

**READING MUNICIPAL
LIGHT DEPARTMENT**

**BOARD
OF
COMMISSIONERS**

REGULAR SESSION

MAY 26, 2016

**READING MUNICIPAL LIGHT DEPARTMENT
BOARD OF COMMISSIONERS MEETING**

230 Ash Street
Reading, MA 01867
May 26, 2016
6:30 p.m.

1. Call Meeting to Order
2. Opening Remarks
3. Introductions
4. Presentation - Winning Schools for RMLD's - LED's Save Energy Campaign

Note: The following schools are first place winners in their respective towns.

- Reading Memorial High School
- Wilmington Middle School
- North Reading E. Ethel Little School
- Lynnfield Summer Street School

5. Public Comment

- RMLD Citizens' Advisory Board
- Liaisons to RMLD Board
- Public Comment

6. Report of the Committee – Audit Committee – Vice Chair Pacino

Note: Vice Chair Pacino attended the Town of Reading Audit Committee meeting on May 5, 2016.

7. Report of General Manager

- a. RMLD Open House, Thursday, October 6, 2016

Note: This is held at the RMLD in conjunction with Public Power Week.

8. Review of RMLD's Fiscal Year 2017 Capital Budget (Attachment 1)

ACTION ITEM

Note: RMLD Board will take a vote on both the Fiscal Year 2017 Operating and Capital Budgets

- a. RMLD's Fiscal Year 2017 Capital Budget

Suggested Motion:

RMLD Board of Commissioners approve the Fiscal Year 2017 Capital Budget dated March 31, 2016, in the amount of \$9,406,217 as presented.

- b. RMLD's Fiscal Year 2017 Operating Budget

Note: This was presented at the RMLD Board meeting on May 12, 2016, no vote was taken.

Suggested Motion:

RMLD Board of Commissioners approve the Fiscal Year 2017 Operating Budget dated March 31, 2016, with a Net Income of \$3,935,097 as presented.

9. Power Supply Report – Mr. Parenteau (Attachment 2)

ACTION ITEM

a. Proposed Rate Adjustment

Suggested Motion:

Move that the RMLD Board of Commissioners approve the rates MDPU numbers #259, 260, 261, 262, 263, 264, 265, 266, 267 and 268 effective July 1, 2016 on the recommendation of the General Manager.

| RATE | TARIFF # |
|---|-----------|
| Residential Schedule A | MDPU #259 |
| Residential Schedule RW | MDPU #260 |
| Residential Time-of-Use Schedule A2 | MDPU #261 |
| Commercial Schedule C | MDPU #262 |
| Industrial Time-of-Use Schedule I | MDPU #263 |
| School Schedule SCH | MDPU #264 |
| Private Lighting Schedule D | MDPU #265 |
| Municipal LED Street Lighting | MDPU #266 |
| Cooperative Resale Schedule G | MDPU #267 |
| General Terms and Conditions (For All Classes of Service) | MDPU #268 |

10. Presentation – Ms. Parenteau

a. RMLD's Demand Response Programs

11. General Discussion

RMLD Board Meetings

Thursday, June 9, 2016

Thursday, July 14, 2016

RMLD Board Policy Committee Meeting

To be determined.

RMLD Fiber Optic Committee Meeting

To be determined.

CAB Meetings

Wednesday, June 1 2016, Regular Meeting

12. Executive Session

ACTION ITEM

Suggested Motion:

Move that the Board go into Executive Session to discuss strategy with respect to collective bargaining and return to Regular Session for the sole purpose of adjournment.

13. Adjournment

ACTION ITEM

Suggested Motion:

Move to adjourn the Regular Session.

RMLD'S FISCAL YEAR 2017
CAPITAL BUDGET
ATTACHMENT 1

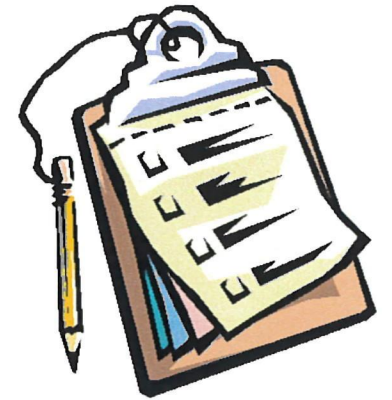
FY 2017 Capital Budget CAB & RMLD Board Presentation

Coleen O'Brien, General Manager
Hamid Jaffari, Director of E&O
Jane Parenteau, Director of IRD
Bob Fournier, Business Manager



FY2017 Budget

Agenda



- FY 2017 Capital Budget
- Distributed Generation Project Updates
- RMLD Rates
- RMLD Terms & Conditions
- Questions & Answers

FY 2016 Capital Authorization Major Spending



| <u>Projects</u> | <u>Amount</u> |
|--|---------------|
| ✓ Sub 4 Switchgear's Breaker Replacement | \$508K |
| ➤ Distributed Generation | \$2,164K |
| ✓ Substation Equipment Upgrade | \$254K |
| ✓ LED Street Lights | \$1,200K |
| ✓ HVAC System Upgrade | \$600K |
| ➤ GIS | \$420K |
| ✓ Step-Down Upgrades | \$250K |
| ✓ URD Upgrade (Cooks farm) | \$340K |
| ✓ Routine Constructions | \$1,000K |
| ✓ Transformers/Capacitors | \$668K |
| ✓ Rolling Stock (Trucks, Fork Lift, Spreader) | \$448K |
| ✓ AMI/Metering (500 Club) | \$219K |
| ✓ MIS | \$451K |
| ➤ Power Quality Meters (EVSE, Data Loggers, Efficiency Meter) | \$60K |
| ✓ Other (Facility Site Plan, Lowell St Project, West St, Fiber Optics) | \$2,014K |
| | <u>Total</u> |
| | \$10,596K |
| ■ Booth & Associates Study Recommendations | |
| ■ Not Completed | |

FY2017 Budget



FY16 Budget vs. Actual



➤ Budget vs. Actual Comparison:

Budgeted: **\$10,596,000**

Estimated to Spend: **\$7,227,000**

Breakdown of Difference:

➤ Roll Over Amount to FY2017:

| | |
|-------------------------------|------------------------|
| ➤ <i>Distributed Gen</i> | <i>\$2,100,000</i> |
| ➤ <i>GIS</i> | <i>\$330,000</i> |
| ➤ <i>Power Quality Meters</i> | <i><u>\$25,000</u></i> |

*Subtotal=****\$2,455,000***

➤ Projects On Hold:

| | |
|----------------------------|------------------------|
| ➤ <i>Master Facilities</i> | <i>\$150,000</i> |
| ➤ <i>5W9 Circuit</i> | <i>\$100,000</i> |
| ➤ <i>Relay Replacement</i> | <i><u>\$73,000</u></i> |

*Subtotal=****\$323,000***

➤ **Lower Bids** (Gaw Gen, Cogsdale, etc) ***\$155,000***

➤ **Others** ***\$436,000***

FY 2016

FY2016 Budget

\$10,596,000

Estimated Spending

\$7,227,000

Variance

\$3,369,000

| <u>Project</u> | <u>FY16 Budgeted</u> | <u>Spent</u> | <u>Variance</u> |
|---------------------|----------------------|--------------|------------------|
| Distributed Gen | \$2,164,000 | \$64,000 | \$2,100,000 |
| Master Facilities | \$150,000 | 0 | \$150,000 |
| LED Street Lights | \$1,200,000 | \$804,000 | \$396,000 |
| GIS | \$420,000 | \$90,000 | \$330,000 |
| URD Upgrades | \$340,000 | \$50,000 | \$290,000 |
| 13.8kV Upgrade | \$352,000 | \$50,000 | \$302,000 |
| Routine Const | \$1,000,000 | \$1,568,000 | (\$568,000) |
| 5W9 Circuit Upgrade | \$100,000 | 0 | \$100,000 |
| BKR Replacement | \$508,000 | \$601,000 | (\$93,000) |
| Lowell St | \$113,000 | \$147,000 | (\$34,000) |
| Old Lynnfield Ctr | \$42,000 | \$300,000 | (\$258,000) |
| Comm Equipment | \$98,000 | \$17,000 | \$81,000 |
| Relay Replacement | \$73,000 | 0 | \$73,000 |
| Cogsdale | \$127,000 | \$29,000 | \$98,000 |
| Gaw Sub GEN | \$107,000 | \$50,000 | \$57,000 |
| Others | | | <u>\$345,000</u> |
| | | | \$3,369,000 |

FY2017 Budget

FY 2017 Capital Authorization Major Spending

| <u>Projects</u> | <u>Amount</u> |
|---|---------------|
| ➤ Distributed Generation | \$2,720K |
| ➤ New Wilmington Substation | \$250K |
| ➤ Relay replacement @ substation 4 | \$49K |
| ➤ LED Street Lights | \$804K |
| ➤ HVAC System Upgrade | \$500K |
| ➤ Grid Modernization | \$284K |
| ➤ GIS | \$360K |
| ➤ Step-Down Upgrades | \$106K |
| ➤ URD Upgrade | \$150K |
| ➤ Routine Constructions | \$1,013K |
| ➤ PM Switchgear Replacement @ various parks | \$195K |
| ➤ Transformers/Capacitors | \$668K |



■ Booth & Associates Study Recommendations

FY 2017 Capital Authorization...Continued

| <u>Projects</u> | <u>Amount</u> |
|---|---------------|
| ➤ Rolling Stock | \$310K |
| ➤ AMI/Mesh Expansion | \$220K |
| ➤ Sub 3: Relay Upgrades & SCADA Integration | \$252K |
| ➤ MIS (Software licensing/Hardware) | \$343K |
| ➤ IRD (EVSE) | \$10K |
| ➤ Others (Facility Site Plan, 4w9 circuit upgrade, PM Switch Upgrade, Fiber Optics) | \$1,172K |
| Total | \$9,406K |



■ Booth & Associates Study Recommendations

DG Pilot Project Status: N.Reading

➤ Engineering Specification

- ✓ Technical Specification reviewed by Booth & Associates & Finalized

➤ Studies

- ✓ Noise Study completed
- ✓ Environmental (Soil Testing) completed

➤ Permitting

- ✓ Site Plan Preparation
- Town of N. Reading Building Dept. Review & Approval
- N.Reading Public Meeting

➤ Bidding Process

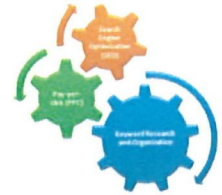
- Bid to go out in May/June 2016
- Construction to be completed by June 15, 2017

➤ Cost

- Spent-to-date (FY16) \$14.1K
- Engine 2MW (FY17) \$2.2M 2.5MW (+\$300K)
- Site preparation (FY17) \$285.9K
- Gas (FY17) \$123K
- Misc. \$97K

Estimated Total Cost = \$2,720K

FY16 did not include gas and bid engine came in higher on preliminary bid



Rates

FY 2017 - Proposed Base Rate Increase Comparative Rates Present/Proposed

| Residential | | | |
|-----------------------|-----------|-----------|-----------|
| | 500 kWh | 750 kWh | 1000 kWh |
| Present | \$72.49 | \$106.99 | \$141.48 |
| Proposed | \$77.30 | \$114.02 | \$150.75 |
| Difference | \$4.81 | \$7.03 | \$9.27 |
| % Change | 6.64% | 6.57% | 6.55% |
| Cost per kWh Present | \$0.14498 | \$0.14265 | \$0.14148 |
| Cost per kWh Proposed | \$0.15460 | \$0.15203 | \$0.15075 |

| Residential Hot Water | | | |
|-----------------------|-----------|-----------|-----------|
| | 1000 kWh | 1500 kWh | 2000 kWh |
| Present | \$130.86 | \$194.55 | \$258.22 |
| Proposed | \$139.06 | \$206.67 | \$274.27 |
| Difference | \$8.20 | \$12.12 | \$16.05 |
| % Change | 6.27% | 6.23% | 6.22% |
| Cost per kWh Present | \$0.13086 | \$0.12970 | \$0.12911 |
| Cost per kWh Proposed | \$0.13906 | \$0.13778 | \$0.13714 |

| Residential Time of Use | | | |
|-------------------------|-----------|-----------|-----------|
| | 1000 kWh | 1500 kWh | 2000 kWh |
| Present | \$128.10 | \$189.41 | \$250.69 |
| Proposed | \$136.03 | \$201.02 | \$265.99 |
| Difference | \$7.93 | \$11.61 | \$15.30 |
| % Change | 6.19% | 6.13% | 6.10% |
| Cost per kWh Present | \$0.12810 | \$0.12627 | \$0.12535 |
| Cost per kWh Proposed | \$0.13603 | \$0.13401 | \$0.13300 |

| Residential Low Income | | | |
|------------------------|-----------|-----------|-----------|
| | 500 kWh | 750 kWh | 1000 kWh |
| Present | \$66.93 | \$100.39 | \$133.85 |
| Proposed | \$71.18 | \$106.76 | \$142.35 |
| Difference | \$4.25 | \$6.37 | \$8.50 |
| % Change | 6.35% | 6.35% | 6.35% |
| Cost per kWh Present | \$0.13386 | \$0.13385 | \$0.13385 |
| Cost per kWh Proposed | \$0.14236 | \$0.14235 | \$0.14235 |

| Residential Hot Water Low Income | | | |
|----------------------------------|-----------|-----------|-----------|
| | 1000 kWh | 1500 kWh | 2000 kWh |
| Present | \$127.36 | \$191.05 | \$254.73 |
| Proposed | \$135.22 | \$202.83 | \$270.42 |
| Difference | \$7.86 | \$11.78 | \$15.69 |
| % Change | 6.17% | 6.17% | 6.16% |
| Cost per kWh Present | \$0.12736 | \$0.12737 | \$0.12737 |
| Cost per kWh Proposed | \$0.13522 | \$0.13522 | \$0.13521 |

| Residential Time of Use Low Income | | | |
|------------------------------------|-----------|-----------|-----------|
| | 1000 kWh | 1500 kWh | 2000 kWh |
| Present | \$122.58 | \$183.88 | \$245.17 |
| Proposed | \$129.96 | \$194.94 | \$259.91 |
| Difference | \$7.38 | \$11.06 | \$14.74 |
| % Change | 6.02% | 6.01% | 6.01% |
| Cost per kWh Present | \$0.12258 | \$0.12259 | \$0.12259 |
| Cost per kWh Proposed | \$0.12996 | \$0.12996 | \$0.12996 |

| Commercial | | | |
|-----------------------|------------|-------------|-------------|
| | Small | Medium | Large |
| Present | \$2,057.52 | \$10,745.32 | \$47,713.75 |
| Proposed | \$2,175.00 | \$11,374.96 | \$50,385.63 |
| Difference | \$117.48 | \$629.64 | \$2,671.88 |
| % Change | 5.71% | 5.86% | 5.60% |
| Cost per kWh Present | \$0.13608 | \$0.14102 | \$0.13269 |
| Cost per kWh Proposed | \$0.14385 | \$0.14928 | \$0.14012 |

| Industrial Time of Use | | | |
|------------------------|-------------|-------------|--------------|
| | Small | Medium | Large |
| Present | \$28,812.65 | \$57,583.75 | \$778,541.95 |
| Proposed | \$30,468.68 | \$60,735.90 | \$819,355.33 |
| Difference | \$1,656.03 | \$3,152.15 | \$40,813.38 |
| % Change | 5.75% | 5.47% | 5.24% |
| Cost per kWh Present | \$0.10834 | \$0.11761 | \$0.10508 |
| Cost per kWh Proposed | \$0.11406 | \$0.12405 | \$0.11059 |

| School Rate | | | |
|-----------------------|------------|-------------|-------------|
| | Small | Medium | Large |
| Present | \$3,938.81 | \$11,630.77 | \$24,843.82 |
| Proposed | \$4,137.59 | \$12,178.14 | \$26,009.41 |
| Difference | \$198.78 | \$547.37 | \$1,165.59 |
| % Change | 5.05% | 4.71% | 4.69% |
| Cost per kWh Present | \$0.12822 | \$0.12055 | \$0.12025 |
| Cost per kWh Proposed | \$0.13469 | \$0.12623 | \$0.12589 |

| Street Lights | | | | |
|-----------------------|------------|------------|---------------|------------|
| | Reading | Lynnfield | North Reading | Wilmington |
| Present | \$9,084.85 | \$3,453.63 | \$4,639.77 | \$9,284.82 |
| Proposed | \$9,691.16 | \$3,684.94 | \$4,948.51 | \$9,902.78 |
| Difference | \$606.31 | \$231.31 | \$308.74 | \$617.96 |
| % Change | 6.67% | 6.70% | 6.65% | 6.66% |
| Cost per kWh Present | \$0.12699 | \$0.12772 | \$0.12583 | \$0.12594 |
| Cost per kWh Proposed | \$0.13547 | \$0.13627 | \$0.13420 | \$0.13433 |

| Co-Op Resale | |
|-----------------------|-----------|
| | 500 kWh |
| Present | \$71.49 |
| Proposed | \$75.89 |
| Difference | \$4.40 |
| % Change | 6.15% |
| Cost per kWh Present | \$0.14298 |
| Cost per kWh Proposed | \$0.15178 |

Note: Proposed Rate Structure to Take Effect July 1, 2016. All Rate Classes Include the Fifteen Percent Prompt Payment Discount except Street Lights

Terms & Conditions

- Applicability – All Rate Classes
- Initiating Electric Service
- Installation of New Service and Service Connections
- Additional Service Requirements and Limitations
- Installation, Access, & Protection of RMLD's Equipment and Meters
- Additional Customer Responsibilities
- Rates, Charges and Billing
- Suspension or Termination of Service
- Limitations on Liability and Damages and Exclusions

Terms & Conditions

- RMLD's Electric Service Policy & Requirements Handbook – July 1, 2016
 - Benefit to customers, architects, engineers, municipal inspectors, employees and contractors
 - Provides a convenient reference as an informational guide
 - Improve communication and coordination
 - Handbook reflects RMLD's standard practices and procedures and does not necessarily address every requirement, limitation or particular situation.
 - Will be located on RMLD website (www.RMLD.com)

QUESTIONS And Answers



thank
you!

