

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

Combined Meeting with the Board of Commissioners

**MINUTES
Regular Session**

Time: 6:30 p.m.

Date: May 8, 2014

Place: RMLD, 230 Ash Street, Reading, MA, Winfred Spurr/ Audio Visual Room

CAB Members Present:

Mr. John Norton, Chairman (North Reading); Mr. Tony Capobianco (Reading); Mr. George Hooper, Vice Chairman (Wilmington); Mr. Dennis Kelley (Wilmington); Mr. David Nelson, Secretary (Lynnfield)

CAB Members Absent:

None

RMLD Commissioner(s) Present:

Mr. John Stempeck, Chairman; Mr. Philip Pacino, Vice Chairman; Mr. Robert Soli; Mr. David Talbot; Mr. Thomas O'Rourke

RMLD Staff Present:

Ms. Coleen O'Brien, Ms. Jeanne Foti, Mr. Robert Fournier, Ms. Priscilla Gottwald, Mr. Hamid Jaffari, Ms. Jane Parenteau, Ms. Kathleen Rybak, Mr. William Seldon

Invited Guests and Members of the Public:

Mr. Mayhew Seavey, *PLM* Electric Power Engineering; Ms. Marcie West, Town of Reading Board of Selectmen Liaison to the Board

1. Call Meeting to Order – J. Norton, Chairman

Chairman Norton called the meeting of the Citizens' Advisory Board to order at 6:32 p.m.

2. Cost of Service Study Presentation – M. Seavey, *PLM* Electric Power Engineering

See attached Minutes as approved by the RMLD Board of Commissioners.

3. Next Meeting – J. Norton, Chairman

The next meeting of the Citizens' Advisory Board will be held on Tuesday, June 3, at 6:30 p.m. at RMLD.


Mr. Capobianco announced that he would not be seeking re-appointment to the CAB. His term expires on June 30, 2014. Chairman Norton noted that he might have difficulty covering the Board of Commissioners meetings, which have been moved to Thursday evenings.

4. Motion to Adjourn – J. Norton, Chairman

Mr. Hooper made a Motion to Adjourn the Citizens' Advisory Board meeting, seconded by Mr. Nelson. Hearing no further discussion, *Motion carried 5:0:0 (5 in favor, 0 opposed, 0 absent).*

The Citizens' Advisory Board Meeting adjourned at 8:12 p.m.

Respectfully submitted,


David Nelson, Secretary

Minutes approved on 2/11/15

**Reading Municipal Light Board of Commissioners
Joint Meeting with the Citizens' Advisory Board**

**Regular Session
230 Ash Street
Reading, MA 01867
May 8, 2014**

Start Time of Regular Session: 6:31 p.m.

End Time of Regular Session: 7:57 p.m.

Commissioners:

John Stempeck, Chairman	Philip B. Pacino, Vice Chair
Robert Soli, Commissioner	David Talbot, Secretary
Thomas O'Rourke, Commissioner	

Staff:

Coleen O'Brien, General Manager	Jeanne Foti, Executive Assistant
Bob Fournier, Accounting/Business Manager	Hamid Jaffari, Engineering and Operations Manager
Priscilla Gottwald, Community Relations Manager	Jane Parenteau, Integrated Resources Manager
Kathleen Rybak, E&O Operational Assistant	William Seldon, Senior Energy Analyst

Citizens' Advisory Board:

John Norton, Chairman	George Hooper, Vice Chairman
David Nelson, Secretary	Tony Capobianco, Member
Dennis Kelley, Member	

Town of Reading Board of Selectmen Liaison to the Board:

Marsie West

Guest: Mayhew Seavey, Principal, Power Line Models

Call Meeting to Order

Chairman Stempeck called the meeting to order and stated that the meeting was being videotaped; it is live in Reading only.

Opening Remarks

Chairman Stempeck read the RMLD Board of Commissioners Code of Conduct.

Chairman Stempeck reported that Commissioner Talbot will be the Secretary this evening.

Introductions

Chairman Stempeck welcomed Selectwoman Marsie West and the Citizens' Advisory Board. Chairman Stempeck also introduced the new RMLD Board member, Tom O'Rourke. Mr. O'Rourke thanked Chairman Stempeck for the introduction.

Chairman Stempeck introduced Mayhew Seavey who has performing the Cost of Service Study for the RMLD.

Ms. O'Brien welcomed the Board and the CAB. She explained that approximately every two to three years, utilities should conduct a Cost of Service Study to ensure that their allocations remain in or at the utility industry standards. A Cost of Service Study has now been performed, a little differently from previous studies at the RMLD. Only budget and revenue requirements were provided to PLM, Mayhew Seavey, to ensure that fully independent results could be achieved. Ms. O'Brien stated that Mayhew has established a Cost of Service modeling system that includes baseline data from other municipalities and Independent Operating Utilities (IOU's) in the commonwealth of Massachusetts.

Cost of Service Study (COSS) Presentation – Mayhew Seavey (Attachment 1)

Mr. Seavey stated that he performed a Cost of Service Study, and is reporting on the results on behalf of the RMLD using fiscal year 2015 data as the basis. Mr. Seavey said that he will be making recommendations with respect to rate design and discuss what the next steps are then discussion.

Mr. Seavey explained that the process began by conducting a historic test year Cost of Service Study. This was performed with actual data from fiscal year 2013, expenses and revenues, and then allocated across the various customer classes to determine how the existing classes were performing. This was also done to verify that the model was working correctly such as calculating revenues correctly; they provide a snap shot on how the present rates look.

Presentation – Mayhew Seavey (Attachment 1) Cost of Service Study (COSS)

Mr. Seavey explained that the model was updated with fiscal year 2015 data provided by RMLD in terms of expenses then calculated what the revenue should be using the present rates and made sure that those revenues were consistent with what the RMLD has projected. Then determine what was required to meet the revenue requirements to cover expenses and to provide sufficient net income. The bottom line is that it was determined that an overall increase of 1.3% was all that was necessary to meet the budget expenses for fiscal year 2015 based on the projected sales that were looked at.

Mr. Seavey stated that the model indicates that the existing rates of return by customer class are at the limit of what is considered the standard municipal utility practice, they are not outside of the range, but are at the outer edge of the range of rates of return. The residential rates' rates of return are fairly low whereas the commercial industrial are fairly high. However, the RMLD's existing rates are extremely competitive with other municipal and private utilities across all customer classes. It is to note that one of RMLD's main objectives is to attract and retain commercial load which helps to support competitive rates for everyone and keeps rates stable.

Mr. Seavey reported that two cases were considered, the first with an across the board 1.3% increase. It is the easiest approach to take by adding approximately 1.3% to the total rates that customers are being charged which produces enough revenue to meet expenses. Every customer class has the same impact. The second case is to slightly smooth out the rates of return within the same general constraint of 1.3% to move the individual class rates of return within the standard range. In order to do that, it would require a 5% increase in residential rates, 1.3% increase in industrial rates and 3% decrease in the commercial and school rates. This would have a fairly significant impact on the difference between the lowest rate of return and the highest rate of return. Each customer class would see a slightly different impact.

Mr. Seavey pointed out that a third commercial class was considered, a small commercial class. Typically private utilities and larger municipal utilities have three commercial classes or general service classes. A small customer class which deals with small businesses that use less than 10,000 kilowatt hours per month which are the majority of RMLD's commercial customers. There is a medium size commercial class which consists of a demand charge and energy charge class. The RMLD is already demand metering all those small customers. If you were to take approximately 2,000 small commercial customers off the demand rate and put them onto an energy only rate a significant amount of them would see a 20% increase. This was a surprise to him because of when you think of small commercial customers as being fairly uniform. Some of RMLD's small commercial customers towards the higher end of the usage have very good load factors. For every kilowatt of demand they put on the system, they are using quite a few kilowatt hours. Those customers are doing quite well under the current rate. If you put them onto an energy only rate, they would be hurt and pay quite a bit more. Also, it would not be an accurate way of billing them because they are not imposing a lot of demand on the system and the present rate structure rewards them for that. Similarly, there would be decreases for the low load factor customers, but they are considered to be bad customers because they would have high demand relative to the number of kilowatt hours they are using. Those customers would get sizeable decreases. It would not be consistent with the goal of sending the message of accurate price signal to the customer. He is not recommending RMLD adopt a small commercial class.

Mr. Seavey added that another rate looked into was a residential low income rate. All private utilities have this rate and many municipalities have adopted them voluntarily as well. There is a state mandate that calls for the private utilities to have the low income rate. This rate applies to customers who are receiving any type of means tested assistance from the commonwealth of Massachusetts. There are two approaches that are currently widely used. Many municipal light departments have chosen to eliminate the customer charge for customers who qualify for a low income rate. One advantage of this is provides the same benefit to all customers. It is particularly beneficial on a percentage basis to small customers. It provides a fixed benefit in dollars and a different benefit in percent depending on usage. For a customer using 250 kilowatt hours it will be a 9% reduction, a 500 kilowatt hour customer which is a more typical customer it is a 5% reduction. The other option used by the private utilities is a flat percentage discount on the entire bill exclusive of the purchase power charge. In the case of private utilities their delivery services, in RMLD's case it would be the distribution charge. The IOU's discounts are that National Grid uses 25% and NSTAR uses 27%. Mr. Seavey calculated that if the RMLD replace the prompt payment discount that is currently 10% with a 25% low income discount that would reduce the total bill by 6%. He did not add the prompt payment discount to the low income discount because that is duplicative. Those are the two options he has suggested. They are fairly equivalent overall as to the amount of revenue the RMLD would spend putting a rate like that into place. The only difference is that the flat customer charge would benefit low usage customers more. Since there is no data available for the customers who qualify for that there is no way to estimate the impact on the customers or revenue.

