

**READING MUNICIPAL
LIGHT DEPARTMENT**

BOARD OF COMMISSIONERS

REGULAR SESSION

MONDAY, DECEMBER 2, 2019

APPROVAL OF BOARD MINUTES
JULY 18, 2019 AND
SEPTEMBER 19, 2019
ATTACHMENT 1

ANNUAL TOWN PAYEMENT STUDY
ENERGY NEW ENGLAND
ATTCHMENT 2



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Reading Municipal Light Department

Annual Town Payment Study

The Reading Municipal Light Department (RMLD) asked Energy New England (ENE) to perform a study of the Annual Town Payment RMLD makes to the Town of Reading (and other towns). RMLD asked ENE to study its current methodology for the Annual Town Payment and determine the appropriateness of the level of the payment and the calculation used to determine the payment. Energy New England was also asked to make a recommendation to RMLD as to the calculation method of the Annual Town Payment going forward.

Although most municipal electric utilities in Massachusetts serve the town in which it resides, the RMLD is unique since it serves four towns (Reading, Wilmington, Lynnfield and North Reading). What makes this arrangement more unique is that the Town of Reading's electric sales compose approximately 21% of the total electric sales in the service territory with remainder of the sales coming from the outside towns. The RMLD makes an annual above the line expense payment to all four towns based on 2% of net plant payed out by load percentage of each of the towns, aside from the annual below the line voluntary payment to the Town of Reading. The other unique situation is that the rate payers in these towns are not the same as the taxpayer in the host community of the light department.

There are only a few municipal electric systems in Massachusetts who serve multiple towns, none to the extent of RMLD and none that have agreements similar to RMLD and payments to other towns. This makes the 20-year agreements and "above the line" payments, a unique situation for RMLD, which must be taken into account when reviewing the potential options for annual town payment formulas. Therefore, when considering the annual payments, all forms of payments to the towns must be considered.

A significant input to this study is the fact that the electric utility business has changed drastically over the last twenty years with the business model focus being on energy efficiency and conservation, customer owned generation and electrification (a nationwide push toward carbon free generation). This effort has spawned a business model in the electric utility industry that is inconsistent with conventional economic



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thought. These factors, along with the financial crisis in 2008, have led to declining sales in the electric utility industry.

1.0 - Executive Summary

The annual town payments are made by electric municipal utilities to the town where it resides and is treated in accounting terms as a voluntary “below the line” payment that comes from the Allowable Return on Equity as constituted by the Massachusetts Department of Public Utilities and Massachusetts General Laws - Chapter 164. Municipal electric utilities can also give additional payments or services to their towns such as discounted street lighting, tree trimming, or labor and materials supplied to the town for various projects, which can also be included in the total annual payment’s calculation.

Annual town payments also have several designations ranging from Return on Equity Payments, Town Payments and Payment in Lieu of Taxes (PILOT) among others. Regardless of the name of the annual town payment, it represents the financial benefit to the town for ownership of the municipal electric light plant and may also include covering the cost of support services (payroll, bill paying, human resources, etc.) performed by the town owning the municipal electric utility.

There is no State statute requiring the municipal electric light departments to make these payments and the calculation used to determine the payments take on many forms, as will be discussed further in this report. There are a few methods used to make this determination and the local and national methods were reviewed.

The following is an explanation of ENE’s data collection, review of the respondent’s data, analysis of the operating data, capital needs, RMLD annual payment history and a recommendation on a methodology on RMLD’s future Annual Town Payment.

2.0 - Initial Meeting

As a matter of defining the ENE Scope of Work, ENE and the RMLD General Manager and Staff met to discuss the RMLD current voluntary Annual Town Payment methodology, its net plant calculation for all towns per DPU order, the budget projections for current and future state of kWh sales, the operation and capital budgets, their current liabilities and the future needs of the RMLD in order to maintain the system. These are



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all factors that help determine the health and stability of the organization and plays a factor into the methodology related to the annual town payments. RMLD provided the information on the items above for review.

3.0 – Data Gathering, Review and Analysis

Municipal electric utilities throughout Massachusetts were contacted by e-mail and asked to respond to a 2018 data request that included the following information.

- Electric sales
- Electric revenues
- Number of customers
- Peak demand
- Number of employees
- Annual Town Payment
- Annual Town Payment calculation
- Services supplied (electric, gas, water etc.)
- Service territory in square miles

ENE reviewed the data collected and developed a spreadsheet that includes the above listed operating data for the municipals who responded to the study in Table 1.