READING MUNICIPAL LIGHT DEPARTMENT

FY 2017 CAPITAL BUDGET

MARCH 31, 2016

Coleen O'Brien
General Manager

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| ⌘ Master Facilities Site Plan | 12 | 129 |
| <i>New Projects for FY17:</i> | | |
| ⌘ Carpet Upgrade – 230 Ash Street | 14 | TBD |
| ⌘ Control Center Modifications | 16 | TBD |
| ⌘ RMLD Lighting (LED) Upgrade Program | 18 | TBD |
| <i>Annual Projects:</i> | | |
| ⌘ Security Upgrades – All Sites | 20 | 119 |
| ⌘ Rolling Stock Replacement | 22 | 118 |

INTEGRATED RESOURCES

| | | |
|--|---------------|------------------|
| <i>Continuing Projects FY17:</i> | Page # | Project # |
| ⌘ Electric Vehicle Supply Equipment (EVSE) | 25 | 099 |

INFORMATION TECHNOLOGY

| | | |
|--------------------------------|---------------|------------------|
| <i>Annual Projects:</i> | Page # | Project # |
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SYSTEM

| | | |
|--|---------------|------------------|
| <i>Continuing Projects Update:</i> | Page # | Project # |
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New Projects for FY17:

| | Page # | Project # |
|--|--------|-----------|
| ⌘ New Wilmington Substation | 53 | TBD |
| ⌘ Station 4: 4W9 Getaway Replacement | 55 | TBD |
| ⌘ Station 4: Relay/SCADA Integration for Bus A&B | 57 | TBD |
| ⌘ Station 3: Relay Upgrades and SCADA Integration | 59 | TBD |
| ⌘ Analog Devices Cap Bank Upgrade | 61 | TBD |
| ⌘ Station 5: LTC Control Replacement | 63 | TBD |
| ⌘ Substation Grounding Equipment Upgrade | 65 | TBD |
| ⌘ Pad-mount Switchgear Upgrade at Industrial Parks | 67 | TBD |

Annual Projects:

| | Page # | Project # |
|---|--------|-----------|
| ⌘ Substation Equipment Upgrade | 69 | 111 |
| ⌘ Transformers and Capacitors | 71 | 116 |
| ⌘ Communication Equipment (Fiber Optic) | 73 | 126 |
| ⌘ Meters | 75 | 117 |
| ⌘ UG Facilities Upgrades (URDs, Manholes, etc.) – All Towns | 77 | 106 |
| ⌘ 13.8kV Upgrade (Step-down Areas, etc.) – All Towns | 79 | 107 |
| ⌘ New Service Installations | 81 | various |
| ⌘ Routine Construction | 83 | various |
| ⌘ AMI Mesh Network | 85 | TBD |

Reading Municipal Light Department

SYSTEM PROFILE

(based on FY15)

| | |
|---|--|
| SERVICE TERRITORY | 51 square miles serving Reading, North Reading, Wilmington and part of Lynnfield |
| TOTAL OPERATING REVENUES | \$85,005,786 |
| POWER PURCHASED | 706,159,454 kWh |
| NUMBER OF CUSTOMERS/ METERS SERVED | 29,482 |
| ANNUAL PEAK DEMAND | 156,283 kW on July 20, 2015 |
| ANNUAL SALES | 689,722,742 kWh |
| PLANT VALUE | \$132,759,000 (Gross) \$69,916,000 (Net) |
| SUPPLY VOLTAGE | 115 kV |
| SUPPLY CAPACITY | Station 4: (3) 60 MVA Transformers (2) 35 MVA Transformers – feeds Station 5 250 MVA Connected, 190 MVA Firm Station 3: (2) 60 MVA Transformers 120 MVA Connected, 60 MVA Firm |
| DISTRIBUTION SYSTEM VOLTAGE | 13,800 volt wye 4,160 volt wye |
| OVERHEAD PRIMARY LINES | All 335 miles |
| UNDERGROUND PRIMARY LINES | All 135 miles |
| DISTRIBUTION TRANSFORMERS | 3,992 transformers – 276.2 MVA Capacity |
| STATION TRANSFORMER CAPACITY | 370 MVA Capacity |
| UTILITY POLES | 17,237 poles <i>Ownership:</i> 50% Verizon, 50% RMLD <i>Custodial 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 | |
| | Great Plains/Cogsdale Windows Server 2012, 2008, Microsoft SQL Office 365 E3 ESRI GIS VMware Windows 7, 8, 8.1, 10 Sharepoint WindMil (in process) LightTable (in process) |

Capital Improvements FY17-21

ANTICIPATED COMPLETION FY16

\$ Shown in thousands

| | TOWN | PG # | PROJECT # | PROJECT NAME | Study Rec # | TOTAL ESTIMATED PROJECT COST | PROJECTED PROJECT VARIANCE | FY16 BUDGET | FY16 EST. | FY17 Plan Est. | FY18 | FY19 | FY20 | FY21 | BRIEF DESCRIPTION |
|----|------|------|-----------|--|-------------|------------------------------|----------------------------|-------------|-----------|----------------|------|-------|------|-------|---|
| F | A | 10 | 121 | HVAC System Upgrade - 230 Ash Street | | 1,273 | | 600 | 600 | 500 | 113 | | | | Replace boilers, chillers, air handling units, and building automation systems addressing air filtration and efficiency. |
| F | A | 12 | 129 | Master Facilities Site Plan | | 50 | | 150 | 0 | 50 | | | | | Town economic development plan impact. Master-hold. Evaluate maintenance only. |
| F | A | n/a | 124 | Rehabilitation of Station 1 - 226 Ash Street | | | | | | | | | | | Town economic development plan impact. Master-hold. Evaluate maintenance only. |
| F | A | n/a | 123 | Oil Containment Facility Construction | | 57 | | 59 | 57 | | | | | | Comprehensive study completed. Recommendations implemented. Updated SPCC. |
| F | A | n/a | 095 | 230 Ash Street Building Repairs | | 80 | | 80 | 80 | | | | | | Brick veneer over loading dock, insulation in lobby, deck structure. |
| F | R | n/a | 096 | Station 4 (Gaw) Back-up Generator | | 50 | | 107 | 50 | | | | | | Purchased and installed an emergency generator for Gaw Station 4. |
| F | A | n/a | 097 | HVAC Roof Units for Garage | | 50 | | 50 | 50 | | | | | | Roof top unit and duct work. |
| F | R | 14 | TBD | Carpet Upgrade -230 Ash Street | | 72 | | | | 72 | | | | | Upgrade worn carpet at 230 Ash Street building. Existing carpet was installed in 2000-2001. |
| F | R | 16 | TBD | Control Center Modifications | | 100 | | | | 100 | | | | | Modify the physical arrangement of the existing Control Center in order to meet grid mod-op. |
| F | R | 18 | TBD | RMLD Lighting (LED) Upgrade Program | | 50 | | | | 25 | 25 | | | | Upgrade Ash Street and other RMLD facilities including substations with new LED fixtures. Evaluate transformer. |
| F | A | 20 | 119 | Security Upgrades All Sites | | | | 50 | 50 | 5 | 5 | 5 | 5 | 5 | Access control, alarm monitoring, video and perimeter monitoring along the fence lines, cyber security. |
| F | A | 22 | 118 | Rolling Stock Replacement (vehicles, trailers fork trucks) | | | | 448 | 448 | 310 | 325 | 300 | 300 | 350 | Scheduled vehicle replacement based on Fleet Assessment. Monitor site/economic development impact to Fleet Assessment - hold. |
| IR | A | n/a | 098 | IRD - Hardware | | | | 10 | 0 | | | | | | Added to project 136 Voltage Data Recorders |
| IR | A | 25 | 099 | Electric Vehicle Supply Equipment (EVSE) | | 40 | | 50 | 0 | 10 | 10 | 10 | 10 | | One electric charging station per town in the service area. Research grant options. |
| M | A | n/a | 120 | Great Plains/Cogsdale Update | | 86 | | 127 | 29 | | | | | | Data conversion and upgrade to including software, hardware, training, consulting, and project management. |
| M | A | 28 | 127 | Hardware Upgrades | | | | 152 | 87 | 112 | 100 | 100 | 100 | 100 | General hardware purchases, wireless internal network configuration. |
| M | A | 30 | 128 | Software and Licensing | | | | 172 | 116 | 231 | 50 | 50 | 50 | 50 | Custom programing/development (OM/UAN/GIS/GPS), SpryPoint SSRS software. |
| SN | R | 33 | 108 | Relay Replacement -Station 4 (Gaw) | | 73 | | 73 | 0 | 49 | | | | | 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. |
| SN | NR | 35 | 130 | Remote Terminal Unit (RTU) Replacement - Station 3 | | 94 | | 94 | 55 | 39 | | | | | 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 | 37 | 125 | GIS | | 450 | | 420 | 90 | 360 | | | | | Current GIS model requires data integrity and quality inspection. Comprehensive data collection. |
| S | A | 39 | 131 | LED Street Light Implementation - All Towns | | 2,412 | | 1,200 | 804 | 804 | 804 | | | | Full implementation. On target. Price of lights reduced. |
| SN | A | 41 | 134 | Substation Test Equipment | | 110 | | 100 | 80 | 30 | | | | | Purchase of test equipment for substation and metering. |
| SN | R | 43 | 113 | Station 4: Battery Bank Upgrade | | 57 | | 57 | 40 | 17 | | | | | Replace battery bank. |
| S | A | 45 | 100 | Distributed Gas Generation - Pilot FY16-17 | | 2,920 | | 2,164 | 200 | 2,720 | 500 | 2,500 | 500 | 2,500 | Pilot DG gas peaking unit FY16/17. Alternate years solar/battery storage and gas. |
| S | A | 47 | 115 | Fault Indicators | | 50 | | 50 | 25 | 25 | | | | | Fault indicators to aid in fault locating. |
| S | A | 49 | 136 | Voltage Data Recorders | | 60 | | 50 | 35 | 25 | | | | | Voltage data and load logger required for voltage assessment and verification of energy efficiency commercial rebates. Project 098 IRD Hardware added to this item. |
| S | A | 51 | 103 | Grid Modernization and Optimization | | 993 | | 70 | 141 | 284 | 478 | | | | Implement technology road map for grid efficiency, reduction of losses, etc. |
| S | A | n/a | TBD | Grid Modernization and Optimization Expansion | | | | | | | | 356 | 392 | 422 | Installation of reclosers on feeders for fault isolation and installing capacitor controls for various cap banks on the system. |

READING MUNICIPAL LIGHT DEPARTMENT
Capital Improvements FY17-21

\$ Shown in thousands

| | TOWN | PG # | PROJECT # | PROJECT NAME | Study Rec # | TOTAL ESTIMATED PROJECT COST | PROJECTED PROJECT VARIANCE | FY16 BUDGET | FY16 EST. | FY17 Plan Est. | FY18 | FY19 | FY20 | FY21 | BRIEF DESCRIPTION |
|----|------|------|-----------|---|-------------|------------------------------|----------------------------|-------------|-----------|----------------|-------|-------|-------|-------|--|
| S | L | n/a | 104 | Upgrading of Old Lynnfield Center URDS (Cook's Farm) | | 550 | 140 | 42 | 300 | | | | | | Upgrade for reliability and to meet construction standards. |
| S | R | n/a | 212 | Force Account West Street, Reading | | 223 | | 150 | 145 | | | | | | Reconstruction of West Street, R. (State project). |
| S | W | n/a | 102 | Pole Line Upgrade - Lowell Street, Wilmington | | 352 | 69 | 113 | 147 | | | | | | 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. |
| SN | R | n/a | 109 | Station 4 (Gaw) 35kv Potential Transformer Replacement | | 41 | | 41 | 41 | | | | | | Replace six 30+ -years-old transformers. |
| SN | R | n/a | 112 | Station 4: Switchgear/Breaker Replacement | | 601 | | 508 | 601 | | | | | | Replace existing switchgears/breakers. |
| S | A | n/a | 114 | Fiber Optic Test Equipment | | 15 | | 15 | 10 | | | | | | Fiber optic testing equipment to locate and diagnose problems on network. |
| S | A | n/a | 122 | Engineering Analysis Software & Data Conversion | | 73 | | 73 | 73 | | | | | | Milsoft Engineering. |
| S | R | n/a | 105 | 4W5-4W6 Tie | | 105 | | | 105 | | | | | | 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 | W | 53 | TBD | New Wilmington Substation | B25 | 5,250 | | | | 250 | 3,000 | 1,600 | 200 | 200 | Planning and securing land and licensing will begin in FY17. |
| S | R | 55 | TBD | 4W9 Getaway Replacement - Station 4 | | 235 | | | | 235 | | | | | Upgrade 2,850 circuit feet of UG cable on Causeway Road and Lowell Street, R, with 750 mcm cu for increased reliability and capacity. |
| SN | R | 57 | TBD | Station 4: Relay/SCADA Integration for Bus A&B | | 0 | | | | 70 | | | | | Replace electromechanical relays with solid state relays to bring more data into SCADA. |
| SN | NR | 59 | TBD | Station 3: Relay Upgrades and SCADA Integration | | 252 | | | | 252 | | | | | Upgrade SEL 351 relays to SEL 351-7 to enhance data delivery to SCADA. |
| SN | A | 61 | TBD | Analog Devices Cap Bank Upgrade | B34 | 54 | | | | 54 | | | | | Replace 360 Kvar Cap bank and upgrade bushing inserts from 200 Amp to 600 Amp |
| SN | A | 63 | TBD | Station 5: LTC Control Replacement | | 42 | | | | 42 | | | | | Upgrade LTC control with newer or solid state controls. |
| SN | A | 65 | TBD | Substation Grounding Equipment Upgrade (all stations) | | 21 | | | | 21 | | | | | Upgrade personal protective grounding equipment. |
| SP | W | 67 | TBD | Pad-mount Switchgear Upgrade at Industrial Parks | | 1,216 | | | | 195 | 195 | 195 | 195 | 195 | Replace all 15kV pad mount switchgears at River Park and Analog Devices, etc. at total of 3-4/year. |
| SN | A | 69 | 111 | Substation Equipment Upgrade | | | | 254 | 192 | 75 | 50 | 50 | 50 | 50 | Upgrade various equipment at substations to include TLC controls, remote racking devices, |
| S | A | 71 | 116 | Transformers and Capacitors | | | | 668 | 660 | 668 | 300 | 300 | 300 | 300 | Purchase of units for stock and proposed projects. |
| S | A | 73 | 126 | Communication Equipment (Fiber Optic) | | | | 98 | 17 | 69 | 50 | 50 | 50 | 50 | Materials to accommodate expanded use of fiber optic network for Distribution Automation and Eaton AMI system. |
| SN | A | 75 | 117 | Meters | B5 | | | 219 | 140 | 80 | 50 | 50 | 50 | 50 | Purchase meters for stock. Materials for meter upgrades to AMI mesh. |
| S | A | 77 | 106 | UG Facilities Upgrades (URDs, Manholes, etc.) - All Towns | | | | 340 | 5 | 150 | 150 | 150 | 150 | 150 | Replace primary and neutral cables and pad mount transformers as needed in various aging URDs. Improved reliability. |
| S | A | 79 | 107 | 13.8kV Upgrade (Step-down Area, etc.) - All Towns | B28 | | | 352 | 50 | 106 | 130 | 100 | 130 | 100 | Convert areas to 13.8kV, remove antiquated equipment and step-downs to lower losses and improve system efficiency. |
| S | A | | various | New Service Installations (Commercial/Industrial) | | | | 34 | 0 | | | | | | Rolled into new service below. |
| S | A | 81 | various | New Service Installations | | | | 164 | 135 | 140 | 160 | 160 | 160 | 160 | Install new and upgraded residential and commercial services as requested. |
| S | A | 83 | various | Routine Construction | | | | 1,000 | 1,568 | 1,013 | 1,000 | 1,000 | 1,000 | 1,000 | Non-project capital including labor, pole sets, transfers, UG, police details, and OT. |
| SN | A | 85 | TBD | AMI Mesh Network Expansion | | | | | | 220 | 50 | 80 | 80 | 80 | Retrofit 500 meters for the AMI mesh network. |
| S | W | | 110 | Pole Line Upgrade - Woburn Street, Wilmington | | 100 | | 91 | 0 | | 50 | 50 | | | 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 | W | | TBD | Station 5- Getaway Replacements, 5W4, 5W5, 5W8 | | | | | | | 50 | 50 | | | Upgrade feeders from substation to risers to increase feeders' Ampacity. |
| S | W | | 101 | 5W9 Reconductoring - Ballardvale Area, Wilmington | | 630 | | 100 | 0 | | 150 | 200 | | | Upgrade to 795 spacer for capacity feeding Ballardvale area (Target). |
| S | R | | TBD | Upgrade 4W24 to 795 | B26 | | | | | | 225 | 225 | | | Upgrade main feeder of Circuit 4W24 to 795 to address voltage and conductor capacity issues (1.5 miles) |
| S | R | | TBD | Upgrade 4W23 to 795 | B37 | | | | | | | | 60 | 165 | Upgrade main feeder to Circuit 4W23 to 795 to address voltage and conductor capacity issues (1.1 miles) |

READING MUNICIPAL LIGHT DEPARTMENT

Capital Improvements FY17-21

\$ Shown in thousands

| | TOWN | PG # | PROJECT # | PROJECT NAME | Study Rec # | TOTAL ESTIMATED PROJECT COST | PROJECTED PROJECT VARIANCE | FY16 BUDGET | FY16 EST. | FY17 Plan Est. | FY18 | FY19 | FY20 | FY21 | BRIEF DESCRIPTION |
|---|------|------|-----------|--|-------------|------------------------------|----------------------------|-------------------------------------|-----------|----------------|---------|---------|---------|---------|---|
| 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 | B24 | | | | | | 214 | 214 | 214 | | Upgrade 25,000 circuit feet of 336 spacer cable on Wildwood, Woburn, and Andover Streets to 795 spacer cable. |
| 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. |
| TOTAL | | | | | | | 208 | 10,596 | 7,227 | 9,406 | 8,659 | 8,272 | 4,239 | 5,927 | |
| TABLE 1: PLANT VALUES & DEPRECIATION EXPENSE | | | | | | | | | | | | | | | |
| | | | | | | | | 134,038 | 132,759 | 138,986 | 147,392 | 155,051 | 162,322 | 165,561 | |
| Plant in Service (Beginning) | | | | | | | | 10,596 | 7,227 | 9,406 | 8,659 | 8,272 | 4,239 | 5,927 | |
| Additions | | | | | | | | -1,000 | -1,000 | -1,000 | -1,000 | -1,000 | -1,000 | -1,000 | |
| Adjustments (Property Retirement) | | | | | | | | 143,634 | 138,986 | 147,392 | 155,051 | 162,322 | 165,561 | 170,488 | |
| Plant in Service (Ending) | | | | | | | | -1,266 | -1,266 | -1,266 | -1,266 | -1,266 | -1,266 | -1,266 | |
| Less Land and Land Rights | | | | | | | | 142,368 | 137,720 | 146,126 | 153,785 | 161,056 | 164,295 | 169,222 | |
| Depreciable Plant in Service | | | | | | | | -68,694 | -66,788 | -70,919 | -75,303 | -79,917 | -84,748 | -89,677 | |
| Accumulated Reserve For Depreciation | | | | | | | | 74,940 | 72,198 | 76,473 | 79,748 | 82,406 | 80,813 | 80,810 | |
| Net Plant in Service | | | | | | | | 8% | 8% | 8% | 8% | 8% | 8% | 8% | |
| Maximum allowed Return on Net Plant (%) | | | | | | | | 5,995 | 5,776 | 6,118 | 6,380 | 6,592 | 6,465 | 6,465 | |
| Maximum allowed Return on Net Plant (\$) | | | | | | | | TABLE 2: DEPRECIATION FUND BALANCES | | | | | | | |
| Beginning Balance | | | | | | | | 5,015 | 6,834 | 4,820 | 593 | 324 | 169 | 1,764 | |
| Interest Earned* | | | | | | | | 50 | 68 | 48 | 6 | 3 | 2 | 18 | |
| Depreciation Rate (3-5%) | | | | | | | | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | |
| Depreciation Expense | | | | | | | | 3,983 | 3,945 | 4,132 | 4,384 | 4,614 | 4,832 | 4,929 | |
| Bond Proceeds and Other Fund Sources | | | | | | | | 257 | 200 | 0 | 3,000 | 2,500 | 0 | 0 | |
| Prior Year Adjustment | | | | | | | | 4,364 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | |
| | | | | | | | | 13,669 | 12,047 | 10,000 | 8,983 | 8,441 | 6,003 | 7,711 | |
| Capital Improvements | | | | | | | | -10,596 | -7,227 | -9,406 | -8,659 | -8,272 | -4,239 | -5,927 | |
| Principal Payment | | | | | | | | 3,073 | 4,820 | 593 | 324 | 169 | 1,764 | 1,784 | |
| Ending Balance | | | | | | | | * 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 | | | | | | | | 150 | 200 | | | | | | |
| DOER - ENE Grant (LED Credit) | | | | | | | | 107 | | | | | | | |
| Bond Proceeds for LED Street Lights | | | | | | | | | | | | | | | |
| Bond Proceeds for Distributed Generation | | | | | | | | | | | | 2,500 | | | |
| Bond Proceeds for New Substation - Wilmington | | | | | | | | 0 | | | 3,000 | | | | |
| | | | | | | | | 257 | 200 | 0 | 3,000 | 2,500 | 0 | 0 | |

FACILITIES MANAGEMENT

CAPITAL PROJECT SUMMARY

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

Project Schedule: FY15-18 **Project Manager:** Paul McGonagle,
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:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

None.

