPLY CAPACITY	Station 4: (3) 60 MVA Transformers (2) 35 MVA Transformers 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 335 miles
UNDERGROUND PRIMARY LINES	All 135 miles
DISTRIBUTION TRANSFORMERS	3,980 – 271.2 MVA Capacity
DISTRIBUTION SUBSTATIONS	(3) 370 MVA Capacity
UTILITY POLES	17,225 poles <i>Ownership:</i> 65% Verizon, 35% RMLD <i>Ownership By Town:</i> North Reading – RMLD Lynnfield – Verizon Reading <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • all poles with 35 kV sub-transmission circuits, and Concord Street – RMLD • all other locations in Wilmington – Verizon
APPLICATION SOFTWARE	
Billing and Accounting	Great Plains/Cogsdale
General PC	Windows 2012, 2008, SQL, Office 2013, 2008, 2012 Exchange 2010, Windows 7, 8, 8.1 Sharepoint Itron
FORECASTING	Metrix ND (Daily Forecasting – Energy Services)
ENGINEERING ANALYSIS	Milsoft (in process)

READING MUNICIPAL LIGHT DEPARTMENT
Capital Improvements FY15-20
\$ Shown in thousands

COMPLETED

	TOWN	PG #	PROJECT #	PROJECT NAME	FY15 Budget	FY15 YTD Actual thru 2/2015	FY15 EST.	FY16 PLAN EST.	FY17	FY18	FY19	FY20	BRIEF DESCRIPTION
F	A	8	121	HVAC System Upgrade - 230 Ash Street	399	11	73	600	500	100			Replace boilers, chillers, air handling units, and building automation systems addressing air filtration and efficiency.
F	A	10	129	Master Facilities Site Plan	50			150					Study will include consideration of solar generation on-site and best use of all facilities, including leased Barbas building.
F	A	n/a	124	Rehabilitation of Station 1 - 226 Ash Street									Proceed based on findings of Master Facilities Site Plan. Offset by potential sale of 230 Ash.
F	A	12	123	Oil Containment Facility Construction	80	11	48	59					Comprehensive study complete. Recommendations to be implemented.
F	A	14	119	Security Upgrades All Sites	61	17	61	50					Access control, alarm monitoring, video and perimeter monitoring along the fence lines.
F		18	TBD	230 Ash Street Building Repairs				80					Engineering study and repairs to building to address brick veneer at rear of building and insulation on exterior wall at the front of the building.
F	R	20	TBD	Station 4 (Gaw) Back-up Generator				107					Purchase and install an emergency generator for Gaw Station 4.
F		22	TBD	HVAC Roof Units for Garage				50					Will evaluate under Master Facilities Site Plan.
F	A	26	118	Rolling Stock Replacement (vehicles, trailers fork trucks)	434		25	448	431	523	560	580	Scheduled vehicle replacement. Fleet assessment being performed.
IR		32	TBD	IRD - Hardware				10					Equipment used to measure and verify commercial rebates for energy efficiency upgrades.
IR		34	TBD	Electric Vehicle Supply Equipment				50					Pilot electric charging stations within RMLD service area.
M	A	40	120	Great Plains/Cogsdale Update	350	39	80	127					Data conversion and upgrade to including software, hardware, training, consulting, and project management.
M	A	44	127	Hardware Upgrades	102	28	102	152	122	122	200	100	General hardware purchases, wireless mesh build-out, VoIP
M	A	46	128	Software and Licensing	122	28	122	172	146	146	146	150	Custom programing/development (OM/UAN/GIS/GPS), SpryPoint SSRS software.
S	W	52	101	SW9 Reconductoring - Ballardvale Area, Wilmington	253	12	373	100					Upgrade to 795 spacer for capacity feeding Ballardvale area (Target).
S	L	54	104	Upgrading of Old Lynnfield Center URDS (Cook's Farm)	217	56	368	42					Upgrade for reliability and to meet construction standards. 90% complete in FY15.
S	R	56	108	Relay Replacement -Station 4 (Gaw)	50		50	73					Replace existing electromechanical protective relay systems on the 15kV feeder breakers. The new relays will be capable of providing more information back to SCADA and store vast amounts of data for down loading and evaluation.
S	NR	58	130	Remote Terminal Unit (RTU) Replacement - Station 3	85			94					Upgrade to add functionality of the existing SEL relays. RTU will be IP addressable and will include Ethernet connection for RMLD and NSTAR connection.
S	A	60	122	Engineering Analysis Software & Data Conversion	55			73					Milsoft Engineering modeling integration with GIS.
S	A	62	125	GIS	150		30	420					Current GIS model requires data integrity and quality inspection. Comprehensive data collection.
S	R	64	212	Force Account West Street, Reading	224		74	150					Reconstruction of West Street, R. (State project). April 2015 estimated start date. Partial state reimbursement (capital/expense).
S	W	66	102	Pole Line Upgrade - Lowell Street, Wilmington	173	61	170	113					Upgrade (30) poles to proper strength, create proper clearance between utilities and transfer. Set two (2) new poles. Benefit to long-term reliability. Expanded scope to include West Street and Woburn Street.
S	A	68	103	Distribution Protection & Automation	69		70	70	130	130	130	130	Install reclosers on feeders for fault isolation and installing capacitor controls for various cap banks on the system.
S	A	70	131	LED Street Light Implementation - All Towns				1,200	1,200	1,200			Full implementation following Pilot Program.
S	A	72	134	Substation Test Equipment	121		105	100	30				Purchase of test equipment for substation and metering.
S	R	74	109	Station 4 (Gaw) 35kv Potential Transformer Replacement				41					Replace six 30+ -years-old transformers.
S	W	78	TBD	Pole Line Upgrade - Woburn Street, Wilmington				91					Upgrade sixteen (16) main line poles and four (4) stub poles to proper strength, create proper clearance between utilities and transfer. Benefit to long-term reliability.
S	A	80	TBD	Substation Equipment Upgrade				254					Upgrade various equipment at substations to include TLC controls, remote racking devices, cable trays and various minor items.
S	R	82	TBD	Station 4: Switchgear/Breaker Replacement				508	508				Replace existing switchgears/breakers.
S	R	84	TBD	Station 4: Battery Bank Upgrade				57					Replace battery bank.
S	A	86	TBD	Distributed Generation				2,164	2,000	2,000	2,000	2,000	Pilot FY16 - Peak shaving units.
S	A	88	TBD	Fiber Optic Test Equipment				15					Fiber optic testing equipment to locate and diagnose problems on network.
S	A	90	TBD	Fault Indicators				50					Fault indicators to aid in fault locating.
S	A	92	TBD	Voltage Data Recorders				50					Voltage data recorders to aid in voltage complaint investigation and survey.
S	A	96	116	Transformers and Capacitors	444	145	444	668	300	300	300	300	Purchase of units for stock and proposed projects.

READING MUNICIPAL LIGHT DEPARTMENT
Capital Improvements FY15-20
\$ Shown in thousands

COMPLETED

	TOWN	PG #	PROJECT #	PROJECT NAME	FY15 Budget	FY15 YTD Actual thru 2/2015	FY15 EST.	FY16 PLAN EST.	FY17	FY18	FY19	FY20	BRIEF DESCRIPTION
S	A	98	126	Communication Equipment (Fiber Optic)	30	5	80	98	50	50	50	50	Materials to accommodate expanded use of fiber optic network.
S	A	100	117	Meters (including "500 Club")	127	55	155	219					Purchase meters for stock. 500 club meter upgrade.
S	A	102	106	URD Upgrades - All Towns	319	51	120	340	213	213	213	213	Replace primary and neutral cables and padmount transformers as needed in various aging URDs. Improved reliability.
S	A	104	107	Step-down Area Upgrades - All Towns	203	40	120	352	150	150	250	150	Convert areas to 13.8kV, remove antiquated equipment and step-downs to lower losses and improve system efficiency.
S	A	106	112	New Service Installations (Commercial/Industrial)	57	12	40	34	50	50	50	50	Install new and upgraded commercial three-phase electrical services as requested.
S	A	106	113	New Service Installations (Residential)	260	93	120	164	250	250	250	250	Install new and upgraded residential services as requested.
S	A	110	114	Routine Construction	947	1,234	1,600	1,000	1,000	1,000	1,000	1,000	Non-project capital including labor, pole sets, transfers, UG, police details, and OT.
S	A		131	LED Street Light Pilot Area - All Towns	37	26	30						Pilot to be done in FY15. Grant received \$125,000 toward Street Light Conversion/Implementation.
S	NR		110	Station 3 - Replacement of Service Cutouts		2	2						Replace potted porcelain cutouts which are prone to failure.
S	W		115	Station 5 - Getaway Replacements 5W9 and 5W10									Underground cables are original to substation (early 1980's). Upgrade feeders for load and reliability reasons, and create a spare feeder on Bus E. 5W9 completed as part of overhead project; 5W10 not being done.
S	R		105	4W5-4W6 Tie	70		95						Install 1,500' of circuit 556 spacer in order to shift distribution load feeding Addison Wesley and South Main St and complete extension to Summer Avenue.
S	A		132	Outage Management Software & Integration	85		85						
S	A		133	Predictive Asset Management Program	80		5						Asset management system to track distribution and substation assets in a preventative manner. Manager Plus is being evaluated.
S	A		135	Arc Flash Study	35		30						
S	A		136	Organizational/Reliability Study	100		261						
S	A		137	SCADA System Upgrades - Hardware	63	20	63						Upgrade Survalent system to a new version supporting new technology.
S	W		810	Station 5 RTU Replacement			56						Purchase pre-wired RTU enclosure to replace exiting RTU enclosure which is unsupported and does not have enough points.
S	W		TBD	Station 5- Getaway Replacements, 5W4, 5W5, 5W8					250				
S	R		TBD	4W9 Getaway Replacement - Station 4					239				Upgrade 2,850 circuit feet of UG cable on Causeway Road and Lowell Street, R, with 750 mcm cu for increased reliability and capacity.
S	R		TBD	4W4 Getaway Replacement - Station 4						341			Upgrade 3,700 circuit feet of UG cable on West Street, R and West St, W to 750 mcm cu for increased reliability and capacity.
S	W		TBD	5W5 Reconductoring - Wildwood to Upton Drive						214	214	214	Upgrade 25,000 circuit feet of 336 spacer cable on Wildwood, Woburn, and Andover Streets to 795 spacer cable.
S	W		TBD	Build New Substation in Wilmington						600	2,500	3,000	Planning and securing land and licensing will begin in FY18.
S	R		TBD	4W5 Getaway Replacement - Station 4							234		Upgrade 1,700 circuit feet of UG cable on West Street, R to 750 mcm cu for increased reliability and capacity.
S	R		TBD	4W6 Getaway Replacement - Station 4							243	243	Upgrade 1,850 circuit feet of UG cable on West Street, R to 750 mcm cu for increased reliability and capacity.

