

**BOROUGH OF SOUTH RIVER ELECTRIC DEPARTMENT
COST OF SERVICE/ ELECTRIC UNBUNDLING STUDY
2011**

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BOROUGH OF SOUTH RIVER ELECTRIC DEPARTMENT

COST OF SERVICE & ELECTRIC UNBUNDLING STUDY

EXECUTIVE SUMMARY

INTRODUCTION

This report was prepared to provide the Borough of South River Electric Department with a long-term financial plan and electric cost of service/unbundling study. The specific purposes of the financial plan and rate study are identified below:

- 1) ***Determine electric utility's revenue requirements for fiscal year 2011.*** The electric utility's revenue requirements were projected for the period from 2011 – 2015 and included adjustments for the following:
 - a. Changes in purchased power costs.
 - b. Capital improvements currently underway and scheduled over the next five years. The Borough of South River Electric Department provided a portion of the capital improvement information used and remaining capital information was estimated to reflect depreciation expense for 2011 – 2015.
- 2) ***Identify cross-subsidies that may exist between rate classes.*** Cross-subsidies exist when certain customer classes subsidize the electric costs of other customers. The rate study determined if cross-subsidies exist and practical ways to reduce the subsidies.
- 3) ***Recommend rate adjustments needed to meet targeted revenue requirements.*** The primary purpose of a rate study is the identification of appropriate revenue requirements and rate adjustments needed to meet financial targets established in the study. This report includes a long-term financial projection and rate track for the Borough of South River's Electric Department. The rate track was designed to help ensure the financial stability of the utility in future years.
- 4) ***Unbundled electric rates.*** The cost of providing electricity to customers consists of a number of components, including power generation, distribution, customer services, transmission, and payment in lieu of tax. The electric unbundling portion of this report identifies the cost of providing each type of service to customers. The unbundling study assists the utility in understanding its cost structure and developing special rate forms for customers such as wheeling rates, net metering rates, standby rates, and time of use rates.
- 5) ***Identify the appropriate monthly customer charge for each customer class.*** The monthly customer charge consists of fixed costs which do not vary with the amount of electricity used. The monthly customer charges consists of fixed expenses related to meter installation costs, meter reading, billing, customer line extension, customer services and a portion of the distribution system.

The Borough of South River Electric Department retained Utility Financial Solutions to review the above items and make recommendations on the appropriate course of action. This report includes results of the long-term financial plan, electric cost of service and unbundling study.

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UTILITY REVENUE REQUIREMENTS FOR FISCAL YEAR 2011

To determine revenue requirements, revenues and expenses for 2008 and 2009 were analyzed with adjustments made to actual expenses to reflect projected operating characteristics. Detailed descriptions of the methodology are included in the section "Summary of Significant Assumptions".

The cash generated from operations is insufficient to support the long-term operation and maintenance cost of the Electric Department. Without rate adjustments the projection of adjusted operating income for 2011 is \$1.0 million and decreases to negative \$(1.2) million in 2015. Adjusted operating income includes a cash transfer to the general fund that is increased by inflation annually. Table one below is the long-term financial projection of the Electric Department without rate adjustments.

Table One – Financial Projection – Without Rate Adjustments

	Projected 2011	Projected 2012	Projected 2013	Projected 2014	Projected 2015
Electric Charges	\$ 14,712,674	\$ 14,859,800	\$ 15,008,398	\$ 15,158,482	\$ 15,310,067
Total Revenues	\$ 14,712,674	\$ 14,859,800	\$ 15,008,398	\$ 15,158,482	\$ 15,310,067
Operating Expenses					
Salaries & Wages	\$ 1,325,000	\$ 1,350,000	\$ 1,397,250	\$ 1,446,154	\$ 1,496,769
Other Expenses - Operating	363,609	376,335	389,507	403,140	417,250
Other Expenses - Office/Administrative	22,068	22,841	23,640	24,468	25,324
Other Expenses - Insurance	1,000,000	1,035,000	1,071,225	1,108,718	1,147,523
Other Expenses - Professional Services	340,000	351,900	364,217	376,964	390,158
Other Expenses - Accumulated Absences	15,000	15,000	15,000	15,000	15,000
Purchase of Power	6,769,392	7,006,321	8,006,321	8,286,542	8,576,571
LESS Surplus (General Budget)	474,553	491,162	508,353	526,145	544,560
Deferred Charges and Statutory Expenditures	199,364	206,341	213,563	221,038	228,774
Depreciation	270,534	281,334	292,134	302,934	313,734
Total O&M	\$ 10,779,520	\$ 11,136,234	\$ 12,281,210	\$ 12,711,102	\$ 13,155,663
Operating Income	\$ 3,933,154	\$ 3,723,566	\$ 2,727,189	\$ 2,447,380	\$ 2,154,404
Transfer to Current Fund as Anticipated Revenue	\$ 2,892,308	\$ 2,993,538	\$ 3,098,312	\$ 3,206,753	\$ 3,318,989
Adjusted Operating Income	\$ 1,040,846	\$ 730,028	\$ (371,123)	\$ (759,373)	\$ (1,164,585)