Status Update:

The HVAC work for FY15 and FY16 is complete. The remaining scopes of work are still on schedule to be designed and constructed. The projected costs are still valid.

FISCAL YEAR 2017 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 | | | | | | |
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| | Unit Cost | | | | | | |
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| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |

TOTAL \$1,273,000

TOTAL ESTIMATED PROJECT COST: \$1,273,000

| | | |
|------|--------------|-----------|
| FY15 | 5% Actual | \$60,252 |
| FY16 | 47% Estimate | \$600,000 |
| FY17 | 39% Estimate | \$500,000 |
| FY18 | 9% Estimate | \$112,748 |

CAPITAL PROJECT SUMMARY

Project Name: Master Facilities Site Plan - Hold **Project #:** 129

Project Schedule: FY17 **Project Manager:** Paul McGonagle, Facilities Manager

Reason for Expenditure:

The Master Facilities Site Plan will begin in FY17, finalizing options and creating bid documents to begin addressing building use and storage allocation requirements. The final plan will also include any demand reduction (solar, etc.) 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:

See Status Update.

Change in Scope of Work From Prior Fiscal Year:

None.

Status Update:

This project is on hold and is impacted by the Reading Economic Development Plan.

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Master Facilities Site Plan

SCHEDULE: FY17

PROJECT #: 129

| ITEM | CREW WEEKS 2-man | RMLD CREW LABOR COST | RMLD CREW VEHICLE COST | OTHER LABOR | OTHER VEHICLE | NEW MATERIAL & MISC | TOTAL |
|-------|------------------------|-------------------------------|---------------------------------|----------------|------------------|---------------------------|----------|
| | | | | | | \$50,000 | \$50,000 |
| | Unit Cost | | | | | | |
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| | Unit Cost | | | | | | |
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| | Unit Cost | | | | | | |
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| | Unit Cost | | | | | | |
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| | Unit Cost | | | | | | |
| TOTAL | | | | | | \$50,000 | |

| | |
|--------------------------------------|-----------------|
| TOTAL ESTIMATED PROJECT COST: | \$50,000 |
|--------------------------------------|-----------------|

CAPITAL PROJECT SUMMARY

Project Name: Carpet Upgrade – 230 Ash Street

Project #: TBD

Project Schedule: FY17

Project Manager: Paul McGonagle,
Facilities Manager

Reason for Expenditure:

Upgrade carpet in the office/operations building. Existing carpet was installed in 2000-2001 and needs to be replaced. The carpet is worn and has demonstrated to be hazardous in many areas. The average lifespan of carpeting is 6-9 years.

Brief Description/Scope:

Determine carpet/pad choice. The total carpeted area is 8,000 square feet. Develop a schedule to replace the carpet.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Carpet Upgrade - 230 Ash Street

SCHEDULE: FY17

PROJECT #: TBD

| ITEM | CREW WEEKS | RMLD CREW LABOR COST | RMLD CREW VEHICLE COST | OTHER LABOR | OTHER VEHICLE | NEW MATERIAL & MISC | TOTAL |
|--------------------------|---------------|-------------------------------|---------------------------------|----------------|------------------|---------------------------|----------|
| Replace carpet. | | | | \$11,653.25 | | \$60,000 | \$71,653 |
| 4 weeks Facilities Staff | Unit Cost | | | \$2,913 | | \$60,000 | |
| | Unit Cost | | | | | | |
| | Unit Cost | | | | | | |
| | Unit Cost | | | | | | |
| | Unit Cost | | | | | | |
| | Unit Cost | | | | | | |

TOTAL \$60,000

TOTAL ESTIMATED PROJECT COST: \$71,653

CAPITAL PROJECT SUMMARY

Project Name: Control Center Modifications

Project #: TBD

Project Schedule: FY17

Project Manager: Paul McGonagle,
Facilities Manager

Reason for Expenditure:

Modify the physical arrangement of the existing Control Center in order to improve operating conditions during emergencies and outages. This modification will include increasing the room size and installing state-of-the-art technology.

Brief Description/Scope:

An architect will engineer and design the space and develop specifications and construction drawings. A general contractor will perform the necessary construction. MIS will develop a specification for the new technology and equipment. All building elements such as HVAC, fire protection, electrical, walls and floors, and furniture, fixtures, and equipment will be impacted.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Control Center Modifications

SCHEDULE: FY17

PROJECT #: TBD

| ITEM | CREW WEEKS | RMLD CREW LABOR COST | RMLD CREW VEHICLE COST | OTHER LABOR | OTHER VEHICLE | NEW MATERIAL & MISC | TOTAL |
|------|---------------|-------------------------------|---------------------------------|----------------|------------------|---------------------------|-------|
|------|---------------|-------------------------------|---------------------------------|----------------|------------------|---------------------------|-------|

| | | | |
|--------------------|--|----------|----------|
| Contractor: | | \$10,000 | \$10,000 |
|--------------------|--|----------|----------|

Firm to design modifications
for the Control Center.

| | | |
|-----------|--|----------|
| Unit Cost | | \$10,000 |
|-----------|--|----------|

| | | | |
|----------------------------|--|----------|----------|
| General Contractor: | | \$70,000 | \$70,000 |
|----------------------------|--|----------|----------|

Construction of walls,
flooring, ceiling, fire alarm
and sprinklers and HVAC

| | | |
|-----------|--|----------|
| Unit Cost | | \$70,000 |
|-----------|--|----------|

| | | | |
|-----------|--|----------|----------|
| Furniture | | \$10,000 | \$10,000 |
|-----------|--|----------|----------|

| | | |
|-----------|--|--|
| Unit Cost | | |
|-----------|--|--|

| | | | |
|---|--|----------|----------|
| Technical equipment including monitors and CPU's | | \$10,000 | \$10,000 |
|---|--|----------|----------|

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| Unit Cost | | |
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| Unit Cost | | |
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| Unit Cost | | |
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| TOTAL | | \$100,000 |
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| TOTAL ESTIMATED PROJECT COST: | \$100,000 |
|--------------------------------------|------------------|

CAPITAL PROJECT SUMMARY

Project Name: RMLD Lighting (LED) Upgrade Program

Project #: TBD

Project Schedule: FY17-18

Project Manager: Paul McGonagle,
Facilities Manager

Reason for Expenditure:

Upgrade the existing lighting at 230 Ash Street, 218 Ash Street, and the substations with new LED fixtures. Energy use will significantly be reduced when switching to LED.

Brief Description/Scope:

FY17 At 230 Ash Street, replace the existing light fixtures mounted in the drop ceiling with new LED retrofit fixtures.

FY18 Replace existing exterior light fixtures (at the Ash Street campus), fixtures in the garage, including the offices and bay area, and lighting at the substations.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: RMLD Lighting (LED) Upgrade Program

SCHEDULE: FY17-18

PROJECT #: TBD

| ITEM | CREW WEEKS | RMLD CREW LABOR COST | RMLD CREW VEHICLE COST | OTHER LABOR | OTHER VEHICLE | NEW MATERIAL & MISC | TOTAL |
|------|---------------|-------------------------------|---------------------------------|----------------|------------------|---------------------------|-------|
|------|---------------|-------------------------------|---------------------------------|----------------|------------------|---------------------------|-------|

| | | | | | | | |
|--|--|--|--|--|--|----------|----------|
| Purchase and Replace: Facility lighting at the Ash Street office building, garage, high bay, and substations | | | | | | \$50,000 | \$50,000 |
|--|--|--|--|--|--|----------|----------|

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| Unit Cost | | | | | | | |

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| Unit Cost | | | | | | | |

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| TOTAL | | \$50,000 |
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| TOTAL ESTIMATED PROJECT COST: | \$50,000 |
|-------------------------------|----------|

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|---------------|----------|
| FY17 Estimate | \$25,000 |
| FY18 Estimate | \$25,000 |

CAPITAL PROJECT SUMMARY

Project Name: Security Upgrades – All Sites

Project #: 119

Project Schedule: Annual

Project Manager: Paul McGonagle,
Facilities Manager

Reason for Expenditure:

On-going security enhancements at our substations and other owned and leased facilities are made as required.

Brief Description/Scope:

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

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

None.

Status Update:

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Security Upgrades - All Sites

SCHEDULE: FY17

PROJECT #: 119

| ITEM | CREW WEEKS 2-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. | | | | | | \$5,000 | \$5,000 |
| Unit Cost | | | | | | | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| | | | | | | | |
| | | | | | | | |

TOTAL

\$5,000

TOTAL ESTIMATED PROJECT COST: \$5,000

CAPITAL PROJECT SUMMARY

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

Project #: 118

Project Schedule: Annual

Project Manager: Paul McGonagle,
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:

Purchase the following vehicles:

- (1) SUV including trade-in of a 2005 Toyota Prius
- (1) material handler including trade-in of a 2006 material handler
- (1) multi-purpose utility trailer including trade-in of two 1957 reel cable/utility trailers

Barriers:

None anticipated at this time.

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

n/a

Status Update:

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Rolling Stock Replacement

SCHEDULE: FY17

PROJECT #: 118

| ITEM | CREW WEEKS | RMLD CREW LABOR COST | RMLD CREW VEHICLE COST | OTHER LABOR | OTHER VEHICLE | NEW MATERIAL & MISC | TOTAL |
|------|---------------|-------------------------------|---------------------------------|----------------|------------------|---------------------------|-------|
|------|---------------|-------------------------------|---------------------------------|----------------|------------------|---------------------------|-------|

| | | | | | | | |
|--|--|--|--|--|--|-----------------------|-----------|
| Purchase one (1) new light duty SUV. | | | | | | \$35,000 | \$35,000 |
| Unit Cost | | | | | | \$35,000 per vehicle | |
| Purchase one (1) new trailer. | | | | | | \$25,000 | \$25,000 |
| Unit Cost | | | | | | \$25,000 per vehicle | |
| Purchase one (1) new material handler. | | | | | | \$250,000 | \$250,000 |
| Unit Cost | | | | | | \$250,000 per vehicle | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| | | | | | | | |
| Unit Cost | | | | | | | |

TOTAL \$310,000

TOTAL ESTIMATED PROJECT COST: \$310,000

INTEGRATED RESOURCES

CAPITAL PROJECT SUMMARY

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

Project Schedule: FY17-20 **Project Manager:** Jane Parenteau, Director of Integrated Resources

Reason for Expenditure:

RMLD anticipates installing four EVSEs over the next four years (one in each of the four towns in the service territory). This will increase RMLD's kWh sales.

Brief Description/Scope:

Each EVSE is a dual charger. RMLD will work with each town to determine interest in locating a unit within the town and the appropriate location.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Electric Vehicle Supply Equipment (EVSE)

SCHEDULE: FY16-20

PROJECT #: 099

| ITEM | CREW WEEKS | RMLD CREW LABOR COST | RMLD CREW VEHICLE COST | OTHER LABOR | OTHER VEHICLE | MATERIAL & MISC | TOTAL |
|------|---------------|-------------------------------|---------------------------------|----------------|------------------|--------------------|-------|
|------|---------------|-------------------------------|---------------------------------|----------------|------------------|--------------------|-------|

| | | | | | | | |
|--|--|--|--|--|--|---------------|----------|
| Purchase four EVSE for installation in RMLD service territory. | | | | | | \$40,000 | \$40,000 |
| Unit Cost | | | | | | \$10,000 each | |

| | | | | | | | |
|-----------|--|--|--|--|--|--|-----|
| | | | | | | | \$0 |
| Unit Cost | | | | | | | |

| | | | | | | | |
|-----------|--|--|--|--|--|--|-----|
| | | | | | | | \$0 |
| Unit Cost | | | | | | | |

| | | | | | | | |
|-----------|--|--|--|--|--|--|-----|
| | | | | | | | \$0 |
| Unit Cost | | | | | | | |

| | | | | | | | |
|-----------|--|--|--|--|--|--|-----|
| | | | | | | | \$0 |
| Unit Cost | | | | | | | |

| | | | | | | | |
|-----------|--|--|--|--|--|--|-----|
| | | | | | | | \$0 |
| Unit Cost | | | | | | | |

| | | | | | | |
|-------|-----|---|-----|-----|-----|----------|
| TOTAL | 0.0 | 0 | \$0 | \$0 | \$0 | \$40,000 |
|-------|-----|---|-----|-----|-----|----------|

| | |
|--------------------------------------|-----------------|
| TOTAL ESTIMATED PROJECT COST: | \$40,000 |
|--------------------------------------|-----------------|

| | |
|---------------|----------|
| FY16 Estimate | \$0 |
| FY17 Estimate | \$10,000 |
| FY18 Estimate | \$10,000 |
| FY19 Estimate | \$10,000 |
| FY20 Estimate | \$10,000 |

INFORMATION TECHNOLOGY

CAPITAL PROJECT SUMMARY

Project Name: Hardware Upgrades

Project #: 127

Project Schedule: Annual

Project Manager: Mark Uvanni, IT Manager

Reason for Expenditure:

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

Brief Description/Scope:

General hardware purchases plus we will commence with the internal network build-out. Also added hardware for GIS (mapping) external site to sit in a DMZ for field access and updates by employees.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Hardware Upgrades

SCHEDULE: FY17

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 network. | | | | | | \$40,000 | \$40,000 |
| | Unit Cost | | | | | | |
| c) GIS | | | | | | \$25,000 | \$25,000 |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |

TOTAL \$7,065 \$105,000

TOTAL ESTIMATED PROJECT COST: \$112,065

CAPITAL PROJECT SUMMARY

Project Name: Software and Licensing

Project #: 128

Project Schedule: Annual

Project Manager: Mark Uvanni, IT Manager

Reason for Expenditure:

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

Brief Description/Scope:

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

- Custom programming/development for OM/UAN/GIS/GPS
- SpryPoint SSRS Software
- Itron MVRs Upgrade to 5.2
- Integrated Work Order Management System

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Software and Licensing

SCHEDULE: FY17

PROJECT #: 128

| | | 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 | | | \$5,375 | | \$25,000 | \$30,375 |
| | 1.75 week(s) Network/System Administration | Unit Cost | | \$3,072 | | | |
| c) | Custom programming/development OM/UAN/GIS/CPS | | | | | \$34,000 | \$34,000 |
| | | Unit Cost | | | | per week | |
| d) | Itron Upgrade | | | | | \$80,000 | \$80,000 |
| e) | Integrated Work Management System | | | | | \$50,000 | \$50,000 |
| | | Unit Cost | | | | | |
| | | | | | | | |
| | | Unit Cost | | | | | |
| | | | | | | | |
| | | Unit Cost | | | | | |
| TOTAL | | | | \$11,519 | | \$219,000 | |
| TOTAL ESTIMATED PROJECT COST: | | | | | | | \$230,519 |

SYSTEM

CAPITAL PROJECT SUMMARY

Project Name: Relay Replacement - Station 4 (Gaw)

Project #: 108

Project Schedule: FY15-17

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 downloading and evaluating.

Brief Description/Scope:

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

Barriers:

Materials were delayed.

Change in Scope of Work From Prior Fiscal Year:

None

Status Update:

All materials are anticipated to be received in early June 2016. Construction will commence in mid-June.

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Station 4: Relay Replacement

SCHEDULE: FY15-17

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) | | | | \$63,601 | \$504 | | \$64,105 |
|--|--|--|--|----------|-------|--|----------|

| | | | | | | | |
|------------|--|--|--|---------|------|----------|--|
| 12 week(s) | | | | \$5,300 | \$42 | per week | |
|------------|--|--|--|---------|------|----------|--|

| | | | | | | | |
|---|--|--|--|----------|-------|--|----------|
| Labor: Technical Services Manager | | | | \$34,966 | \$189 | | \$35,155 |
|---|--|--|--|----------|-------|--|----------|

| | | | | | | | |
|-----------|--|--|--|---------|------|----------|--|
| 9 week(s) | | | | \$3,885 | \$21 | per week | |
|-----------|--|--|--|---------|------|----------|--|

| | | | | | | | |
|---|--|--|--|--|--|----------|----------|
| 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. | |
|-----------|--|--|--|--|--|------------------|--|

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|--|--|--|--|--|--|--|--|

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|-----------|--|--|--|--|--|--|--|
| Unit Cost | | | | | | | |
|-----------|--|--|--|--|--|--|--|

| | | | | | | | |
|--------------------------------|--|--|--|--|--|--|--|
| Police Details (if applicable) | | | | | | | |
|--------------------------------|--|--|--|--|--|--|--|

| | | | | | | | |
|-----------|--|--|--|--|--|--|--|
| Unit Cost | | | | | | | |
|-----------|--|--|--|--|--|--|--|

| | | | | | | | |
|--------------|--|--|--|----------|-------|----------|--|
| TOTAL | | | | \$98,567 | \$693 | \$23,000 | |
|--------------|--|--|--|----------|-------|----------|--|

| | |
|--------------------------------------|------------------|
| TOTAL ESTIMATED PROJECT COST: | \$122,260 |
|--------------------------------------|------------------|

| | | | | | |
|------|-----|----------|-------------|--|--|
| FY15 | 0% | Actual | | | |
| FY16 | 60% | Estimate | \$73,356.07 | | |
| FY17 | 40% | Estimate | \$48,904.04 | | |

CAPITAL PROJECT SUMMARY

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

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

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:

n/a

Status Update:

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: RTU Replacement - Station 3

SCHEDULE: FY16-17

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) | | | | \$15,900 | \$126 | | \$16,026 |
| 3 week(s) | Unit Cost | | | \$5,300 | \$42 | per week | |
| | | | | | | | |
| Labor: Technical Services Manager | | | | \$11,655 | \$63 | | \$11,718 |
| 3 week(s) | Unit Cost | | | \$3,885 | \$21 | per week | |
| | | | | | | | |
| Labor: Engineering | | | | \$11,523 | \$63 | | \$11,586 |
| 3 week(s) | Unit Cost | | | \$3,841 | \$21 | per week | |

TOTAL

| | | | |
|--|----------|-------|----------|
| | \$39,078 | \$252 | \$55,000 |
|--|----------|-------|----------|

TOTAL ESTIMATED PROJECT COST: \$94,330

| | | | |
|------|--------------|----|--------|
| FY16 | 58% Estimate | \$ | 55,000 |
| FY17 | 42% Estimate | \$ | 39,330 |

CAPITAL PROJECT SUMMARY

Project Name: GIS Upgrade

Project #: 125

Project Schedule: FY15-17

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:

None.

Status Update:

It is anticipated that 20% of this project will be completed by the end of FY16.

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: GIS

SCHEDULE: FY15-17

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 | 0% Actual | |
| FY16 | 20% Estimate | \$90,000 |
| FY17 | 80% Estimate | \$360,000 |

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 conducted an LED Street Light Pilot Program, which allowed 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 was completed, we began 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:

None.

Status Update:

We are on target to have approximately 2,450 street lights replaced for FY16.