READING MUNICIPAL LIGHT DEPARTMENT
Capital Improvements FY15-20
\$ Shown in thousands

COMPLETED

	TOWN	PG #	PROJECT #	PROJECT NAME	FY15 Budget	FY15 YTD Actual thru 2/2015	FY15 EST.	FY16 PLAN EST.	FY17	FY18	FY19	FY20	BRIEF DESCRIPTION
TOTAL					5,850	1,949	5,056	10,596	7,569	7,388	8,340	8,430	
TABLE 1: PLANT VALUES & DEPRECIATION EXPENSE													
				Plant in Service (Beginning)	129,981		129,981	134,038	143,634	150,203	156,591	163,932	
				Additions	5,850		5,056	10,596	7,569	7,388	8,340	8,430	
				Adjustments (Property Retirement)	-1,300		-1,000	-1,000	-1,000	-1,000	-1,000	-1,000	
				Plant in Service (Ending)	134,531		134,038	143,634	150,203	156,591	163,932	171,362	
				Less Land and Land Rights	-1,266		-1,266	-1,266	-1,266	-1,266	-1,266	-1,266	
				Depreciable Plant in Service	133,265		132,772	142,368	148,937	155,325	162,666	170,096	
				Accumulated Reserve For Depreciation	-64,700		-64,711	-68,694	-72,965	-77,433	-82,093	-86,973	
				Net Plant in Service	69,831		69,327	74,940	77,238	79,158	81,839	84,389	
				Maximum allowed Return on Net Plant (%)	8%		8%	8%	8%	8%	8%	8%	
				Maximum allowed Return on Net Plant (\$)	5,586		5,546	5,995	6,179	6,333	6,547	6,751	
				<i>Estimated</i> Return on Net Plant (%)	5.9%		5.9%	5.2%	4.2%	7.1%	6.5%	6.5%	
				Estimated Return on Net Plant (\$)	4,120		4,090	3,897	3,244	5,620	5,320	5,485	
				TABLE 2: DEPRECIATION FUND BALANCES									
				Beginning Balance	5,130		5,130	5,015	3,073	4,006	5,926	7,805	
				Interest Earned*	51		51	50	31	40	59	78	
				Depreciation Rate (3-5%)	3.0%		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
				Depreciation Expense	3,861		3,872	3,983	4,271	4,468	4,660	4,880	
				Bond Proceeds and Other Fund Sources	18		18	257	3,200	3,800	4,500	5,000	
				Prior Year Adjustment	1,000		1,000	4,364	1,000	1,000	1,000	1,000	
					10,061		10,072	13,669	11,575	13,314	16,145	18,763	
				Capital Improvements	-5,850		-5,056	-10,596	-7,569	-7,388	-8,340	-8,430	
				Principal Payment									
				Ending Balance	4,211		5,015	3,073	4,006	5,926	7,805	10,333	
				* Interest Rate on Fund Balances:	1.00%		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	
				TABLE 3: BOND PROCEEDS & OTHER FUND SOURCES									
				Mass DOT (Highway): West Street	224		74	150					
				DOER - ENE Grant (LED Credit)	18		18	107					
				Bond Proceeds for LED Street Lights					1,200	1,200			
				Bond Proceeds for Distributed Generation					2,000	2,000	2,000	2,000	
				Bond Proceeds for New Substation - Wilmington				0	0	600	2,500	3,000	
					241	0	91	257	3,200	3,800	4,500	5,000	

FACILITIES MANAGEMENT

Continuing Projects:

	Page #	Project #
⌘ HVAC System Upgrade	8	121
⌘ Master Facilities Site Plan	10	129
Rehabilitation of Station 1 – Pending Master Facilities Site Plan		124
⌘ Oil Containment Facility Construction	12	123
⌘ Security Upgrades – All Sites	14	119

New Projects for FY16:

⌘ 230 Ash Street Building Repairs	18	TBD
⌘ Station 4 (Gaw) Back-up Generator	20	TBD
⌘ HVAC Roof Units – Garage	22	TBD

Annual Projects:

⌘ Rolling Inventory	26	118
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FACILITIES MANAGEMENT

CONTINUING PROJECTS

CAPITAL PROJECT SUMMARY

Project Name: HVAC System Upgrade – 230 Ash Street **Project #:** 121

Project Schedule: FY15-18 **Project Manager:** Facilities Manager

Reason for Expenditure:

Upgrade the HVAC system at 230 Ash Street.

Brief Description/Scope:

FY15: Professional Services including study/report phase, construction documents and bid/construction.

FY16: Replace the HW boiler plant with condensing boilers. Replace DDC Control System. Replace VAV terminal box controllers. Replace AHU-3 as an indoor unit with split system DX condensing unit on the roof.

FY17: Replace AHU-1 and AHU-2 as an indoor unit with split system DX condensing units on the roof.

FY18: Enhance fin-tube radiation for higher output and to compensate for lower HW temperatures. Enhance heating of the front lobby. Reconfigure ductwork serving the receiving area roll-up dock.

Barriers:

Change in Scope of Work From Prior Fiscal Year:

Status Update:

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: HVAC System Upgrade - 230 Ash Street

SCHEDULE: FY15-18

PROJECT #: 121

ITEM	CREW WEEKS 2-man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC.	TOTAL
Multi-year upgrade to HVAC system.						\$1,273,000	\$1,273,000
	Unit Cost						
	Unit Cost						
	Unit Cost						
	Unit Cost						
	Unit Cost						
	Unit Cost						
	Unit Cost						
TOTAL						<u>\$1,273,000</u>	

TOTAL ESTIMATED PROJECT COST:	\$1,273,000
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FY15	6% Estimate	\$73,000
FY16	47% Estimate	\$600,000
FY17	39% Estimate	\$500,000
FY18	8% Estimate	\$100,000

CAPITAL PROJECT SUMMARY

Project Name: Master Facilities Site Plan

Project #: 129

Project Schedule: FY16

Project Manager: Facilities Manager

Reason for Expenditure:

The Master Facilities Site Plan will begin in FY16, finalizing options and creating bid documents to begin addressing building use and storage allocation requirements. The final plan will also include the photovoltaic recommendations as part of the Facilities Master Plan.

Brief Description/Scope:

Complete assessment of the office space, Station 1, garage and leased warehouse space. Finalize recommendations and create a long- term strategic plan based on current and future needs working collaboratively with other Town agencies.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

None.

Status Update:

This project was postponed pending the outcome of the Organizational Study.

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Master Facilities Site Plan

SCHEDULE: FY16

PROJECT #: 129

ITEM	CREW WEEKS 2-man	RMLD CREW LABOR COST	RMLD CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	NEW MATERIAL & MISC	TOTAL
Hire consultant to perform master site plan for Ash Street campus.						\$138,000	\$138,000
Unit Cost							
Facilities Department Labor:				\$12,459			\$12,459
4.5 week (s)				\$2,769		per week	
Unit Cost							
Unit Cost							
Unit Cost							
Unit Cost							
Unit Cost							
Unit Cost							

TOTAL	\$12,459	\$138,000
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TOTAL ESTIMATED PROJECT COST: \$150,459

CAPITAL PROJECT SUMMARY

Project Name: Oil Containment Facility Construction **Project #:** 123

Project Schedule: FY15-16 **Project Manager:** Facilities Manager

Reason for Expenditure:

RMLD stores new and used oil filled equipment in multiple locations. Necessary measures will be taken related to storage of this equipment at RMLD facilities.

Brief Description/Scope:

This project provides engineering, design and construction services at a number of RMLD facilities where equipment is stored.

Barriers:

Engineering, design and permitting.

Change in Scope of Work From Prior Fiscal Year:

All Substations were reviewed as part of the study. Work will be completed at Stations 3, 4 and 5 in addition to the Ash Street Campus.

Status Update:

Study was completed and recommendations made. We expect to begin construction at sites as per the recommendations and complete work by the end of FY16.

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Oil Containment Facility Construction

SCHEDULE: FY15-16

PROJECT #: 123

ITEM	CREW WEEKS 2-man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC.	TOTAL
Conduct a study and take temporary measures for the containment of oil filled equipment at the Ash Street Campus and Station 3.						\$15,000	\$15,000
Unit Cost							
Improvements to Station 3 and oversight of construction.	1.0	\$5,828	\$920			\$48,121	\$54,868
Unit Cost		\$5,828	\$920			per week	
Improvements to Station 4 and oversight of construction.				\$2,712	\$18	\$13,043	\$15,774
Labor: Senior Techs (2-man crew) 0.5 week(s)							
Unit Cost				\$5,425	\$36	per week	
Improvements to Station 5 and oversight of construction.				\$8,137.36	\$54	\$13,469	\$21,660
Labor: Senior Techs (2-man crew) 1.5 week(s)							
Unit Cost				\$5,425	\$36	per week	
1.0							
TOTAL		\$5,828	\$920	\$10,850	\$72	\$89,633	

ESTIMATED TOTAL PROJECT COST: \$107,302

FY15	45%	Estimate	\$48,434
FY16	55%	Estimate	\$58,868

CAPITAL PROJECT SUMMARY

Project Name: Security Upgrades – All Sites

Project #: 119

Project Schedule: FY15-16

Project Manager: Facilities Manager

Reason for Expenditure:

Security enhancements at our substations and other owned and leased facilities.

Brief Description/Scope:

Scope of work includes upgrades and modification of our cameras, access control points, entry point alarms, and perimeter fencing.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

None.