Table 1 shows the town payment information the twenty-five responding utilities provided to ENE. Seventeen of the responding utilities have a formula in place to determine the annual town payment. Two utilities have a contract with their town and six utilities have no formal contract or formula in place.

Table 1

	Annual Rev.	Annual kWh	Ann. Town Pmt.
Princeton Municipal Light Department	\$3,719,002	14,158,197	\$0
Boylston Municipal Light Department	\$4,129,978	32,248,264	\$15,000
Rowley Municipal Light Plant	\$7,200,000	49,514,742	\$29,042
Groton Electric Light Department	\$9,934,138	72,741,132	\$32,720
Groveland Municipal Light Department	\$5,696,275	35,881,411	\$35,000
Georgetown Municipal Light Department	\$7,940,419	48,851,623	\$45,851
Ashburnham Municipal Light Plant	\$5,182,596	34,637,563	\$69,275
Merrimac Municipal Light Department	\$5,029,340	28,212,233	\$79,571



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Middleton Municipal Electric Department	\$13,936,000	9,789,049	\$176,100
North Attleborough Electric Department	\$33,399,000	227,867,000	\$300,000
Hull Municipal Light Plant	\$8,298,731	50,918,038	\$319,509
Ipswich Electric Light Department	\$17,000,000	110,000,000	\$325,000
Marblehead Municipal Light Department	\$17,390,000	104,440,000	\$330,000
Mansfield Municipal Electric Department	\$26,480,145	209,522,749	\$354,850
Concord Municipal Light Plant	\$30,530,220	171,638,069	\$452,000
Hingham Municipal Lighting Plant	\$26,018,304	201,632,234	\$504,080
Belmont Municipal Light Department	\$24,862,172	125,598,043	\$650,000
Danvers Electric Division	\$38,946,559	303,655,896	\$758,900
Middleborough Gas & Electric Department	\$49,218,615	275,885,067	\$817,040
Holyoke Gas & Electric Department	\$75,000,000	370,000,000	\$1,083,320
Shrewsbury Electric & Cable Operations	\$32,129,248	288,749,998	\$1,240,000
Braintree Electric Light Department	\$60,479,000	335,165,099	\$1,500,000
Hudson Light & Power Department	\$24,658,522	224,080,124	\$2,060,728
Norwood Municipal Light Department	\$48,283,334	328,139,228	\$2,905,963
Reading Municipal Light Department	\$91,822,764	675,536,970	\$3,919,770

Table 2 shows a breakdown of the seventeen municipals who have formulas in place to determine the annual town payment. The formulas range from percentage of annual sales, unit amounts multiplied by the annual kWh sales, formulas based on electric municipal assets base and other formula-based payments.

The data gathered in this study shows municipals electric departments that use a formula to determine their annual town payments favor a formula that includes energy sales multiplied by a mils per kWh rate.

Table 2

Municipal Electric Department – Formula Breakdown

Energy sales multiplied by mils per kWh	10
Net Assets multiplied by Tax Rate	3
Other formula	4

Formula based annual payments are very practical, since the payments are based on the performance of the municipal electric utility. Annual sales can be affected by several



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factors including weather, local economic activity, commercial activity, and consumer spending trends, all of which can have both positive and negative effects on the annual sales. The energy efficiency trends by the utilities and the improved efficiency of equipment in the home and business have also contributed to a reduction in annual sales.

In a study by the American Public Power Association (APPA), which represents 2,200 public power systems, 33% of the respondents to the annual survey about annual town payments, use a formula approach to determine their payments. This survey is informative and interesting, but the caveat to the APPA report is that the systems in APPA all have very different governance structures and therefore the methods for calculating their payments can differ greatly based on this governance. Even with that caveat, a third of the responding systems, used a formula for their calculation. Therefore, the responses to the data requested from the Massachusetts utilities carries more weight in this report, due to the similar nature of the governance of the utilities in Massachusetts.

The use of the kWh sales formula makes sense for instance, if electric kWh sales increase 1% then the annual town payment will increase by its portion of the increase based on the formula. Both the municipal electric utility and the town share in the positive performance and health of the utility. Conversely, electric sales can decrease for the same reasons mentioned above and that decrease may also be reflected in a decrease in the annual town payment. It is critical to take the health and requirements of the light department into account, as the maintenance and upgrades of the system are important to the reliability of the system. This is funded by the revenue of the utility and hinges on kWh sales.