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: LED Street Light Implementation

SCHEDULE: FY16-18

PROJECT #: 131

| ITEM | CREW WEEKS 2-Man | RMLD CREW LABOR COST | RMLD CREW VEHICLE COST | OTHER LABOR | OTHER VEHICLE | NEW MATERIAL & MISC | TOTAL |
|---|------------------------|-------------------------------|---------------------------------|----------------|------------------|---------------------------|-------------|
| Conversion Program | 51 | \$307,465 | \$46,920 | | | \$1,423,400 | \$1,777,785 |
| Purchase and install 8000 LED light fixtures | | | | | | | |
| Unit Cost | | \$6,029 | \$920 | | | \$178 see box at left | |
| Purchase and install 800 LED flood lights. | 6 | \$36,172 | \$5,520 | | | \$526,020 | \$567,712 |
| Unit Cost | | \$6,029 | \$920 | | | \$658 see box at left | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| Police Details: | | | | \$66,713 | | | \$66,713 |
| 30 week(s) | | | | | | | |
| Unit Cost | | | | \$2,224 | | | |

Total RMLD Crew Weeks: 57

| | | | | |
|--------------|------------------|-----------------|-----------------|--------------------|
| TOTAL | <u>\$343,637</u> | <u>\$52,440</u> | <u>\$66,713</u> | <u>\$1,949,420</u> |
|--------------|------------------|-----------------|-----------------|--------------------|

TOTAL ESTIMATED PROJECT COST: \$2,412,211

| | | |
|------|--------------|-----------|
| FY16 | 33% Estimate | \$804,070 |
| FY17 | 33% Estimate | \$804,070 |
| FY18 | 33% Estimate | \$804,070 |

CAPITAL PROJECT SUMMARY

Project Name: Substation Test Equipment

Project #: 134

Project Schedule: FY17

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 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Substation Test Equipment

SCHEDULE: FY17

PROJECT #: 134

| ITEM | CREW WEEKS | RMLD CREW LABOR COST | RMLD CREW VEHICLE COST | OTHER LABOR | OTHER VEHICLE | MATERIAL & MISC | TOTAL |
|------|---------------|-------------------------------|---------------------------------|----------------|------------------|--------------------|-------|
|------|---------------|-------------------------------|---------------------------------|----------------|------------------|--------------------|-------|

| | | | | | | | |
|-------------------------------------|-----------|--|--|--|--|----------|----------|
| Purchase of various test equipment. | | | | | | \$30,000 | \$30,000 |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |

| | | | | | | |
|-------|-----|---|-----|-----|-----|----------|
| TOTAL | 0.0 | 0 | \$0 | \$0 | \$0 | \$30,000 |
|-------|-----|---|-----|-----|-----|----------|

TOTAL ESTIMATED PROJECT COST: \$30,000

CAPITAL PROJECT SUMMARY

Project Name: Station 4: Battery Bank Upgrade

Project #: 113

Project Schedule: FY16-17 **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:

None.

Status Update From Prior Fiscal Year:

The battery bank will be purchased in June 2016 and installed early FY17.

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Station 4: Battery Bank Upgrade

SCHEDULE: FY16-17

PROJECT #: 113

| 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) | | | | \$10,600 | \$84 | | \$10,684 |
| 2 week(s) | | | | \$5,300 | \$42 | per week | |
| Unit Cost | | | | | | | |
| Labor: Technical Services Manager | | | | \$3,885 | \$21 | | \$3,906 |
| 1 week(s) | | | | \$3,885 | \$21 | per week | |
| Unit Cost | | | | | | | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| TOTAL | | | | \$14,485 | \$105 | \$42,200 | |

| | |
|--------------------------------------|-----------------|
| TOTAL ESTIMATED PROJECT COST: | \$56,790 |
|--------------------------------------|-----------------|

| | | |
|------|--------------|----------|
| FY16 | 70% Estimate | \$39,753 |
| FY17 | 30% Estimate | \$17,037 |

CAPITAL PROJECT SUMMARY

Project Name: Distributed Gas Generation Pilot

Project #: 100

Project Schedule: FY16-17

Project Manager: Hamid Jaffari, Director of
Engineering & Operations
Peter Price, Chief Engineer

Reason for Expenditure:

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

Brief Description/Scope:

RMLD is exploring an opportunity to install a 2 to 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 customers. Generating power on-site eliminates the cost, complexity, interdependencies, and inefficiencies associated with transmission and distribution. These credits are expected to increase substantially starting in 2017, which makes the return of investment (ROI) four to five years.

Barriers:

Securing a site and permitting.

Change in Scope of Work from Prior Fiscal Year:

n/a

Status Update:

We have completed the environmental and geotechnical testing and noise study. Next, we will meet with Town of N. Reading Building Inspector for permitting process.

FISCAL 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: 2 to 2.5 MW Distributed Generator

SCHEDULE: FY16-17

PROJECT #: 100

| ITEM | CREW WEEKS 2-man | RMLD CREW LABOR COST | RMLD CREW VEHICLE COST | OTHER LABOR | OTHER VEHICLE | MATERIAL & MISC | TOTAL |
|---|------------------------|-------------------------------|---------------------------------|----------------|------------------|--------------------|-------------|
| 2 to 2.5 MW Generator | | | | | | \$2,435,000 | \$2,435,000 |
| Unit Cost | | | | | | \$2,435,000 | |
| Engineering and Design | | | | | | \$20,000 | \$20,000 |
| Permitting and Legal Services | | | | | | \$15,000 | \$15,000 |
| Installation and Implementation. | | | | | | | |
| RMLD Labor | | | | | | | |
| Line Crews | 8 | \$48,230 | \$7,360 | | | | \$55,590 |
| Unit Cost | | \$6,029 | \$920 | | | per week | |
| 2 weeks Sr. Techs (2-man crew) | | | | \$10,600 | \$84 | | \$10,684 |
| Unit Cost | | | | \$5,300 | \$42 | per week | |
| 2 weeks Tech Svs Manager | | | | \$7,770.22 | \$42 | | \$7,812 |
| Unit Cost | | | | \$3,885 | \$21 | per week | |
| 4 weeks Engineering | | | | \$15,364 | \$84 | | \$15,448 |
| Unit Cost | | | | \$3,841 | \$21 | per week | |
| Materials | | | | | | \$105,375 | \$105,375 |
| Contractors | | | | | | \$100,500 | \$100,500 |
| Unit Cost | | \$6,029 | \$920 | | | | |
| NGrid Gas Pipeline Connection | | | | | | \$125,000 | \$125,000 |
| Unit Cost | | | | | | | |
| Miscellaneous Costs | | | | | | \$10,000 | \$10,000 |
| Unit Cost | | | | | | | |
| Testing and Commissioning | | | | | | \$20,000 | \$20,000 |
| Unit Cost | | \$6,029 | \$920 | | | | |

TOTAL

| | | | | |
|--------|-------|--------|-----|-----------|
| 48,230 | 7,360 | 33,734 | 210 | 2,830,875 |
|--------|-------|--------|-----|-----------|

TOTAL ESTIMATED PROJECT COST: \$2,920,409

| | | | |
|------|-----|----------|-------------|
| FY16 | 7% | Estimate | \$200,000 |
| FY17 | 93% | Estimate | \$2,720,409 |

CAPITAL PROJECT SUMMARY

Project Name: Fault Indicators

Project #: 115

Project Schedule: FY16-17

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 additional fault locators.

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

We have purchased 60 fault locators for overhead, which are scheduled for delivery in April 2016. We have budgeted for additional purchases in FY17.

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Fault Indicators

SCHEDULE: FY16-17

PROJECT #: 115

| ITEM | CREW WEEKS | RMLD CREW LABOR COSTS | RMLD CREW VEHICLE COSTS | OTHER LABOR | OTHER VEHICLE | MATERIAL & MISC | TOTAL |
|---|---------------|--------------------------------|----------------------------------|----------------|------------------|--------------------|----------|
| Purchase Fault Indicators | | | | | | \$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

| | | | |
|------|--------------|----|--------|
| FY16 | 50% Estimate | \$ | 25,000 |
| FY17 | 50% Estimate | \$ | 25,000 |

CAPITAL PROJECT SUMMARY

Project Name: Voltage Data Recorders

Project #: 136

Project Schedule: FY16-17 **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:

Researching products and plan on ordering some in FY16. Additional units will be ordered in FY17.

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Voltage Data Recorders

SCHEDULE: FY16-17

PROJECT #: 136

| ITEM | CREW WEEKS | RMLD CREW LABOR COSTS | RMLD CREW VEHICLE COSTS | OTHER LABOR | OTHER VEHICLE | MATERIAL & MISC | TOTAL |
|---|---------------|--------------------------------|----------------------------------|----------------|------------------|--------------------|----------|
| Voltage Data Recorders | | | | | | \$60,000 | \$60,000 |
| | | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| Police Details (if applicable) week(s) | | | | | | | |
| | Unit Cost | | | | | per week | |

TOTAL

\$60,000

TOTAL ESTIMATED PROJECT COST: \$60,000

| | | | |
|------|--------------|----|--------|
| FY16 | 58% Estimate | \$ | 35,000 |
| FY17 | 42% Estimate | \$ | 25,000 |

CAPITAL PROJECT SUMMARY

Project Name: Grid Modernization and Optimization **Project #:** 103
Project Schedule: FY15-18 **Project Manager:** Hamid Jaffari, Director of
Engineering & Operations
Peter Price, Chief 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:

Implement grid modernization/optimization road map including installation of smart switches, intellirupters, outage management system, cyber security, simulator, fiber rationale connection, fault detection, economic dispatch and overall system integration, including GIS and AML.

Barriers:

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

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

Upgraded SCADA licensing, installed N-Dimensions cyber security, cap bank automation upgrade and fiber nodes.

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Grid Modernization and Optimization

SCHEDULE: FY15-18

PROJECT #: 103

| ITEM | CREW WEEKS | RMLD CREW LABOR COSTS | RMLD CREW VEHICLE COSTS | OTHER LABOR | OTHER VEHICLE | MATERIAL & MISC | TOTAL |
|---|---------------|--------------------------------|----------------------------------|----------------|------------------|--------------------|-----------|
| | 2-Man | | | | | | |
| Purchase | | | | | | | \$522,000 |
| 12 SCADA-mate switches | | | | | | \$420,000 | |
| 2 Intellirupters | | | | | | \$90,000 | |
| 10 RuggedCom Ethernet Switches (Cap Banks, etc) | | | | | | \$12,000 | |
| Intelliteam Software | | | | | | | \$40,000 |
| 14 Licenses | | | | | | \$28,000 | |
| Designer Software | | | | | | \$12,000 | |
| Servers/Hardware/Integration | | | | | | | \$199,949 |
| SCADA Upgrade | | | | | | \$19,500 | |
| SCADA Licenses | | | | | | \$65,000 | |
| OMS | | | | | | \$90,000 | |
| Cyber Security | | | | | | \$25,449 | |
| Fiber Installation-Construction | | | | | | \$46,200 | \$46,200 |
| Miscellaneous | | | | | | \$10,000 | \$10,000 |
| AGIs, Sensors, RTUs, etc. | | | | | | | |
| Consulting Services | | | | | | \$26,520 | \$26,520 |
| Line Crews | 16.0 | \$96,460 | \$14,720 | | | | \$111,180 |
| | | \$6,029 | \$920 | | | per week | |
| Technical Services Labor | | | | \$21,200 | \$168 | | \$21,368 |
| 4 weeks (2 man crew) | | | | | | | |
| Unit Cost | | | | \$5,300 | \$42 | per week | |
| Engineering Labor: | | | | \$15,364 | \$84 | | \$15,448 |
| 4 week(s) | | | | | | | |
| Unit Cost | | | | \$3,841 | \$21 | per week | |

TOTAL \$96,460 \$14,720 \$36,564 \$252 \$844,669

TOTAL ESTIMATED PROJECT COST: \$992,665

| | | |
|------|----------|-----------|
| FY15 | Actual | \$90,519 |
| FY16 | Estimate | \$140,500 |
| FY17 | Estimate | \$284,000 |
| FY18 | Estimate | \$477,646 |

CAPITAL PROJECT SUMMARY

Project Name: New Wilmington Substation

Project #: TBD

Project Schedule: FY17-21

Project Manager: Hamid Jaffari, Director of Engineering & Operations

Reason for Expenditure:

Substation 5 has reached the end of its useful life. The transformer and switchgear need major upgrades/repairs to keep substation operational.

Brief Description/Scope:

Install a new 115kV/13.8 MW substation in Wilmington in the Ballardvale area. The new substation will include two 60 MVA 115kV/13.8MW transformers and a 15Kv switchgear with six feeder breaker positions to accommodate the Town of Wilmington load and provide backup for both Substation 3 and Substation 4.

Barriers:

Availability of land.

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

n/a

Status Update From Prior Fiscal Year:

n/a

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: New Wilmington Substation

SCHEDULE: FY17-21

PROJECT #: TBD

| ITEM | CREW WEEKS 2-man | RMLD CREW LABOR COSTS | RMLD CREW VEHICLE COSTS | OTHER LABOR | OTHER VEHICLE | MATERIAL & MISC | TOTAL |
|--|------------------------|--------------------------------|----------------------------------|----------------|------------------|--------------------|-------------|
| Purchase Land. | | | | | | \$250,000 | \$250,000 |
| | | | | | | | |
| Permitting and Legal Services | | | | | | \$20,000 | \$20,000 |
| | Unit Cost | | | | | | |
| Engineering and design. | | | | | | \$150,000 | \$150,000 |
| | Unit Cost | | | | | | |
| Site Preparation | | | | | | \$225,000 | \$225,000 |
| | Unit Cost | | | | | | |
| Materials: Transformers and switchgears | | | | | | \$3,600,000 | \$3,600,000 |
| | Unit Cost | | | | | | |
| Materials: Cables, manholes, gantry, etc. | | | | | | \$400,000 | \$400,000 |
| | Unit Cost | | | | | | |
| Miscellaneous Costs | | | | | | \$100,000 | \$100,000 |
| | Unit Cost | | | | | | |
| Testing and Commissioning. | | | | | | \$150,000 | \$150,000 |
| | Unit Cost | | | | | | |
| 115 kV Tap Construction | | | | | | \$355,000 | \$355,000 |
| | Unit Cost | | | | | | |
| TOTAL | | | | | | \$5,250,000 | |

TOTAL ESTIMATED PROJECT COST: \$5,250,000

| | | |
|------|----------|-------------|
| FY17 | Estimate | \$250,000 |
| FY18 | Estimate | \$3,000,000 |
| FY19 | Estimate | \$1,600,000 |
| FY20 | Estimate | \$200,000 |
| FY21 | Estimate | \$200,000 |

CAPITAL PROJECT SUMMARY

Project Name: Station 4: 4W9 Getaway Replacement **Project #:** TBD

Project Schedule: FY17 **Project Manager:** Peter Price, Chief Engineer

Reason for Expenditure:

The underground cable for circuit 4W9 consists of 500W and 1000 AL cables. These cables are over 30 years old.

Brief Description/Scope:

Replace underground feeder cables on circuit 4W9 from the substation breaker to the riser pole. Splice cables in manholes and terminate cables at the riser and switchgear.

Barriers:

Work to be done in the fall or spring.

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

n/a

Status Update From Prior Fiscal Year:

n/a

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Station 4: 4W9 Getaway Replacement

SCHEDULE: FY17

PROJECT #: TBD

| ITEM | CREW WEEKS 2-man | CREW LABOR COST | CREW VEHICLE COST | OTHER LABOR | OTHER VEHICLE | NEW MATERIAL & MISC | TOTAL |
|--|------------------------|-----------------------|-------------------------|----------------|------------------|---------------------------|-----------|
| Reconductor 4W9 U/G Cable 8,500 feet of 750 MCM CU | 6.0 | \$36,172 | \$5,520 | | | \$170,000 | \$211,692 |
| Unit Cost | | \$6,029 | \$920 | | | per week | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| 18 splices @\$225 6 terminations @ \$225 fire proof tape - \$450 | | | | | | \$5,850 | \$5,850 |
| Unit Cost | | | | | | see box at left | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| Engineering Labor | | | | \$3,841 | \$21 | | \$3,862 |
| 1 Week | | | | \$3,841 | \$21 | per week | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| Police Details (if applicable) | | | | \$13,343 | | | \$13,343 |
| 6 weeks | | | | \$2,224 | | per week | |

Total RMLD Crew Weeks **6.0**

| | | | | | | |
|-------|-----|----------|---------|----------|------|-----------|
| TOTAL | 6.0 | \$36,172 | \$5,520 | \$17,184 | \$21 | \$175,850 |
|-------|-----|----------|---------|----------|------|-----------|

TOTAL PROJECT COST: \$234,747

CAPITAL PROJECT SUMMARY

Project Name: Station 4: Relay/SCADA Integration
for Bus A&B

Project #: TBD

Project Schedule: FY17

Project Manager: Nick D'Alleva
Technical Services Manager

Reason for Expenditure:

The old electro-mechanical relays will be changed out at Station 4 in early FY17. In order to communicate with these relays, we will need to design, construct, program, and map data points to the RMLD SCADA system.

Brief Description/Scope:

Install communication equipment, data concentrators, and fiber wiring from the relays to the remote terminal unit at Station 4.

Barriers:

None anticipated at this time.

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

Status Update From Prior Fiscal Year:
n/a

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Station 4: Relay/SCADA Integration for Bus A&B

SCHEDULE: FY17

PROJECT #: TBD

| ITEM | CREW WEEKS 2-man | RMLD CREW LABOR COSTS | RMLD CREW VEHICLE COSTS | OTHER LABOR | OTHER VEHICLE | MATERIAL & MISC | TOTAL |
|---|------------------------|--------------------------------|----------------------------------|----------------|------------------|--------------------|----------|
| Contractor | | | | | | \$25,000 | \$25,000 |
| Materials | | | | | | \$30,000 | \$30,000 |
| Labor: Senior Techs (2-man crew) 2.5 week(s) | | | | \$13,250 | \$105.00 | | \$13,355 |
| Unit Cost | | | | \$5,300 | \$42.00 | per week | |
| Labor: Technical Services Manager 0.5 week(s) | | | | \$1,943 | \$10.50 | | \$1,953 |
| Unit Cost | | | | \$3,885 | \$21.00 | per week | |
| Labor: Engineering week(s) | | | | | | | |
| Unit Cost | | | | | | per week | |
| TOTAL | | | | \$15,193 | \$116 | \$55,000 | |

TOTAL ESTIMATED PROJECT COST: \$70,308

CAPITAL PROJECT SUMMARY

Project Name: Station 3: Relay Upgrades and
SCADA Integration

Project #: TBD

Project Schedule: FY17

Project Manager: Nick D'Alleva
Technical Services Manager

Reason for Expenditure:

Booth and Associates identified an issue with the existing relays at Station 3. They recommend replacing the relays with the new type SEL relays. In addition, RMLD will need to install new equipment so the relays can communicate with RMLD's SCADA system.

Brief Description/Scope:

Replace all feeder and main bus relays with SEL version 7 relays. Install communication and data concentration equipment to collect and populate data to RMLD's SCADA system.

Barriers:

None anticipated at this time.

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

n/a

Status Update From Prior Fiscal Year:

n/a

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Station 3: Relay Upgrades and SCADA Integration **SCHEDULE:** FY17

PROJECT #: TBD

| ITEM | CREW WEEKS 2-man | RMLD CREW LABOR COSTS | RMLD CREW VEHICLE COSTS | OTHER LABOR | OTHER VEHICLE | MATERIAL & MISC | TOTAL |
|--|------------------------|--------------------------------|----------------------------------|----------------|------------------|--------------------|-----------|
| Contractor: Design and map new relays to SCADA System. | | | | | | \$110,000 | \$110,000 |
| | | | | | | | |
| Materials: (12) SEL 351 feeder relays; (2) SEL 500 Bus Relays; SEL communication relays. | | | | | | \$100,000 | \$100,000 |
| | | | | | | | |
| Labor: Senior Techs (2-man crew) | | | | \$26,500 | \$210.00 | | \$26,710 |
| 5 week(s) | | | | \$5,300 | \$42.00 | per week | |
| | | | | | | | |
| Labor: Technical Services Manager | | | | \$5,828 | \$31.50 | | \$5,859 |
| 1.5 week(s) | | | | \$3,885 | \$21.00 | per week | |
| | | | | | | | |
| Labor: Engineering | | | | \$9,602 | \$52.50 | | \$9,655 |
| 2.5 week(s) | | | | \$3,841 | \$21.00 | per week | |
| | | | | | | | |

TOTAL \$41,931 \$294 \$210,000

TOTAL ESTIMATED PROJECT COST: \$252,225

CAPITAL PROJECT SUMMARY

Project Name: Analog Devices Cap Bank Upgrade

Project #: TBD

Project Schedule: FY17

Project Manager: Nick D'Alleva
Technical Services Manager

Reason for Expenditure:

During infrared scans at the capacitor bank at Analog Devices, the RMLD has discovered evidence of overheating at several 200 Amp elbows. We will be replacing the existing 200 Amp enclosure with a 600 Amp enclosure to mitigate this issue.