Status Update:

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Security Upgrades - All Sites

SCHEDULE: FY15-16

PROJECT #: 119

ITEM	CREW WEEKS 4-Man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
Upgrades and modifications to cameras, access control points, entry point alarms and perimeter fencing.				\$11,075		\$50,000	\$61,075
4 weeks Facilities Labor	Unit Cost			\$2,769		per week	
Gate upgrades pending master facilities site plan.						\$50,000	\$50,000
	Unit Cost						
	Unit Cost						
	Unit Cost						

TOTAL \$11,075 \$100,000

TOTAL ESTIMATED PROJECT COST: \$111,075

FY15	55% Estimate	\$61,091
FY16	45% Estimate	\$49,984

FACILITIES MANAGEMENT

NEW PROJECTS

CAPITAL PROJECT SUMMARY

Project Name: 230 Ash Street Building Repairs

Project #: TBD

Project Schedule: FY16

Project Manager: Facilities Manager

Reason for Expenditure:

The deck is a means of egress for three doorways: two single doors exiting the cafeteria and a set of double doors leading from the main corridor. The deck was constructed in 1993 and has served us well. However, due to weather and age, it has deteriorated to the point that it needs to be replaced.

Additionally, the exterior walls above the hung ceiling and the vestibule ceiling at the main entrance need insulation upgrades and to be resealed.

Brief Description/Scope:

Deck: replace/repair deck and related equipment per architectural consultant's specifications.

Main Entrance: insulate and seal exterior wall and vestibule ceiling per architectural consultant's specifications.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: 230 Ash Street Building Repairs

SCHEDULE: FY16

PROJECT #: TBD

ITEM	CREW WEEKS	RMLD CREW LABOR COST	RMLD CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	NEW MATERIAL & MISC	TOTAL
Replace/repair deck and related equipment per architectural consultant specifications.						\$60,000	\$60,000
Unit Cost						\$60,000	
Insulate and seal exterior wall in lobby per architectural consultant specifications.						\$20,000	\$20,000
Unit Cost						\$20,000	
Unit Cost							
Unit Cost							
Unit Cost							
Unit Cost							

TOTAL \$80,000

TOTAL ESTIMATED PROJECT COST: \$80,000

CAPITAL PROJECT SUMMARY

Project Name: Station 4 (Gaw) Back-up Generator **Project #:** TBD

Project Schedule: FY16 **Project Manager:** Facilities Manager

Reason for Expenditure:

Station 4 (Gaw) does not have a standby generator. This is standard item for a substation of this size and is necessary as a safeguard against outages at the Station.

Brief Description/Scope:

Purchase and install a generator with automatic transfer switches. Project would include concrete foundation, base-mount fuel tank, switches, installation and all associated wiring and hardware.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Station 4 (Gaw) Back-up Generator

SCHEDULE: FY16

PROJECT #: TBD

ITEM	CREW WEEKS 2-man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
Purchase and install a standby generator for the Gaw Substation				\$8,306		\$95,000	\$103,306
Labor:							
3 weeks Facilities Labor	Unit Cost			\$2,769		per week	
Labor:				\$3,763	\$18		\$3,781
Technical Services Manager	Unit Cost			\$3,763	\$18	per week	
1 week(s)							
	Unit Cost						
	Unit Cost						
	Unit Cost						
	Unit Cost						
	Unit Cost						
TOTAL				<u>\$12,069</u>	<u>\$18</u>	<u>\$95,000</u>	
TOTAL ESTIMATED PROJECT COST:							\$107,087

CAPITAL PROJECT SUMMARY

Project Name: HVAC Roof Units - Garage

Project #: TBD

Project Schedule: FY16

Project Manager: Facilities Manager

Reason for Expenditure:

The garage (at 218 Ash Street) has four, through-the-wall electric heat/air conditioning units and two small wall-mount space heaters to service five rooms. They are near the end of their expected life and run constantly to keep up with heat demands. The four units with AC have had multiple repairs and run constantly to keep up with the cooling requirements.

Brief Description/Scope:

Install HVAC equipment and duct work, per engineering evaluation and recommendations, to heat and cool five rooms in the garage.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: HVAC Roof Units - Garage

SCHEDULE: FY16

PROJECT #: TBD

ITEM	CREW WEEKS 4-Man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
Install HVAC equipment and ductwork to heat and cool five rooms at 218 Ash Street (Garage)						\$50,000	\$50,000
	Unit Cost						
	Unit Cost						
	Unit Cost						
	Unit Cost						

TOTAL \$50,000

TOTAL ESTIMATED PROJECT COST: \$50,000

FACILITIES MANAGEMENT

ANNUAL PROJECTS

CAPITAL PROJECT SUMMARY

Project Name: Rolling Stock Replacement
(vehicles, trailers and fork trucks)

Project #: 118

Project Schedule: Annual

Project Manager: Facilities Manager

Reason for Expenditure:

Replace vehicles based on an 8-10 year cycle to reduce maintenance costs and improve reliability. Vehicles removed from the fleet will be disposed of under RMLD Policy No. 2 "Surplus Material."

Brief Description/Scope:

In FY16, two (2) new vehicles (Box Truck and Digger Derrick), which will be bid in FY15, will be received. Additionally, we will purchase a new forklift and spreader.

Barriers:

None anticipated at this time.

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

n/a

Status Update:

Specifications, bid, and purchase order will be complete for both the Box Truck and Digger Derrick, which will have an FY16 delivery. Scheduled purchase of two small SUV's was postponed pending outcome of a comprehensive fleet study.

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Rolling Stock Replacement

SCHEDULE: FY16

PROJECT #: 118

ITEM	CREW WEEKS	RMLD CREW LABOR COST	RMLD CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	NEW MATERIAL & MISC	TOTAL
Box Truck - scheduled to be received in FY16.						\$155,000	\$155,000
Unit Cost						\$155,000 per vehicle	
45' Digger Derrick - scheduled to be received in FY16.						\$250,000	\$250,000
Unit Cost						\$250,000 per vehicle	
Purchase and receive one Fork Lift						\$35,000	\$35,000
Unit Cost						\$35,000 per vehicle	
Purchase and receive one Spreader (sand and salt)						\$8,000	\$8,000
Unit Cost						\$8,000 per vehicle	
Unit Cost							
Police Details (if applicable)							
Unit Cost							

TOTAL \$448,000

TOTAL ESTIMATED PROJECT COST: \$448,000

INTEGRATED RESOURCES

<i>Continuing Projects:</i>		<i>Page #</i>	<i>Project #</i>
None			
<i>New Projects for FY16:</i>			
⌘	IRD Hardware	32	TBD
⌘	Electric Vehicle Supply Equipment (EVSE)	34	TBD
<i>Annual Projects:</i>			
None			

INTEGRATED RESOURCES

NEW PROJECTS

CAPITAL PROJECT SUMMARY

Project Name: IRD Hardware

Project #: TBD

Project Schedule: FY16

Project Manager: Jane Parenteau, Director of
Integrated Resources

Reason for Expenditure:

This is an amount reserved to purchase equipment used to measure and verify commercial rebates for energy efficiency upgrades.

Brief Description/Scope:

Some potential equipment includes lighting meters, data loggers, digital multi-meters, and infrared camera.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: IRD - Hardware

SCHEDULE: FY16

PROJECT #: TBD

ITEM	CREW WEEKS	RMLD CREW LABOR COST	RMLD CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
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General hardware purchase for efficiency measurement and verification.						\$10,000	\$10,000
	Unit Cost						

							\$0
	Unit Cost						

							\$0
	Unit Cost						

							\$0
	Unit Cost						

							\$0
	Unit Cost						

							\$0
	Unit Cost						

TOTAL	0.0	0	\$0	\$0	\$0	\$10,000
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TOTAL ESTIMATED PROJECT COST:	\$10,000
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CAPITAL PROJECT SUMMARY

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

Project Schedule: FY16 **Project Manager:** Jane Parenteau, Director of Integrated Resources

Reason for Expenditure:

RMLD installed three EVSE's in FY15 and anticipates further demand in FY16.

Brief Description/Scope:

Each EVSE is a dual charger. This will increase RMLD's kWh sales.

Barriers:

Based on customer requests and the increasing use of electric vehicles.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Electric Vehicle Supply Equipment (EVSE) **SCHEDULE:** FY16

PROJECT #: TBD

ITEM	CREW WEEKS	RMLD CREW LABOR COST	RMLD CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
Purchase five (5) EVSE for installation on RMLD service territory.						\$50,000	\$50,000
Unit Cost						\$10,000 each	
							\$0
Unit Cost							
							\$0
Unit Cost							
							\$0
Unit Cost							
							\$0
Unit Cost							

TOTAL 0.0 0 \$0 \$0 \$0 \$50,000

TOTAL ESTIMATED PROJECT COST: \$50,000

MIS

Continuing Projects:

	<i>Page #</i>	<i>Project #</i>
⌘ Great Plains/Cogsdale Update	40	120

New Projects for FY16:

None

Annual Projects:

⌘ Hardware Upgrades	44	127
⌘ Software Upgrades	46	128

MIS

CONTINUING PROJECTS

CAPITAL PROJECT SUMMARY

Project Name: Great Plains/Cogsdale Upgrade

Project #: 120

Project Schedule: FY15-16

Project Manager: Mark Uvanni, MIS Manager

Reason for Expenditure:

We are currently using Great Plains/Cogsdale Version 10 as our financial management and customer service management (CSM) software. Version 10 will no longer be supported by the end of 2014 (calendar) or shortly thereafter. We will be doing a 'data conversion' upgrade to Great Plains/Cogsdale 2013. The costs include software, hardware, training, consulting, custom programming and project management. System will provide new work order system capability and integration with Engineering and customer data-bases for improved customer service and system reliability.

Brief Description/Scope:

Upgrade will be a 'data conversion' update to Version 2013 (most current stable build). It will update current CSM and financial systems to the newest version. Project will encompass software, hardware, consulting (CDM), training, custom programming, and project management (RMLD and CDM)

Barriers:

Successful interfacing of various adjunct systems.

Change in Scope of Work From Prior Fiscal Year:

Status Update:

The "go live" date is set for August 1, 2015. We still have to solve a few issues; mainly the USPS Smart Bar Code on bills to eliminate having to send a data file to our mailer. We also have to decide, what if any, new processes we will introduce based on the Business Process Review. Overall we seem to be in good shape and the testing is going well. We will continue to test with periodic data refreshes.