Since the formula approach is based on kWh sales, an adjustment to the electric rates will have no effect on the Annual Town Payment other than possible price elasticity responses from the customer base.

Another important factor effecting kWh sales is the business model that has emerged over the last fifteen years, which involves promoting energy conservation, evolving low energy appliances and lighting, along with customer owned - environmentally friendly generation. Electrification is an opportunity, due to the fuel switching availability, to increase kWh sales.



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Energy efficient LED lighting uses about one-sixth the energy of traditional incandescent lighting. Home appliances (washer, dryer, ovens, air conditioning, water heaters, etc.) are all manufactured under energy efficiency guidelines. Commercial manufacturing applications have also embraced energy efficiency resulting in lowering unit pricing through lower electricity bills.

Table 3 – RMLD’s Annual Energy Sales shows the RMLD’s annual kWh sales for the years 2015 through 2018 along with the percentage change for the years since 2015. The energy sales have decreased steadily from 2015 through 2018 with the overall cumulative decrease being -3.1% for the 2015 through 2018 timeframe.

This is very consistent with the trend for most of the municipal utilities surveyed, who have seen very similar decreases in their annual sales. This can be traced to the items listed previously that have become a trend in the electric industry, with more efficient uses of electricity, driving down the kWh sales of electric utilities.

Every year, more and more customers are installing solar energy installations at their homes and businesses which replace a portion of the energy that was once purchased from the electric utility. The result of this energy efficiency and eco-friendly customer owned generation is that the RMLD kWh sales have decreased steadily over the last three years.

Table 3

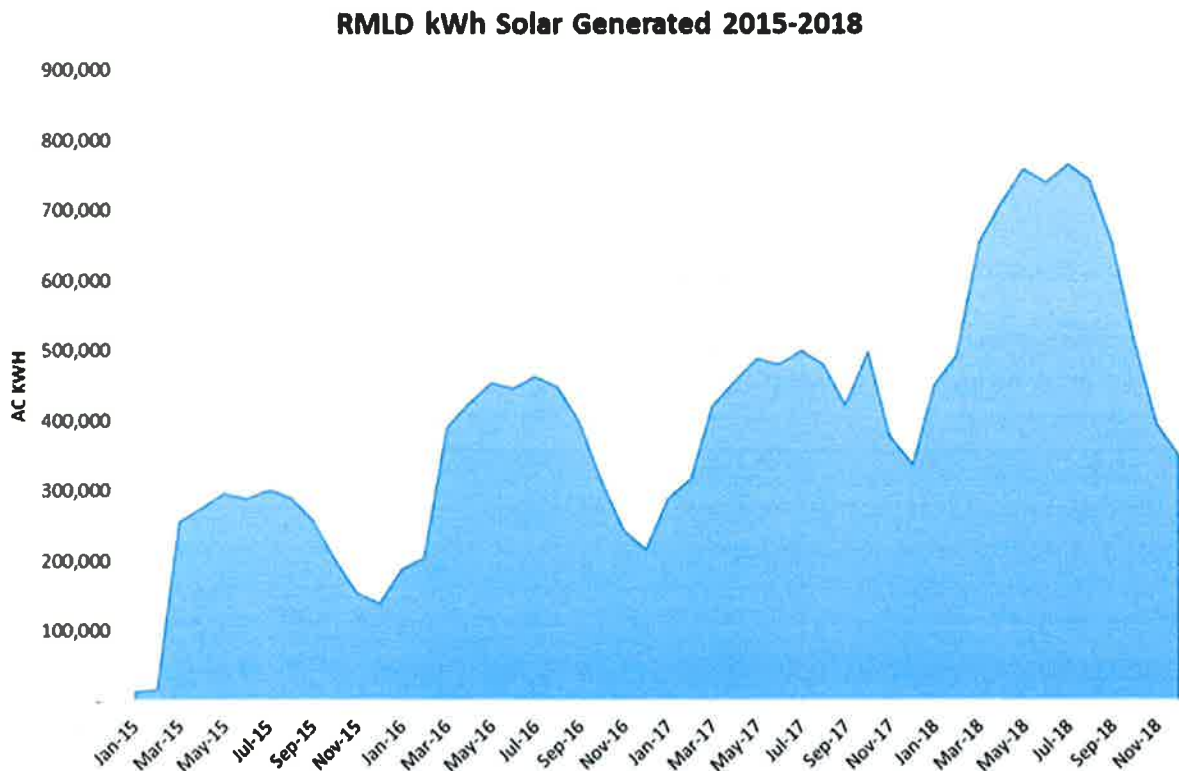
RMLD Energy Sales (kWh)