Brief Description/Scope:

Purchase and install a 600 Amp capacitor bank enclosure to replace the existing 200 Amp enclosure.

Barriers:

None anticipated at this time.

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

n/a

Status Update From Prior Fiscal Year:

n/a

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Analog Devices Cap Bank Upgrade

SCHEDULE: FY17

PROJECT #: TBD

| ITEM | CREW WEEKS 2-man | RMLD CREW LABOR COSTS | RMLD CREW VEHICLE COSTS | OTHER LABOR | OTHER VEHICLE | MATERIAL & MISC | TOTAL |
|---|------------------------|--------------------------------|----------------------------------|----------------|------------------|--------------------|----------|
| Materials: (1) 600-Amp cap bank, enclosure and miscellaneous equipment. | | | | | | \$30,000 | \$30,000 |
| | | | | | | | |
| Labor: Line Department | 1.0 | \$6,028.72 | \$920.00 | | | | \$6,949 |
| | | \$6,028.72 | \$920.00 | | | per week | |
| | | | | | | | |
| Labor: Senior Techs (2-man crew) 2.5 week(s) | | | | \$13,250 | \$105.00 | | \$13,355 |
| | Unit Cost | | | \$5,300 | \$42.00 | per week | |
| | | | | | | | |
| Labor: Technical Services Manager 0.5 week(s) | | | | \$1,943 | \$10.50 | | \$1,953 |
| | Unit Cost | | | \$3,885 | \$21.00 | per week | |
| | | | | | | | |
| Labor: Engineering 0.5 week(s) | | | | \$1,920 | \$10.50 | | \$1,931 |
| | Unit Cost | | | \$3,841 | \$21.00 | per week | |

TOTAL CREW WEEKS 1.0

| | | | | | | |
|--------------|------------|----------------|--------------|-----------------|--------------|-----------------|
| TOTAL | 1.0 | \$6,029 | \$920 | \$17,113 | \$126 | \$30,000 |
|--------------|------------|----------------|--------------|-----------------|--------------|-----------------|

TOTAL ESTIMATED PROJECT COST: \$54,188

CAPITAL PROJECT SUMMARY

Project Name: Station 5: LTC Control Replacement

Project #: TBD

Project Schedule: FY17

Project Manager: Nick D'Alleva
Technical Services Manager

Reason for Expenditure:

The existing LTC transformer controls at Station 5 are in need of replacement. They are old and difficult to adjust. The replacement controls are digital and more accurate.

Brief Description/Scope:

Replace the existing LTC controls with new Beckwith controls.

Barriers:

None anticipated at this time.

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

n/a

Status Update From Prior Fiscal Year:

n/a

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Station 5: LTC Control Replacement

SCHEDULE: FY17

PROJECT #: TBD

| ITEM | CREW WEEKS 2-man | RMLD CREW LABOR COSTS | RMLD CREW VEHICLE COSTS | OTHER LABOR | OTHER VEHICLE | MATERIAL & MISC | TOTAL |
|--|------------------------|--------------------------------|----------------------------------|-----------------|------------------|--------------------|----------|
| Contractor: Assist with and program new Beckwith controls. | | | | | | \$10,000 | \$10,000 |
| | | | | | | | |
| Materials: (2) Beckwith controls | | | | | | \$15,000 | \$15,000 |
| | | | | | | \$7,500 | |
| Labor: Senior Techs (2-man crew) 2 week(s) | | | | \$10,600 | \$84.00 | | \$10,684 |
| Unit Cost | | | | \$5,300 | \$42.00 | per week | |
| Labor: Technical Services Manager 1.5 week(s) | | | | \$5,828 | \$31.50 | | \$5,859 |
| Unit Cost | | | | \$3,885 | \$21.00 | per week | |
| Labor: Engineering week(s) | | | | | | | |
| Unit Cost | | | | | | per week | |
| TOTAL | | | | <u>\$16,428</u> | <u>\$116</u> | <u>\$25,000</u> | |

TOTAL ESTIMATED PROJECT COST: \$41,543

CAPITAL PROJECT SUMMARY

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

Project Schedule: FY17 **Project Manager:** Nick D'Alleva
Technical Services Manager

Reason for Expenditure:

The existing personal protective grounds at some of the RMLD substations are old, out of adjustment and in need of replacement.

Brief Description/Scope:

Purchase new 115kV and 15kV personal protective grounds for Station 4. Purchase additional equipment to utilize existing ground carts at Station 3.

Barriers:

None anticipated at this time.

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

n/a

Status Update From Prior Fiscal Year:

n/a

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Substation Grounding Equipment Upgrade

SCHEDULE: FY17

PROJECT #: TBD

[illegible]

| | |
|--------------------------------------|-----------------|
| TOTAL ESTIMATED PROJECT COST: | \$20,671 |
|--------------------------------------|-----------------|

CAPITAL PROJECT SUMMARY

Project Name: Pad-mount Switchgear Upgrade at Industrial Parks

Project #: TBD

Project Schedule: FY17-22

Project Manager: Peter Price
Chief Engineer

Reason for Expenditure:

Increase distribution system protection in the underground industrial parks in Wilmington, i.e., River Park Drive, Jonspin Road, etc.

Brief Description/Scope:

Purchase five units to replace live front pad-mounted switchgear. New units will be dead front with provisions for remote/supervisor control.

Barriers:

None anticipated at this time.

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

n/a

Status Update From Prior Fiscal Year:

n/a

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Pad-mount Switchgear Upgrade - Industrial Parks

SCHEDULE: FY17-22

PROJECT #: TBD

| ITEM | CREW WEEKS 2-Man | RMLD CREW LABOR COSTS | RMLD CREW VEHICLE COSTS | OTHER LABOR | OTHER VEHICLE | MATERIAL & MISC | TOTAL |
|--|------------------------|--------------------------------|----------------------------------|----------------|------------------|---------------------|-------------|
| Install: 25 Pad-mount Switches. | 7.5 | \$45,215 | \$6,900 | | | | \$52,115 |
| Unit Cost | | \$6,029 | \$920 | | | per week | |
| Purchase: 25 Pad-mount Switches. | | | | | | \$1,125,000 | \$1,125,000 |
| Unit Cost | | | | | | \$45,000 per switch | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| Labor: Engineering 10 week(s) | | | | \$38,410 | \$210 | | \$38,620 |
| Unit Cost | | | | \$3,841 | \$21 | per week | |
| Police Details (if applicable) week(s) | | | | | | | |
| Unit Cost | | | | | | per week | |
| | | | | | | | |
| Total RMLD Crew Weeks: | | 7.5 | | | | | |
| | | | | | | | |
| TOTAL | 7.5 | \$45,215 | \$6,900 | \$38,410 | \$210 | \$1,125,000 | |

TOTAL ESTIMATED PROJECT COST: \$1,215,735

| | | |
|------|----------|-----------|
| FY17 | Estimate | \$194,518 |
| FY18 | Estimate | \$194,518 |
| FY19 | Estimate | \$194,518 |
| FY20 | Estimate | \$194,518 |
| FY21 | Estimate | \$194,518 |
| FY22 | Estimate | \$243,147 |

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:

Major items include the replacement of the transformer LTC controls at Station #3, the purchase of remote racking devices for Substation 5, 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:

None.

Status Update:

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Substation Equipment Upgrade

SCHEDULE: FY17

PROJECT #: 111

| ITEM | CREW WEEKS 2-man | RMLD CREW LABOR COSTS | RMLD CREW VEHICLE COSTS | OTHER LABOR | OTHER VEHICLE | MATERIAL & MISC. | TOTAL |
|---|------------------------|--------------------------------|----------------------------------|-----------------|------------------|---------------------|----------|
| Materials | | | | | | \$50,000 | \$50,000 |
| Unit Cost | | | | | | | |
| Labor: Senior Techs (2-man crew) | | | | \$10,600 | \$84 | | \$10,684 |
| 2 week(s) | | | | \$5,300 | \$42 | per week | |
| Unit Cost | | | | | | | |
| Labor: Technical Services Manager | | | | \$3,885 | \$21 | | \$3,906 |
| 1 week(s) | | | | \$3,885 | \$21 | per week | |
| Unit Cost | | | | | | | |
| Engineering Consulting Services | | | | | | \$10,000 | \$10,000 |
| Unit Cost | | | | | | | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| TOTAL | | | | \$14,485 | \$105 | \$60,000 | |

TOTAL ESTIMATED PROJECT COST: \$74,590

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 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Transformers and Capacitors

SCHEDULE: FY17

PROJECT #: 116

| ITEM | CREW WEEKS | CREW LABOR COST | CREW VEHICLE COST | OTHER LABOR | OTHER VEHICLE | NEW MATERIAL & MISC | TOTAL |
|--|---------------|-----------------------|-------------------------|----------------|------------------|---------------------------|-------------------|
| a) Three-phase pad mount transformers for proposed commercial services and stock 15 units | | | | | | \$187,500 | \$187,500 |
| | Unit Cost | | | | | | \$12,500 per unit |
| b) Single-phase pad mount transformers for proposed subdivisions and stock 40 units | | | | | | \$100,000 | \$100,000 |
| | Unit Cost | | | | | | \$2,500 per unit |
| c) Three-phase pole mount transformers for proposed commercial services and stock 31 units | | | | | | \$201,500 | \$201,500 |
| | Unit Cost | | | | | | \$6,500 per unit |
| d) Single phase pole mount 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:

We have purchased four Ethernet switches for the field and one Ethernet switch for the office.

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Communication Equipment (Fiber Optic)

SCHEDULE: FY17

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. | | | | | | \$30,000 | \$30,000 |
| 6.0 units | | | | | | | |
| Unit Cost | | | | | | \$5,000 | |
| Contract labor and materials for splicing fiber. | | | | | | \$18,750 | \$18,750 |
| 6.0 units | | | | | | | |
| Unit Cost | | | | | | \$3,125 | |
| Fiber optic cable and hardware. | | | | | | \$11,250 | \$11,250 |
| Unit Cost | | | | | | | |
| Labor - Line Crews | 1 | \$6,029 | \$920 | | | | \$6,949 |
| Unit Cost | | \$6,029 | \$920 | | | per week | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| Police Details (if applicable) | | \$2,224 | | | | | \$2,224 |
| 1 week(s) | | | | | | | |
| Unit Cost | | \$2,224 | | | | per week | |

| | | | |
|--------------|----------------|--------------|-----------------|
| TOTAL | \$8,253 | \$920 | \$60,000 |
|--------------|----------------|--------------|-----------------|

TOTAL ESTIMATED PROJECT COST: \$69,173

CAPITAL PROJECT SUMMARY

Project Name: Meters

Project #: 117

Project Schedule: Annual

Project Manager: Nick D'Alleva
Technical Services Manager

Reason for Expenditure:

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

Brief Description/Scope:

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

Barriers:

None anticipated at this time.

Change in Scope of Work From Prior Fiscal Year:

n/a

Status Update:

n/a

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: _____ Meters

SCHEDULE: FY17

PROJECT #: 117

| ITEM | CREW WEEKS | RMLD CREW LABOR COST | RMLD CREW VEHICLE COST | OTHER LABOR | OTHER VEHICLE | NEW MATERIAL & MISC | TOTAL |
|---|---------------|-------------------------------|---------------------------------|----------------|------------------|---------------------------|----------|
| For Stock: | | | | | | \$60,000 | \$60,000 |
| Residential and Commercial Meters | | | | | | | |
| 200 units | Unit Cost | | | | | \$300 each | |
| Locking sealing rings, seals and meter switches | | | | | | \$20,000 | \$20,000 |
| | Unit Cost | | | | | \$100 per meter | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |

TOTAL

\$80,000

TOTAL ESTIMATED PROJECT COST: \$80,000

CAPITAL PROJECT SUMMARY

Project Name: Underground Facilities Upgrades
(URDs, Manholes, etc.) – 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:

Completed work on Rourke Lane in Lynnfield. We are now replacing transformers in various subdivisions.

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: UG Facilities Upgrades (URDs, Manholes, etc.) - All Towns

SCHEDULE: FY17

PROJECT #: 106

| ITEM | CREW WEEKS 2-man | RMLD CREW LABOR COSTS | RMLD CREW VEHICLE COSTS | OTHER LABOR | OTHER VEHICLE | MATERIAL & MISC. | TOTAL |
|--|------------------------|--------------------------------|----------------------------------|----------------|------------------|---------------------|----------|
| Install approximately 178 pad mount transformers. (Transformers are included in annual transformer purchase) | 5.0 | \$30,144 | \$4,600 | | | | \$34,744 |
| Unit Cost | | \$6,029 | \$920 | | | per week | |
| Install approximately 4,500 feet of 1/0 Al UG cable and 4,500 feet of #2 CU neutral. | 11.0 | \$66,316 | \$10,120 | | | \$14,000 | \$90,436 |
| Unit Cost | | \$6,029 | \$920 | | | per week | |
| Materials: splices, elbows, terminations, connectors, box pads, tape, etc. | | | | | | \$13,200 | \$13,200 |
| Unit Cost | | | | | | | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| Engineering Labor: 3 week(s) | | | | \$ 11,523 | \$63 | | \$11,586 |
| Unit Cost | | | | \$3,841 | \$21 | per week | |
| Police Details (if applicable) week(s) | | | | | | | |
| Unit Cost | | | | | | per week | |

Total RMLD Crew Weeks 16.0

| | | | | | |
|--------------|-----------------|-----------------|-----------------|-------------|-----------------|
| TOTAL | <u>\$96,460</u> | <u>\$14,720</u> | <u>\$11,523</u> | <u>\$63</u> | <u>\$27,200</u> |
|--------------|-----------------|-----------------|-----------------|-------------|-----------------|

TOTAL ESTIMATED PROJECT COST: \$149,965

CAPITAL PROJECT SUMMARY

Project Name: 13.8kV Upgrade (Step-down Area, etc.)
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:

We have completed conversions of Burroughs Road (North Reading); Cortland Road, Tophet Road, Cooks Farm Lane and Rourke Lane (Lynnfield); Oak Ridge Road (Reading) and Clifton Street (Wilmington)

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: 13.8kV Upgrade (Step-down Area, etc) - All Towns

SCHEDULE: FY17

PROJECT #: 107

| ITEM | CREW WEEKS 2-man | RMLD CREW LABOR COSTS | RMLD CREW VEHICLE COSTS | OTHER LABOR | OTHER VEHICLE | MATERIAL & MISC. | TOTAL |
|--|------------------------|--------------------------------|----------------------------------|----------------|------------------|---------------------|----------|
| Install 3,400' of 1/0 primary. | 4.6 | \$27,435 | \$4,187 | | | \$2,628 | \$34,250 |
| Unit Cost | | \$6,029 | \$920 | | | see box at left | |
| Install 2844' of 4/0 - 3/C sec cable | 4.6 | \$27,435 | \$4,187 | | | \$5,347 | \$36,969 |
| Unit Cost | | \$6,029 | \$920 | | | see box at left | |
| Replace 11 transformers. (Transformers are included with annual transformer purchase.) | 2.3 | \$13,718 | \$2,093 | | | | \$15,811 |
| Unit Cost | | \$6,029 | \$920 | | | per week | |
| Miscellaneous Hardware \$200 per pole for approximately 40 poles. | | | | | | \$8,000 | \$8,000 |
| Unit Cost | | | | | | \$200 per pole | |
| | | | | | | | |
| Unit Cost | | | | | | | |
| Engineering Labor: 1 week(s) | | | | 4,370 | \$23.89 | | \$4,394 |
| Unit Cost | | | | 3,841 | \$21 | per week | |
| Police Details (if applicable) 3 week(s) | | | | \$6,325 | | | \$6,325 |
| Unit Cost | | | | \$2,224 | | per week | |

Total RMLD Crew Weeks 11.4

| | | | | | |
|--------------|-----------------|-----------------|-----------------|-------------|-----------------|
| TOTAL | <u>\$68,588</u> | <u>\$10,467</u> | <u>\$10,695</u> | <u>\$24</u> | <u>\$15,975</u> |
|--------------|-----------------|-----------------|-----------------|-------------|-----------------|

TOTAL ESTIMATED PROJECT COST: \$105,748

CAPITAL PROJECT SUMMARY

Project Name: Service Installations
(Commercial and Residential)

Project #: various

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:

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

n/a

Status Update:

n/a

FISCAL 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Service Installations (Residential and Commercial)

SCHEDULE: FY17

PROJECT #: various

| 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 300 units (approx 75-100 feet per installation). | 13 | \$76,843 | \$11,726 | | | \$51,000 | \$139,570 |
| | Unit Cost | \$6,029 | \$920 | | | per week | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |
| | | | | | | | |
| | Unit Cost | | | | | | |

Total RMLD Crew Weeks 13
Total U/G Crew Weeks

TOTAL 13 76,843 \$11,726 \$51,000

TOTAL ESTIMATED PROJECT COST \$139,570

CAPITAL PROJECT SUMMARY

Project Name: Routine Construction

Project #: various

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 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: Routine Construction

SCHEDULE: FY17

PROJECT #: various

| ITEM | CREW WEEKS 2-man | CREW LABOR COST | CREW VEHICLE COST | OTHER LABOR | OTHER VEHICLE | NEW MATERIAL & MISC | TOTAL |
|-------------------------------|------------------------|-----------------------|-------------------------|----------------|------------------|---------------------------|-----------|
| a) Capital Construction | 20 | 120,574 | \$18,400 | | | \$100,000 | \$238,974 |
| | Unit Cost | 6,029 | \$920 | | | per week | |
| b) Street Light Installations | 4 | 24,115 | \$3,680 | | | | \$27,795 |
| | Unit Cost | 6,029 | \$920 | | | per week | |
| c) Pole Setting/Transfers | 31 | 186,890 | \$28,520 | | | \$100,000 | \$315,410 |
| | Unit Cost | \$6,029 | \$920 | | | per week | |
| d) Engineering Labor | | | | \$30,728 | \$168 | | \$30,896 |
| 8.0 weeks | Unit Cost | | | \$3,841 | \$21 | per week | |
| e) General Line Foreman Labor | | | | \$105,554 | \$546.0 | | \$106,100 |
| 26.0 weeks | Unit Cost | | | \$4,060 | \$21 | per week | |
| f) U/G Construction | 1.5 | \$9,043 | \$1,380 | | | \$100,000 | \$110,423 |
| | Unit Cost | \$6,029 | \$920 | | | per week | |
| g) Police Details | | | | \$115,637 | | | \$115,637 |
| 52.0 weeks | Unit Cost | | | \$2,224 | | per week | |
| h) Overtime | 10 | \$58,528 | \$9,200 | | | | \$67,728 |
| | Unit Cost | \$5,852.76 | \$920 | | | per week | |

Total RMLD Crew Weeks 56.5

| | | | | | | |
|-------|------|--------------|----------|-----------|-------|-----------|
| TOTAL | 56.5 | \$399,150.38 | \$61,180 | \$251,918 | \$714 | \$300,000 |
|-------|------|--------------|----------|-----------|-------|-----------|

TOTAL ESTIMATED PROJECT COST: \$1,012,962

CAPITAL PROJECT SUMMARY

Project Name: AMI Mesh Network Expansion

Project #: TBD

Project Schedule: Annual

Project Manager: Nick D'Alleva
Technical Services Manager

Reason for Expenditure:

In order to expand RMLD's AMI network, additional relays and meters need to be purchased and installed. These new meters will give the RMLD the ability to monitor voltage, current, demand, power factor and power quality.

Brief Description/Scope:

Purchase materials and retrofit 500 exiting RMLD Itron meters to enable them to join the AMI Mesh Network.