Mr. Pacino asked one question to Mr. Seavey and the other is for the Department. The discount on the lower rate what is the offset at this point. The offset has to be made up by some other customers. Where would be the offset be? Mr. Pacino's second question is what would be the cost to administrate this and how would it be handled by the Department if this was to be put in place. Mr. Seavey responded it is not possible to estimate what the revenue loss would be. Initially, the revenue would come out of net income. Once you gain a year's experience, you would adjust the rates to make up for the lost income.

Cost of Service Study (COSS) Presentation – Mayhew Seavey (Attachment 1)

Mr. Seavey said that the presumption he has going into this is that we are not talking about a huge amount of revenue that will be lost that would make a material impact on meeting the revenue in the system. In terms of implementation the way the rate is implemented by private utilities or other municipalities is to require documentation from the customer that they are eligible to receive some sort of means tested assistance. That would be a simple process to sign up a customer and put that rate code into the billing system.

Ms. O'Brien commented that the RMLD has payment plans with its customers that require documentation and already have that process. With the new Cogsdale update the RMLD can add that rate structure. Chairman Stempeck inquired that RMLD's customers will know what means tested assistance or will it be published. Mr. Seavey responded that it is typically identified in the tariff. Mr. Pacino said that this would be taken out of the 8% or the bottom line in the short term. As time goes on other customers would be making up for this. Mr. Seavey responded that he believes that is correct. Mr. Hooper asked if this could benefit some of the seniors. Mr. Seavey replied presumably that is correct.

Mr. Seavey reported that the next item is the unbundling of the rate structure and creating rates that essentially take all the purchased power costs out of the base rates. There is approximately four cents of purchased power costs embedded in the base rates and the rest of the purchased power costs come through the purchased power adjustment. The fuel adjustment recovers all the energy costs. They are proposing collapsing those three pieces into a single purchase power charge which includes all purchase power costs and would be billed on the basis of estimates then trueed up after the fact to actuals. It is fairly standard practice in the industry by now to break out the distribution rate which covers all the costs of owning, operating and maintaining your distribution system plus all of your profit and net income. Putting that into what essentially is the base rate which will be called distribution rate and all the purchase power and transmission costs will be covered by a purchase power charge. That makes it much more transparent and easier to account for purchase power collection whether you are accurately collecting all your purchase power costs or whether your base rates are performing properly. If you end up with more revenue than expected at the end of the year, it is difficult to tell right now if you overcollected on your base rate or purchase power costs. Breaking into these two components makes it possible to do that. The one downside to this is the prompt payment discount applies to the entire base rate would no longer apply to the four cents of purchase power that is built into the base rate. While the percentage discount will remain at ten percent, the dollar discount to the customer will be smaller. The purchase power charge is a pass through cost; you cannot discount it because if you discount it incorrectly you will under recover your costs. The proposal would be to keep the prompt payment discount at ten percent, but would apply to a smaller piece of the rate.

Mr. Seavey demonstrated the rate for a residential customer noting that the results would be similar. The customer charge remains the same. The base rate charge would drop by approximately four and a half cents because it would take that base rate purchase power charge out. In place of the four cents that is in the base rate plus the five cent fuel adjustment plus the two mill purchase power adjustment you would have a nine and a half cent purchase power charge which recovers all the purchase power costs (capacity, energy plus transmission). These designs reflect fiscal year 2015 projected. The typical five hundred kilowatt hour bill, 1.3% higher overall the energy conservation charge and NYPA credit will remain the same. The ten percent prompt payment discount would only apply on the four and a half cent distribution charge plus the \$3.73 customer charge. The discount is built into the rate. The bill will have one fewer line item on it. It might be easier for the customer to understand. It would be easier to compare to a National Grid or NSTAR bill because it will have the same terminology. It will have a distribution charge on it to compare RMLD's to the investor owned utilities. Increasingly, municipal utilities have the same structure so that comparisons can also be made with other municipal utilities.

Mr. Kelley asked that 2013 numbers were utilized and the multipliers were not the same as what has been presented. Mr. Seavey replied that in the presentation, it is for forecasted fiscal year 2015 which is based on estimated purchased power costs. Mr. Kelley pointed out that the fuel adjustment is .05167 however, on his bill it is .06 not quite a penny difference which is 2014. Mr. Seavey explained that this is the problem doing this type of comparison. What this compares is what the bill would be if you did not change the rates to this new structure, but you have the costs that you have next year. It is not what the bill is now, it is would be on July 1 if the rate change was not performed. Mr. Kelley added on top of the rate increase they just had, it will be another 1.3%. Mr. Seavey added that it is probably going to be a decrease.

Ms. O'Brien responded that the RMLD performs purchase power fuel adjustment analysis every month that fluctuates. You are trying to hit a moving target. Purchase Power costs are a pass through, no profit is made.

Ms. O'Brien stated that purchase power by law, must be recovered. You are projecting forward and reconciling because it changes every month and you have to recover this. By unbundling this, the not for profit percent return, goes on to the distribution side so the RMLD is clear that it is covering all of its purchase power costs.

Cost of Service Study (COSS) Presentation – Mayhew Seavey (Attachment 1)

Mr. O'Rourke commented that this depends on a lot of factors, in general for an average bill taking out the purchase power charge what does that ten percent become nine percent, eight and a half percent. Mr. Seavey clarified ten percent of the discount. Mr. O'Rourke explained that the current bill is discounted ten percent. Mr. Seavey responded that the fuel does not get discounted. Mr. O'Rourke wants to understand from a customer's perspective they will not get a ten percent that they are currently receiving. Mr. Seavey stated that on a five hundred kilowatt bill instead of a \$4.50 discount it will be approximately \$2.25 based on the ten percent discount. Mr. O'Rourke stated that in terms of the description on the bill it will need to be clear to delineate this. Mr. Seavey said that he is not sure how the bill is structured and community education is one avenue to deal with this. Ms. O'Brien asked Mr. Seavey to speak to the utilities that have gone to unbundling and how they have dealt with the prompt payment discount. Has the percentage on the prompt payment discount has it been increased. Mr. Seavey said that there is one municipal that he has knowledge of that increased the prompt payment discount in order to try to maintain the same level of dollar discount. Most municipalities these days are realizing that the prompt payment discount may not be that useful of a tool as it use to be before. There is some indication that in essence it is a tax on customers who don't have cash to pay their bills quickly. He does not know of any municipalities that have done a controlled experiment. The only situation that he is aware of is that ten years ago, Concord added a prompt payment discount and showed a fairly sharp drop in their receivables. The customers who do not take advantage of the discount are paying for those who do.

Mr. Pacino said that this committee had discussed the ten percent discount, is the ten percent common, and is it standard. Mr. Seavey replied that it is very widespread; at least eighty percent of municipal utilities have the ten percent prompt payment discount. Some of them have five percent for some groups of customers, such as businesses who pay promptly. Mr. Pacino explained that there was discussion about fifteen years ago with Peabody Light avoided a rate increase by lowering their prompt payment discount. Mr. Pacino said that he does make the deadline and pays the extra ten percent. Chairman Stempeck said that this could be considered in another session. Chairman Stempeck added that the water department also has a significant discount if you pay ahead of time. Mr. O'Rourke asked approximately how many customers take advantage of the discount. Mr. Seavey replied that the number is high because he has not seen a utility in which its customers did not take advantage of it. Mr. Fournier reported that on an annual basis, the RMLD will see approximately \$1 million in forfeited discounts. However, on the discount dates the RMLD is inundated with payments. The options that the RMLD offers is automatic pay and auto pay to ensure customers meet the discount. Chairman Stempeck commented there is a balance to having the discount or not having the discount. From an economic perspective is that you get your money faster, and have knowledge that you are going to receive it. If the RMLD were to take the prompt payment discount away or lower it would have an economic impact. Mr. O'Rourke said that to speak to the other side, is there any penalty if you are ninety days late on your payment. Chairman Stempeck asked how long until the RMLD shuts off power. Mr. Fournier responded that there are regulations that dictate when you can shut off customers. When customers are past due, they receive two notices; it does not get to the ninety day timeframe. There are methods and processes that the RMLD follows that are dictated by the Department of Public Utilities. Chairman Stempeck pointed out that nonpayment by RMLD's customers is the exception, not the rule. Chairman Stempeck pointed out that it his understanding that the RMLD bends over backwards to work with its customers. Mr. O'Rourke added that what he is touching upon is if did eliminate the prompt payment totally that it disincentives the customer to pay more expeditiously. Mr. Seavey added that the prompt payment discount has a positive effect on cash flow.

Mr. Pacino clarified that the RMLD can put a lien on a customer's home for nonpayment. Mr. Fournier commented that the RMLD does place liens on residential customers for nonpayment.