Year	kWh Sales	% Change
2015	689,722,742	
2016	676,128,060	-1.019%
2017	675,536,970	-.0087%
2018	665,042,076	-1.554%

The solar generation, as shown in Chart 1, within the RMLD customer base grew from 138,694 kWh in 2015 to 349,722 kWh in 2018, which is approximately 95% of the decrease

in sales during this timeframe. Customer owned generation is a large factor in RMLD’s recent decreasing sales of energy trend. This has been a significant trend in Massachusetts with other municipal utilities, as the State of Massachusetts has made great strides in solar installations for homeowners.

Chart 1



The electric utility industry has embraced a different business model over the last fifteen years. Electric utilities are advocating, advancing and subsidizing programs that entice customers to purchase less electricity through the usage of energy efficient home appliances, low energy usage commercial processes and affordable solar generation.

The RMLD’s decreasing kWh sales are the result of energy efficiency measures it has created and supported, therefore, annual expenditures need to be examined to see where the RMLD can offset the decrease in revenues due to its energy efficiency efforts.

Chart 2 – Annual Town Payments Over \$500,000, shows the municipal electric utilities from Table 1 that make Annual Town Payments over \$500,000. ENE chose the \$500,000 floor because many of the responding utilities are small and are likely not comparable to the RMLD’s financial and operational structure.

The RMLD’s Annual Town Payment (above and below the line) of \$3.92 million is the largest payment of the surveyed utilities with Norwood at \$2.91 million being the next largest payment. Of the twenty-five responding utilities only ten municipals pay their towns more than \$500,000. Hingham Municipal Light Plant, who pays \$500,000 to the Town of Hingham, is at the bottom of Chart 2.

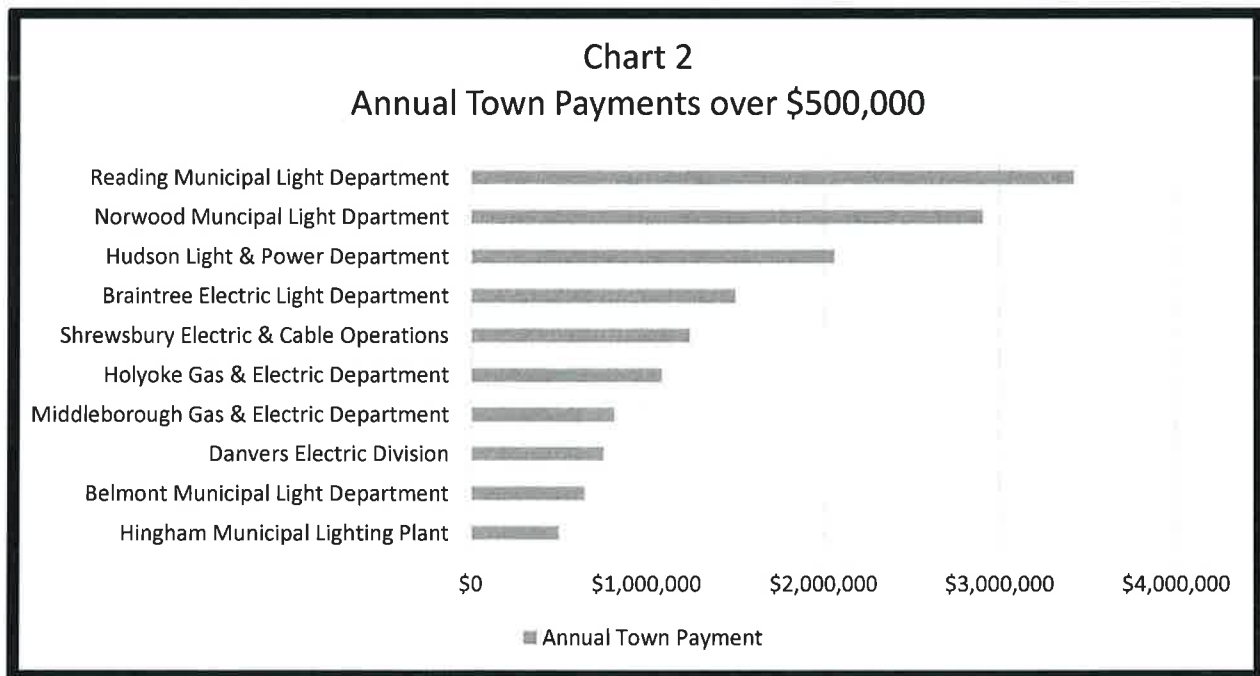


Table 4 – RMLD Annual Revenues and Town Payments 2015 – 2018, shows the RMLD Reading Annual Town Payments and Annual Revenues. The table also shows the



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Annual Payment to the Town of Reading (not inclusive of the 2% net plant payment) as compared to the Annual Revenues.