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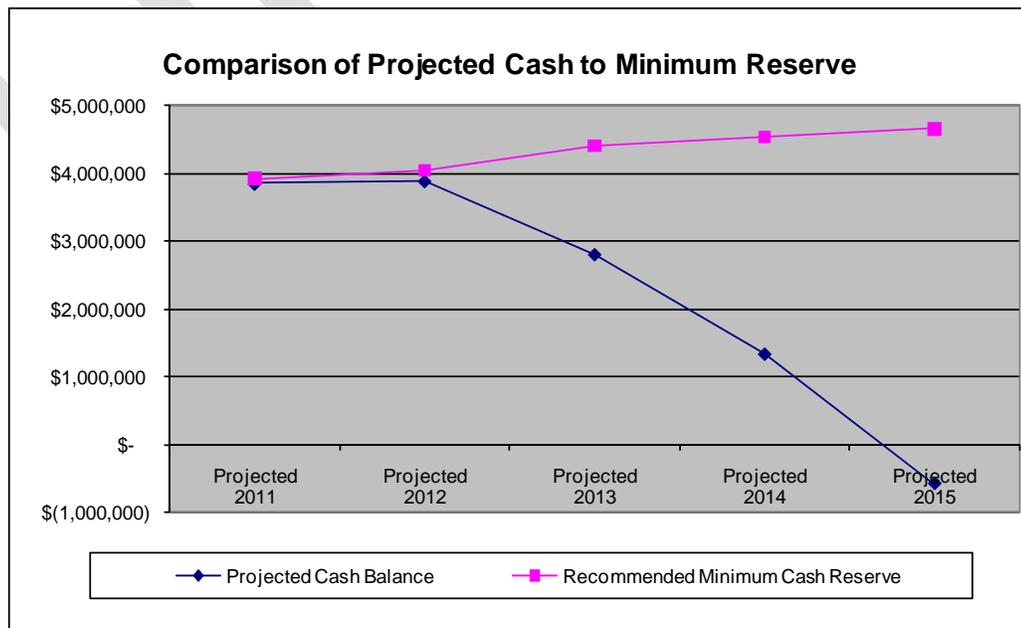
The cash balance for 2011 is projected to be \$3.9 million and decreases to negative \$(578,726) in 2015 without rate adjustments. The minimum target for 2011 is \$3.9 million and increases to \$4.7 million in 2015. The projected cash balances compared with the recommended minimum reserve levels are displayed below.

**Table Two – Projected Cash Balance vs Minimum Cash Reserves Calculation
– with no rate adjustment**

	Projected 2011	Projected 2012	Projected 2013	Projected 2014	Projected 2015
Add Net Income	\$ 3,787,334	\$ 3,607,940	\$ 2,631,626	\$ 2,345,875	\$ 2,037,389
Add Back Depreciation Expense	270,534	281,334	292,134	302,934	313,734
Subtract Debt Principal (Series 91/07)	(415,000)	(325,000)	(375,000)	(375,000)	(400,000)
Subtract Debt Principal (Anticipation Note)	(255,308)	(260,516)	(265,831)	(271,254)	(276,787)
Cash Available from Operations	\$ 3,387,560	\$ 3,303,758	\$ 2,282,929	\$ 2,002,556	\$ 1,674,336
LESS Estimated Annual Capital Additions	\$ 270,000	\$ 270,000	\$ 270,000	\$ 270,000	\$ 270,000
Net Cash before Reserve	\$ 3,117,560	\$ 3,033,758	\$ 2,012,929	\$ 1,732,556	\$ 1,404,336
Beginning Cash Balance	\$ 3,630,036	\$ 3,855,288	\$ 3,895,507	\$ 2,810,124	\$ 1,335,927
Ending Cash Balance	\$ 6,747,595	\$ 6,889,046	\$ 5,908,436	\$ 4,542,680	\$ 2,740,263
Transfer to Current Fund as Anticipated Revenue	\$ (2,892,308)	\$ (2,993,538)	\$ (3,098,312)	\$ (3,206,753)	\$ (3,318,989)
Total Cash Available	\$ 3,855,288	\$ 3,895,507	\$ 2,810,124	\$ 1,335,927	\$ (578,726)
Recommended Minimum	\$ 3,926,364	\$ 4,052,772	\$ 4,411,278	\$ 4,545,912	\$ 4,669,192

The graph below compares the projected cash balance with recommended minimum cash reserve levels established in the formula on page 8, Table Five.