Mr. Pacino stated that it is his understanding as explained that the 1.3% increase of the 4.5% from the prior rate increase, but Mr. Seavey has said previously that it actually has decreased. Mr. Seavey clarified it is the function of the fact that the 1.3% increase is with all things being equal on July 1. Mr. Seavey pointed out that July 1 the bill will be 1.3% higher than it would have been. What it has relative to the June bill is a function of purchase power costs that are being billed in June versus purchase power costs that are being forecasted for July. Mr. Seavey said that he is not sure where that is going to fall right now. Given the increase, it is not a large adjustment one way or the other. Mr. Pacino said that potentially under the purchase power adjustment that could be a 1.3% increase no matter what. Mr. Seavey explained that purchase power costs can swing the bill much more than that 1.3% very easily. Mr. Seavey commented that we are dealing with some costs the RMLD has control over going up 1.3% the others will swing either way. Mr. Pacino said that if we do nothing than we will end up with a 1.3% increase that is his understanding. Chairman Stempeck pointed out that is beyond our control that is external; the purchase of power can go anywhere, we are dependent on our internal power pool to find the lowest possible cost. It is an advantage that the RMLD has. Chairman Stempeck said that we need to look at different variations on the theme of the discount which will be looked at and come up with a reasonable assumption.

Cost of Service Study (COSS) Presentation – Mayhew Seavey (Attachment 1)

Ms. West stated that her question is what percentage of purchase power, which she believes is a pretty high percentage, is variable. Mr. Seavey pointed out that purchase power is nine and a half cents versus four and a half cents for everything else which is two thirds. Ms. West asked is there any way to try to make that variability less are there any strategies to make that variability less on the purchase power or to make purchase power lower as a total percentage. Ms. O'Brien replied that this is the function of Integrated Resources and Planning group. By creating a power supply portfolio that has the lowest cost power, and risk management for power supply. That is how we are able to have the second lowest rate in the state. Ms. O'Brien is not sure other than performing an analysis on the portfolio almost on a daily basis that you could get it much lower than that. Ms. West commented that there is no way to decrease the fluctuation. Ms. O'Brien said that when you perform purchase power and fuel adjustment analysis you generally are looking ahead six months and reconciling six months then you strategize to even that out the best you can. You are forecasting ahead. If you know it is going to go up then you might do something a little different if you know it is going down in order to keep as stable a rate as possible within that pass through and getting all your money back. Ms. West stated that the reason she is asking this is that two thirds of the power can go up and down; you have the potential for things to bounce around. Chairman Stempeck agreed. Chairman Stempeck stated that others in different industries when presented with that kind of variability they try to track it historically, and know such in July and August when air conditioning goes on it will go up you try to do longer term contracts to lower costs to try help that or shave the peak power if you can do that. Chairman Stempeck pointed out that the RMLD is trying to get programs in place to shave its peak, which takes time to make that happen.

Mr. Seavey then addressed the structure of the hydropower credit. Presently, the hydropower credit is calculated on the basis of market value of the capacity and energy that the RMLD receives from New York Power Authority. The recommendation is to change that methodology to a formula that is tied to the average cost of the energy which RMLD receives from all its other sources compared to the cost of energy from NYPA if the average cost of energy which is basically the same number as the current fuel adjustment. As that goes up, the value of the hydro power credit will increase and if it goes down the value of the hydropower credit will decrease. Since we are in a period of time where energy prices have gone up significantly in the last year and projected to go up, this change in methodology should produce a larger credit for the residential customers through the hydropower credit. Chairman Stempeck pointed out that this is an excellent approach to help the residential customers.

Mr. Seavey said that they are looking at the streetlighting rate and in the process of reviewing the present streetlight rate to determine if there is a need to adjust the rates which is not quite completed. It is looking however, that the present streetlight rate are acceptable and they are not going to recommend any change in the present rates. They are looking at instituting a new rate for LED streetlights as they come on stream that will help reflect the greater efficiencies being offset by the higher costs of the fixtures. They will develop a rate that is consistent with the other rates, but will reflect that greater efficiency in the rate. Hopefully, the cost to the communities will not increase as a result of that new technology in the short run and decrease over time as the cost of those new fixtures get amortized over the expected longer life. It is anticipated that those rates should be completed within the next week or so.

Mr. Soli asked if Mr. Seavey is going to discuss the spreadsheets. Mr. Seavey responded that he was not planning on it. Mr. Soli said that he had a question, power is a big part between demand, transmission and energy, it is approximately \$78 million of the total budget. Mr. Soli said that with energy the RMLD meters which are new and should be in calibration. However, \$40 million for demand and transmission are based on RMLD's estimates. If the estimate perhaps is off two and a half percent, this translates to \$1 million. Mr. Soli said that he looked at the metering and ran the numbers; you need to get every meter, every fifteen minutes. Mr. Soli noted that he ran a year's worth that is eighteen months of data measured every fifteen minutes. The data rate looked like that a kilobit per second which is very modest. For a dial up modem, the peak rate is fifty six kilo per second, it is vastly greater at a kilobit per second. Mr. Soli stated that being on the Board we have never seen really good data. The schools have fancy meters for the school rate. They have never really seen the demand that they have relative to what the percentage states. Mr. Soli said that he would be reluctant to go \$40 million just on the basis of an estimate when it seems, just get the data. A kilobit per second, eighteen months of data, taken every fifteen minutes, the hardware is modest with some software.

Mr. Seavey added that there are many utilities that have already installed smart meters on all their accounts and are now in the process of building that data. This modeling benefits from that data. While the data in here is not of the residential customer of RMLD, it is the residential customers of National Grid because they are performing that type of research and are required to publish residential class loads hourly for an entire year on their website for the use of competitive electric supply. Mr. Seavey reported that is the data he uses when he determines what residential customers are contributing to the monthly system peak and therefore how much of the transmission cost gets allocated to them. How much residential customers are contributing to the summer annual peak and therefore how much capacity costs gets allocated to them.

Cost of Service Study (COSS) Presentation – Mayhew Seavey (Attachment 1)

Mr. Seavey said that he would not guarantee that these allocations are accurate to within one to two percent, there is a very high degree of confidence particularly with the residential class consists of 20,000 customers which is an enormous amount of diversity. There will not be many outliers that will throw the results off that happen with large industrial customers.

Mr. Seavey said that he is a little more leery about typical load shapes for large commercial industrial customers because they can have different usage patterns from one utility to another. Mr. Seavey said that he is comfortable with the data that was utilized to allocate the capacity and transmission costs are representative. Can you do a better job by sending correct price signals to customers, be careful what you wish for. If every residential customer has a smart meter you have the potential to bill them for their contribution to the summer peak and it will have a varying effect on customers. Currently, all the residential customers are lumped together and are socialized for the cost of the class. All are treated exactly the same for contribution to your costs. If you disaggregate them as in the small commercial class there will be winners and losers. The winners are going to win small and the losers are going to lose big. It is the nature of a probability distribution like that. The data is getting more available, more affordable. It is a matter of what you decide to do with that data. Chairman Stempeck added that this may be a unique case in which you both can be right. Chairman Stempeck said that we would like to use real time data. There is no question that when you use real time data it would help the analysis tremendously. Chairman Stempeck asked what RMLD's penetration of smart meters is. Mr. Jaffari responded that RMLD's 500 club which consists of commercial and industrial that need to be completed. Chairman Stempeck commented that the question is how we get the right algorithm in place to real time measurements. Chairman Stempeck pointed out that doing things on an individual basis could be positive for load reduction. Chairman Stempeck asked how difficult is it to obtain real time data as Mr. Soli pointed out in order that this is fed into the model to see what the dichotomy is. Chairman Stempeck said that if we have the mechanism why not do this because decisions may be made differently if we had the actual data.

Mr. Kelley said that what is being discussed and is in agreement that we are making assumptions, but should be taking real data to make sure it is not an assumption. Mr. Kelley said that we are speaking about another 1.3% increase to the end user. Chairman Stempeck commented that it is going to take time to figure out what the algorithms are to write the software then perform another analysis. Chairman Stempeck pointed out RMLD is a month to two months behind on the real data for purchase power, etcetera and that needs to be readjusted in the following invoice. The RMLD then has to readjust for this time lag in the following invoice which could be off one or two percent. Mr. Kelley stated that we just had a rate increase where it was 5% or 9%. Chairman Stempeck pointed out that he wanted to make it clear the increase was not 9%. Chairman Stempeck explained that the 9% was on a sub category; the increase on the entire bill was 5%. Mr. Kelley said that there was a 5% increase now; it will be going up 1.3%. Chairman Stempeck responded that is correct. Chairman Stempeck explained that we are going up to what our cost of power is because by law we are required to do so. Chairman Stempeck asked if this was clear. Mr. Kelley responded, no. Chairman Stempeck said that otherwise the RMLD can send documentation. Mr. Kelley said that he is asking a question in that the rates have gone 5% and are going up another 1.3%. Mr. Kelley said that's what the statement was, and he will go back to the minutes, and that part of the reason was that the things done for energy savings have affected the net profit so this was the change. The net profit to him is what RMLD is making, that is all he is asking. Chairman Stempeck explained that the way the analysis for the rate increase was presented it was clearly indicated that there was going to be a rate increase in the July timeframe. They were doing an estimate at that time, but projected the 5% increase and with the Cost of Service it is 1.3% which is incredibly accurate. Chairman Stempeck pointed out that it has been three and a half years since there has been a rate increase. People have received salary increases over the last three years and a half years, if not they have had cost of living increases. Mr. Kelley added that he disagreed because there companies out there in which employees do not get one every year. Chairman Stempeck said that Mr. Kelley could share the companies with him offline because they are probably going out of business.

Ms. O'Brien said that she will ask Mr. Jaffari to work with Mr. Fournier to look at the data channels of what those meters can bring back hourly. We could analyze if residential assumption is correct.