Barriers:

None anticipated at this time.

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

n/a

Status Update From Prior Fiscal Year:

n/a

FISCAL YEAR 2017 CAPITAL BUDGET COST SHEET

CAPITAL PROJECT NAME: AMI Mesh Network Expansion

SCHEDULE: FY17

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: 30 Relays 52 GS meters 80 5S meters 16 16S meters | | | | | | \$98,000 | \$98,000 |
| | | | | | | | |
| Labor: Meter Tech (2-man crew) 7.5 week(s) | | | | \$37,147 | 270 | | \$37,417 |
| Unit Cost | | | | \$4,953 | 36 | per week | |
| Labor: Technical Services Manager 3.75 week(s) | | | | \$14,569 | 79 | | \$14,648 |
| Unit Cost | | | | \$3,885 | 21 | per week | |
| Purchase and Install: 500 Retrofit units and materials for existing meters to join the new AMI Mesh network. | | | | | | \$50,000 | \$50,000 |
| | | | | | | \$100 each | |
| Labor: Meter Tech (2-man crew) 4 week(s) | | | | \$19,812 | 144 | | \$19,956 |
| Unit Cost | | | | \$4,953 | 36 | per week | |
| RMLD Crew Weeks: | | | | | | | |
| TOTAL | | | | <u>\$71,529</u> | <u>\$493</u> | <u>\$148,000</u> | |

TOTAL ESTIMATED PROJECT COST: \$220,021

POWER SUPPLY REPORT ATTACHMENT 2

FY 2017 - Proposed Base Rate Increase
Comparative Rates Present/Proposed

Residential

| | 500 kWh | 750 kWh | 1000 kWh |
|------------------------------|------------------|------------------|------------------|
| Present | \$72.49 | \$106.99 | \$141.48 |
| Proposed | \$77.30 | \$114.02 | \$150.75 |
| Difference | \$4.81 | \$7.03 | \$9.27 |
| % Change | 6.64% | 6.57% | 6.55% |
| Cost per kWh Present | \$0.14498 | \$0.14265 | \$0.14148 |
| Cost per kWh Proposed | \$0.15460 | \$0.15203 | \$0.15075 |

Residential Hot Water

| | 1000 kWh | 1500 kWh | 2000 kWh |
|------------------------------|------------------|------------------|------------------|
| Present | \$130.86 | \$194.55 | \$258.22 |
| Proposed | \$139.06 | \$206.67 | \$274.27 |
| Difference | \$8.20 | \$12.12 | \$16.05 |
| % Change | 6.27% | 6.23% | 6.22% |
| Cost per kWh Present | \$0.13086 | \$0.12970 | \$0.12911 |
| Cost per kWh Proposed | \$0.13906 | \$0.13778 | \$0.13714 |

Residential Time of Use

| | 1000 kWh | 1500 kWh | 2000 kWh |
|------------------------------|------------------|------------------|------------------|
| Present | \$128.10 | \$189.41 | \$250.69 |
| Proposed | \$136.03 | \$201.02 | \$265.99 |
| Difference | \$7.93 | \$11.61 | \$15.30 |
| % Change | 6.19% | 6.13% | 6.10% |
| Cost per kWh Present | \$0.12810 | \$0.12627 | \$0.12535 |
| Cost per kWh Proposed | \$0.13603 | \$0.13401 | \$0.13300 |

Residential Low Income

| | 500 kWh | 750 kWh | 1000 kWh |
|------------------------------|------------------|------------------|------------------|
| Present | \$66.93 | \$100.39 | \$133.85 |
| Proposed | \$71.18 | \$106.76 | \$142.35 |
| Difference | \$4.25 | \$6.37 | \$8.50 |
| % Change | 6.35% | 6.35% | 6.35% |
| Cost per kWh Present | \$0.13386 | \$0.13385 | \$0.13385 |
| Cost per kWh Proposed | \$0.14236 | \$0.14235 | \$0.14235 |

Residential Hot Water Low Income

| | 1000 kWh | 1500 kWh | 2000 kWh |
|------------------------------|------------------|------------------|------------------|
| Present | \$127.36 | \$191.05 | \$254.73 |
| Proposed | \$135.22 | \$202.83 | \$270.42 |
| Difference | \$7.86 | \$11.78 | \$15.69 |
| % Change | 6.17% | 6.17% | 6.16% |
| Cost per kWh Present | \$0.12736 | \$0.12737 | \$0.12737 |
| Cost per kWh Proposed | \$0.13522 | \$0.13522 | \$0.13521 |

Residential Time of Use Low Income

| | 1000 kWh | 1500 kWh | 2000 kWh |
|------------------------------|------------------|------------------|------------------|
| Present | \$122.58 | \$183.88 | \$245.17 |
| Proposed | \$129.96 | \$194.94 | \$259.91 |
| Difference | \$7.38 | \$11.06 | \$14.74 |
| % Change | 6.02% | 6.01% | 6.01% |
| Cost per kWh Present | \$0.12258 | \$0.12259 | \$0.12259 |
| Cost per kWh Proposed | \$0.12996 | \$0.12996 | \$0.12996 |

Commercial

| | Small | Medium | Large |
|------------------------------|-------------------|--------------------|--------------------|
| Present | \$2,057.52 | \$10,745.32 | \$47,713.75 |
| Proposed | \$2,175.00 | \$11,374.96 | \$50,385.63 |
| Difference | \$117.48 | \$629.64 | \$2,671.88 |
| % Change | 5.71% | 5.86% | 5.60% |
| Cost per kWh Present | \$0.13608 | \$0.14102 | \$0.13269 |
| Cost per kWh Proposed | \$0.14385 | \$0.14928 | \$0.14012 |

Industrial Time of Use

| | Small | Medium | Large |
|------------------------------|--------------------|--------------------|---------------------|
| Present | \$28,812.65 | \$57,583.75 | \$778,541.95 |
| Proposed | \$30,468.68 | \$60,735.90 | \$819,355.33 |
| Difference | \$1,656.03 | \$3,152.15 | \$40,813.38 |
| % Change | 5.75% | 5.47% | 5.24% |
| Cost per kWh Present | \$0.10834 | \$0.11761 | \$0.10508 |
| Cost per kWh Proposed | \$0.11406 | \$0.12405 | \$0.11059 |

School Rate

| | Small | Medium | Large |
|------------------------------|-------------------|--------------------|--------------------|
| Present | \$3,938.81 | \$11,630.77 | \$24,843.82 |
| Proposed | \$4,137.59 | \$12,178.14 | \$26,009.41 |
| Difference | \$198.78 | \$547.37 | \$1,165.59 |
| % Change | 5.05% | 4.71% | 4.69% |
| Cost per kWh Present | \$0.12822 | \$0.12055 | \$0.12025 |
| Cost per kWh Proposed | \$0.13469 | \$0.12623 | \$0.12589 |

Street Lights

| | Reading | Lynnfield | North Reading | Wilmington |
|------------------------------|-------------------|-------------------|-------------------|-------------------|
| Present | \$9,084.85 | \$3,453.63 | \$4,639.77 | \$9,284.82 |
| Proposed | \$9,691.16 | \$3,684.94 | \$4,948.51 | \$9,902.78 |
| Difference | \$606.31 | \$231.31 | \$308.74 | \$617.96 |
| % Change | 6.67% | 6.70% | 6.65% | 6.66% |
| Cost per kWh Present | \$0.12699 | \$0.12772 | \$0.12583 | \$0.12594 |
| Cost per kWh Proposed | \$0.13547 | \$0.13627 | \$0.13420 | \$0.13433 |

Co-Op Resale

| | 500 kWh |
|------------------------------|------------------|
| Present | \$71.49 |
| Proposed | \$75.89 |
| Difference | \$4.40 |
| % Change | 6.15% |
| Cost per kWh Present | \$0.14298 |
| Cost per kWh Proposed | \$0.15178 |

Note: Proposed Rate Structure to Take Effect July 1, 2016. All Rate Classes Include the Fifteen Percent Prompt Payment Discount except Street Lights

Residential Schedule A Rate

Designation:

Residential A Rate

Available in:

Reading, Lynnfield Center, North Reading, and Wilmington

Applicable to:

Individual residential customers for all domestic uses where service is taken through one meter. Incidental commercial use, not exceeding 20% of the total energy used on the same premises is permitted.

Character of service:

A.C. 60 cycles: single phase.

Customer Charge:

\$4.51 per month

Distribution Energy Charge:

\$.05905 per Kilowatt-hour for all Kilowatt-hours usage

Budget Billing:

The customers under this rate will have available to them a budget billing program under which the customer is required to pay a levelized amount to the Department each billing period during the calendar year. The specifics of this program are outlined in the Department's General Terms and Conditions.

Low Income Discount

The Customer Charge under this rate will be waived upon verification of a low-income customer's receipt of any means-tested public benefit, or verification of eligibility for the low-income home energy assistance program, or its successor program, for which eligibility does not exceed 200 percent of the federal poverty level based on a household's gross income. In a program year in which maximum eligibility for LIHEAP exceeds 200 percent of the federal poverty level, a household that is income eligible under LIHEAP shall be eligible for the low-income electric discount. It is the responsibility of the customer to annually certify, by forms provided by the utility, the continued compliance with the foregoing qualifications.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

Residential Schedule A Rate (cont'd)

Farm Discount:

Customers who meet the eligibility requirements set forth by the Massachusetts Department of Food and Agriculture for being engaged in the business of agriculture or farming, and upon certification to the RMLD by the Massachusetts Department of Food and Agriculture, will be eligible for an additional 10% discount, prior to the RMLD prompt payment discount, on rates and charges applicable on their monthly billing statement.

Energy Conservation Charge:

The bill for service hereunder may be increased or decreased as provided by the Energy Conservation Charge.

Fuel Adjustment:

The bill for service hereunder may be increased or decreased as provided by the Standard Fuel Adjustment Clause.

Purchase Power Capacity and Transmission Charge:

The bill for service hereunder may be increased or decreased as provided by the Purchase Power Capacity and Transmission Charge.

Meter Reading and Billing:

Bills under this schedule will be rendered monthly. A prompt payment discount of 15% will be allowed on the Customer Charge and Distribution Energy Charge, only if the entire bill is paid-in-full by the discount due date.

General Terms and Conditions:

Service hereunder is subject to the General Terms and Conditions which are incorporated herein and are a part of this rate schedule.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

**Residential Schedule RW
Controlled Water Heater Rate**

Designation:

Residential RW Rate

Available in:

Reading, Lynnfield Center, North Reading, and Wilmington

Applicable to:

Individual residential customers for all domestic uses where service is taken through one meter. Incidental commercial use, not exceeding 20% of the total energy used on the same premises is permitted.

Character of service:

A.C. 60 cycles: single phase.

Terms of Use:

When a customer regularly uses an electric water heater of a type approved by the Department, service to the water heater will be controlled by a Department owned timing device. Customer also needs a customer owned internet connection. Internal wiring will be the responsibility of the customer. Water heater with two elements shall be interlocked to prevent simultaneous operation.

Customer Charge:

\$4.52 per month.

Distribution Energy Charge:

\$.04529 per Kilowatt-hour for all Kilowatt-hours usage

Budget Billing:

The customers under this rate will have available to them a budget billing program under which the customer is required to pay a leveled amount to the Department each billing period during the calendar year. The specifics of this program are outlined in the Department's General Terms and Conditions.

Low Income Discount

The Customer Charge under this rate will be waived upon verification of a low-income customer's receipt of any means-tested public benefit, or verification of eligibility for the low-income home energy assistance program, or its successor program, for which eligibility does not exceed 200 percent of the federal poverty level based on a household's gross income. In a program year in which maximum eligibility for LIHEAP exceeds 200 percent of the federal poverty level, a household that is income eligible under LIHEAP shall be eligible for the low-income electric discount. It is the responsibility of the customer to annually certify, by forms provided by the utility, the continued compliance with the foregoing qualifications.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

**Residential Schedule RW
Controlled Water Heater Rate (cont'd)**

Farm Discount:

Customers who meet the eligibility requirements set forth by the Massachusetts Department of Food and Agriculture for being engaged in the business of agriculture or farming, and upon certification to the RMLD by the Massachusetts Department of Food and Agriculture, will be eligible for an additional 10% discount, prior to the RMLD prompt payment discount, on rates and charges applicable on their monthly billing statement.

Energy Conservation Charge:

The bill for service hereunder may be increased or decreased as provided by the Energy Conservation Charge.

Fuel Adjustment:

The bill for service hereunder may be increased or decreased as provided by the Standard Fuel Adjustment Clause.

Purchase Power Capacity and Transmission Charge:

The bill for service hereunder may be increased or decreased as provided by the Purchase Power Capacity and Transmission Charge

Meter Reading and Billing:

Bills under this schedule will be rendered monthly. A prompt payment discount of 15% will be allowed on the Customer Charge and Distribution Energy Charge, only if the entire bill is paid-in-full by the discount due date.

General Terms and Conditions:

Service hereunder is subject to the General Terms and Conditions which are incorporated herein and are a part of this rate schedule.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

Residential Time-of-Use Schedule A2 Rate

Designation:

Residential Time-of-Use A2 Rate

Available in:

Reading, Lynnfield Center, North Reading, and Wilmington

Applicable to:

Individual residential customers for all domestic uses where service is taken through one On-Peak and Off-Peak meter. Incidental commercial use, not exceeding 20% of the total energy used on the same premises is permitted.

Character of service:

A.C. 60 cycles: single phase.

Customer Charge:

\$7.15 per month.

Distribution Energy Charge:

\$.08798 per Kilowatt-hour for all Kilowatt-hours usage during the On-Peak hours.

\$.01815 per Kilowatt-hour for all Kilowatt-hours usage during the Off-peak hours.

Definition of Periods:

The On-Peak period is defined as the hours between 12:00 Noon and 7:00 P.M. Monday through Friday except holidays as listed under the "Granted Holidays" paragraph listed below. The Off-Peak period is defined as the hours between 7:00 P.M. and 12:00 Noon Monday through Friday and all hours Saturday, Sunday and granted holidays as listed below.

Controlled Water Heater Allowance:

When a customer regularly uses an electric water heater of a type approved by the Department, 333 kWh will be credited to usage during the Off-Peak period and will be billed at \$.00300 per kWh. All kWh used Off-Peak above 333 kWh will be charged at the regular Off-Peak rate. If less than 333 kWh are used Off-Peak then only that amount of kWh will be billed at \$.00300 per kWh. Water heater with two elements shall be interlocked to prevent simultaneous operation. Service to the water heater will be controlled by a Department owned time switch in an approved outdoor socket.

Term:

A customer electing to be billed under this rate must remain on this rate for a minimum of one year. At the end of one year on this rate a customer may elect to remain on this rate or be billed under the Residential A Rate.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

Residential Time-of-Use Schedule A2 Rate (cont'd)

Budget Billing:

The customers under this rate will have available to them a budget billing program under which the customer is required to pay a levelized amount to the Department each billing period during the calendar year. The specifics of this program are outlined in the Department's General Terms and Conditions.

Low Income Discount

The Customer Charge under this rate will be waived upon verification of a low-income customer's receipt of any means-tested public benefit, or verification of eligibility for the low-income home energy assistance program, or its successor program, for which eligibility does not exceed 200 percent of the federal poverty level based on a household's gross income. In a program year in which maximum eligibility for LIHEAP exceeds 200 percent of the federal poverty level, a household that is income eligible under LIHEAP shall be eligible for the low-income electric discount. It is the responsibility of the customer to annually certify, by forms provided by the utility, the continued compliance with the foregoing qualifications.

Farm Discount:

Customers who meet the eligibility requirements set forth by the Massachusetts Department of Food and Agriculture for being engaged in the business of agriculture or farming, and upon certification to the RMLD by the Massachusetts Department of Food and Agriculture, will be eligible for an additional ten percent discount, prior to the RMLD prompt payment discount, on rates and charges applicable on their monthly billing statement.

Energy Conservation Charge:

The bill for service hereunder may be increased or decreased as provided by the Energy Conservation Charge.

Fuel Adjustment:

The bill for service hereunder may be increased or decreased as provided by the Standard Fuel Adjustment Clause.

Purchase Power Capacity and Transmission Charge:

The bill for service hereunder may be increased or decreased as provided by the Purchase Power Capacity and Transmission Charge.

Meter Reading and Billing:

Bills under this schedule will be rendered monthly. A prompt payment discount of 15% will be allowed on the Customer Charge, Distribution Demand Charge and Distribution Energy Charge, only if the entire bill is paid-in-full by the discount due date.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

**Town of Reading, Massachusetts
Municipal Light Department**

**MDPU # 261 supersedes
and cancels MDPU # 252**

Residential Time-of-Use Schedule A2 Rate (cont'd)

Granted Holidays

Under the Residential Time-of-Use Schedule A2 Rate the holidays granted for Off-Peak are: New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Columbus Day, Veteran's Day and Christmas Day.

General Terms and Conditions:

Service hereunder is subject to the General Terms and Conditions which are incorporated herein and are a part of this rate schedule.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

Commercial Schedule C Rate

Designation:

Commercial C Rate

Available in:

Reading, Lynnfield Center, North Reading, and Wilmington

Applicable to:

Service under this rate is available to industrial or commercial customers who take all their requirements under this rate. All electricity furnished under this rate will be metered through one service unless it is convenient for the Department to do otherwise.

Character of service:

AC 60 cycles: single phase or three phase.

Customer Charge:

\$7.76 per month.

Distribution Demand Charge:

\$8.12 per Kilowatt for all demand usage.

Distribution Energy Charge:

\$.01723 per Kilowatt-hour for all Kilowatt-hours usage.

Budget Billing:

The customers under the C Rate may elect the Budget Billing program under which the customer is required to pay the levelized amount to the Department each billing period during the calendar year. This rate is not available to C Rate Customers electing the Contract Demand Rate, or the Non-Firm Demand Rate. The specifics of this program are outlined in the Department's General Terms and Conditions.

Energy Conservation Charge:

The bill for service hereunder may be increased or decreased as provided by the Energy Conservation Charge.

Fuel Adjustment:

The bill for service hereunder may be increased or decreased as provided by the Standard Fuel Adjustment Clause.

Purchase Power Capacity and Transmission Charge:

The bill for service hereunder may be increased or decreased as provided by the Purchase Power Capacity and Transmission Charge.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

Commercial Schedule C Rate (cont'd)

Measurement of Billing Demand:

The billing demand shall be the highest of the fifteen minute kilowatt demand established during the billing period, but not less than eighty percent of the maximum demand established during the preceding summer season or sixty percent of the maximum demand established during the winter season.

Definitions of Seasons:

The summer season is defined as the months of June through September and the winter season is defined as the months of October through May.

Farm Discount:

Customers who meet the eligibility requirements set forth by the Massachusetts Department of Food and Agriculture for being engaged in the business of agriculture or farming, and upon certification to the RMLD by the Massachusetts Department of Food and Agriculture, will be eligible for an additional ten percent discount, prior to the RMLD prompt payment discount, on rates and charges applicable on their monthly billing statement.

Customer Transformer Ownership:

A customer requiring a minimal transformer capacity of over 2,000 kW will be required to furnish its own transforming and protective equipment, including mat, vault, primary and secondary cables, conduits, etc., which must comply with the specifications of the Department. The following discounts apply when the above is complied with:

\$.12 per kilowatt of demand when the service is taken at 2,400/4,160 volts.

\$.25 per Kilowatt of demand when the service is taken at 13,800 volts.

\$.375 per Kilowatt of demand when the service is taken at 34,500 volts.

Metering:

The Department may, at its option, meter at the customer's utilization voltage or on the high side of the transformers through which the service is furnished.