Graph One – Comparison of Projected Cash Balances with Cash Reserves



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COST OF SERVICE SUMMARY RESULTS

A cost of service study was completed to determine the cost of providing service to each class of customers and to assist in design of electric rates for customers. A cost of service study consists of the following general steps:

- 1) Determine utility revenue requirement for 2011
- 2) Classify utility expenses into common cost pools
- 3) Allocate costs to customer classes based on the classes' contribution to utility expenses
- 4) Compare revenues received from each class to the cost of service

The cost of service summary is included in the table below which compares the projected cost to serve each class with the revenue received from each class. The "% change" column is the rate adjustment necessary to meet projected cost of service requirements.

Table Three – Cost of Service Summary 2011

Customer Class	Cost of Service	Projected Revenues	% Change
Residential	\$ 8,035,566	\$ 8,202,602	-2%
General Service/Non Demand	2,183,742	2,407,362	-9%
Street Lighting	50,081	1,930	2495%
Yard Lighting	85,135	76,994	11%
Municipal Buildings	623,464	-	0%
Retail Power/Demand	601,557	709,316	-15%
Commercial Demand	1,887,083	2,734,074	-31%
Public School Building	552,584	580,396	-5%
Total	\$ 14,019,211	\$ 14,712,674	-4.7%

The cost structure of the Borough of South River Electric Department consists of power supply costs and distribution cost to operate and maintain the local infrastructure. The study indicates an overall decrease of 4.7% is needed to meet cost of service for 2011.

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Development of Recommended Rate Track

When evaluating rates to charge customers, three factors must be considered:

1. Debt Coverage Ratio
2. Minimum Cash Reserves
3. Optimal Net Income

Each of these factors is discussed below:

1. **Debt Coverage Ratio** - Debt coverage ratios that are mandated by covenants established in the bond ordinance must be maintained to ensure the Borough of South River Electric Department maintains its bond rating and has the capacity to issue additional revenue bonds. Typical bond coverage ratios require that cash generated from operations exceed 1.2 times the debt payments. The Utility should maintain a minimum coverage ratio of 1.2. Due to fluctuations in sales, mainly the result of weather, a safety factor is recommended to help ensure coverage ratios are met during low sales years. We have established a target of 1.4 for financial projection purposes. This becomes the minimum target and rates must be established to meet the debt coverage ratio requirement.

The table below contains projected debt coverage ratios from 2011 – 2015. The Debt Ratios are sufficient through 2015.

Table Four – Debt Coverage Ratio

	Projected 2011	Projected 2012	Projected 2013	Projected 2014	Projected 2015
Add Net Income	\$ 3,787,334	\$ 3,607,940	\$ 2,631,626	\$ 2,345,875	\$ 2,037,389
Add Depreciation Expense	270,534	281,334	292,134	302,934	313,734
Add Interest Expense	265,501	241,228	222,462	201,564	180,518
Cash Available for Debt Service	\$ 4,323,369	\$ 4,130,502	\$ 3,146,222	\$ 2,850,374	\$ 2,531,641
Debt Principal and Interest	\$ 935,809	\$ 826,744	\$ 863,293	\$ 847,818	\$ 857,305
Projected Debt Coverage Ratio (Covenants)	4.62	5.00	3.64	3.36	2.95
Minimum Debt Coverage Ratio	1.40	1.40	1.40	1.40	1.40

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Minimum Cash Reserves

To help ensure timely completion of capital improvements and enable the utility to meet requirements for large unexpected expenditures, a minimum cash reserve policy should be established. Minimum cash reserves attempts to quantify the minimum amount of cash the utility should keep in reserve, the actual cash reserves may vary substantially above the minimum and is dependent on the life cycle of assets currently in service. The minimum cash reserve calculation considers the risk “in total” and not each individual category. For example; catastrophic events can occur and the amount may far exceed the amount set aside under investment in assets. This category should also consider short term financing and the reserves set aside in the remaining four categories.