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Great Plains/Cogsdale Upgrade

SCHEDULE: FY15-16

PROJECT #: 120

ITEM	CREW WEEKS 4-Man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC.	TOTAL
Great Plains/Cogsdale Update to 2013						\$100,000	\$100,000
Unit Cost							
CDM Project Management and Consulting - GP/Cogsdale Update						\$55,000	\$55,000
Unit Cost							
Network/System Administration				\$52,219			\$52,219
17 week(s)	Unit Cost			\$3,072		per week	
	Unit Cost						
	Unit Cost						
	Unit Cost						
	Unit Cost						

TOTAL \$52,219 \$155,000

TOTAL ESTIMATED PROJECT COST: \$207,219

FY15	39%	Estimate	\$80,000
FY16	61%	Estimate	\$127,219

MIS

ANNUAL PROJECTS

CAPITAL PROJECT SUMMARY

Project Name: Hardware Upgrades

Project #: 127

Project Schedule: Annual

Project Manager: Mark Uvanni, MIS Manager

Reason for Expenditure:

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

Brief Description/Scope:

General hardware purchases plus the following specific projects.

- General Hardware Purchases
- Wireless Mesh Build-Out
- Convert Digital Phones to VoIP

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Hardware Upgrades SCHEDULE: FY16
PROJECT #: 127

ITEM	CREW WEEKS	RMLD CREW LABOR COST	RMLD CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	NEW MATERIAL & MISC	TOTAL
a) General hardware purchases.				\$7,065		\$40,000	\$47,065
2.30 weeks Network/System Administration	Unit Cost			\$3,072		per week	
b) Commence build-out of wireless mesh.						\$40,000	\$40,000
	Unit Cost						
c) Convert digital phones to VOIP.						\$65,000	\$65,000
	Unit Cost						
	Unit Cost						
	Unit Cost						
	Unit Cost						

TOTAL \$7,065 \$145,000

TOTAL ESTIMATED PROJECT COST: \$152,065

CAPITAL PROJECT SUMMARY

Project Name: Software and Licensing

Project #: 128

Project Schedule: Annual

Project Manager: Mark Uvanni, MIS Manager

Reason for Expenditure:

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

Brief Description/Scope:

In addition to the standard software and licensing purchases described above, we anticipated the following:

- Custom programming/development for OM/UAN/GIS/GPS
- Ad-hoc software purchases
- SpryPoint SSRS Software

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Software and Licensing

SCHEDULE: FY16

PROJECT #: 128

ITEM	CREW WEEKS	RMLD CREW LABOR COST	RMLD CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	NEW MATERIAL & MISC	TOTAL
a) General software purchases.				\$6,143		\$30,000	\$36,143
2.00 week(s) Network/System Administration							
	Unit Cost			\$3,072		per week	
b) SpryPoint SSRS Software				\$2,304		\$14,000	\$16,304
0.75 week(s) Network/System Administration							
	Unit Cost			\$3,072			
c) Custom programming/development OM/UAN/GIS/CPS						\$120,000	\$120,000
	Unit Cost					per week	
	Unit Cost						
	Unit Cost						
	Unit Cost						

TOTAL \$8,447 \$164,000

TOTAL ESTIMATED PROJECT COST: \$172,447

SYSTEM

Continuing Projects Update:

	Page #	Project #
⌘ 5W9 OH Reconductoring – Ballardvale Area, Wilmington	52	101
⌘ Upgrade Old Lynnfield Center URDs (Cook's Farm)	54	104
⌘ Relay Replacement – Station 4	56	108
⌘ Remote Terminal Unit (RTU) Replacement - Station 3	58	130
⌘ Engineering Analysis Software and Data Conversion	60	122
⌘ GIS	62	125
⌘ Force Account (Mass DOT) West Street, Reading	64	212
⌘ Pole Line Upgrade – Lowell Street, Wilmington	66	102
⌘ Distribution Protection & Automation	68	103
⌘ LED Street Light Implementation – All Towns	70	131
⌘ Substation Test Equipment	72	134
⌘ Station 4 (Gaw) 35 kV Potential Transformers Replacement	74	109

New Projects for FY16:

⌘ Pole Line Upgrade – West Street, Wilmington	78	TBD
⌘ Substation Equipment Upgrade	80	TBD
⌘ Station 4: Switchgear/Breaker Replacement	82	TBD
⌘ Station 4: Battery Bank Upgrade	84	TBD
⌘ Distributed Generation	86	TBD
⌘ Fiber Optic Equipment	88	TBD
⌘ Fault Indicators	90	TBD
⌘ Voltage Data Recorders	92	TBD

Annual Projects:

⌘ Transformers and Capacitors	96	116
⌘ Communication Equipment (Fiber Optic)	98	126
⌘ Meters	100	117
⌘ URD Upgrades – All Towns	102	106
⌘ Step-down Area Upgrades – All Towns	104	107
⌘ New Service Installations	106	
Commercial/Industrial		112
Residential		113
⌘ Routine Construction	110	114

SYSTEM

CONTINUING PROJECTS

CAPITAL PROJECT SUMMARY

Project Name: 5W9 Reconductoring – Ballardvale Area, W **Project #:** 101

Project Schedule: FY14-16 **Project Manager:** Peter Price, Chief Engineer

Reason for Expenditure:

5W9 is a 336-spacer cable circuit that feeds Ballardvale Street and Research Drive in Wilmington. This feeder construction dates back to the 1980s. This circuit has seen heavy loading during the summer peaks and is experiencing load growth. This load growth includes the new Target Store and associated retail mall as well as some proposed projects on Research Drive. The project will add to the long-term reliability of the area and contingency planning by increasing the feeder capacity.

Brief Description/Scope:

Reconductor existing 336-spacer cable with 795-spacer cable, upgrade brackets as needed, and re-use existing messenger cable.

Barriers:

This is a Verizon set area. Also, we will need a flagman to reconductor over the railroad tracks on Middlesex Avenue in North Wilmington.

Change in Scope of Work from Prior Fiscal Year:

n/a

Status Update:

It is expected that 84% of this project will be completed by the end of FY15.

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: 5W9 Reconductoring - Ballardvale Area, W.

SCHEDULE: FY14-16

PROJECT #: 101

ITEM	CREW WEEKS 2-man	CREW LABOR COSTS	CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC.	TOTAL
Install 63,000 feet of 795 spacer cable and 7,000 feet of 0.052 messenger.	40.2	\$234,269	\$36,984			\$168,458	\$439,711
Unit Cost		\$5,828	\$920			per week	
Reframe approximately 100 poles with new brackets, miscellaneous sleeves, hardware and connectors.	11.0	\$64,104	\$10,120			\$20,000	\$94,224
Unit Cost		\$5,828	\$920			per week	
Install (1) 900 amp gang operated switch	0.8	\$4,662	\$736			\$2,510	\$7,908
Unit Cost		\$5,828	\$920			per week	
Miscellaneous pole line hardware and materials for 65 poles.						\$13,000	\$13,000
Unit Cost							
Labor: Engineering 3 week(s)				11,160			\$11,160
Unit Cost				\$3,720		per week	
Police Details (if applicable) 24.0 week(s)						\$59,538	\$59,538
Unit Cost						\$2,481 per week	

Total RMLD Crew Weeks 52.0
Total U/G Crew Weeks

TOTAL	\$303,035	\$47,840	\$11,160	\$263,506
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TOTAL ESTIMATED PROJECT COST: \$625,541

FY14	24% Actual	\$152,387
FY15	60% Estimate	\$373,067
FY16	16% Estimate	\$100,086

CAPITAL PROJECT SUMMARY

Project Name: Upgrading of Old Lynnfield Center URDs (Cook's Farm) **Project #:** 104

Project Schedule: FY14-16 **Project Manager:** Peter Price, Chief Engineer

Reason for Expenditure:

This is one of the original Lynnfield underground subdivisions and is over 40 years old. This area does not conform to the Department's current construction standards. When this system was installed, the design called for fiber duct, 2,400-volt primary cable, and no manholes. With this type of design, an underground cable failure could result in a significant outage for some customers.

Brief Description/Scope:

The first phase of this project was the Townsend and Needham Road Subdivision (FY12). The second phase is Russell Road, Trog Hawley and Charing Cross (FY13), and the third phase will be Cooks Farm, Cortland Lane, and Tophet Road (FY14). This project would require building a new underground distribution system within the public way. This involves the installation of manholes, conduits, transformers, underground primary and secondary cable, and pull boxes, etc. The transformers would be replaced in the same location. The Department would intercept the customer's existing service and place a pull box on the property. If the customer wants to upgrade their service at the same time, they would be responsible from the pull box to the house. In FY14 the Department will begin Cooks Farm Lane, Cortland Lane, and Trophet Road. Engineering will petition the Town for permission to install the underground electric facilities and meet with the customers affected by this construction to explain the project and scope of work.

This project will require procuring an excavation contractor and may require the complete repaving of the subdivision.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

Status Update:

This project started in FY14 and continued into FY15. This was the same case for the previous two subdivisions. The construction season for this type of project runs from mid-April to mid-October. It is expected that 90% of this project will be completed by the end of FY15.

FISCAL 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Upgrading Old Lynnfield Center URDs (Cook's Farm)

SCHEDULE: FY14-16

PROJECT #: 104

ITEM	CREW WEEKS 2-man	CREW LABOR COST	CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	NEW MATERIAL & MISC	TOTAL
Complete Installation of: 6,000 feet of U/G conduit 5,400 feet of U/G 1/0 primary 1,800 feet of U/G 4/0 secondary 11 manholes, 9 transformers, etc.	28.0	\$163,173	\$25,760			\$75,000	\$263,933
	Unit Cost	\$5,828	\$920			per week	
Underground Contractor:	2-Man 16.0			\$94,438	\$640		\$95,078
	Unit Cost			\$5,902	\$40	per week	
	Unit Cost						
	Unit Cost						
LABOR: Engineering 8.0 weeks				\$29,759			\$29,759
	Unit Cost			\$3,720		per week	
	Unit Cost						
Police Details (if applicable) 14.0 weeks				\$34,730			\$34,730
	Unit Cost			\$2,481		per week	

Total RMLD Crew Weeks 28.0
Total U/G Crew Weeks 16.0

TOTAL	44.0	\$163,173	\$25,760	\$158,928	\$640	\$75,000
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TOTAL ESTIMATED PROJECT COST: \$423,501

FY14	3% Actual	\$13,548
FY15	87% Estimate	\$367,603
FY16	10% Estimate	\$42,350

CAPITAL PROJECT SUMMARY

Project Name: Relay Replacement - Station 4 (Gaw)

Project #: 108

Project Schedule: FY15-16

Project Manager: Nick D'Alleva
Technical Services Manager

Reason for Expenditure:

Replace the existing electro-mechanical protective relay systems on the 15kV feeder breakers at the Gaw Substation. These relays will be able to provide more information back to the SCADA; they also store vast amounts of data for down-loading and evaluating.