In the latter case, or if the customer's utilization voltage requires no transformation, a discount of 1.8% will be applied to the bill but in no case will such a discount be allowed if the metering voltage is less than 2,400 volts.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

**Town of Reading, Massachusetts
Municipal Light Department**

**MDPU # 262 supersedes
and cancels MDPU # 253**

Commercial Schedule C Rate (cont'd)

Meter Reading and Billing:

Bills under this schedule will be rendered monthly. A prompt payment discount of 15% will be allowed on the Customer Charge, Distribution Demand Charge and Distribution Energy Charge, only if the entire bill is paid-in-full by the discount due date.

General Terms:

Service hereunder is subject to the General Terms and Conditions which are incorporated herein and are a part of this rate schedule.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

Industrial Time-of-Use Schedule I Rate

Designation:

Industrial Time-of-Use I Rate

Available in:

Reading, Lynnfield Center, North Reading, and Wilmington

Applicable to:

Service under this rate is available to industrial or commercial customers who take all their requirements under this rate. All electricity furnished under this rate will be metered using an electronic meter capable of metering On-Peak and Off-Peak energy as well as kW demand.

Character of service:

A.C. 60 cycles: single phase or three phase.

Customer Charge:

\$35.77 per month.

Distribution Demand Charge:

\$8.94 per Kilowatt for all demand usage.

Definition of Periods:

The On-Peak period is defined as the hours between 12:00 Noon and 7:00 P.M., Monday through Friday except holidays as listed below. The Off-Peak period is defined as the hours between 7:00 P.M. and 12:00 Noon, Monday through Friday and all hours Saturday, Sunday and granted holidays as listed below.

Term:

A customer electing to be billed under this rate must remain on this rate for a minimum of one year. At the end of one year on this rate a customer may elect to remain on this rate or be billed under the Commercial C Rate.

Energy Conservation Charge:

The bill for service hereunder may be increased or decreased as provided by the Energy Conservation Charge.

Fuel Adjustment:

The bill for service hereunder may be increased or decreased as provided by the Standard Fuel Adjustment Clause.

Purchase Power Capacity and Transmission Charge:

The bill for service hereunder may be increased or decreased as provided by the Purchase Power Capacity and Transmission Charge.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

Industrial Time-of-Use Schedule I Rate (cont'd)

Measurement of Billing Demand:

The Billing demand shall be the highest of the fifteen minute On Peak kilowatt demand established during the billing period, but not less than eighty percent of the maximum On Peak demand established during the preceding summer season or sixty percent of the maximum On Peak demand established during the winter season.

The summer season is defined as the months of June through September and the winter season is defined as the months of October through May.

Farm Discount:

Customers who meet the eligibility requirements set forth by the Massachusetts Department of Food and Agriculture for being engaged in the business of agriculture or farming, and upon certification to the RMLD by the Massachusetts Department of Food and Agriculture, will be eligible for an additional ten percent discount, prior to the RMLD prompt payment discount, on rates and charges applicable on their monthly billing statement.

Customer Transformer Ownership:

A customer requiring a minimal transformer capacity of over 2000 kW will be required to furnish its own transforming and protective equipment, including mat, vault, primary and secondary cables, conduits, etc., which must comply with the specifications of the Department. The following discounts apply when the above is complied with:

\$.12 per Kilowatt of demand when the service is taken at 2,400/4,160 volts.

\$.25 per Kilowatt of demand when the service is taken at 13,800 volts.

\$.375 per Kilowatt of demand when the service is taken at 34,500 volts.

Metering:

The Department may, at its option, meter at the customer's utilization voltage or on the high side of the transformer through which the service is furnished. In the latter case, or if the customer's utilization voltage requires no transformation, a discount of 1.8% will be applied to the bill but in no case will such discount be allowed if the metering voltage is less than 2,400 voltage

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

Industrial Time-of-Use Schedule I Rate (cont'd)

Meter Reading and Billing:

Bills under this schedule will be rendered monthly. A prompt payment discount of 15% will be allowed on the Customer Charge, Distribution Demand Charge and Distribution Energy Charge, only if the entire bill is paid-in-full by the discount due date.

Granted Holidays

Under the Industrial Time-of-Use Schedule I Rate the holidays granted for Off-Peak are; New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Columbus Day, Veteran's Day and Christmas Day.

General Terms and Conditions:

Service hereunder is subject to the General Terms and Conditions which are incorporated herein and are a part of this rate schedule.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

School Schedule SCH Rate

Designation:

School SCH Rate

Available in:

Reading, Lynnfield Center, North Reading, and Wilmington

Applicable to:

Applicable to public or private schools offering kindergarten, regular elementary, middle, and high school as approved by the Department, who take all their requirements under this rate. All electricity furnished under this rate will be metered through one service unless it is convenient for the Department to do otherwise.

Character of service:

AC 60 cycles: single phase or three phase.

Customer Charge:

\$7.15 per month.

Distribution Demand Charge:

\$7.48 per Kilowatt for all demand usage.

Distribution Energy Charge:

\$.01180 per Kilowatt-hour for all Kilowatt-hours usage.

Budget Billing:

The customers under the School Rate may elect the Budget Billing program under which the customer is required to pay levelized amount to the Department each billing period during the calendar year.

Energy Conservation Charge:

The bill for service hereunder may be increased or decreased as provided by the Energy Conservation Charge.

Fuel Adjustment:

The bill for service hereunder may be increased or decreased as provided by the Standard Fuel Adjustment Clause.

Purchase Power Capacity and Transmission Charge:

The bill for service hereunder may be increased or decreased as provided by the Purchase Power Capacity and Transmission Charge.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

School Schedule SCH Rate (cont'd)

Measurement of Billing Demand:

The billing demand shall be the highest of the fifteen minute Kilowatt demand established during the billing period, but not less than eighty percent of the maximum demand established during the preceding summer season or sixty percent of the maximum demand established during the winter season.

Definitions of Seasons:

The summer season is defined as the months of June through September and the winter season is defined as the months of October through May.

Customer Transformer Ownership:

A customer requiring a minimal transformer capacity of over 2000 kW will be required to furnish its own transforming and protective equipment, including mat, vault, primary and secondary cables, conduits, etc., which must comply with the specifications of the Department. The following discounts apply when the above is complied with:

\$.12 per kilowatt of demand when the service is taken at 2,400/4,160 volts.

\$.25 per Kilowatt of demand when the service is taken at 13,800 volts.

\$.375 per Kilowatt of demand when the service is taken at 34,500 volts.

Metering:

The Department may, at its option, meter at the customer's utilization voltage or on the high side of the transformers through which the service is furnished.

In the latter case, or if the customer's utilization voltage requires no transformation, a discount of 1.8% will be applied to the bill but in no case will such a discount be allowed if the metering voltage is less than 2,400 volts.

Meter Reading and Billing:

Bills under this schedule will be rendered monthly. A prompt payment discount of 15% will be allowed on the Customer Charge, Distribution Demand Charge and Distribution Energy Charge, only if the entire bill is paid-in-full by the discount due date.

General Terms:

Service hereunder is subject to the General Terms and Conditions which are incorporated herein and are a part of this rate schedule.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

Private Street Lighting Rate Schedule D

Designation:

Street Light D Rate

Available:

Reading, Lynnfield Center, North Reading, and Wilmington

Applicable to:

Street and Area Light service on all public, private, and unaccepted streets and areas where the Department has facilities for supplying electricity and where the installation work involved is limited to the necessary lighting unit and connection on the same pole. This Schedule does not apply to Public Street Lighting Service supplied directly to the Municipalities.

Energy Charge:

The rate per year for the standard 4,000-hour schedule is as follows:

| <u>Fixture Type</u> | <u>Annual Rate \$</u> | <u>Annual kWh</u> |
|-------------------------------------|-----------------------|-------------------|
| 100 Watt Mercury | 63.79 | 500 |
| 175 Watt Mercury | 64.46 | 860 |
| 400 Watt Mercury | 117.59 | 1,900 |
| 50 Watt HPS | 73.46 | 240 |
| 100 Watt HPS | 93.75 | 500 |
| 250 Watt HPS | 123.79 | 1,200 |
| 400 Watt HPS | 171.95 | 1,900 |
| 25 Watt LED - Standard | 61.91 | 100 |
| 42 Watt LED – Non - Standard | 69.08 | 168 |
| 101 Watt LED – Non - Standard | 111.36 | 404 |
| 93 Watt LED Flood - Standard | 159.67 | 372 |
| 134 Watt LED Flood – Non - Standard | 195.13 | 536 |

Note: Mercury lamps will no longer be supplied for new installations.

Fuel Adjustment:

The bill for service hereunder may be increased or decreased as provided by the Standard fuel Adjustment Clause.

The Fuel Adjustment will appear on the bill as the monthly fuel charge multiplied by one twelfth of the Annual kWh shown above for each Fixture Type.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

Private Street Lighting Rate Schedule D (cont'd)

Purchase Power Capacity and Transmission Charge:

The bill for service hereunder may be increased or decreased as provided by the Purchase Power Capacity and Transmission Charge.

The Purchase Power Capacity and Transmission Charge will appear on the bill as the monthly charge multiplied by one twelfth of the Annual kWh shown above for each Fixture Type.

Extra Pole Cost

When an extra pole is required, specifically for street lighting, there will be an extra cost based upon pole size, including up to 100 feet of secondary.

| | |
|---------------------------------|------------------|
| 30 foot or 35 foot Class 4 pole | \$48.40 per year |
| 40 foot Class 4 pole | \$52.80 per year |

Meter Reading and Billing:

Bills under this schedule will be rendered monthly. A prompt payment discount of 15% will be allowed on the current bill, excluding Fuel and Purchased Power Capacity and Transmission Charges, only if the entire bill is paid-in-full by the discount due date.

General Terms and Conditions:

Service hereunder is subject to the General Terms and Conditions which are incorporated herein and are a part of this rate schedule.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

Municipal LED Street Lighting Rate

Designation:

LED Street Light Rate

Available:

Reading, Lynnfield Center, North Reading, and Wilmington

Applicable to:

Public Street Light service using LED fixtures supplied directly to the Municipalities where the Department has private facilities for supplying electricity and where the installation work involved is limited to the necessary lighting unit and connection to the same pole.

Energy Charge:

The rate per year for the standard 4,000-hour schedule is as follows:

| <u>Fixture Type</u> | <u>Annual Rate \$</u> | <u>Annual kWh</u> |
|-------------------------------------|-----------------------|-------------------|
| 25 Watt LED – Standard | 23.99 | 100 |
| 42 Watt LED – Non-Standard | 24.67 | 168 |
| 101 Watt LED – Non - Standard | 32.37 | 404 |
| 93 Watt LED Flood - Standard | 49.12 | 372 |
| 134 Watt LED Flood – Non - Standard | 56.42 | 536 |

Fuel Adjustment:

The bill for service hereunder may be increased or decreased as provided by the Standard fuel Adjustment Clause. The Fuel Adjustment will appear on the bill as the monthly fuel charge multiplied by one twelfth of the Annual kWh shown above for each Fixture Type.

Purchase Power Adjustment:

The bill for service hereunder may be increased or decreased as provided by the Purchase Power Adjustment. The Purchase power Adjustment will appear on the bill as the monthly charge multiplied by one twelfth of the Annual kWh shown above for each Fixture Type.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

**Town of Reading, Massachusetts
Municipal Light Department**

**MDPU # 266 supersedes
and cancels MDPU #257**

Municipal LED Street Lighting Rate (cont'd)

Extra Pole Cost

When an extra pole is required, specifically for street lighting, there will be an extra cost based upon pole size, including up to 100 feet of secondary.

| | |
|---------------------------------|------------------|
| 30 foot or 35 foot Class 4 pole | \$48.40 per year |
|---------------------------------|------------------|

| | |
|----------------------|------------------|
| 40 foot Class 4 pole | \$52.80 per year |
|----------------------|------------------|

Meter Reading and Billing:

Bills under this schedule will be rendered monthly. A prompt payment discount of 10% will be allowed on the current bill, excluding fuel adjustment charges, only if the entire bill is paid-in-full by the discount due date.

General Terms and Conditions:

Service hereunder is subject to the General Terms and Conditions which are incorporated herein and are a part of this rate schedule.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

Cooperative Resale Schedule G Rate

Designation:

Cooperative G Rate

Available in:

Available to municipal lighting plants and private companies whose service territory is adjacent to the service territory of the Department and for distribution to such customers that cannot be served from the existing distribution lines, provided that the Department has available facilities for furnishing the service

Character of Service:

A.C. 60 cycles: single phase.

Customer Charge:

\$4.16 per month.

Distribution Energy Charge:

\$.04929 per Kilowatt-hour for all Kilowatt-hours usage.

Fuel Adjustment:

The bill for service hereunder may be increased or decreased as provided by the Standard Fuel Adjustment Clause.

Purchase Power Capacity and Transmission Charge:

The bill for service hereunder may be increased or decreased as provided by the Purchase Power Capacity and Transmission.

Meter Reading and Billing:

Bills under this schedule will be rendered monthly. A prompt payment discount of 15% will be allowed on the Customer Charge and Distribution Energy Charge, only if the entire bill is paid-in-full by the discount due date.

General Terms and Conditions:

Service hereunder is subject to the General Terms and Conditions which are incorporated herein and are a part of this rate schedule.

Rate Filed: June 1, 2016

Effective: On Billings on or After July 1, 2016

Filed By: Coleen M. O'Brien, General Manager

**READING MUNICIPAL LIGHT DEPARTMENT
GENERAL TERMS AND CONDITIONS
FOR ELECTRIC SERVICE**

I. APPLICABILITY

The following Terms and Conditions of the Reading Municipal Light Department (“RMLD”) shall be a part of every Rate Schedule or contract for electric service, except as may be expressly modified by contract or a particular Rate Schedule, or superseded by any applicable order or regulation of the Massachusetts Department of Public Utilities (“DPU”). The provisions of these Terms and Conditions and the Schedule of Rates shall apply to all persons and entities applying for or receiving service from RMLD (“Customer”) and compliance therewith by the Customer is a condition precedent to the initial and/or continuing supply of electricity, as applicable, by RMLD.

These Terms and Conditions, and any amendments hereto, are binding on every Customer regardless of whether such Customer has actual notice of them. No agent or employee of RMLD is authorized to modify, change or waive any of these Terms and Conditions by oral agreement, representation or otherwise. These Terms and Conditions may be revised, amended, supplemented, or otherwise changed from time to time only by a duly authorized vote of the RMLD Board of Commissioners. Such changes, when effective, shall supersede the applicable provisions hereof and shall be binding on all Customers. Service shall be subject to RMLD’s applicable policies, rules, regulations and specifications, to the extent not inconsistent with these Terms and Conditions.

II. INITIATING ELECTRIC SERVICE

- A. EXCLUSIVE SERVICE PROVIDER. RMLD shall be the exclusive electric service provider in its service territory. All Customers within RMLD’s electric service territory shall be prohibited from purchasing energy from any other entity or person. All Customers within RMLD’s electric service territory shall be prohibited from obtaining distribution services from any other service provider, except with RMLD’s express written consent, which may be withheld by RMLD in its sole discretion, or upon order of the DPU.
- B. SERVICE APPLICATION. Any person or entity seeking to initiate temporary or permanent service or to change or to restore service shall complete and sign a written application on such forms provided or specified by RMLD. RMLD may require that applications be submitted in person for identification purposes. The Customer shall be responsible for the payment of all applicable fees at the time of application for service. RMLD may request any other information as it deems

necessary to secure payment for all charges and to provide efficient and reliable service.

- C. SECURITY DEPOSITS. RMLD may require any Customer, upon application for service or at any time, to furnish a security deposit in the form of cash, check, credit or debit card payment, or irrevocable letter of credit equal to an estimated bill for up to three months' service or such other amount as permitted by applicable law or regulation. The estimate maybe based on the highest month(s) of billing within a twelve-month period or based on the information reasonably available for electric usage for the type of business in which the Customer is engaged. RMLD may adjust the amount of the security deposit as necessary consistent with the Customer's usage history and as otherwise may be necessary to ensure that the full deposit is maintained. The security deposit may be maintained for the full term of service. Interest on security deposits held longer than six months shall be paid to the Customer or credited to the Customer's account in accordance with applicable laws or regulations. Outstanding charges may be deducted from the security deposit upon discontinuation or termination of service. RMLD may waive the security deposit, in its sole discretion, when payment of the charges may be secured through other means. Failure to pay the security deposit or any adjusted amount when due may result in denial or suspension of service.
- D. SERVICE CONTINGENT UPON CERTAIN RIGHTS. The supply of service is contingent upon RMLD's ability to secure and retain the necessary location(s), rights-of-way or other property rights for its poles, wires, conduit, cable, and other equipment or apparatus. The Customer, at its sole expense, shall provide or secure any necessary permits, licenses, certificates, easements or rights-of-way on private property as may be required by RMLD to enable RMLD to install and furnish the service for which application is made. RMLD, without liability, may suspend or terminate service if the Customer fails to furnish or maintain any such permits, licenses, certificates, easements or right-of-way grants required by RMLD for such service.
- E. REFUSAL TO SERVE. RMLD reserves the right to refuse to supply service to new Customers or to supply additional load or to upgrade service to any existing Customer if it is unable to obtain the necessary equipment and facilities or capital required for the purpose of furnishing such service, or the difficulty of access thereto is such that it causes an undue hardship on RMLD, financial or otherwise. RMLD also may refuse to supply service to loads of unusual characteristics that could negatively affect the cost, quality or reliability of service supplied to

RMLD's other Customers. As a condition to providing or continuing service, RMLD may require any Customer having such unusual loads to install special regulating and protective equipment, as determined by RMLD, at the Customer's sole expense.

- F. REJECTION FOR UNPAID BALANCE. RMLD reserves the right to reject any applications made by or on behalf of any Customer whose bills for service remain unpaid at the time of the application. In RMLD's discretion, RMLD may require either the execution of a Cromwell Waiver to add the outstanding balance to the new account or the payment of all outstanding bills in advance of supplying service.

III. INSTALLATION OF NEW SERVICE AND SERVICE CONNECTIONS

- A. CUSTOMER'S WIRING. Except for the meter, the Customer is responsible for the installation of all equipment and wiring on the Customer's premises beyond the point of connection, as specified by RMLD. The Customer's wiring and electrical equipment shall comply with applicable bylaws, state and local codes or requirements, the National Electric Safety Code, and RMLD's specifications and policies as may be established or amended from time to time. The Customer shall obtain written approval of the Town Wiring Inspector prior to the connection of new service. RMLD may refuse to provide service until the Customer's wiring has been approved for energization or if RMLD determines that the Customer's installation does not comply with applicable requirements.
- B. EXTENSION OF DISTRIBUTION SERVICE. The extension of new service, whether to undeveloped areas or existing service locations, shall be subject to RMLD's requirements and specifications and at the Customer's expense. RMLD may require the execution of a separate construction agreement to address major or unusual new service installations, as determined by RMLD. When system-wide improvements are required, as determined by RMLD, to provide reliable service to the Customer due to the size of the load or the characteristics of service, the Customer may be required to pay all or a portion of the cost of such system-wide improvements. The Customer also may be required to pay all or a portion of the costs of the relocation of RMLD's existing facilities when required to provide new or upgraded service or when roadways are reconfigured to accommodate new service. Such charges will be based on RMLD's actual costs for labor and materials, including engineering and design.