The methodology used in this report is based on certain assumptions related to percent of operation and maintenance, rate base, capital improvements, and debt service. The establishment of minimum cash reserves should consider a number factors including:

- **Working Capital Lag** - Timing differences between when expenses are incurred and revenues received from customers. Establishing a minimum cash reserve helps ensure cash exists to pay expenses in a timely manner.
- **Investment in assets** – Catastrophic events may occur that require substantial investments to replace damaged assets. Some examples of catastrophic events include ice storms, earthquakes, wind storms, floods, or tornadoes. Many of these catastrophic events may allow the utility to recover the cost of damages from FEMA; however FEMA reimbursements can take between 6 months to 2 years to recover. The utility should ensure adequate cash reserves exist to replace the assets in a timely fashion. The minimum reserve levels are often combined with emergency funding from banks or bonding agencies. The percent to the minimum cash reserves are dependent on the age of the assets in service and the level of risk of catastrophic type events.
- **Annual debt service** – Debt service payments do not occur evenly throughout the year and often occurs at periodic times typically every six months. The utility has to ensure adequate cash reserves exist to fund the debt service payment when the payment is due.
- **Capital improvement program** – Some capital improvements are funded through bond issuances and some through cash reserves. The establishment of a minimum cash reserve level helps to ensure timely replacement or construction of assets.

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The recommended minimum cash reserve calculation established for FY 2011 is \$4.9 million based on the assumptions listed below. The minimum level of cash reserves is projected to increase each year and exceed \$5.9 million in 2015. Current and projected cash reserves are below minimum levels throughout the projection period.

The recommended minimum cash reserve calculation established for FY 2011 is \$2.6 million based on the assumptions listed below including the implementation of a Power Cost Adjustment (PCA) as described on page 10. The minimum level of cash reserves is projected to increase each year and exceed \$3.0 million in 2015. Current and projected cash reserves meet recommended minimum levels throughout the projection period.

The Electric Department should develop and approve a formal cash reserve policy based on cost categories listed below. The assumptions used to determine minimum cash levels are based on the judgment and experience of Utility Financial Solutions and consider the potential variations in power supply costs and risks factors that may adversely impact Electric Department's cash reserves

Table Five – Recommended Minimum Cash Reserves Calculation

Recommended Minimum Cash Reserve with a PCA

	Percent Allocation	Projected 2011	Projected 2012	Projected 2013	Projected 2014	Projected 2015
Operation & Maintenance Less Depreciation Expense	20%	\$ 747,919	\$ 769,716	\$ 796,551	\$ 824,325	\$ 853,072
Purchased Power Expense	17%	1,130,488	1,170,056	1,337,056	1,383,853	1,432,287
Historical Rate Base	1%	101,194	103,894	106,594	109,294	111,994
Current Portion of Debt Service	50%	413,372	431,647	423,909	428,653	417,590
Next Years Capital Improvements - Net of bond proceeds	15%	40,500	40,500	40,500	40,500	40,500
Five Year Capital Improvements - Net of bond proceeds	15%	202,500	202,500	202,500	202,500	202,500
Recommended Minimum Cash Reserve with a PCA		\$ 2,635,974	\$ 2,718,312	\$ 2,907,110	\$ 2,989,125	\$ 3,057,943
Total Cash Available		\$ 3,855,288	\$ 3,895,507	\$ 2,810,124	\$ 1,335,927	\$ (578,726)

Recommended Minimum Cash Reserve with no PCA

	Percent Allocation	Projected 2011	Projected 2012	Projected 2013	Projected 2014	Projected 2015
Operation & Maintenance Less Depreciation Expense	20%	\$ 747,919	\$ 769,716	\$ 796,551	\$ 824,325	\$ 853,072
Purchased Power Expense	50%	3,384,696	3,503,160	4,003,160	4,143,271	4,288,285
Historical Rate Base	1%	101,194	103,894	106,594	109,294	111,994
Current Portion of Debt Service Reserve	50%	413,372	431,647	423,909	428,653	417,590
Next Years Capital Improvements - Net of bond proceeds	15%	40,500	40,500	40,500	40,500	40,500
Five Year Capital Improvements - Net of bond proceeds	15%	202,500	202,500	202,500	202,500	202,500
Recommended Minimum Cash Reserve without a PCA		\$ 4,890,181	\$ 5,051,417	\$ 5,573,215	\$ 5,748,543	\$ 5,913,941
Total Cash Available		\$ 3,855,288	\$ 3,895,507	\$ 2,810,124	\$ 1,335,927	\$ (578,726)

Notes:

1. Operation and maintenance expense include purchase power costs and excludes depreciation expense.
2. Historical rate base is historical investment in plant and equipment
3. Next year capital includes budgeted capital improvements for the next fiscal year and excludes capital improvements funded through debt issuances
4. Next five year capital is budgeted capital improvements over the next five years and excludes capital improvements funded through debt issuances.

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Optimal Operating Income Targets

The optimal target for setting rates is the establishment of a target operating income which assists in ensuring the following items are funded by rates:

- a. Operation and Maintenance Expenses
- b. Depreciation expense
- c. Interest expense on debt
- d. Adequate rate of return on investment to help ensure current customers are paying their fair share of the use of the infrastructure and not deferring the charge to future generations.