Brief Description/Scope:

Replace relays and rewire feeder cubicle for installation of this equipment previously purchased. Test and commission new relays.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

None

Status Update:

It is anticipated that 41% of this project will be completed by the end of FY15.

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Station 4: Relay Replacement

SCHEDULE: FY15-16

PROJECT #: 108

ITEM	CREW WEEKS 2-man	RMLD CREW LABOR COST	RMLD CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
Miscellaneous materials including wire, test blocks, terminals, panels, etc.						\$2,000	\$2,000
Unit Cost		See box at left.					
Labor: Senior Techs (2-man crew)				\$65,099	\$432		\$65,531
12 week(s)				\$5,425	\$36	per week	
Unit Cost							
Labor: Technical Services Manager				\$33,864	\$162		\$34,026
9 week(s)				\$3,763	\$18	per week	
Unit Cost							
Engineering Consultant: design and inter-connection and as built plans.						\$15,000	\$15,000
Unit Cost		See box at left.					
Electrical Contractor: testing and commissioning.						\$6,000	\$6,000
Unit Cost		See box at left.					
Unit Cost							
Police Details (if applicable)							
Unit Cost							

TOTAL \$98,963 \$594 \$23,000

TOTAL ESTIMATED PROJECT COST: \$122,557

FY15	41%	Estimate	\$50,000
FY16	59%	Estimate	\$72,557

CAPITAL PROJECT SUMMARY

Project Name: Remote Terminal Unit (RTU) Replacement – Station 3 **Project #:** 130

Project Schedule: FY16 **Project Manager:** Peter Price, Chief Engineer

Reason for Expenditure:

The existing RTU was installed in 2000 and uses a legacy TeleGyr 8979 protocol. This was done so that it would work with the old TeleGyr SCADA system. The existing RTU is not IP addressable, nor does it have an ethernet connection. The RTU needs to be upgraded to add the functionality of the existing SEL relays at Station 3. A new RTU will give the Department the ability to communicate with the SEL relays, similar to what is being done at Station 4.

Brief Description/Scope:

Bid and purchase a pre-wired RTU enclosure, with required technical support, that will replace the existing RTU enclosure at Station 3. Contract with SEL for technical assistance and any required hardware for the interconnection. Station Supervisor and Senior Technicians will re-wire and terminate control wiring within the new RTU cabinet. Engineering will program and configure SCADA for new comm-line and RTU

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

Status Update:

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: RTU Replacement - Station 3

SCHEDULE: FY16

PROJECT #: 130

ITEM	CREW WEEKS 2-man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
Purchase RTU, pre-wired enclosure and miscellaneous equipment.						\$55,000	\$55,000
Labor: Senior Techs (2-man crew)				\$16,275	\$108		\$16,383
3 week(s)	Unit Cost			\$5,425	\$36	per week	
Labor: Technical Services Manager				\$11,288	\$54		\$11,342
3 week(s)	Unit Cost			\$3,763	\$18	per week	
Labor: Engineering				\$11,160			\$11,160
3 week(s)	Unit Cost			\$3,720		per week	

TOTAL \$38,722 \$162 \$55,000

TOTAL ESTIMATED PROJECT COST: \$93,884

CAPITAL PROJECT SUMMARY

Project Name: Engineering Analysis Software and
Data Conversion

Project #: 122

Project Schedule: FY16

Project Manager: Peter Price, Chief Engineer

Reason for Expenditure:

This software purchase and data conversion will allow the Engineering department to perform engineering analysis on the distribution system. Internally, the department would be able to perform fault current calculations, arc flash calculations, load flow and voltage drop calculations, load balancing, voltage regulator settings, etc. This new software would work with the existing coordination software that the Engineering department uses.

Brief Description/Scope:

Take the existing databases and newly collected as-built data, and core ESRI data for the GIS project and have it converted for use in the electric model by the Milsoft and Windmill software provider. Purchase the software necessary to perform the engineering analysis and to update map/land-base data. Purchase of server for software and databases.

Barriers:

GIS as-built data completion.

Change in Scope of Work From Prior Fiscal Year:

Status Update:

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Engineering Analysis Software & Data Conversion

SCHEDULE: FY16

PROJECT #: 122

ITEM	CREW WEEKS 4-Man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
Engineering Analysis Software						\$18,250	\$18,250
Data conversion for WindmilMap						\$25,000	\$25,000
Unit Cost							
WindmilMap Software						\$30,000	\$30,000
Unit Cost							
Unit Cost							
Unit Cost							
Unit Cost							
TOTAL						\$73,250	

TOTAL ESTIMATED PROJECT COST: \$73,250

CAPITAL PROJECT SUMMARY

Project Name: GIS Upgrade

Project #: 125

Project Schedule: FY15-16

Project Manager: Hamid Jaffari, Director of
Engineering and Operations

Reason for Expenditure:

The current RMLD GIS lacks critical information to accurately perform system modeling. Once this information is captured, reviewed, and optimized, RMLD will be able to enhance contingency and reliability planning, developing system protection and coordination studies. By increasing the value of the information within the GIS, RMLD will be better able to manage the assets within the network. Once completed RMLD will be able to track flow from substations to individual meters.

In conjunction with a contracted engineering firm, RMLD is creating a template of desired GIS attributes to include the Milsoft WindMilMap required attributes for engineering analysis as well as Smart Grid systems (i.e. OMS, DMS, FDIR, etc.). RMLD does not have enough resources to collect pole-by-pole data throughout its service territory, as this is a tedious and time-consuming task. Staff augmentation with an outside data collector will be used for this data integration effort.

Brief Description/Scope:

Comprehensive, contracted third-party data collection to produce GIS base model for overhead assets.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

Status Update:

It is anticipated that 7% of this project will be completed in FY15.

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: GIS

SCHEDULE: FY15-16

PROJECT #: 125

ITEM	CREW WEEKS 2-man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
Comprehensive data collection for RMLD overhead network.						\$450,000	\$450,000
	Unit Cost						
	Unit Cost						
	Unit Cost						
	Unit Cost						
Police Details (if applicable) week(s)							
	Unit Cost						

TOTAL

\$450,000

TOTAL ESTIMATED PROJECT COST: \$450,000

FY15	7% Estimate	\$30,000
FY16	93% Estimate	\$420,000

CAPITAL PROJECT SUMMARY

Project Name: Force Account – West Street, Reading

Project #: 212

Project Schedule: FY15-16

Project Manager: Peter Price, Chief Engineer

Reason for Expenditure:

Mass DOT is reconstructing West Street, in Reading, from the Woburn town line to the intersection of Summer Avenue. The reconstruction includes the widening of the roadway, the installation of traffic signals and the resurfacing of the road. This work will require the RMLD to relocate poles, transfer construction, lower and raise manhole covers, and relocate conduits.

Brief Description/Scope:

Replace approximately 38 poles and 15 anchors, frame and transfer primaries, secondaries, transformers, services, and street lights on 42 poles, relocate primary conduits and cables feeding Westcroft Circle, and lower and raise manhole frames and covers. All work except for the lowering and raising of the manhole frames and covers is reimbursable.

Barriers:

Verizon is responsible to replace 4 of the poles. The RMLD will need to petition the Town of Reading for any of the pole and conduit relocations. The Mass DOT has approved these relocations, but they must be formally presented and approved by the Town.

Change in Scope of Work From Prior Fiscal Year:

Status Update:

It is anticipated that 33% of this work will be completed in FY15. The project will continue into FY16.

FISCAL 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: FA (MassDOT) West Street, R

SCHEDULE: FY15-16

PROJECT #: 212

ITEM	CREW WEEKS 2-Man	RMLD CREW LABOR COST	RMLD CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	NEW MATERIAL & MISC	TOTAL
Install approximately 38 poles and 15 anchors on West Steet between South Street and Summer Avenue.	9	\$52,448	\$8,280			\$23,000	\$83,728
Unit Cost		\$5,828	\$920			per week	
Frame 42 poles for spacer cable circuit, primary laterals and secondary cable and transfer.	11	\$64,104	\$10,120			\$7,500	\$81,724
Unit Cost		\$5,828	\$920			per week	
Relocate primary conduits and cables feeding Westcroft Circle to new pole (working with Underground Crew).	2	\$11,655	\$1,840				\$13,495
Unit Cost		\$5,828	\$920			per week	
Underground Contractor (2-man): See above.	1	\$5,902	\$40				\$5,942
Unit Cost		\$5,902	\$40			per week	
Engineering Labor:				\$11,160			\$11,160
3.0 weeks				\$3,720		per week	
Police Details (if applicable)				\$27,288			\$27,288
11.0 weeks				\$2,481		per week	

Total RMLD Crew Weeks 22.0
Total U/G Crew Weeks 1.0

TOTAL	\$134,109	\$20,280	\$38,448	\$30,500
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TOTAL ESTIMATED PROJECT COST: \$223,337

FY15	33%	Estimate	\$73,701
FY16	67%	Estimate	\$149,636

CAPITAL PROJECT SUMMARY

Project Name: Pole Line Upgrade – Lowell Street, Wilmington **Project #:** 102

Project Schedule: FY15-16 **Project Manager:** Peter Price, Chief Engineer

Reason for Expenditure:

This section of Lowell Street currently has three (3) spacer cable circuits and two (2) aerial cable circuits. These poles are under-sized, under-classed, and over 30 years old. This project will upgrade the poles to the proper strength and height class, create the proper clearance between utilities, and benefit the long-term reliability of the system.

Brief Description/Scope:

Replace approximately twenty poles with 55'-1 poles along a section of Lowell Street in Wilmington, between West Street and Woburn Street. Frame poles with new hardware and transfer the three (3) spacer cable circuits, the two (2) aerial cable circuits, two (2) gang operated switches, four (4) primary laterals, secondaries, services, and street lights.