Mr. Talbot said that Mr. Soli is on the right track the more data you have the more efficient things become. Mr. Talbot said that he is impressed by how much revenue it can save and generate by dealing with that peak. Mr. Talbot said that if he understands it correctly, we can't change the rates in a manner to influence the peak because the RMLD does not have tiered real-time pricing for almost all customers. Rates cannot be raised from 3:00 pm to 6:00 pm for some of them to send them a price signal to chop the peak, is that correct. Ms. O'Brien replied that the RMLD is hoping to work with the larger commercial customers to have real time pricing at some point. Mr. Talbot said that the RMLD does not have a tiered structure, however, when the RMLD has the data it will be able to say which customers contributed more to the peak which resulted in hundreds of thousands of dollars extra per year because of the high monthly peaks in the summer.

Cost of Service Study (COSS) Presentation – Mayhew Seavey (Attachment 1)

Mr. Talbot pointed out that if each month's peak hour could be cut, it would be a large cost savings for RMLD and its customers, five percent translates into \$1 million for the organization it is amazing how powerful that is. The data will help us with that. Mr. Talbot said that the people contributing to the peak need to know they have to do something and will be charged if they do not. In the meantime, as we head into the heat wave season and there is a hot day in June or July, the weather forecast will show this, if everyone is contributing to some larger communication strategy that day at 10:00 am there are e-mails going all over the place, radio announcements and Facebook postings that customers are getting the message it gets done that day. Real financial savings will be garnered if we implement a communications strategy in that manner. It is not that difficult to do this. Mr. Talbot added that he learned that newspapers are not as efficient for this purpose. He wrote an op ed laying this out and suggesting people get a time of use meter and save money on their bills, but only a few customers called to get one. There were front page articles in the *Reading Chronicle* and the Wilmington newspaper with almost no effect. The lesson is that when press releases are done to the newspapers it has little impact on consumer behavior. The viral strategy is the way to go on hot weather days with customers until the RMLD has the data and deals with the commercial customers, July is coming up and we can do it this year.

Mr. Hooper asked based on the conservation charge, what constitutes that has the RMLD thought of a flat rate, other utilities charge thirty six cents for their conservation charge. Ms. Parenteau replied that it is a rate design. Initially, the conservation charge is self-funded so any moneys that are collected, for that go out for that purpose. Examples of use of this use of the conservation charge are the residential appliance rebate, energy audits and commercial incentive programs. The rate designs for the IOU's or private companies are set up on a per kilowatt hour charge likewise it is three times higher than what RMLD charges. That is why the RMLD elected to choose that rate design. You can design the rate any way you want to. Historically, the RMLD use to charge residential fifty cents per bill. Today, the conservation charge brings in estimated revenue of \$700,000. It is a matter of achieving the revenue requirements and set the rate appropriately in order to collect those revenues. Mr. Hooper asked if the RMLD is generating sufficient funds to cover this. Ms. Parenteau replied that is correct. Mr. Seavey added that from a rate design perspective, charging on a flat per customer basis is considered to be fairly regressive because it affects small users more highly than high users. Mr. Seavey said that someone using two hundred kilowatt hours per month is going to pay the same conservation charge as someone using two thousand kilowatt hours a month.

Mr. Pacino said that if we do nothing with the purchase power adjustment, the 1.3% will be coming into place if we do nothing. That is what he is taking away from this. Mr. Seavey explained that if the 1.3% comes in from the purchase power adjustment, it will not flow to your bottom line, not reach net income and will not help you meet your revenue target. Mr. Seavey pointed out that it is really important that the 1.3% happens to the base rates regardless of what happens to purchase power. Mr. Pacino asked if we are trading a variable under the purchase power adjustment for a steady 1.3%. Mr. Seavey responded it is not trading because the variable still has to be recovered. Those expenses and revenues are off in a different part of the world. The part that is over here 1.3% increase needs the 1.3%, you cannot use purchase power revenues to subsidize. Mr. Pacino said that the purchase power adjustment goes away until another rate study is performed, that is his understanding and will be replaced by the 1.3% increase. Ms. O'Brien explained that when the rate increase discussion back in November there would be a five percent in January or February and another two percent in July. The RMLD was estimating on a revenue requirement. There is a little bit of confusion because the purchase power and the fuel are pass throughs. The 1.3% is required for the revenue requirement which has anything to do with purchase power. Mr. Kelley asked that the RMLD is taking the pass through numbers and bundling those together because the discount only are the part that you make revenue on. Ms. O'Brien explained that currently, you have an embedded purchase power piece that is a pass through that is part of the base rate. The base rate consists of purchase power, operating and maintenance expenses, and as purchase power and fuel fluctuates from what you have in the embedded rate as it goes up and down this is adjusted every month, to collect by law what you have to collect. When you unbundle the rate, you have your expenses and your purchase power. It is lot easier to do a budget to actuals, to make sure that you are collecting for your expenses, purchase power you are collecting for that. Ms. O'Brien pointed out that most utilities are going towards a transparent unbundled rate. Mr. Kelley said that at the last commission meeting he attended, Mr. Soli asked to take the pass through money and keep it in a separate that is what you are working towards that. Ms. O'Brien replied that is correct. Mr. Kelley said that the budgets will show those as separate line items. Ms. O'Brien agreed. Ms. O'Brien clarified that her answer at that meeting is that the RMLD is going to an unbundled rate and the reason it is not there is because the billing software is being upgraded. The RMLD is doing the Cost of Service and unbundling it. As soon as Cogsdale billing is capable to handle this, then it will be unbundled on the bill. That is the direction the RMLD is going.

Mr. Soli said that the current purchase power adjustment the value is a little more than half a cent per kilowatt hour. On five hundred kilowatt hours, it would be \$2.50 as opposed there is an eighty five cent differential as shown in the presentation. Ms. Parenteau pointed out that the current billing adds the fuel to account for the purchase power charge. Mr. Seavey pointed out in the presentation it is not the present today, it is the present July1, based on budget estimates.

Cost of Service Study (COSS) Presentation – Mayhew Seavey (Attachment 1)

Mr. Soli added as of his May bill it is half a cent a kilowatt month. Mr. Pacino added that the point Mr. Soli is trying to make that it is a real possibility that if the 1.3% is put in place that is based on estimates that we could be possibly decreasing this to the customer as opposed to doing nothing. Mr. Seavey added that if purchase power costs go down, at the same time it goes down. Mr. Seavey commented that it is really important to do this if purchase power costs are entangled together with base rates it is far too easy for the utility to do essentially a back door rate increase by overcollecting purchase power costs and flowing it through the bottom line because you cannot account for them. That is what municipalities have done for decades as soon as they had the ability to do a purchase power adjustment rather than increasing the rates they would increase the purchase power adjustment. They would do that in order to make their three to four percent, for the rate of return. It was not possible for their auditors to tear that apart, you did not actually earn a four percent return for the year, and you actually overcollected \$500,000 in purchased power costs. With it broken out and unbundled then this is not a possibility. You as a customer can look at the numbers and see that the correct amount of money was collected from the base rates and recovered all the purchased power costs. It is much more transparent.

Ms. O'Brien said that when the RMLD went through the 4.5% in February, the schools were 3.9% it varied for the rate classes. When we went through that conversation and Ms. Parenteau discussed that realistically that if you looked at the fuel, the customer's bill had down. With the 4.5% increase, realistically the purchase power had gone down more than what the RMLD was increasing into base. However, purchase power can go up, if one of your nuclear plants shuts down and you have to go the market for replacement power. The RMLD tries to stabilize that over time or to soften that so there are no rate spikes and tries to do this on a daily basis. Purchase power goes up and we have to recover it.

Mr. Pacino asked where we go from here where we have had the presentation, what is the next step. Chairman Stempeck said that we need some refinement on the LED streetlighting before we can provide the final acceptance. Mr. Seavey added that you will need actual rate schedules that you can vote on. Chairman Stempeck said that the rate schedules will be available at the next meeting. Chairman Stempeck said that the next step would be a recommendation on the adoption of the policies that have been just walked through. An agreement of each of the proposals, in terms of breakouts on how to structure the mix question and then approval for 1.3% increase. There are three things different things that need to happen.

Chairman Norton pointed out this needs to occur before it comes to the CAB. Mr. Pacino said that he is trying to establish the timetable. Chairman Stempeck said that the Board hopes to have a recommendation before its next meeting. Mr. Pacino said that the RMLD Board needs to meet in order to make the recommendation and refer it to the CAB. Mr. Pacino noted that the CAB has a thirty day time review. Ms. O'Brien said that June 18 is the deadline for Cogsdale billing changes for a July bill.

Chairman Stempeck said that all the data will be available for the next meeting, Thursday, May 15.

Mr. Talbot asked that the customer charge goes up when customers get a special meter and stays on the bill for \$2 forever such as the time of use meters, is there a payback for that charge. Mr. Fournier replied that it does not matter if it is a time of use meter or not. Mr. Talbot said that remains even for forty years. Mr. Fournier explained that will stay on as long until the customer charge is changed again. Mr. Seldon said that you try to time that out so for the next generation of metering comes in you will have a brand new meter.

Ms. O'Brien clarified the data that will be needed. Mr. Seavey said that it would be a complete set of rate schedules on either option. Chairman Stempeck said that the outcome of the May 15 meeting will be forwarded to the CAB. Mr. Pacino said that if any commission member needs information to communicate to the department tomorrow. Ms. O'Brien said that the recommendation to the CAB is up to thirty days.