As improvements are made to the system, the optimal operating income target will increase unless yearly depreciation is greater than yearly capital improvements. The target established for 2011 is \$347,383 and increases in 2015 to \$411,057. The projected operating income for 2011 is \$1.0 million and losses are projected to increase to negative \$(1.2) million in 2015. The operating income is deficient in 2013 through 2015 without rate adjustments.

Table Six - Optimal Operating Income Targets Compared to Projected – Without Rate Adjustments

	Percent Allocation	Projected 2011	Projected 2012	Projected 2013	Projected 2014	Projected 2015
Interest Expense on Debt	4.2%	\$ 283,689	\$ 259,097	\$ 232,182	\$ 205,039	\$ 176,614
System Equity	7.0%	63,695	103,888	147,196	190,129	234,442
Target Operating Income		\$ 347,383	\$ 362,984	\$ 379,378	\$ 395,168	\$ 411,057
Projected Operating Income		\$ 1,040,846	\$ 730,028	\$ (371,123)	\$ (759,373)	\$ (1,164,585)
Rate of Return in %		4.5%	4.7%	5.0%	5.2%	5.4%

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Review of Power Cost Adjustment

Power Cost Adjustments are used by many public power systems and most investor owned utilities to help ensure changes in power supply costs are recovered from customers in a timely manner. The market price of power varies depending on a number of factors including: natural gas prices, weather, economic conditions, and transmission constraints that occur in certain regions of the state.

The Borough of South River currently does not include a Power Cost Adjustment and this submits the borough's Electric Department to several financial stability weaknesses including:

1. Substantial reductions in cash reserve balances
2. Exposure to a substantial amount of market risk with inadequate cash reserve levels to support the fluctuations in power supply costs
3. Operating income losses
4. Inadequate funding for the replacement of infrastructure

To help ensure the long-term financial stability of the Electric Department, the Borough of South River should consider the establishment of a Power Cost Adjustment (PCA) mechanism to protect the utility and customers from under or over-recovery of power costs. Consideration should be given of the positives and negatives prior to implementation of a PCA mechanism. Some of these are listed below:

Negatives:

1. If large fluctuations in power supply costs occur, it can result in large un-expected charges to customers resulting in increased customer complaints.
2. A PCA tends to impact high load customers negatively in the short-term when compared with the cost impacts on lower load factor customers.
3. Upon initial implementation, customers may not understand the new line item on bill

Positives:

1. Implementing a PCA recovers variations in power supply costs in a timely fashion from customers
2. Helps improve bond ratings of utility
3. Results in lower cash reserve requirements for the utility
4. Helps prevent overcharging or undercharging customers
5. Reduces the frequency of annual rate changes

The negative impacts on customers can be minimized while helping to maintain the financial integrity of the utility. The type of PCA mechanism established should consider the potential negative impacts and consider the current financial position of the utility. The negative impacts on customers can be minimized and is dependent on the type of PCA implemented by the utility.

A number of methodologies exist in calculating PCAs. Two recommended methodologies are listed below:

Rolling average PCA - Tends to smooth out the fluctuations while maintaining the financial integrity of the utility. Costs are reviewed each month with small changes occurring with the goal of balancing power costs at the end of specific period of time such as 12 months.

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Forecasted PCA Monthly Review - Based on the annual budget then adjusted monthly to reflect actual power supply costs

It is recommended one of these methodologies be implemented by the Borough and be included in the rate design process for FY 2011.

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RECOMMENDED RATE TRACK

Table Seven is the recommended rate track to achieve targets established in the study and minimize rate impacts to customers of the Electric Department. The rate track identified below is developed to maintain operating income levels while building cash for operations between 2011 and 2015.

Table Seven – Recommended Rate Adjustments

Recommended rate track if PCA is implemented

Fiscal Year	Projected Rate Adjustments	Projected Revenues	Projected Expenses	Transfer to Electric Reserve Account	Transfer to Borough	Projected Cash Balances - Electric Department	Capital Improvements	Bond/Note Issues	Debt Coverage Ratio
2011	-1.40%	\$14,506,696	\$ 10,779,520	\$ 19,275	\$ 2,892,308	\$ 3,649,310	\$ 270,000	\$ -	4.40
2012	3.00%	15,091,316	11,136,234	266,586	2,993,538	3,915,896	270,000	-	5.27
2013	3.00%	15,699,496	12,281,210	(393,776)	3,098,312	3,522,121	270,000	-	4.45
2014	3.00%	16,332,186	12,711,102	(282,694)	3,206,753	3,239,427	270,000	-	4.77
2015	3.00%	16,990,373	13,155,663	(186,760)	3,318,989	3,052,667	270,000	-	4.97
Recommended Target in 2011 (w/ PCA)				\$ 347,383		\$ 2,635,974			1.40
Recommended Target in 2015 (w/ PCA)				\$ 411,057		\$ 3,057,943			1.40