Table 4

RMLD's Annual Revenues and Annual Town Payments 2015 – 2018

Year	Annual Revenue	RMLD Below the Line	
		Annual Payment	
2015	\$83,985,195	\$2,332,863	
2016	\$88,353,905	\$2,370,445	
2017	\$91,822,764	\$2,384,668	
2018	\$96,747,035	\$2,419,770	

In reviewing the data acquired from Tables 3 and 4, it is evident that RMLD had to increase its electric rates over the last five years to meet capital and operating expenses, which includes the Reading Annual Town Payment. The true annual town payments (above and below the line) would have to be increased from the \$2.419 million listed above to the \$3.919 million for the total actual payments, which still comes from the same total annual revenue listed above, and is true for each prior years.

As stated in the Executive Summary, the Annual Town Payment is paid from the RMLD's Allowable Return on Equity or Net Profit. The Allowable Return can be used to pay for capital additions, annual town payments or be retained earnings.

Table 5 – RMLD's Allowable Return and Annual Town Payments 2015 – 2018, shows the recent Allowable Return and the Annual Payments along with the percentage that represents Annual Town Payment as compared to the Allowable Return.

Table 5

RMLD's Allowable Return and Annual Town Payments 2015 – 2018

Max. 8%		
Year	Allowable Return	Annual Payment
2015	\$3,241,276	\$2,332,863
2016	\$3,369,404	\$2,370,445
2017	\$4,472,650	\$2,384,668
2018	\$4,853,207	\$2,419,770

It is evident that the Reading Annual Town Payment, coupled with the additional above the line payments, leaves a decreasing level of funds available for the other liabilities (Pension and OPEB payments, emergency and storm response) of the RMLD. Again, we would have to add the approximately, \$1.5 million in annual payments to each of the 4 towns to the number listed above and further decrease the amount of funds available for capital and maintenance work on the system.

The underlying issue in Table 5 is that the RMLD needs about an average of \$8 million annually for capital additions and system improvements. According to Table 5, in 2015 and 2016 only about \$1 million was left from the allowable return for capital improvements after making the Annual Town Payment. In 2017 and 2018, after a necessary electric rate increase, the net amount of money available for capital improvements increased to \$2 million and \$2.4 million, which still leaves a shortfall of \$6 million. The detailed capital improvement plan over the next five years needs to be funded from the Depreciation fund and from operating income and as we can see in Table 5, there is a current shortfall when you include the annual payment.

According to MGL Chapter 164, municipal electric utilities can depreciate their plant by 3% annually and this fund can be used for capital improvements. However, depleting this fund each year is not prudent for the financial health of the RMLD.



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5.0 Financial Obligations for RMLD

A review of the current RMLD financial statements, capital plan, operating income and annual payment history, have led to a view that there is a financial convergence on the horizon. Even with a rate increase(s) for a period of time, this convergence continues to grow as an increasing concern. Add in the Pension and OPEB liabilities that exist for the RMLD, the rising cost of transmission and market volatility, along with the prudent desire to have at least 2 to 3 months' worth of operating income (est. \$8-\$10 million per month) on hand to cover their expenses, this tightens the revenue stream in a declining annual sales market. This is good prudent practice in the event of an emergency or event.

5.1 Future Power Portfolio

The RMLD, similar to other utilities in the State, continue to review and revise its power supply portfolios to a more non-emitting set of sources to cover their power supply needs into the future and these projects and contracts may carry a higher cost for these resources, which would increase the expenses to the utility. The power supply costs are pass thru costs to the customer and do not add to the revenue component of the department. This component, along with the other expenses that make up the rate, need to remain competitive and the rate impact should be managed closely. This adds to the revenue pressure for the light department and must be taken into account when looking at all the financial obligations of RMLD.

6.0 Alternative Annual Town Payments

According to Section 3.0, of the seventeen municipals responding to the survey, ten used a formula to determine their Annual Town Payment, three used an asset and tax-based formula and four had other formula-based calculation.