RMLD Board Meetings

Thursday, May 15, 2014, 6:30 pm

Citizens' Advisory Board Meeting

Citizens' Advisory Board will continue to meet after this meeting and determine their next CAB meeting date.

Adjournment

At 7:57 p.m. Mr. Soli made a motion seconded by Mr. Pacino to adjourn the Regular Session to adjourn.

A true copy of the RMLD Board of Commissioners minutes
as approved by a majority of the Commission.
David Talbot, Secretary Pro Tem
RMLD Board of Commissioners

Cost of Service and Rate Design

A Presentation to the
RMLD Board and Citizens' Advisory Board
May 8, 2014

Outline of Presentation

1. Results of Proforma Fiscal Year (FY)15 Cost of Service Analysis
2. Rate Design Recommendations
3. Next Steps
4. Discussion

Results of the Proforma Future Test Year (FY15) Cost of Service Study

- ◆ FY13 Historic Test Year Cost of Service model was updated with expenses and sales from RMLD Operating Budget for FY15
- ◆ An overall increase of 1.3% in revenues is necessary to meet budgeted expenses

Rate of Return

- ◆ Existing rates of return by customer class are at the range of standard municipal utility practice
- ◆ Existing rates are very competitive with other municipal and private utilities across the board
- ◆ A main objective of RMLD is to attract and retain commercial load to support the stabilization of rates

Proposed Rates

Case 1 – Uniform Increase

- ◆ Overall revenue increase required is only 1.3% for all customer classes.

Proposed Rates

Case 2 – Smoothed Rates of Return

- ◆ Same overall revenue increase of 1.3%
- ◆ Class rates of return moved within the standard municipal utility range
 - Residential increase to produce a breakeven
 - ◆ Would require a 5% increase
 - Industrial increase of 1.3% (Same as Case 1)
 - ◆ Would require a 1.3% increase
 - Commercial and School decrease rate of return
 - ◆ Would require a 3% decrease

Rate Classification

Small Commercial Class

- ◆ Investigated adding a Small Commercial class for customers using less than 10,000 kWh per month
 - No demand charge
 - Consistent with private utility rate structure
- ◆ Results indicate that this would not be a viable option
 - Would cause increases of up to 20% for a large number of high load factor customers
 - Would result in decreases of up to 50% for a large number of low load factor customers
 - Not consistent with the goal of sending accurate price signals to customers

Rate Classification

Residential Low Income Rate

- ◆ Option 1 – Eliminate Customer Charge for qualifying customers
 - Used by several Municipal Light Departments
 - Provide same benefit (\$3.73 per month) for all customers regardless of usage
 - Higher percentage reduction for low usage customers
 - ♦ 9% reduction for 250 kWh customer
 - ♦ 5% reduction for 500 kWh customer
- ◆ Option 2 – Percentage discount on entire bill exclusive of purchased power charges
 - National Grid uses a 25% discount on Delivery Services
 - Nstar uses 27% (25.7% for electric heat customers)
 - A 25% discount in place of the Prompt Payment discount would reduce the total bill by 6% relative to a bill using the Prompt Payment discount

Rate Structure

Unbundled Rates

- ◆ All purchased power costs removed from Base Rate Charge
 - Becomes Distribution Charge
- ◆ Capacity, Energy and Transmission costs recovered through Purchase Power Charge
 - Includes a portion of the Base Rate Charge as well as all of the Fuel Charge and Purchase Power Adjustment (PPA)
 - Billed using estimated costs and sales then reconciled to actual costs and revenues after the fact
- ◆ Prompt payment discount applies to Customer Charge and Distribution Charge
 - Percentage remains at 10%, however dollar amount is smaller to customer because there is no discount on the portion of purchase power cost built into the Energy Charge

Residential Rate

Present		Proposed
Customer Charge	\$3.73	Customer Charge \$3.73
Base Rate Charge	\$0.08980	Distribution Charge \$0.0457
Fuel Adjustment	0.05167	
Purchase Power Adjustment	0.00197	Purchased Power Charge \$0.09503*
Energy Conservation Charge	0.00100	Energy Conservation Charge 0.00100
NYPA Credit	(\$0.00274)	NYPA Credit (\$0.00274)
Prompt Payment Discount	10%	Prompt Payment Discount 10%
500 kWh bill	\$69.72	\$70.57

*Purchased Power Charge estimated based on budgeted purchased power costs for FY15

Results of the Historic Test Year (FY13) Cost of Service Study

Rate Structure

Recommend changing the methodology for calculating the NYPA hydropower adjustment

$$\text{NYPA Savings} = \text{NK} \times [\text{ACEWO} - \text{ACN}]$$

Where

NK = total kWh of NYPA received

ACEWO = average cost of energy excluding NYPA

ACN = average cost of NYPA energy

Should reduce customer bills since the average cost of energy purchased is expected to increase

May 8, 2014

PLM Electric Power Engineering

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Results of the Historic Test Year (FY13)

Cost of Service Study

Rate Structure

- ◆ In the process of reviewing the Street Lighting rate to determine if there is a need to adjust the present rates in order to recover the cost of service
- ◆ Gathering data to develop a rate for LED Street Lights in addition to the present Street Light rates



Discussion

FY15 Proforma Test Year Cost of Service Study **TYPICAL & SPECIFIC ALLOCATION FACTORS (IN PER UNIT)**

SYM	ALLOCATION FACTOR	Residential		Residential Time of Use	School	Commercial	Industrial	Small Commercial	Coop	Lighting		TOTALS
		A	A 2							SCH	C	
DEMAND:												
12CP	AVERAGE 12 COINCIDENT PEAKS	0.4507	0.0072	0.0191	0.1946	0.2518	0.0661	0.0051	0.0041	0.0013	1.0000	
1CP	ICAP (ISO ANNUAL PEAK)	0.4648	0.0074	0.0193	0.1967	0.2388	0.0678	0.0052	0.0000	0.0000	1.0000	
AED	AVERAGE & EXCESS	0.3645	0.0058	0.0210	0.2136	0.3111	0.0729	0.0056	0.0041	0.0013	1.0000	
PR	PEAK RESPBLTY (SEE ABOVE)	0.4507	0.0072	0.0191	0.1946	0.2518	0.0661	0.0051	0.0041	0.0013	1.0000	
NCP	NON-COINCIDENT PEAK DEMAND	0.4392	0.0070	0.0179	0.1827	0.2660	0.0770	0.0048	0.0041	0.0013	1.0000	
ENERGY:												
E	ENERGY	0.3678	0.0057	0.0206	0.2139	0.3106	0.0711	0.0054	0.0037	0.0012	1.0000	
	ENERGY PRICE-WEIGHTED SALES	256,569,112	3,944,216	14,351,890	149,202,281	216,663,541	49,594,874	3,775,245	2,587,739	804,071		
	PER UNIT MARGINAL ENERGY COST	1.0159	0.9802	0.9877	1.0080	1.0051	0.9821	0.9658	0.9000	0.9000		
CUSTOMER:												
CTM	CUSTOMER METERED - TOTAL	0.8877	0.0112	0.0011	0.0135	0.0023	0.0841	0.0002	0.0000	0.0000	1.0000	
	CUSTOMFR UNMETERED	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0137	0.0144	
	CUSTOMER METERED	0.8749	0.0110	0.0011	0.0133	0.0023	0.0829	0.0002	0.0000	0.0000	0.9856	
CT	CUSTOMER TOTAL	0.8749	0.0110	0.0011	0.0133	0.0023	0.0829	0.0002	0.0006	0.0137	1.0000	
CWM	CUSTOMER WEIGHTED METERED	0.4416	0.0070	0.0180	0.1837	0.2675	0.0774	0.0049	0.0000	0.0000	1.0000	
	CUSTOMFR WEIGHTED UNMETERED	0.3770	0.0047	0.0005	0.0057	0.0010	0.0357	0.0001	0.000265	0.0059	0.4309	
	CUSTOMER WEIGHTED METERED	0.2513	0.0040	0.0103	0.1045	0.1522	0.0440	0.0028	0.000000	0.0000	0.5691	
CWT	CUSTOMER WEIGHTED TOTAL	0.6283	0.0087	0.0107	0.1103	0.1532	0.0798	0.0028	0.000265	0.0059	1.0000	
DEMAND & CUSTOMER:												
0.75	DEMAND (NCD*WEIGHT)	0.3294	0.0052	0.0134	0.1370	0.1995	0.0577	0.0036	0.0031	0.0010	0.7500	
0.25	CUSTOMER (C*WEIGHT)	0.2187	0.0028	0.0003	0.0033	0.0006	0.0207	0.0000	0.000154	0.0034	0.2500	
D&C	D&C OVERALL	0.5481	0.0080	0.0137	0.1403	0.2001	0.0784	0.0037	0.0032	0.0044	1.0000	
DEMAND & ENERGY:												
0.5	DEMAND (AED*WEIGHT)	0.1823	0.0029	0.0105	0.1068	0.1556	0.0364	0.0028	0.0021	0.0006	0.5000	
0.5	ENERGY (F*WEIGHT)	0.1839	0.0028	0.0103	0.1070	0.1553	0.0356	0.0027	0.0019	0.0006	0.5000	
D&E	D&E OVERALL	0.3662	0.0057	0.0208	0.2138	0.3109	0.0720	0.0055	0.0039	0.0012	1.0000	
STREET LIGHTS:												
LA	CUSTOMER-LIGHT AREA	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000	
LS	CUSTOMER-LIGHT STREET	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	1.0000	
PURCHASED POWER FACTOR:												
VAR	SEE ABOVE DEMAND FACTORS	0.4507	0.0072	0.0191	0.1946	0.2518	0.0661	0.0051	0.0041	0.0013	1.0000	
PS	PASNY..PER KWH BASIS	0.9843	0.0157	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	