Recommended rate track if PCA is not implemented

Fiscal Year	Projected Rate Adjustments	Projected Revenues	Projected Expenses	Transfer to Electric Reserve Account	Transfer to Borough	Projected Cash Balances - Electric Department	Capital Improvements	Bond/Note Issues	Debt Coverage Ratio
2011	2.00%	\$15,006,927	\$ 10,779,520	\$ 519,506	\$ 2,892,308	\$ 4,149,541	\$ 270,000	\$ -	4.93
2012	3.00%	15,611,706	11,136,234	799,482	2,993,538	4,949,023	270,000	-	5.91
2013	3.00%	16,240,858	12,281,210	173,415	3,098,312	5,122,438	270,000	-	5.10
2014	3.00%	16,895,365	12,711,102	320,493	3,206,753	5,442,931	270,000	-	5.48
2015	3.00%	17,576,248	13,155,663	454,202	3,318,989	5,897,133	270,000	-	5.72
Recommended Target in 2011 (w/o PCA)				\$ 347,383		\$ 4,890,181			1.40
Recommended Target in 2015 (w/o PCA)				\$ 411,057		\$ 5,913,941			1.40

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COST OF SERVICE RESULTS AVERAGE COST PER KWH

The table below shows the average cost of service per kWh and compares the cost to the average revenue per kWh for each customer class. The table is sorted from lowest to highest based on average cost of service.

Table Eight - Average Cost per kWh compared with Average Revenue per kWh

Customer Class	Cost of Service	Projected Revenues
Public School Building	0.162	0.170
Residential	\$ 0.179	\$ 0.183
Commercial Demand	0.186	0.269
Retail Power/Demand	0.198	0.233
Municipal Buildings	0.247	-
General Service/Non Demand	0.267	0.295
Street Lighting	0.731	0.028
Yard Lighting	0.758	0.685

Cost differences result from usage patterns of customers and how efficiently each Customer class uses the facilities provided by the Borough of South River Electric Department.

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The cost of service of providing service to each customer class is broken down by each type of service provided by the Electric Department. Costs are broken down in the study on the following parameters.

- 1) Power supply cost
- 2) Transmission-related costs for any transmission or sub transmission facilities owned by the City
- 3) Distribution related costs isolated as follows:
 - a. Substation
 - b. Distribution system
 - c. Transformer
 - d. Services
 - e. Meter operation and maintenance
- 4) Customer service costs are broken down on the following:
 - a. Meter installation
 - b. Meter reading
 - c. Billing and collections
 - d. Customer service
 - e. Direct cost for investments to service specific customer classes
- 5) Peak system losses estimated on a seasonal basis

The cost of service study combined with the electric unbundling study allows the isolation of cost to assist in developing special rates that control system peaks or for economic development purposes. Examples of alternative rate designs are listed below:

- Standby charges – Cost isolated by investment in facilities to serve customers on a standby basis.
- Interruptible Loads – Rates to promote interruptible loads that reflect the savings to the City. The study isolates costs by power supply demand, energy and transmission to assist in identifying potential cost savings of an interruptible customer.
- Seasonal Rates – The cost of service study allocates costs to each rate class based on seasonal time period to assist in developing seasonal rates for customers.
- Time of Use – For time of use rates to be effective in sending the proper price signal the cost of service analysis completed is supplemented with marginal costs to identify and recommend appropriate charges on a time of use basis.
- Economic Development Rates - Rates can be developed to promote economic development by attracting new customers or expansion of existing customers. It is important that economic development rates be developed using a marginal cost approach to ensure existing customers are not unduly subsidizing any reduce rates or fees charged under an economic development program.
- Aggregation of loads for customers with multiple facilities in the service territory
- Net metering rates for customer that install generation facilities
- Wheeling rates for customers that select an alternative power supplier

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EXECUTIVE SUMMARY – ELECTRIC UNBUNDLING

Delivery of electricity consists of many components that bring electricity from the power supply facilities to the communities and eventually into customer facilities. The facilities consist of four major components: transmission, distribution, customer-related services, and administration. Following are general descriptions of each of these facilities and the sub-breakdowns within each category.

Transmission

The transmission system is comprised of four types of subsystems that operate together:

- 1) Backbone and inter-tie transmission facilities are the network of high voltage facilities through which a utility's major production sources are integrated.
- 2) Generation set-up facilities are the substations through which power is transformed from a utility's generation voltages to its various transmission voltages.
- 3) Sub-transmission plant consists of lower voltage facilities to transfer electric energy from convenient points on a utility's backbone system to its distribution system.
- 4) Radial transmission facilities are those that are not networked with other transmission lines but are used to serve specific loads directly.