The following describes possible formulas and calculations to determine Annual Town Payments.

6.1 Economic Indicators Calculation

The RMLD has used the Consumer Price Index for the Boston-Brockton-Nashua area to adjust the RMLD's Annual Town Payment to the Town of Reading since 1997. The RMLD selected the Consumer Price Index for Boston-Brockton-Nashua because it reflected economic activity in RMLD's service territory.



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The CPI based formula worked well in the past, however, as discussed earlier in Section 4.0, due to the present electric industry business model economic indicators do not reflect the performance of an electric utility. This method is more a measure of the economic and labor markets in its measured area and not necessarily the health and requirements needed of the utility.

6.2 Mil Rate Multiplied By kWh Sales

An Annual Town Payment based on a mil per kWh is an appropriate calculation of the Annual Town Payment because it is totally based on the performance of the municipal electric utility. The mil per kWh is a constant factor and is applied to the annual kWh sales to determine the Annual Payment, the electric sales are affected by weather patterns related to hot or cold summers and winters and economic factors.

Since this calculation is based solely on kWh sales, the Annual Town Payment will not be affected by rate adjustments. This represents the health of the utility and the trends of the consumers usage.

This is the most widely used method in the surveyed utilities in Massachusetts and the one most used in the APPA study of public power systems in the country.

6.3 Percentage of Annual Sales

Another formula that can be used to determine the Annual Town Payment is using a percentage that can be applied to the Annual Sales. The percentage in the calculation can reflect a present Annual Town Payment level or it can be a negotiated amount reflective of financial projections. The percentage should remain static in the calculation going forward and the future payments will be adjusted by the movement in the Annual Sales.

The Annual Sales formula is different from the mil per kWh formula because annual sales can be adjusted through rate increases, which is different from energy sales adjustments based on performance factors.

In simple terms the Annual Town Payment should not be adjusted due to a rate adjustments, bonding or fund transfers.



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6.4 No Formula or Calculation

The absence of a formula or asset-based calculation can be detrimental to both the municipal electric utility and the town that owns it. The municipal electric utility and the town need to budget, both short and long term, and the absence of an estimate of future annual town payments can raise serious questions regarding the bottom line for both entities.

It is also evident that the absence of a formula requires yearly discussions and negotiations between the Board of Commissioners and Town officials, which can be very time consuming and lead to disagreements on all sides.

7.0 Recommendations

After reviewing and analyzing the data collected in this report ENE makes the following recommendations for the RMLD Board of Commissioners and Management to consider:

7.1 RMLD should consider changing its calculation of the Annual Town Payment from the present formula using the Boston-Brockton-Nashua Consumer Price Index to a mil per kWh rate multiplied by the Annual kWh Sales.

- In making this change, the Annual Town Payment will be strictly based on the sales performance of the utility.
- RMLD can develop a five-year forecast of sales and formulate an estimate of the Annual Town Payments. The current town payment is fixed for 2020.
- The Town of Reading will also be able to include in their budgeting process RMLD's forecast of Annual Town Payments, which can be updated from time to time.
- This approach should also help mitigate the convergence of the financial obligations discussed above and limit the rate increases for capital funding needed in the future.

7.2 The RMLD should base the mil per kWh rate in the Annual Town Payment formula on the 2018 Annual Town Payment/2018 kWh Sales. In 2018, the mil per kWh rate resulting from the Annual Town Payment and the Annual kWh Sales was \$.00358/kWh.

- The RMLD's 2018 mil per kWh rate of \$.00358/kWh was in the median range for the data request respondents whose Annual Town Payments were over \$500,000.
- The RMLD should transition to a set mil per kWh rate, in the area of \$.003/kwh, which would align the RMLD with the average unit cost. The transition could be the next 5 years, which aligns with the capital spending plan.

7.3 The RMLD may want to consider creating a floor for the Annual Town Payment at some point in the process, as the kWh sales flatten during this transition period.

- The RMLD's present kWh sales has been decreasing and that trend may continue which would effectively lower the Annual Town Payment.
- The Town of Reading budgeting process needs to account for the possibility of a decreasing Annual Town Payment.
- While the Annual Town Payment may be decreasing due to the kWh sales going down, the capital plan increases to the system, will increase the 2% net plant above the line payment to the towns for a period of time. This needs to be taken into account, as it all comes from the same revenue source.