Barriers:

This is a Verizon set area, but they will not set 55' poles. Therefore, RMLD will set poles.

Change in Scope of Work From Prior Fiscal Year:

Increased pole replacement area to include the West and Lowell Street intersection as well as the Woburn and Lowell Street intersection. This increased the number of poles to be replaced to 30 and the setting of two (2) new poles.

Status Update:

It is anticipated that 60% of the project will be completed by the end of FY15.

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Pole Line Upgrade - Lowell Street, W

SCHEDULE: FY15-16

PROJECT #: 102

ITEM	CREW WEEKS 2-man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
Install approximately twenty (20) 55' poles on Lowell Street between West Street and Woburn Street. Transfer three (3) spacer cable circuits and two (2) aerial cable circuits.	14.0	\$81,586	\$12,880			\$12,000	\$106,466
Unit Cost		\$5,828	\$920			per week	
Frame 20 poles for three (3) spacer cable circuits and two (2) aerial circuits with new brackets and hardware.	8.0	\$46,621	\$7,360			\$7,300	\$61,281
Unit Cost		\$5,828	\$920			per week	
Install 12 additional poles.	8.0	\$46,621	\$7,360			\$10,000	\$63,981
Unit Cost		\$5,828	\$920			per week	
Engineering Labor: 3 week(s)				\$11,160			\$11,160
Unit Cost				3,720		per week	
Police Details (if applicable) 16.0 week(s)				\$39,692			\$39,692
Unit Cost				\$2,481		per week	
Total RMLD Crew Weeks 30.0 Total U/G Crew Weeks							
TOTAL		\$174,828	\$27,600	\$50,852		\$29,300	

TOTAL ESTIMATED PROJECT COST: \$282,579

FY15 60% Estimate \$169,548
FY16 40% Estimate \$113,032

CAPITAL PROJECT SUMMARY

Project Name: Distribution Protection and Automation **Project #:** 103

Project Schedule: FY15-16 **Project Manager:** Peter Price, Chief Engineer

Reason for Expenditure:

Increase distribution line protection.

Brief Description/Scope:

Install 13.8kV feeder reclosers on 13.8kV feeders to increase feeder protection along the primary distribution feeders serving all four (4) communities.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

Status Update:

It is anticipated that 50% of this project will be completed in FY15.

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Distribution Protection and Automation

SCHEDULE: FY15-16

PROJECT #: 103

ITEM	CREW WEEKS	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
Purchase and Install: (4) Reclosers with SCADA ready controls.	2-Man 4.0	\$23,310	\$3,680			\$100,000	\$126,990
Unit Cost		\$5,828	\$920			\$25,000 each	
Unit Cost							
Unit Cost							
Unit Cost							
Engineering Labor: 2 week(s)				\$7,440			\$7,440
Unit Cost				\$3,720		per week	
Police Details (if applicable) 2.0 week(s)				\$4,961			\$4,961
Unit Cost				\$2,481		per week	

Total RMLD Crew Weeks 4.0
Total U/G Crew Weeks

TOTAL	\$23,310	\$3,680	\$12,401	\$0	\$100,000
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TOTAL ESTIMATED PROJECT COST: \$139,392

FY15	50% Estimate	\$69,696
FY16	50% Estimate	\$69,696

CAPITAL PROJECT SUMMARY

Project Name: LED Street Light Implementation – All Towns **Project #:** 131

Project Schedule: FY16-18 **Project Manager:** Brian Smith
Engineering Project Manager

Reason for Expenditure:

Street light technology has advanced greatly over the years and has moved towards the installation and use of the more energy efficient and longer lasting LED replacements. In FY15, we are conducting an LED Street Light Pilot Program, which will allow us to evaluate the performance of, monitor the energy usage of, and get feedback on the lighting provided by this newer technology. Once the Pilot Program is complete, we will work with the towns to determine an implementation strategy for system-wide installation as appropriate.

Brief Description/Scope:

Purchase and install LED street lights for system-wide installation.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

Status Update:

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: LED Street Light Implementation

SCHEDULE: FY16-18

PROJECT #: 131

[illegible]

TOTAL

TOTAL ESTIMATED PROJECT COST: \$3,600,000

FY16	33% Estimate	\$1,200,000
FY17	33% Estimate	\$1,200,000
FY18	33% Estimate	\$1,200,000

CAPITAL PROJECT SUMMARY

Project Name: Substation Test Equipment

Project #: 134

Project Schedule: FY16

Project Manager: Nick D'Alleva
Technical Services Manager

Reason for Expenditure:

This project is necessary to purchase several pieces of test equipment to be used by the Technical Services department.

Brief Description/Scope:

The RMLD is formulating a distribution and substation, preventative, maintenance program. In order to perform many of the electrical tests, additional test equipment will be needed.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Substation Test Equipment SCHEDULE: FY16

PROJECT #: 134

ITEM	CREW WEEKS	RMLD CREW LABOR COST	RMLD CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
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Purchase of various test equipment.						\$100,000	\$100,000

TOTAL	0.0	0	\$0	\$0	\$0	\$100,000
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TOTAL ESTIMATED PROJECT COST:	\$100,000
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CAPITAL PROJECT SUMMARY

Project Name: Station 4 (Gaw) 35kv Potential Transformer Replacement **Project #:** 109

Project Schedule: FY16 **Project Manager:** Nick D'Alleva, Technical Services Manager

Reason for Expenditure:

The existing potential transformers are 30 plus years old and are in need of replacement.

Brief Description/Scope:

Purchase and replace six (6) 35kv potential transformers. Replace steel conduit and associated control wiring.

Barriers:

None.

Change in Scope of Work From Prior Fiscal Year:

Status Update:

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Station 4: 35kV PT Replacement

SCHEDULE: FY16

PROJECT #: 109

ITEM	CREW WEEKS 2-man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC.	TOTAL
Purchase and mount six (6) 35kV potential transformers and miscellaneous equipment.	1.0	\$5,828	\$920			\$20,000	\$26,748
Unit Cost		\$5,828	\$920			\$3,333 see box at left	
Labor: Senior Techs (2-man crew) 2 week(s)				\$10,850	\$72		\$10,922
Unit Cost				\$5,425	\$36	per week	
Labor: Technical Services Manager 1 week(s)				\$3,763	\$18		\$3,781
Unit Cost				\$3,763	\$18	per week	
Unit Cost							
Unit Cost							
Unit Cost							
Total RMLD Crew Weeks		1.0					
Total U/G Crew Weeks							
TOTAL		\$5,828	\$920	\$14,612	\$90	\$20,000	

TOTAL ESTIMATED PROJECT COST: \$41,450

SYSTEM

NEW PROJECTS

CAPITAL PROJECT SUMMARY

Project Name: Pole Line Upgrade – Woburn Street, Wilmington **Project #:** TBD

Project Schedule: FY16 **Project Manager:** Peter Price, Chief Engineer

Reason for Expenditure:

This section of Woburn Street currently has three (3) spacer cable circuits. These poles are under-sized, under-classed, and over 30 years old. This project will upgrade the poles to the proper strength and height class, create the proper clearance between utilities, and benefit the long-term reliability of the system.

Brief Description/Scope:

Replace approximately sixteen (16) main line poles and four (4) stub poles along a section of Woburn Street in Wilmington, between Concord Street and West Street. Frame poles with new hardware and transfer the three (3) spacer cable circuits, four (4) transformers, one (1) primary lateral, secondaries, services, and streetlights. Street lights will be changed to LED's, and transformers will be upgraded as part of the transformer maintenance program.

Barriers:

This is a Verizon set area.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Pole Line Upgrade - Woburn Street, W.

SCHEDULE: FY16

PROJECT #: TBD

ITEM	CREW WEEKS	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
Assist Verizon with pole sets.	2-man 2.0	\$11,655	\$1,840				\$13,495
	Unit Cost	\$5,828	\$920			per week	
Frame 20 poles for three (3) spacer cable circuits with new brackets and hardware.	6.0	\$34,966	\$5,520			\$7,300	\$47,786
	Unit Cost	\$5,828	\$920			per week	
Install three (3) transformers.	0.8	\$4,662	\$736				\$5,398
	Unit Cost	\$5,828	\$920			per week	
Engineering Labor: 2 week(s)				\$7,440			\$7,440
	Unit Cost			3,720		per week	
Police Details (if applicable) 7.0 week(s)				\$17,365			\$17,365
	Unit Cost			\$2,481		per week	
Total RMLD Crew Weeks		8.8					
Total U/G Crew Weeks							
TOTAL		\$51,283	\$8,096	\$24,805		\$7,300	

TOTAL ESTIMATED PROJECT COST: \$91,484

CAPITAL PROJECT SUMMARY

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

Project Schedule: FY16 **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:

Major items include the replacement of the transformer LTC controls at Station #3, the purchase of remote racking devices for all our 15 Kv breakers, replacement cable tray covers for Station #4, redesign of the transfer scheme at Station #3 and various minor items at Stations #3, #4 and #5.

Barriers:

Availability of replacement parts.

Change in Scope From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Substation Equipment Upgrade

SCHEDULE: FY16

PROJECT #: TBD

ITEM	CREW WEEKS 2-man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC.	TOTAL
Materials						\$175,000	\$175,000
Unit Cost							
Labor:				\$43,399	\$288		\$43,687
Senior Techs (2-man crew)							
8 week(s)				\$5,425	\$36	per week	
Unit Cost							
Labor:				\$15,051	\$72		\$15,123
Technical Services Manager							
4 week(s)				\$3,763	\$18	per week	
Unit Cost							
Engineering Consulting Services						\$20,000	\$20,000
Unit Cost							
Unit Cost							
Unit Cost							
TOTAL				\$58,450	\$360	\$195,000	

TOTAL ESTIMATED PROJECT COST: \$253,810

CAPITAL PROJECT SUMMARY

Project Name: Station 4: Switchgear/Breaker Replacement **Project #:** TBD

Project Schedule: FY16-17 **Project Manager:** Nick D'Alleva
Manager of Technical Services

Reason for Expenditure:

The existing switchgear and breakers at Station 4 are in excess of 40 years old. We will be performing an evaluation of the switchgear with the assistance of United Power Group. The existing breakers utilize an older air magnetic technology for interrupting fault current. We will be replacing the existing breakers with new vacuum type breakers.