Operation of the transmission system also consists of providing certain services that ensures a stable supply of power. These services are typically referred to as ancillary services. The Federal Energy Regulatory Commission (FERC) has defined six ancillary service charges for the use of transmission facilities. Ancillary services consist of the following: provided by PJM

Ancillary Service Charges:

- Regulation and Frequency Response Service
- Energy Imbalance Charges
- Operating Reserves Spinning
- Operating Reserves Supplemental
- Power losses from use of transmission system

BOROUGH OF SOUTH RIVER ELECTRIC DEPARTMENT

COST OF SERVICE & ELECTRIC UNBUNDLING STUDY

EXECUTIVE SUMMARY – ELECTRIC UNBUNDLING

Distribution System

The distribution facilities connect the customer with the transmission grid to provide the customer with access to the electrical power that has been generated and transmitted. The distribution plant includes substations, primary and secondary conductors, poles, and transformers.

Substations typically separate the distribution plant from the transmission system. The substation power transformer reduces the voltage to a level that is more practical to install throughout the service territory.

The Distribution system provides primary circuits with voltages between 13.8 kV and 4.16 kV. Secondary circuits are 480 volts and less.

Distribution Customer Types

Sub-transmission customers are served directly from the substation feeder and bypass both the secondary and primary distribution lines. The charges for this type of customer should reflect the cost of the substation and not include the cost of primary or secondary line charges.

Primary customers are typically referred to as customers who own and maintain their own transformers. The rates for these customers should reflect the cost of substations and the cost of primary distribution lines and not include the cost of secondary line extensions.

Secondary customers have the services provided by the utilities directly into their facilities. The utility provides the customer with the transformer and the connection on the customers' facilities.

Customer-Related Services

Certain administrative-type services are necessary to ensure customers are provided service connections and disconnections in a timely manner and the facilities are in place to read meters and bill for customer usages. These services typically consist of the following components:

- 1) Customer Services – The cost of providing personnel to assist customers with questions and dispatch personnel to connect and disconnect meters.
- 2) Billing and Collections – The cost of billing and collections personnel, postage, and supplies.
- 3) Meter Reading – The cost of reading customer meters.
- 4) Meter Operation and Maintenance – The cost of installing and maintaining customer meters.

BOROUGH OF SOUTH RIVER ELECTRIC DEPARTMENT
COST OF SERVICE & ELECTRIC UNBUNDLING STUDY

EXECUTIVE SUMMARY – ELECTRIC UNBUNDLING

Administrative Services

These costs are sometimes referred to as overhead costs and relate to functions that cannot be directly attributed to any service. These costs are spread to the other services through an allocator such as labor, expenses, or total rate base. These costs may consist of administrative expenses, building expenses, property insurance, and wages for higher-level management of the utility.

System Losses

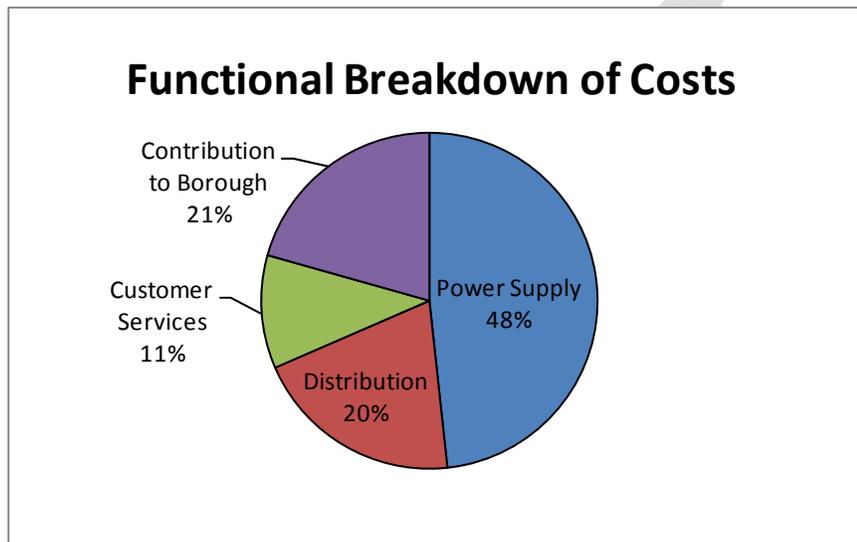
As energy moves through each component of the transmission and distribution system, some of the power is lost and cannot be sold to customers. Losses vary based on time of day and season. Typically, as system usage increases or ambient temperature increases, the percentages of losses that occur also increase.