FY15 Proforma Test Year Cost of Service Study
COST OF ELECTRIC PLANT 6-30-13

ACNT	DESCRIPTION	Allocation Factor	FY2013 Test Year Total	Residential A	Residential Time-of Use A-2	School SCH	Commercial C	Industrial I	Small Commercial SC	Coop COOP	Lighting	
											Municipal Street	Private Area Lights
350	LAND AND LAND RIGHTS	AED	0									
351	CLEARING LAND AND RIGHTS/WAY	AED	25,015									
352	STRUCTURES AND IMPROVEMENTS	AED	765,613									
353	STATION EQUIP	AED	4,257,806									
354	TOWERS AND FIXTURES	AED	0									
355	POLES AND FIXTURES	AED	0									
356	OVERHEAD CONDUCTOR AND DEVICES	AED	20,923									
357	UNDERGROUND CONDUIT	AED	9,056									
358	UNDERGRD CONDUCTOR AND DEVICES	AED	3,475									
359	ROADS AND TRAILS	AED	0									
	TOTAL TRANSMISSION PLANT		5,081,890	1,852,463	29,516	106,570	1,085,607	1,581,016	370,405	28,670	21,089	6,553

FY15 Proforma Test Year Cost of Service Study COST OF ELECTRIC PLANT 6-30-13

ACNT	DESCRIPTION	Allocation Factor	FY2013 Test Year Total	Residential		School SCH	Commercial C	Industrial I	Small Commercial		Coop COOP	Lighting	
				A	A 2				SC	SC		Municipal Street	Private Area Lights

4. DISTRIBUTION PLANT

360 LAND AND LAND RIGHTS	NCP		843.454										
362 STATION EQUIP	NCP		5,321.547										
363 STORAGE BATTERY EQUIP	NCP		16.281										
361 STRUCTURES AND IMPROVEMENTS	D&C		6,181.283	2,714.878	43.258	110.839	1,129.097	1,644.353	475.660		29.818	25.466	7.913
364 POLES, TOWERS AND FIXTURES	D&C		3,036.175										
365 OVERHEAD CONDUCTOR AND DEVICES	D&C		16,424.832										
366 OVERHEAD CONDUIT	D&C		14,500.151										
367 UNDERGROUND CONDUIT	D&C		3,534.637										
367 UNDERGRD CONDUCTOR AND DEVICES	D&C		4,395.290										
368 LINE TRANSFORMERS	D&C		4,840.478										
369 SERVICES	CWT		46,731.562	25,615.640	373.880	640.854	6,557.490	9,350.052	3,665.567		171.071	151.586	205.421
370 METERS	CWM		2,168.550	1,362.528	18.969	23.241	239.091	332.212	172.947		6.146	575	12.841
371 INSTALLATIONS ON CUST PREMISES	DA		3,409.205	1,505.485	23.988	61.464	626.120	911.845	263.768		15.535	0	0
372 LEASED PROP ON CUST PREMISES	LA		0	0	0	0	0	0	0		0	0	0
373 STREET LIGHT AND SIGNAL SYSTEM	IS		790.969	0	0	0	0	0	0		0	790.969	0
			6,368.724	2,868.013	42.957	84.705	865.211	1,244.057	436.715		22.681	791.544	12.841
TOTAL DISTRIBUTION PLANT			59,281.569	31,198.531	460.095	836.398	8,551.799	12,238.462	4,577.942		223.571	968.596	226.175
PER UNIT	-D		1.0000	0.5263	0.0078	0.0141	0.1443	0.2064	0.0772		0.0038	0.0163	0.0038

COMPONENTS:

DEMAND			41,229.954	18,108.588	288.535	739.312	7,531.226	10,968.046	3,172.711		198.893	169.863	52.790
PER UNIT	=DD		0.6955	0.3055	0.0049	0.0125	0.1270	0.1850	0.0535		0.0034	0.0029	0.0009
CUSTOMER			18,051.615	13,089.943	171.560	97.086	1,020.573	1,270.416	1,405.231		24.678	798.733	173.394
PER UNIT	-DC		0.3045	0.2208	0.0029	0.0016	0.0172	0.0214	0.0237		0.0004	0.0135	0.0029
TOTAL BEFORE GENERAL PLANT			64,363.458	33,050.995	489.611	942.968	9,537.406	13,819.478	4,948.346		252.241	989.685	232.728
PER UNIT	PTD		1.0000	0.5135	0.0076	0.0147	0.1497	0.2147	0.0769		0.0039	0.0154	0.0036
COMPONENTS:													
DEMAND			46,311.844	19,961.052	318.051	845.882	8,616.833	12,549.062	3,543.116		227.563	190.952	59.333
PER UNIT	-PDTD		0.7195	0.3101	0.0049	0.0131	0.1339	0.1950	0.0550		0.0035	0.0030	0.0009
CUSTOMER			18,051.615	13,089.943	171.560	97.086	1,020.573	1,270.416	1,405.231		24.678	798.733	173.394
PER UNIT	-PTDC		0.2805	0.2034	0.0027	0.0015	0.0159	0.0197	0.0218		0.0004	0.0124	0.0027

FY15 Proforma Test Year Cost of Service Study
COST OF ELECTRIC PLANT 6-30-13

ACN1	DESCRIPTION	Allocation Factor	FY2013 Test Year Total	Residential A	Residential Time-of-Use A-2	School SCH	Commercial C	Industrial I	Small Commercial SC	Coop COOP	Lighting	
											Municipal Street	Private Area Lights
389	LAND AND LAND RIGHTS	PTD	397,372									
390	STRUCTURES AND IMPROVEMENTS	PTD	2,628,819									
391	OFFICE FURNITURE AND EQUIP	PTD	349,281									
392	TRANSPORTATION EQUIP	PTD	1,075,372									
393	STORES EQUIP	PTD	20,114									
394	TOOLS, SHOP AND GARAGE EQUIP	PTD	6,641									
395	LABORATORY EQUIP	PTD	159,975									
396	POWER OPERATED EQUIP	PTD	0									
397	COMMUNICATION EQUIP	PTD	1,174,712									
398	MISC EQUIP	PTD	18,703									
399	OTHER TANGIBLE PROPERTY	PTD	0									
	TOTAL GENERAL PLANT		5,830,989	2,994,245	44,356	85,428	873,098	1,251,972	448,294	22,852	89,660	21,084

FY15 Proforma Test Year Cost of Service Study COST OF ELECTRIC PLANT 6-30-13

ACNT	DESCRIPTION	Allocation Factor	FY2013 Test Year Total	Residential Time-of-Use		School SCH	Commercial		Industrial I	Small Commercial		Coop		Lighting	
				A	A 2		C			SC		COOP		Municipal Street	Private Area Lights
	TOTAL GROSS PLANT, INCL UNCLASFD		70,194,448	36,045,240	533,968	1,028,396	10,510,504	15,071,450	5,396,640	275,092	1,079,346	253,812			
	PER UNIT		1.0000	0.5135	0.0076	0.0147	0.1497	0.2147	0.0769	0.0039	0.0154	0.0036			
	DEMAND		50,507,452	21,769,417	346,865	922,515	9,397,472	13,685,941	3,864,103	248,179	208,251	64,709			
	PER UNIT		0.7195	0.3101	0.0049	0.0131	0.1339	0.1950	0.0550	0.0035	0.0030	0.0009			
	CUSTOMER		19,686,996	14,275,823	187,102	105,882	1,113,032	1,385,509	1,532,537	26,914	871,094	189,103			
	PER UNIT		0.2805	0.2034	0.0027	0.0015	0.0159	0.0197	0.0218	0.0004	0.012410	0.0027			
	LESS ACCOUNTS NOT DEPRECIABLE:														
	FULLY DEPRECIATED 1 (-)	AED	0	0	0	0	0	0	0	0	0	0		0	0
	FULLY DEPRECIATED 2 (-)	D&C	0	0	0	0	0	0	0	0	0	0		0	0
	SUBTOTAL		0	0	0	0	0	0	0	0	0	0		0	0
	TOTAL RATE BASE		70,194,448	36,045,240	533,968	1,028,396	10,510,504	15,071,450	5,396,640	275,092	1,079,346	253,812			
	PER UNIT	-PLNT	1.0000	0.5135	0.0076	0.0147	0.1497	0.2147	0.0769	0.0039	0.0154	0.0036			
	COMPONENTS:														
	DEMAND		50,507,452	21,769,417	346,865	922,515	9,397,472	13,685,941	3,864,103	248,179	208,251	64,709			
	PER UNIT	PLNTD	0.7195	0.3101	0.0049	0.0131	0.1339	0.1950	0.0550	0.0035	0.0030	0.0009			
	CUSTOMER		19,686,996	14,275,823	187,102	105,882	1,113,032	1,385,509	1,532,537	26,914	871,094	189,103			
	PER UNIT	-PLNTC	0.2805	0.2034	0.0027	0.0015	0.0159	0.0197	0.0218	0.0004	0.012410	0.0027			