Brief Description/Scope:

Replace existing air magnetic breaker with replacement vacuum breakers. Inspect and test the condition of the existing switchgear.

Barriers:

Lead time for replacement breakers. Condition of the existing switchgear.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Station 4: Switchgear/Breaker Replacement

SCHEDULE: FY16-17

PROJECT #: TBD

ITEM	CREW WEEKS 2-man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC.	TOTAL
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Purchase (2) replacement breakers.						\$968,000	\$968,000
Unit Cost	\$484,000 each						

Labor: Senior Techs (2-man crew) 6 week(s)				\$32,549	\$216		\$32,765
Unit Cost	\$5,425 \$36 per week						

Labor: Technical Services Manager 4 week(s)				\$15,051	\$72		\$15,123
Unit Cost	\$3,763 \$18 per week						

Unit Cost							

Unit Cost							

Unit Cost							

TOTAL		\$47,600	\$288	\$968,000
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TOTAL ESTIMATED PROJECT COST:	\$1,015,888
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FY15	50%	Estimate	\$507,944
FY16	50%	Estimate	\$507,944

CAPITAL PROJECT SUMMARY

Project Name: Station 4: Battery Bank Upgrade

Project #: TBD

Project Schedule: FY16

Project Manager: Nick D'Alleva
Manager of Technical Services

Reason for Expenditure:

Battery bank two at Station 4 was identified as needing replacement during evaluation by our (substation) testing consultant, United Power Group. This battery bank is in excess of 20 years old.

Brief Description/Scope:

Replace the existing battery bank and install a battery monitoring system, which will bring important information back to our SCADA system in the RMLD Control Center.

Barriers:

None.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update From Prior Fiscal Year:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Station 4: Battery Bank Upgrade

SCHEDULE: FY16

PROJECT #: TBD

ITEM	CREW WEEKS 2-man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC.	TOTAL
Materials						\$42,200	\$42,200
Unit Cost							
Labor: Senior Techs (2-man crew) 2 week(s)				\$10,850	\$72		\$10,922
Unit Cost				\$5,425	\$36	per week	
Labor: Technical Services Manager 1 week(s)				\$3,763	\$18		\$3,781
Unit Cost				\$3,763	\$18	per week	
Unit Cost							
Unit Cost							
Unit Cost							

Total RMLD Crew Weeks
Total U/G Crew Weeks

TOTAL	\$14,612	\$90	\$42,200
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TOTAL ESTIMATED PROJECT COST: \$56,902

CAPITAL PROJECT SUMMARY

Project Name: Distributed Generation

Project #: TBD

Project Schedule: FY16

Project Managers: Hamid Jaffari, Director of
Engineering and Operations
Peter Price, Chief Engineer

Reason for Expenditure:

Take advantage of ISO's market opportunity to reduce the cost of power purchase for RMLD ratepayers.

Brief Description/Scope:

RMLD is exploring an opportunity to install a 2-2.5 MW gas fuel generator as a pilot program to take advantage of New England ISO's capacity and transmission credits that lower power purchase costs for our ratepayers. Generating power on-site eliminates the cost, complexity, interdependencies, and inefficiencies associated with transmission and distribution. These credits are expected to increase substantially starting 2017, which makes the return of investment (ROI) 3 to 5 years.

Barriers:

Securing a site and permitting.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: 2 to 2.5 MW Distributed Generator

SCHEDULE: FY16

PROJECT #: TBD

ITEM	CREW WEEKS	RMLD CREW LABOR COST	RMLD CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
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2 MW Generator Unit						\$2,100,000	\$2,100,000
	Unit Cost						
Engineering and Design						\$20,000	\$20,000
	Unit Cost						
Permitting and Legal Services						\$15,000	\$15,000
	Unit Cost						
Installation and implementation.						\$14,000	\$14,000
	Unit Cost						
Miscellaneous Costs						\$10,000	\$10,000
	Unit Cost						
Testing and Commissioning	0.6	\$3,205	\$506			\$1,300	\$5,011
	Unit Cost	\$5,828	\$920			per week	

TOTAL	0.0	3,205	\$506	\$0	\$0	\$2,160,300
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TOTAL ESTIMATED PROJECT COST: \$2,164,011

CAPITAL PROJECT SUMMARY

Project Name: Fiber Optic Testing Equipment

Project #: TBD

Project Schedule: FY16

Project Manager: Peter Price, Chief Engineer

Reason for Expenditure:

The RMLD relies on contractors to trouble shoot problems with the fiber optic network. With the expansion of the fiber optic network for the automation plan, this equipment would allow RMLD to locate and diagnose problems with the network. The fiber optic cable contractor would be used for splicing and terminating the fiber.

Brief Description/Scope:

Purchase optical test equipment and associated cables, adapter, cleaners, accessories, as well as necessary training.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Fiber Optic Equipment

SCHEDULE: FY16

PROJECT #: TBD

ITEM	CREW WEEKS 4-Man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
Fiber Optic Equipment						\$15,000	\$15,000
	Unit Cost						
	Unit Cost						
	Unit Cost						
	Unit Cost						

TOTAL \$15,000

TOTAL ESTIMATED PROJECT COST: \$15,000

CAPITAL PROJECT SUMMARY

Project Name: Fault Indicators

Project #: TBD

Project Schedule: FY16

Project Manager: Peter Price, Chief Engineer

Reason for Expenditure:

The RMLD has installed approximately 99 fault locators along the distribution circuits over the last 4 years to aid in fault locating.

Brief Description/Scope:

This project is for the purchase of 54 fault locators.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Fault Indicators

SCHEDULE: FY16

PROJECT #: TBD

ITEM	CREW WEEKS 4-Man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
Fault Indicator						\$50,000	\$50,000
	Unit Cost						
	Unit Cost						
	Unit Cost						
	Unit Cost						
Police Details (if applicable) week(s)							
	Unit Cost					per week	

TOTAL

\$50,000

TOTAL ESTIMATED PROJECT COST: \$50,000

CAPITAL PROJECT SUMMARY

Project Name: Voltage Data Recorders

Project #: TBD

Project Schedule: FY16 **Project Manager:** Peter Price, Chief Engineer

Reason for Expenditure:

The Engineering department requires feeder data loggers for feeder load balancing, and voltage recorders for residential and commercial voltage complaint investigation and survey.

Brief Description/Scope:

Purchase a set of feeder data loggers, two single-phase voltage recorders, and one three-phase voltage recorder.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Voltage Data Recorders

SCHEDULE: FY16

PROJECT #: TBD

ITEM	CREW WEEKS 4-Man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC	TOTAL
Voltate Data Recorders						\$50,000	\$50,000
	Unit Cost						
	Unit Cost						
	Unit Cost						
	Unit Cost						
Police Details (if applicable) week(s)							
	Unit Cost					per week	

TOTAL \$50,000

TOTAL ESTIMATED PROJECT COST: \$50,000

SYSTEM

ANNUAL PROJECTS

CAPITAL PROJECT SUMMARY

Project Name: Transformers & Capacitors

Project #: 116

Project Schedule: Annual

Project Manager: Peter Price, Chief Engineer

Reason for Expenditure:

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

Brief Description/Scope:

- | | | |
|----|-------------------------------------------------------------------------------------|--------------------|
| a) | Three-phase padmount transformers
(commercial services) | Quantity: 15 units |
| b) | Single-phase padmount transformers
for proposed subdivisions and stock. | Quantity: 40 units |
| c) | Three-phase polemount transformers
for proposed commercial projects and stock | Quantity: 31 units |
| d) | Single-phase polemount transformers
for proposed residential services and stock. | Quantity: 86 units |
| e) | Submersible transformers for stock. | Quantity: 4 units |
| f) | 1200 kVar capacitor banks. | Quantity: 4 units |

Barriers:

None anticipated at this time

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Transformers and Capacitors

SCHEDULE: FY16

PROJECT #: 116

ITEM	CREW WEEKS	CREW LABOR COST	CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	NEW MATERIAL & MISC	TOTAL
a) Three-phase padmount transformers for proposed commercial services and stock 15 units						\$187,500	\$187,500
		Unit Cost					\$12,500 per unit
b) Single-phase padmount transformers for proposed subdivisions and stock 40 units						\$100,000	\$100,000
		Unit Cost					\$2,500 per unit
c) Three-phase polemount transformers for proposed commercial services and stock 31 units						\$201,500	\$201,500
		Unit Cost					\$6,500 per unit
d) Single phase polemount transformers for proposed residential services and stock 86 units						\$129,000	\$129,000
		Unit Cost					\$1,500 per unit
e) Submersible transformers for stock 4 units						\$20,000	\$20,000
		Unit Cost					\$5,000 per unit
f) 1200 kVar capacitor banks 4 units						\$30,000	\$30,000
		Unit Cost					\$7,500 per unit

TOTAL \$668,000

TOTAL ESTIMATED PROJECT COST: **\$668,000**

CAPITAL PROJECT SUMMARY

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

Project Schedule: Annual **Project Manager:** Peter Price, Chief 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:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Communication Equipment (Fiber)

SCHEDULE: FY16

PROJECT #: 126

ITEM	CREW WEEKS 2-man	RMLD CREW LABOR COST	RMLD CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	NEW MATERIAL & MISC	TOTAL
Fiber node materials to include the enclosure, patch panel, power supply and Ethernet switch.						\$40,000	\$40,000
8.0 units	Unit Cost					\$5,000	
Contract labor and materials for splicing fiber.						\$25,000	\$25,000
8.0 units	Unit Cost					\$3,125	
Fiber optic cable and hardware.						\$15,000	\$15,000
	Unit Cost						
Labor - Line Crews	2	\$11,655	\$1,840				\$13,495
	Unit Cost	\$5,828	\$920			per week	
	Unit Cost						
Police Details (if applicable) 2 week(s)		\$4,961					\$4,961
	Unit Cost	\$2,481				per week	

TOTAL	<u>\$16,617</u>	<u>\$1,840</u>	<u>\$80,000</u>
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TOTAL ESTIMATED PROJECT COST: \$98,457

CAPITAL PROJECT SUMMARY

Project Name: Meters (including 500 Club)

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.