- C. CUSTOMER-SPECIFIC ENGINEERING REQUIREMENTS AND SPECIFICATIONS. RMLD reserves the right to impose any Customer-specific engineering requirements or specifications, as RMLD, in its discretion, deems necessary for the protection of its distribution system and for the provision of safe and reliable service to the Customer and to RMLD's other Customers. The Customer is responsible for ascertaining whether any special engineering requirements or specifications will apply.
- D. EQUIPMENT. RMLD may require the installation of any equipment that it deems necessary for the reliable and efficient provision of service and the protection of its facilities, including remote disconnect and current limiting devices.
- E. CUSTOMER INSTALLATIONS. When RMLD requires the Customer to install equipment and facilities for the extension, upgrade, repair, relocation or conversion of electric service, including temporary service, a Utility Authorization Number (UAN) shall be obtained from RMLD prior to the commencement of the work. All installations and work shall be performed in a workmanlike manner in accordance with applicable codes and prevailing industry standards, and shall be subject to RMLD's inspection and written approval. All equipment shall be installed at a location designated or authorized by RMLD. Service shall not be connected or reconnected to RMLD's facilities until written approval is obtained from RMLD and applicable local authorities. RMLD may suspend or disconnect service if the Customer's installation subsequently fails to satisfy applicable codes, standards or RMLD's requirements or specifications.
- F. OWNERSHIP OF EQUIPMENT AND FACILITIES. All equipment and facilities up to the point of connection, whether installed by the Customer or RMLD, shall be owned by RMLD. All meters shall be owned by RMLD. Unless otherwise provided herein or pursuant to a written agreement with the Customer, all equipment furnished by RMLD shall remain its property.
- G. REPLACEMENTS, REPAIRS, AND UPGRADES OF CUSTOMER EQUIPMENT AND FACILITIES. The Customer shall be responsible, at its expense, for maintaining its equipment and facilities in good condition, in compliance with applicable codes, and in accordance with RMLD's requirements and specifications. All new equipment and facilities shall conform to RMLD's requirements and specifications. RMLD may suspend or disconnect service if Customer fails to comply with this provision.

- H. TEMPORARY SERVICE. Temporary service will be provided to the Customer in accordance with RMLD's specifications and requirements and at the Customer's expense. The Customer shall pay a flat rate as provided in RMLD's prevailing rate schedules for temporary, single phase 120/240 Volt, 100 AMP, three-wire connections for building construction or reconstruction projects, or when permanent electric service will not result. The Customer shall pay the actual costs, as estimated by RMLD, for all other temporary service. All charges shall be paid in advance. Any temporary relocation of service drop conductors by RMLD to accommodate building reconstruction that will not be immediately connected to a new service entrance shall be subject to charges as a temporary service.

When temporary service is provided for the construction of new buildings and electric service is expected to be furnished to the location on a permanent basis, RMLD may reuse any equipment or material in the temporary service installation for the permanent connection. The temporary service extension charge will not include the costs of any material and associated labor that will be used in the permanent connection.

IV. ADDITIONAL SERVICE REQUIREMENTS AND LIMITATIONS

- A. LOAD CHARACTERISTICS. RMLD will determine the character of service to be made available at each location. As provided in Article II, Section E, RMLD may refuse to supply service or may suspend or discontinue service to loads of unusual characteristics that could adversely affect RMLD's equipment and facilities, the quality of service supplied to other Customers, the public safety, or the safety of RMLD personnel, or require the installation of regulating equipment, as determined by RMLD in its sole discretion. The Customer shall notify RMLD in writing, on a form approved by the RMLD, before any change or addition is made in the load characteristics of the Customer's equipment. A minimum of 90 days' advanced written notice is required for load additions or changes that would result in a 25% increase above original load projections. The Customer shall be liable for any damage caused by any such changes or additions made without RMLD's written approval, including any damage to RMLD's meters, transformers, lines, or other equipment. RMLD reserves the right to install load-limiting devices to enable the disconnection of service if the rated capacity of RMLD's service is exceeded.
- B. TYPE OF SERVICE. The type and/or size of service requested by a Customer may not be available at the location where such service is desired. Non-standard

service only may be made available upon the express written approval of the General Manager of RMLD, as determined in RMLD's sole discretion, and at the sole expense of the Customer.

- C. COMPLIANCE WITH RATE AVAILABILITY. To the extent applicable, the use of service shall not be for any purposes other than those covered by the availability provision of the particular rate under which service is supplied.
- D. SUITABILITY OF EQUIPMENT AND APPARATUS. The Customer's wiring, equipment and apparatus shall be suitable for compatible operation with the service supplied by RMLD and shall, at all times, conform to the requirements of any legally constituted authorities and to those of RMLD, and the Customer shall keep such wiring, apparatus, and equipment in proper repair. The Customer shall not use the supplied service for any purpose or with any apparatus that would cause any disturbances or which may impair or render unsafe the service supplied by RMLD to its other Customers. RMLD shall not be responsible for the maintenance or installation of the equipment and property on the Customer's side of the delivery point, nor shall RMLD have any duty to investigate the same. However, RMLD reserves the right, but not the obligation, to disconnect its service, if to its knowledge and in its judgment, the Customer's installation has become or is dangerous, defective, or in violation of applicable safety codes or RMLD's requirements or specifications. The Customer shall be liable for any damage resulting to RMLD's apparatus or facilities or to its other Customers caused by the Customer's failure to comply with any provision of these Terms & Conditions.
- E. COMPLIANCE WITH LAWS. The Customer shall comply with all applicable by-laws, codes, requirements, certificates, permits and approvals of federal, state or municipal bodies or authorities with respect to the installation and maintenance of its equipment and facilities and shall be required to furnish satisfactory evidence of such compliance upon request. RMLD shall not be required to supply or continue service unless all applicable permits and approvals have been obtained or compliance with applicable codes has been established.
- F. RESALES PROHIBITED. Service supplied by RMLD shall be for the exclusive use of the Customer for the purpose and class of service specified, and such service shall not be resold.

**V. INSTALLATION, ACCESS AND PROTECTION OF RMLD'S EQUIPMENT
AND METERS**

- A. INSTALLATION AND MAINTENANCE OF METER. Unless otherwise specified herein or in an applicable rate schedule, at its expense, RMLD will furnish and install, at locations it designates, one or more meters for the purpose of measuring electricity supplied. All meters shall be installed on meter sockets or troughs provided and wired by the Customer, at its expense. All meters installed by RMLD shall remain the property of RMLD, regardless of whether such meter is repaired or replaced by RMLD at the Customer's expense as provided herein. RMLD shall maintain and test the meters in accordance with applicable laws or regulations.
- B. CHANGES TO METERS DUE TO UNAUTHORIZED USE. Whenever RMLD determines that an unauthorized use of electricity is being made at the service location, RMLD may make any changes to its meters, appliances or other equipment on the Customer's premises or take any other corrective action as may be appropriate under the circumstances to ensure the safety and security of the equipment and its installation. Any such changes shall be made at the Customer's sole expense.
- C. SPACE AND HOUSING. The Customer shall furnish and maintain, at no cost to RMLD, the necessary space, housing, fencing, barriers, and foundations for the protection of equipment to be installed upon the Customer's premises, whether such equipment is furnished by the Customer or RMLD. If the Customer refuses or fails to do so, RMLD, at its option, may charge the Customer the costs for furnishing and maintaining the necessary facilities or devices for the protection of its equipment. Such space, housing, fencing, barriers and foundations shall be in conformity with applicable laws and regulations and subject to RMLD's specifications and approval.
- D. ACCESS TO RMLD'S EQUIPMENT AND METERS. At all times, the meter and all other RMLD equipment installed on the Customer's premises for the purposes of supplying service, shall be readily accessible to RMLD at all reasonable times for reading, inspection, repairs, replacements, and testing. Access to RMLD's meters and equipment shall be free from all obstructions, including shrubbery, fencing, and other obstructions. RMLD may refuse to supply or may suspend service if access cannot be readily or safely obtained, as determined by RMLD in its sole discretion.
- E. GRANT OF RIGHTS. The Customer hereby gives RMLD permission to access the Customer's premises at all reasonable times for the purposes of installing, inspecting, testing, reading, maintaining, repairing, replacing or removing RMLD's meters, equipment or appliances. If access is refused or is otherwise not provided, RMLD may take such corrective action as it deems necessary, including suspending service until access is obtained. The Customer shall be responsible for all costs incurred by RMLD to obtain such access. The Customer shall pay all

such charges in full before service will be restored or any new service will be supplied. RMLD shall not be liable for any damage caused in obtaining lawful access to the premises.

- F. INTERFERENCE AND TAMPERING PROHIBITED. No person, unless expressly authorized by RMLD in writing, shall disconnect, remove, inspect or otherwise alter any meter or other equipment or facilities owned by RMLD. Neither Customer, nor anyone acting on the Customer's behalf, shall break any seals or change any settings to RMLD's meters or equipment. Upon request, RMLD will temporarily relocate meters to accommodate construction projects at the service location. Charges may apply. The Customer shall be responsible for the safekeeping of RMLD's meters and equipment, which includes taking all reasonable precautions to prevent damage or interference therewith. RMLD may impose any additional reasonable conditions as it deems necessary for the protection of its equipment and facilities. The Customer shall be responsible for all costs associated with any damage or interference with RMLD's meters and/or equipment, including the cost of repairs or replacements as determined by RMLD in its sole discretion. RMLD reserves the right to suspend or discontinue service until full restitution is made and to take other reasonable measures to ensure the safety and protection of its property. In addition, any person found tampering with such RMLD equipment or meters may be subject to a fine or imprisonment, or both, as provided by G.L. c. 164, Section 126 or other applicable law.
- G. MULTIPLE DWELLING UNITS AND BUILDINGS. Separate dwelling units, whether within the same building or in separate buildings on the same premises, shall be considered to be separate Customers and shall be metered individually wherever practicable. If a single family residence is subsequently converted to multiple dwelling units, or if for some other reason it is impractical, in the judgment of RMLD, to separately meter individual dwelling units, electric service may be supplied through a single meter under the applicable residential or general service rate. RMLD shall have the option, but shall not be required to install separate service for any garage, barn, or other out-building if such service may be supplied from the main premises. Landlord customers shall comply with the requirements of the State Sanitary Code. As provided in Section IV.F, in no circumstances shall electricity be resold to the occupants.

VI. ADDITIONAL CUSTOMER RESPONSIBILITIES.

- A. PROTECTION OF CUSTOMER EQUIPMENT AND APPLIANCES. The Customer acknowledges that computers, reproduction, X-ray, data processing equipment, electronics, similar and other devices can be extremely sensitive to abnormal voltage or reversal of service. The Customer is solely responsible for the protection of its equipment and appliances and should consult the equipment manufacturer for suitable devices to protect against these conditions. RMLD shall

not be liable for any losses or damage to the Customer's equipment and appliances.

- B. INSTALLATION OF RELAYS. The Customer shall install, at its own expense, a reverse-phase relay of approved type on all alternating-current motors for passenger and freight elevators, hoists and cranes, and a reverse-power or other approved relays for parallel operation. The Customer is responsible for protecting all polyphase equipment from loss of phase conditions (single phasing).
- C. CHANGES IN CUSTOMER'S CONDITIONS OR INSTALLATION. The Customer shall provide advance written notice to RMLD of any proposed change to the purpose or location of the Customer's equipment or service conditions. Such changes shall not be made until approved by RMLD in writing. RMLD may request any information as it deems necessary to evaluate the effect of the proposed change on its system. The Customer shall be liable for any damage to the meters or other apparatus and equipment of RMLD caused by the changed conditions or installation made without RMLD's express prior approval. RMLD may terminate or refuse to provide service to any location if changes in the Customer's equipment, installation or interconnection fail to meet specifications or requirements prescribed RMLD.
- D. RELOCATION OF FACILITIES. If for any reason, it becomes necessary for RMLD to relocate any of its poles, wires or cables by which the Customer is served, the Customer, at its own expense, shall change the location of its point of delivery to a point readily accessible from the new location, and shall make any change in the wiring system in connection therewith. The Customer also may be responsible for the costs of such relocation if the relocation is necessitated by the Customer's service requirements or development plans.
- E. TREE AND DEBRIS REMOVAL. The Customer shall be responsible, at its expense, for removing and disposing of any trees, shrubs, branches, limbs, or debris that interfere with RMLD's equipment or facilities or the provision of electric service to the Customer or RMLD's other customers. RMLD shall have the right, but not the obligation, to clear the Customer's storm-related debris at the Customer's expense, as it deems necessary to access its facilities.

VII. RATES, CHARGES AND BILLING

- A. RATE. RMLD will determine the rate applicable to each Customer based upon such Customer's usage or class of service. Every Customer is entitled to request service under the lowest rate applicable to the service supplied during each calendar year. RMLD shall not be liable for any claim that service provided to the Customer might have been less expensive or more advantageous to the

Customer if supplied under a different rate. Minimum charges may apply to each billing period or portion thereof as provided in the applicable rate schedule.

- B. CHANGES IN RATE. RMLD's rates, rate schedules and tariffs are subject to change pursuant to and in accordance with G. L. c. 164, § 58. Service shall be billed at the new rate as of effective date.
- C. BILLING. Meters typically will be read on a monthly basis. At a minimum, all meters shall be read at least every other month as provided in the DPU billing and termination regulations, except where access to the meter cannot be obtained on the regular reading date. Bills for regular service charges shall be rendered monthly, except when RMLD determines that a different billing period is required or desirable as permitted by applicable law or regulation, such as on a bimonthly basis. Charges for the installation, maintenance, and repairs of equipment and facilities will be billed as applicable. RMLD may require payment in advance for such work.
- D. BUDGET AND PAYMENT PLANS FOR RESIDENTIAL CUSTOMERS. RMLD offers budget and payment plans to qualified residential customers in accordance with 220 CMR 25.02. The establishment and administration of budget and payment plans shall be subject to RMLD's prevailing policies and practices. RMLD may terminate budget and payment plans in accordance with applicable regulations and to the extent permitted, if the Customer discontinues automatic withdrawal payments when required, fails to maintain sufficient funds for full payment when due or otherwise fails to make any payment when due. Customers also may be subject to termination for electric service in accordance with 220 CMR. 25.00.
- E. DUE DATE. All bills shall be due and payable upon receipt. The bill shall be deemed to be received on the date of hand delivery or three days following the date of mailing, as applicable, unless otherwise specified in the applicable rate schedule. If a bill for monthly service is not paid in full within forty-five (45) days of receipt of the original invoice and the amount is not subject to a good faith dispute, the invoice shall be deemed to be past due and service shall be subject to termination in accordance with applicable laws and regulations. The Customer also may be subject to late payment fees. Any applicable discounts will apply only when all charges have been paid in full and only when full payment is received by RMLD by the discount expiration date. All claims for billing adjustments shall be made before the bill becomes past due.
- F. LIABILITY FOR CHARGES. The Customer shall be and shall remain the Customer of record and shall be liable for all charges for service until such time as the Customer requests termination of service and a final meter reading is obtained by RMLD. All requests for termination shall be in writing on such

forms required by RMLD. Continuous service will be provided to rental properties during periods of vacancy upon the filing of an application for continuous service pursuant to which the property owner or management company agrees to pay for the charges until a new Customer-of-record is established.

- G. LIABILITY FOR UNMETERED SERVICE AND UNBILLED CHARGES. When the Customer receives service that has not been metered or has not been charged due to a billing error or otherwise, RMLD may issue a make-up bill for the unbilled charges. The charges will be based on the actual use (if available) or estimated use (if actual meter readings are not available), at the applicable rate(s) for service during the period of unmetered or unbilled use.
- H. ADDITIONAL FEES AND CHARGES. Additional fees and charges may apply based on RMLD's then-current fees and charges.

VIII. SUSPENSION OR TERMINATION OF SERVICE

- A. SUSPENSION OF SERVICE FOR REPAIRS AND EMERGENCIES. RMLD reserves the right to suspend service at any time for the purposes of making repairs, replacements or changes to RMLD's equipment or facilities, whether on or off the Customer's premises. RMLD also may suspend service at any time, in its judgment, to protect the safety of its workers or the public or its property, or otherwise when RMLD deems that an emergency exists. However, nothing in this Section shall be deemed to require RMLD to make any such repairs, replacements or changes, at times other than RMLD's normal business hours. The Customer typically will be notified in advance to the extent practicable except in cases of emergency.
- B. NON-COMPLIANCE. RMLD shall have the right to suspend or discontinue service when the Customer fails to comply with or fails to perform any of the requirements or obligations of these Terms and Conditions or any applicable rate schedule or service agreement with RMLD, including non-payment of charges when due, or if the equipment and apparatus of the Customer interferes with RMLD's system or service to RMLD's other Customers.
- C. REASONS OF SAFETY OR FRAUD. RMLD may suspend or discontinue service without prior notice in the following situations:
1. Where the Customer's wiring or equipment is found to be in a dangerous or unsafe condition or for other reasons affecting the health or safety of the public or RMLD's workers; and/or
 2. If necessary to protect RMLD from fraud or theft.

- D. CAUSES BEYOND RMLD'S CONTROL. RMLD may discontinue or suspend service and remove any RMLD equipment which, in the opinion of RMLD, may have become unsuitable by reason of deterioration, civil commotion, vandalism, state of war, explosions, fire, storm, flood, lightning, or any other causes beyond RMLD's reasonable control.
- E. AS PERMITTED BY DPU REGULATIONS. RMLD may discontinue service in accordance with or as permitted by the DPU's billing and termination regulations, 220 C.M.R. 25.00, *et seq.*
- F. REMOVAL OF APPLIANCES. RMLD may remove its equipment, wiring and appliances upon termination or discontinuance of service. Such appliances, wiring and/or equipment shall not be restored except upon the filing and acceptance of a new application for service and payment of all outstanding charges and the costs of removal and restoration of service.

IX. LIMITATIONS ON LIABILITY AND DAMAGES AND EXCLUSIONS

- A. SERVICE QUALITY AND INTERRUPTIONS. While RMLD endeavors to furnish adequate and reliable service, RMLD does not guarantee continuous service or warrant that service will be free from interruptions or defects and disclaims any and all loss or liability resulting from its failure to provide service or its inability to maintain uninterrupted and continuous service to the extent allowed by law. RMLD shall not be responsible for any variation or diminution in service, abnormal voltage, or reversal of its service. To the extent such liability may not be disclaimed by law, RMLD shall not be liable for such condition except to the extent that such condition is caused solely by RMLD's gross negligence or willful misconduct. In no event shall RMLD be liable for any indirect, incidental or consequential losses or damages of any kind resulting therefrom. RMLD shall have no duty to regulate voltage and/or frequency beyond that required by the American National Standard for Electric Power Systems and Equipment, ANSI C84.1, and if the Customer requires regulation of voltage and/or frequency that is more refined, the Customer shall furnish, install, maintain and operate the necessary apparatus at his own expense.

The Customer acknowledges that when a part or parts of the interconnected generation, transmission or distribution systems may be threatened by a condition which may affect the integrity of the supply of electric service, or when a condition of actual or threatened shortage of available energy supplies and resources shall exist, RMLD may, in its sole judgment, curtail, allocate, or interrupt such service to the Customer. If Customers fail to comply with any such allocations or restrictions, RMLD may take such remedial actions as it deems appropriate under the circumstances including but not limited to, suspension of

electric service and/or imposing a surcharge for the Customer's excess use of electricity.

- B. USE OF ELECTRICITY OR PRESENCE OF APPLIANCES. RMLD shall not be liable for injuries or damage to the person or property of the Customer or any other persons resulting from the use of electricity or the presence of RMLD's appliances and equipment on the Customer's premises. Neither by inspection nor non-rejection does RMLD in any way give any warranty, express or implied, as to the adequacy, safety or other characteristics of any equipment, wiring or devices, installed on the Customer's premises. RMLD shall not be liable for injuries or damages resulting in any way from the supplying or use of electricity or from the presence or operation of RMLD's service, conductors, appurtenances or other equipment on the Customer's premises.
- C. OTHER EVENTS. Notwithstanding the foregoing limitations, RMLD disclaims any and all liability for losses or damages due to any other causes beyond its immediate control, whether fire, explosion, flood, weather conditions, accidents, labor difficulties, conditions of fuel supply, the attitude of any public authority, reduction in voltage, rotational utilization of distribution feeders, scheduled black-outs, failure to receive electricity for which in any manner it has contracted, or due to the operation in accordance with good utility practice of an emergency load reduction program by RMLD or one with whom it has contracted for the supply of electricity.