FY15 Proforma Test Year Cost of Service Study

ELECTRIC OPERATING AND MAINTENANCE EXPENSES

ACNT		DESCRIPTION	Allocation Factor	FY15 Test Year Total	Residential:		Residential Time-of Use	School	Commercial	Industrial	Small Commercial	Coop	Lighting	
					A		A 2	SCH	C	I	SC	COOP	Municipal Street	Private Area Lights
E. OTHER POWER SUPPLY EXPENSES														
555		PURCHASED POWER (1)		36,952,025										
		ENERGY	E	0										
		NET INTERCHANGE (1)	E	36,952,025										
		GROSS PURCHASED ENERGY												
		LESS SALES FOR RESALE (1)	E	0										
		NET PURCHASED ENERGY		36,952,025	13,592,608	208,958	760,339	7,904,490	11,478,476	2,627,454	200,006	137,094	42,598	
		PASNY SAVINGS		-702,372	691,356	-11,016	0	0	0	0	0	0	0	
		CAPACITY (1)	VAR	16,332,287										
		LESS CAP SALES FOR RESALE (1)	VAR	0	7,360,557	117,280	312,000	3,178,278	4,112,171	1,080,131	83,935	67,088	20,846	
		NET PURCHASED CAPACITY	VAR	0	0	0	0	0	0	0	0	0	0	
555C		OTHER:HYDRO Q-Ph2	VAR	52,581,940	20,261,808	315,222	1,072,339	11,082,769	15,590,648	3,707,585	283,942	204,182	63,444	
		555 TOTAL												
556		SYS CONTROL AND LOAD DISPT'G	AED	0	0	0	0	0	0	0	0	0	0	
557		OTHER EXPENSES		52,581,940	20,261,808	315,222	1,072,339	11,082,769	15,590,648	3,707,585	283,942	204,182	63,444	
		SUBTOTAL												
		TOTAL PRODUCTION		52,581,940	20,261,808	315,222	1,072,339	11,082,769	15,590,648	3,707,585	283,942	204,182	63,444	
PRODUCTION COMPONENTS:														
		DEMAND		16,332,287	7,360,557	117,280	312,000	3,178,278	4,112,171	1,080,131	83,935	67,088	20,846	
		ENERGY		0	0	0	0	0	0	0	0	0	0	
		PP&FA FUEL		36,952,025	13,592,608	208,958	760,339	7,904,490	11,478,476	2,627,454	200,006	137,094	42,598	
		PASNY SAVINGS		-702,372	-691,356	11,016	0	0	0	0	0	0	0	
		SUBTOTAL		52,581,940										

FY15 Proforma Test Year Cost of Service Study

ELECTRIC OPERATING AND MAINTENANCE EXPENSES

ACNT	DESCRIPTION	Allocation Factor	FY15 Test Year Total	Residential		School	Commercial	Industrial	Small Commercial	Coop	Lighting	
				A	A-2						SCH	C
2. TRANSMISSION EXPENSES												
OPERATION:												
560	OPER. SUPERV'N AND ENGINEER'G	AFD	0									
561	LOAD DISPATCHING	AED	0									
562	STATION EXPENSES	AED	0									
563	OVERHEAD LINE EXPENSES	AED	0									
564	UNDERGROUND LINE EXPENSES	AED	0									
566	MISC TRANS EXPENSE	AFD	0									
567	RENTS	AED	0									
	SUBTOTAL		0									
565	TRANS OF FLCTY BY OTHERS	VAR	12,556,727	5,659,006	90,168	239,874	2,443,551	3,161,554	830,435	64,532	51,579	16,027
	TOTAL		12,556,727	5,659,006	90,168	239,874	2,443,551	3,161,554	830,435	64,532	51,579	16,027
MAINTENANCE:												
568	MAINT. SUPERV'N AND ENGINEER'G	AED	3,000									
569	MAINT OF STRUCTURES	AED	0									
570	MAINT OF STATION EQUIP	AED	0									
571	MAINT OF OVERHEAD LINES	AED	0									
572	MAINT OF UNDERGROUND LINES	AED	0									
573	MAINT OF MISC TRANS PLANT	AED	0									
	SUBTOTAL		3,000	1,094	17	63	641	933	219	17	12	4
	TOTAL		12,559,727	5,660,099	90,186	239,937	2,444,192	3,162,488	830,654	64,549	51,592	16,031
COMPONENTS:												
	DEMAND	#####	12,559,727	5,660,099	90,186	239,937	2,444,192	3,162,488	830,654	64,549	51,592	16,031
TOTAL PRODUCTION & TRANSM EXP												
			65,141,667									

FY15 Proforma Test Year Cost of Service Study

ELECTRIC OPERATING AND MAINTENANCE EXPENSES

ACNT	DESCRIPTION	Allocation Factor	FY15 Test Year Total	Residential		Residential Time-of Use A-2	School SCH	Commercial C	Industrial I	Small Commercial SC	Coop COOP	Lighting	
				A								Municipal Street	Private Area Lights
3. DISTRIBUTION EXPENSES													
OPERATION:													
580	OPER. SUPERVN AND ENGINEERING	D&C	583,668	319,934	4,670	8,004	81,902	116,780	45,782	2,137	1,893	2,566	
581	OPERATION LABOR	NCP	750,285	329,533	5,251	13,454	137,050	199,592	57,736	3,619	3,091	960	
582	STATION EXPENSES	NCP	398,849	175,178	2,791	7,152	72,855	106,102	30,692	1,924	1,643	511	
583	OVERHEAD LINE EXPENSES	D&C	0	0	0	0	0	0	0	0	0	0	
584	UNDERGROUND LINE EXPENSES	D&C	0	0	0	0	0	0	0	0	0	0	
585	STREET LIGHT'G AND SIG SYS EXP	LS	82,907	0	0	0	0	0	0	0	82,907	0	
586	METER EXPENSES	CWM	247,938	109,488	1,745	4,470	45,535	56,315	19,183	1,203	0	0	
587	CUSTOMER INSTALLATION EXPENSES	CT	0	0	0	0	0	0	0	0	0	0	
588	MISC DISTRIBUTION EXPENSES	D	402,885	212,029	3,127	5,684	58,119	83,174	31,112	1,519	6,583	1,537	
589	RENTS	D	0	0	0	0	0	0	0	0	0	0	
	SUBTOTAL		2,466,533	1,146,162	17,583	38,764	395,462	571,964	184,505	10,402	96,117	5,574	
MAINTENANCE													
590	MAINT. SUPERVN AND ENGINEERING	D&C	464,026	265,316	3,872	6,638	67,920	96,844	37,966	1,772	1,570	2,128	
591	MAINT OF STRUCTURES	D&C	0	0	0	0	0	0	0	0	0	0	
592	MAINT OF STATION EQUIP	NCP	0	0	0	0	0	0	0	0	0	0	
593	MAINT OF OVERHEAD LINES	D&C	1,792,794	982,710	14,343	24,586	251,569	358,702	140,625	6,563	5,815	7,881	
594	MAINT OF UNDERGROUND LINES	D&C	130,694	71,639	1,046	1,792	18,339	26,149	10,251	478	424	575	
595	MAINT OF LINE TRANSFORMERS	D&C	156,000	85,511	1,248	2,139	21,890	31,212	12,236	571	506	586	
596	MAINT OF ST LIGHT'G AND SIG SYS	LS	9,745	0	0	0	0	0	0	0	9,745	0	
597	MAINT OF METERS	CWM	43,290	19,117	305	780	7,950	11,579	3,349	210	0	0	
598	MAINT OF MISC DISTRIBUTION PLANT	DA	0	0	0	0	0	0	0	0	0	0	
	SUBTOTAL		2,616,549	1,424,292	20,814	35,935	367,669	524,487	204,428	9,594	18,060	11,269	
	TOTAL		5,083,082	2,570,455	38,397	74,699	763,131	1,096,450	388,933	19,996	114,178	16,842	
COMPONENTS:													
	DEMAND		3,789,725	1,664,483	26,521	67,955	592,246	1,008,148	291,625	18,282	15,613	4,851	
	CUSTOMER		1,293,357	905,971	11,876	6,744	70,885	88,303	97,308	1,715	98,564	11,991	
	TOTAL		5,083,082										

FY15 Proforma Test Year Cost of Service Study **ELECTRIC OPERATING AND MAINTENANCE EXPENSES**

ACNT	DESCRIPTION	Allocation Factor	FY15 Test Year Total	Residential		Residential Time of Use	School	Commercial	Industrial	Small Commercial	Coop	Lighting	
				A	A-2							SCH	C
4. CUSTOMER ACCOUNTS EXPENSES													
OPERATION													
901	SUPERVISION	CTM	0	0	0	0	0	0	0	0	0	0	0
902	METER READING EXPENSES	CTM	30,922	27,449	345	33	417	71	2,601	5	0	0	0
903	CUSTR RECORDS & COLLECTN EXP	CTM	1,705,333	1,513,814	19,045	1,834	23,008	3,904	143,432	296	0	0	0
904	UNCOLLECTIBLE ACCOUNTS	CTM	120,000	106,523	1,340	129	1,619	275	10,093	21	0	0	0
906	CUSTOMER SERVICE & INFORMATION	CTM	0	0	0	0	0	0	0	0	0	0	0
908	CUSTOMER EDUCATION	CTM	0	0	0	0	0	0	0	0	0	0	0
909	INFO & INSTRUCTIONAL SERVICES	CTM	0	0	0	0	0	0	0	0	0	0	0
	SUBTOTAL		1,856,255	1,647,787	20,731	1,996	25,045	4,249	156,126	322	0	0	0
	PER UNIT	=CA	1,0000	0.8877	0.0112	0.0011	0.0135	0.0023	0.0841	0.0002	0.0000	0.0000	0.0000
910	MISC CUSTR ACCOUNTS EXPENSES	CA	0	0	0	0	0	0	0	0	0	0	0
	TOTAL		1,856,255	1,647,787	20,731	1,996	25,045	4,249	156,126	322	0	0	0
COMPONENTS:													
	CUSTOMER		1,856,255	1,647,787	20,731	1,996	25,045	4,249	156,126	322	0	0	0