Additionally, the existing "500 Club" commercial meters, which are manually read meters, will be replaced with meters that can be read remotely with the fixed network system.

Brief Description/Scope:

Two hundred residential and commercial meters as well as miscellaneous hardware will be purchases for stock.

The RMLD will complete change out of the "500 Club" commercial meters. In the same fashion as the commercial upgrade, the data will be transmitted to the RMLD via the fiber optic system, which encircles the territory. The new data will provide reads at the desktop and additional consumption information.

This fixed network offers the ability to remotely:

- a. perform all reads from the office;
- b. amend the frequency of reads to maintain the read cycle;
- c. monitor and discuss customer usage from a monthly, daily, or hourly perspective;
- d. provide information that can be used for the demand-side management program; and
- e. control distribution equipment, i.e., capacitor banks, distribution switches, reclosers, and water heater controllers.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Meters

SCHEDULE: FY16

PROJECT #: 117

ITEM	CREW WEEKS	RMLD CREW LABOR COST	RMLD CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	NEW MATERIAL & MISC	TOTAL
For Stock:							
Residential and Commercial Meters						\$60,000	\$60,000
200 units	Unit Cost					\$300 each	
Locking sealing rings, seals and meter switches						\$20,000	\$20,000
	Unit Cost					\$100 per meter	
500 Club - AMI Mesh System							
50% of the cost of the AMI mesh system is expected to be spent in FY15. 50% is allocated in FY16.						\$99,968	\$99,968
	Unit Cost						
Technical Services Manager:							
Labor				\$3,763	\$18		\$3,781
1 week(s)	Unit Cost			\$3,763	\$18 per week		
Senior Techs:							
Labor				\$8,137	\$54		\$8,191
1.5 week(s) Regular Time	Unit Cost			\$5,424.91	\$36 per week		
Meter Techs:							
Labor				\$3,099	\$22		\$3,120
0.6 week(s) Regular Time	Unit Cost			\$5,164.45	\$36 per week		
Network/System Administration:							
Labor				\$19,966			\$19,966
6.5 week(s)	Unit Cost			\$3,072 per week			
Engineering:							
Labor				\$3,720			\$3,720
1 week(s)	Unit Cost			\$3,720 per week			

TOTAL \$38,685 \$94 \$179,968

TOTAL ESTIMATED PROJECT COST: \$218,746

CAPITAL PROJECT SUMMARY

Project Name: URD Upgrades – All Towns

Project #: 106

Project Schedule: Annual

Project Manager: Peter Price, Chief Engineer

Reason for Expenditure:

There are 244 +/- underground residential subdivisions in the RMLD service territory, of which, 65 +/- 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 7,979 volts. Also, 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.

Brief Description/Scope:

Replace primary and neutral cables, and padmount transformers as needed in the various URDs. Replace precast transformer pads with fiberglass box pads as needed for elevation requirements.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: URD Upgrades - All Towns

SCHEDULE: FY16

PROJECT #: 106

ITEM	CREW WEEKS 2-man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC.	TOTAL
Install approximately 40 padmount transformers. (Transformers are included in annual transformer purchase)	10.0	\$58,276	\$9,200				\$67,476
Unit Cost		\$5,828	\$920			per week	
Install approximately 10,000 feet of 1/0 Al UG cable and 10,000 feet of #2 CU neutral.	14.0	\$81,586	\$12,880			\$30,000	\$124,466
Unit Cost		\$5,828	\$920			per week	
Materials: splices, elbows, terminations, connectors, box pads, tape, etc.						\$30,000	\$30,000
Unit Cost							
Underground Contractor: 16.8 week(s)				\$ 99,160	\$672		\$99,832
Unit Cost				\$5,902	\$40	per week	
Engineering Labor: 5 week(s)				\$ 18,599			\$18,599
Unit Cost				\$3,720		per week	
Police Details (if applicable) week(s)							
Unit Cost						per week	

Total RMLD Crew Weeks 24.0
Total U/G Crew Weeks 16.8

TOTAL	<u>\$139,862</u>	<u>\$22,080</u>	<u>\$117,760</u>	<u>\$672</u>	<u>\$60,000</u>
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TOTAL ESTIMATED PROJECT COST: \$340,374

CAPITAL PROJECT SUMMARY

Project Name: Step-down Area Upgrades – All Towns **Project #:** 107

Project Schedule: Annual **Project Manager:** Peter Price, Chief Engineer

Reason for Expenditure:

There are 32 +/- step-down areas in the RMLD service territory. These areas on the RMLD distribution system were originally fed from 4kV distribution circuits. When RMLD began moving load over to the 13.8kV distribution circuits, most areas were converted and 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, secondary cable, and overhead transformers, as needed, in the various step-down areas. Convert areas to 13.8kV and remove step-down transformers.

Pole replacements will be charged to the pole replacement/inspection project.
Transformers will be upgraded as part of the transformer upgrade project.

Barriers:

Some areas are Verizon set areas.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Step-down Area Upgrades - All Towns

SCHEDULE: FY16

PROJECT #: 107

ITEM	CREW WEEKS 2-man	RMLD CREW LABOR COSTS	RMLD CREW VEHICLE COSTS	OTHER LABOR	OTHER VEHICLE	MATERIAL & MISC.	TOTAL
Install 12,000' of 1/0 primary.	16.0	\$93,242	\$14,720			\$12,000	\$119,962
Unit Cost		\$5,828	\$920			per week	
Install 10,000' of 4/0 - 3/C sec cable	16.0	\$93,242	\$14,720			\$14,000	\$121,962
Unit Cost		\$5,828	\$920			per week	
Replace 40 transformers. (Transformers are included with annual transformer purchase.)	8.0	\$46,621	\$7,360				\$53,981
Unit Cost		\$5,828	\$920			per week	
Miscellaneous Hardware \$200 per pole for approximately 80 poles.						\$16,000	\$16,000
Unit Cost						\$200 per pole	
Unit Cost							
Engineering Labor: 4 week(s)				14,880			\$14,880
Unit Cost				3,720		per week	
Police Details (if applicable) 10 week(s)				\$24,807			\$24,807
Unit Cost				\$2,481		per week	
Total RMLD Crew Weeks	40.0						
Total U/G Crew Weeks							
TOTAL		\$233,104	\$36,800	\$39,687		\$42,000	

TOTAL ESTIMATED PROJECT COST: \$351,591

CAPITAL PROJECT SUMMARY

Project Name: Service Installations
(Commercial and Residential) **Project #:** 112
113

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

Reason for Expenditure:

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

Brief Description/Scope:

- **Service Installations – Commercial/Industrial Customers:** This item includes new service connections, upgrades, and service replacements for 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.
- **Service Installations – Residential Customers:** This item includes new or upgraded overhead and underground services.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year

n/a

Status Update:

n/a

FISCAL 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Service Installations-Commercial/Industrial

SCHEDULE: FY16

PROJECT #: 112

ITEM	CREW WEEKS 2-man	CREW LABOR COST	CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	NEW MATERIAL & MISC	TOTAL
Installation of new commercial/ industrial service connections.	3	\$17,483	\$2,760			\$13,389	\$33,632
Unit Cost		\$5,828	\$920			per week	
Unit Cost							
Unit Cost							
Unit Cost							
Unit Cost							
Police Details (if applicable)							
Unit Cost							

Total RMLD Crew Weeks 3.0
Total U/G Crew Weeks

TOTAL	3.0	\$17,483	\$2,760	\$13,389
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TOTAL ESTIMATED PROJECT COST: \$33,632

FISCAL 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Service Installations - Residential Customers

SCHEDULE: FY16

PROJECT #: 113

ITEM	CREW WEEKS 2-Man	RMLD CREW LABOR COST	RMLD CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	NEW MATERIAL & MISC	TOTAL
Install new and upgraded service connections at approximately 360 units (approx 75-100 feet per installation).	16	\$93,242	\$14,720			\$56,250	\$164,212
Unit Cost		\$5,827.60	\$920			per week	
Unit Cost							
Unit Cost							
Unit Cost							
Unit Cost							

Total RMLD Crew Weeks 16.0
Total U/G Crew Weeks

TOTAL	16.0	93,242	\$14,720	\$56,250
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TOTAL ESTIMATED PROJECT COST \$164,212

CAPITAL PROJECT SUMMARY

Project Name: Routine Construction

Project #: 114

Project Schedule: Annual

Project Manager: n/a

Reason for Expenditure:

Routine Construction covers capital projects that develop during the year involving items shown below.

Brief Description/Scope:

- Capital Construction – transformer installation, overhead and underground system upgrades, miscellaneous projects, pole damage, etc.
- Street Lights – new equipment installation
- Pole setting/transfers
- Engineering labor
- General Line Foreman labor
- Underground capital construction
- Police details associated with routine capital work
- Overtime associated with routine capital work

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2016 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Routine Construction

SCHEDULE: FY16

PROJECT #: 114

ITEM	CREW WEEKS 2-man	CREW LABOR COST	CREW VEHICLE COST	OTHER LABOR	OTHER VEHICLE	NEW MATERIAL & MISC	TOTAL
a) Capital Construction	20	116,552	\$18,400			\$100,000	\$234,952
	Unit Cost	5,828	\$920			per week	
b) Street Light Installations	4	23,310	\$3,680				\$26,990
	Unit Cost	5,828	\$920			per week	
c) Pole Setting/Transfers	30	174,828	\$27,600			\$100,000	\$302,428
	Unit Cost	\$5,828	\$920			per week	
d) Engineering Labor				\$29,759			\$29,759
8.0 weeks	Unit Cost			\$3,720		per week	
e) General Line Foreman Labor				\$102,227			\$102,227
26.0 weeks	Unit Cost			\$3,932		per week	
f) U/G Construction	1.5	\$8,854	\$60			\$100,000	\$108,914
	Unit Cost	\$5,902	\$40			per week	
g) Police Details				\$128,999			\$128,999
52.0 weeks	Unit Cost			\$2,481		per week	
h) Overtime	10	\$56,575	\$9,200				\$65,775
	Unit Cost	\$5,657.50	\$920			per week	

Total RMLD Crew Weeks 54.0
Total U/G Crew Weeks 1.5

TOTAL	55.5	\$380,118.74	\$58,940	\$260,985	\$300,000
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TOTAL ESTIMATED PROJECT COST: \$1,000,044