5. SALES EXPENSES

	OPERATION:											
909	ENERGY CONSERVATION	CT	1,267,096									
911	SUPERVISION	CT	0									
912	DEMONSTRATING AND SELLING LXP	CT	0									
913	ADVERTISING EXPENSES	CT	0									
916	MISC SALES EXPENSES	CT	0									
	TOTAL		1,267,096	1,108,644	13,948	1,343	16,850	2,859	105,043	217	780	17,413
	COMPONENTS:											
	DEMAND		0	0		0	0	0	0	0	0	0
	CUSTOMER		1,267,096	1,108,644	13,948	1,343	16,850	2,859	105,043	217	780	17,413
	TOTAL O&M (EXCLUDING PP)		20,766,160	10,986,985	163,262	317,975	3,249,217	4,266,046	1,480,756	85,084	166,549	50,286
	PER UNIT	=O&M	1,0000	0.5291	0.0079	0.0153	0.1565	0.2054	0.0713	0.0041	0.0080	0.0024
	DEMAND		16,349,452	7,324,583	116,707	307,892	3,136,438	4,170,635	1,122,279	82,830	67,205	20,882
	PER UNIT	=O&MD	0.7873	0.3527	0.0056	0.0148	0.1510	0.2008	0.0540	0.0040	0.0032	0.0010
	CUSTOMER		4,416,708	3,662,402	46,555	10,083	112,779	95,411	358,476	2,253	99,344	29,404
	PER UNIT	O&MC	0.2127	0.1764	0.0022	0.0005	0.0054	0.0046	0.0173	0.0001	0.0048	0.0014
	ENERGY		0	0	0	0	0	0	0	0	0	0
	PER UNIT	O&M-	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

FY15 Proforma Test Year Cost of Service Study

ELECTRIC OPERATING AND MAINTENANCE EXPENSES

ACNT	DESCRIPTION	Allocation Factor	FY15 Test Year Total	Residential		Residential: Time-of-Use	School	Commercial	Industrial	Small Commercial	Coop	Lighting	
				A	A-2							SCH	C
6. ADMIN & GENERAL EXPENSES													
OPERATION:													
920	ADMIN & GENERAL SALARIES	O&M	842,170										
921	OFFICE SUPPLIES AND EXPENSES	O&M	301,000										
922	ADMIN EXPENSES TRANSFERRED	O&M	0										
923	OUTSIDE SERVICES EMPLOYED	O&M	351,650										
925	INJURIES & DAMAGE	O&M	49,059										
926	EMPLOYEE PENSIONS & BENEFITS	O&M	2,746,619										
928	REGULATORY COMMISSION EXPENSES	O&M	0										
934	Inventory Adjustment	O&M	240,772										
930	MISC GENERAL EXPENSES	O&M	212,000										
931	RENTS	O&M	4,743,270	2,509,575	37,291	72,630	742,165		974,422	338,224	19,434	38,042	11,486
	SUBTOTAL		4,743,270	233,145	3,451	6,621	67,671		97,014	34,842	1,771	7,033	1,652
924	PROPERTY INSURANCE	DPLNT	453,200	2,742,720	40,742	79,251	809,836		1,071,436	373,067	21,205	45,075	13,138
	SUBTOTAL		5,196,470										
MAINTENANCE:													
932	MAINTENANCE OF GENERAL PLANT	O&M	737,711										
933	TRANSPORTATION EXPENSE	O&M	0										
	SUBTOTAL		737,711	390,309	5,800	11,296	115,427		151,550	52,603	3,023	5,917	1,766
	TOTAL		5,934,181	3,133,029	46,542	90,547	925,264		1,222,986	425,670	24,228	50,992	14,925
COMPONENTS:													
	DEMAND		4,557,076	2,073,050	36,732	87,193	888,220		1,102,385	321,035	23,457	19,076	5,927
	CUSTOMER		1,285,032	1,059,978	12,980	3,353	37,043		25,358	104,635	771	31,916	8,997
	ENERGY		0	0	0	0	0		0	0	0	0	0
	TOTAL		5,842,108										
	TOTAL OPER & MAINT EXPENSES		79,282,281	34,381,822	525,026	1,480,861	15,257,249		21,079,680	5,614,011	393,253	421,723	128,655
COMPONENTS:													
	DEMAND (INCLUDES 500 557)		37,238,816	16,758,190	270,719	707,085	7,202,936		9,385,191	2,523,445	190,223	153,369	47,655
	CUSTOMER		5,701,740	4,722,381	59,535	13,436	149,823		120,769	463,111	3,024	131,260	38,402
	ENERGY		0	0	0	0	0		0	0	0	0	0
	PP&A-FUEL		36,952,025	13,592,608	208,958	760,339	7,904,490		11,478,476	2,627,454	200,006	137,094	42,598
	PASNY SAVINGS		-702,372	-691,356	11,016	0	0		0	0	0	0	0
	TOTAL		79,190,208	34,381,822	528,196	1,480,861	15,257,249		20,984,437	5,614,011	393,253	421,723	128,655

FY15 Proforma Test Year Cost of Service Study

ELECTRIC OPERATING AND MAINTENANCE EXPENSES

ACNT	DESCRIPTION	Allocation Factor	FY15 Test Year Total	Residential		School SCH	Commercial C	Industrial I	Small Commercial SC	Coop COOP	Lighting	
				A	A 2						Municipal Street	Private Area Lights
OTHER EXPENSES												
403	DEPRECIATION PRODUCTION - NON PRODUCTION	DPLNT	0									
404	AMORT OF LTD TERM ELECT PLNT	DPLNT	3,892,000									
	SUBTOTAL		3,892,000	2,002,207	29,636	56,860	581,150	833,135	299,219	15,208	60,397	14,187
426	OTHER INCOME DEDUCTIONS	PLNT	0	0	0	0	0	0	0	0	0	0
INTEREST CHARGES:												
427	INT ON BONDS & NOTES - PROD - NONPROD	PLNT	0									
428	AMORT OF DEBT DISC & EXPENSE -	PLNT	0									
429	AMORT OF PREMIUM ON DEBT -	PLNT	0									
432	INTEREST CHARGED TO CONTRS	PLNT	0									
	SUBTOTAL		0	0	0	0	0	0	0	0	0	0
431	OTHER INTEREST EXPENSE	O&M	0	0	0	0	0	0	0	0	0	0
	SUBTOTAL		0	0	0	0	0	0	0	0	0	0
MISC SURPLUS ADJUSTMENT:												
434	MISC CREDITS TO SURPLUS	PLNT	0									
435	MISC DEBITS TO SURPLUS	PLNT	0									
436	APPROPRIATIONS OF SURPLUS	PLNT	1,416,000									
	DEBT PRINCIPAL PRODUCTION	PLNT	0									
	NON PRODUCTN	PLNT	0									
437	SURPLUS APPL'D TO DEPRECIATION	PLNT										
	SUBTOTAL		1,416,000	727,124	10,771	20,745	212,024	304,029	108,864	5,549	21,773	5,120
	TOTAL		5,308,000	2,729,331	40,408	77,605	793,174	1,137,165	408,082	20,758	82,171	19,307
* PRODUCTION RELATED - OTHER EXPENSES												
COMPONENTS												
	DEMAND		0	0	0	0	0	0	0	0	0	0
	CUSTOMER ENERGY		0	0	0	0	0	0	0	0	0	0
	TOTAL		0	0	0	0	0	0	0	0	0	0
DISTRIBUTION RELATED - OTHER EXPENSES												
COMPONENTS												
	DEMAND		5,308,000	2,729,331	40,408	77,605	793,174	1,137,165	408,082	20,758	82,171	19,307
	CUSTOMER ENERGY		5,308,000									
	TOTAL		5,308,000									
	TOTAL ANNUAL EXPENSES		64,580,281	37,111,153	565,434	1,558,466	15,050,423	22,215,844	5,022,093	414,011	503,894	147,963
COMPONENTS												
	DEMAND (INCLUDES 500,557)		41,044,351	18,398,032	295,848	116,610	7,911,157	10,415,618	2,814,569	208,927	169,060	52,531
	CUSTOMER ENERGY		7,234,194	5,811,870	73,814	21,517	234,766	226,507	580,370	5,378	197,739	52,833
	LINE LOSS		0	0	0	0	0	0	0	0	0	0
	POWER-A-FUEL		35,952,025	13,592,608	208,958	760,339	7,904,490	11,478,476	2,627,454	200,005	137,094	42,598
	POWER SAVINGS		702,372	591,356	11,016	0	0	0	0	0	0	0
	TOTAL		84,456,208	37,111,153	566,604	1,558,466	15,050,423	22,121,502	5,022,093	414,011	503,894	147,963