**BOROUGH OF SOUTH RIVER ELECTRIC DEPARTMENT
COST OF SERVICE & ELECTRIC UNBUNDLING STUDY**

EXECUTIVE SUMMARY – ELECTRIC UNBUNDLING

The cost of power supply, distribution, and customer services are identified as part of the unbundling process and are the first step in determining unbundled charges to customers. The total revenue requirements of \$14.0 million are separated into the four categories and are identified in the graph below.

Graph Two – Breakdown of Cost Structure



Power Supply	Distribution	Customer Services	Contribution to Borough
\$ 6,769,392	\$ 2,831,317	\$ 1,526,194	\$ 2,892,308

The Borough of South River's - Electric Department is projected to expend 48% of its total costs towards purchased power costs. Distribution-related costs are 20%, customer service amounts to 11% and Contributions to the Borough amount to 21%. These components are broken down into each of the subcomponents and are identified in the following sections.

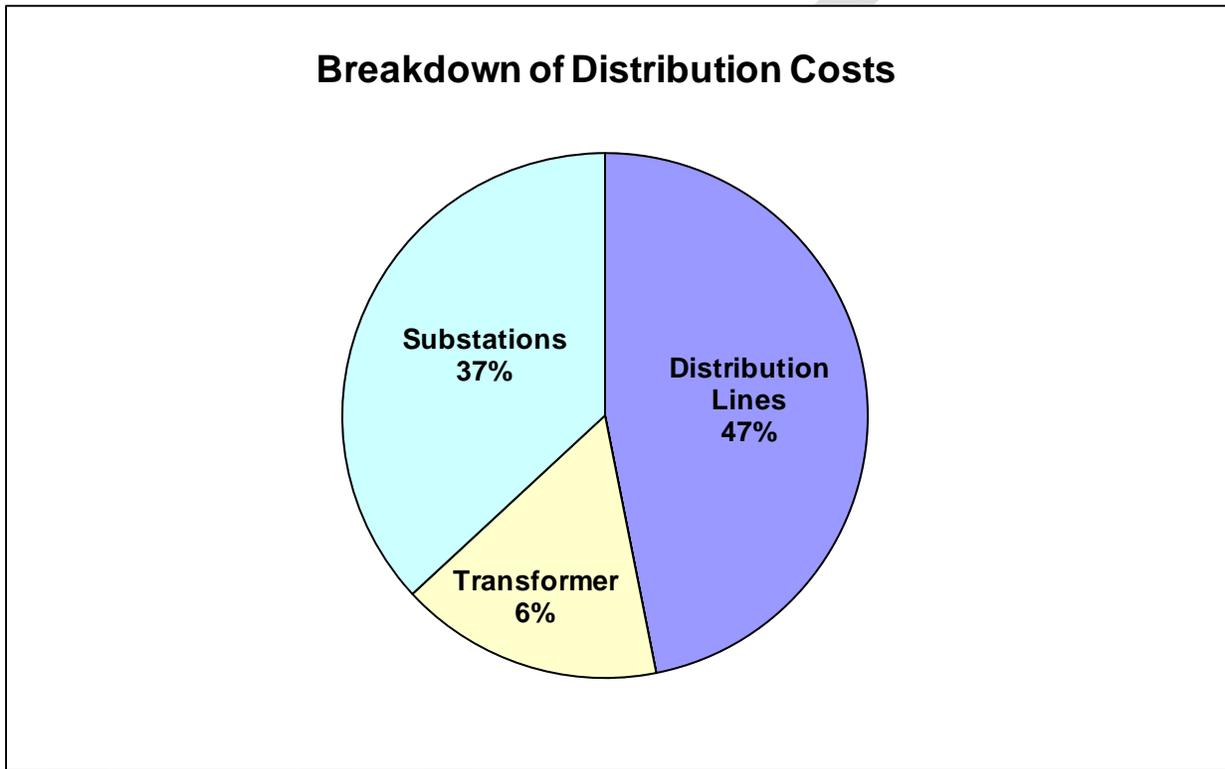
**BOROUGH OF SOUTH RIVER ELECTRIC DEPARTMENT
COST OF SERVICE & ELECTRIC UNBUNDLING STUDY**

EXECUTIVE SUMMARY – ELECTRIC UNBUNDLING

DISTRIBUTION BREAKDOWN

As stated earlier, distribution rates consist of a number of different components and total distribution-related costs of \$2.8 million for FY 2011 are broken down into the main components of substations, transformers, and distribution lines.

Graph Three – Breakdown of Distribution Costs



Each cost component is allocated to customer groups based on certain factors established in the study. These factors are based on the efficiency of each customer class and the time of day or the season the electricity is used. Other factors are also considered, such as the length of line extensions to reach certain customer classes. A complete list of allocators is included in the detailed section of this report.

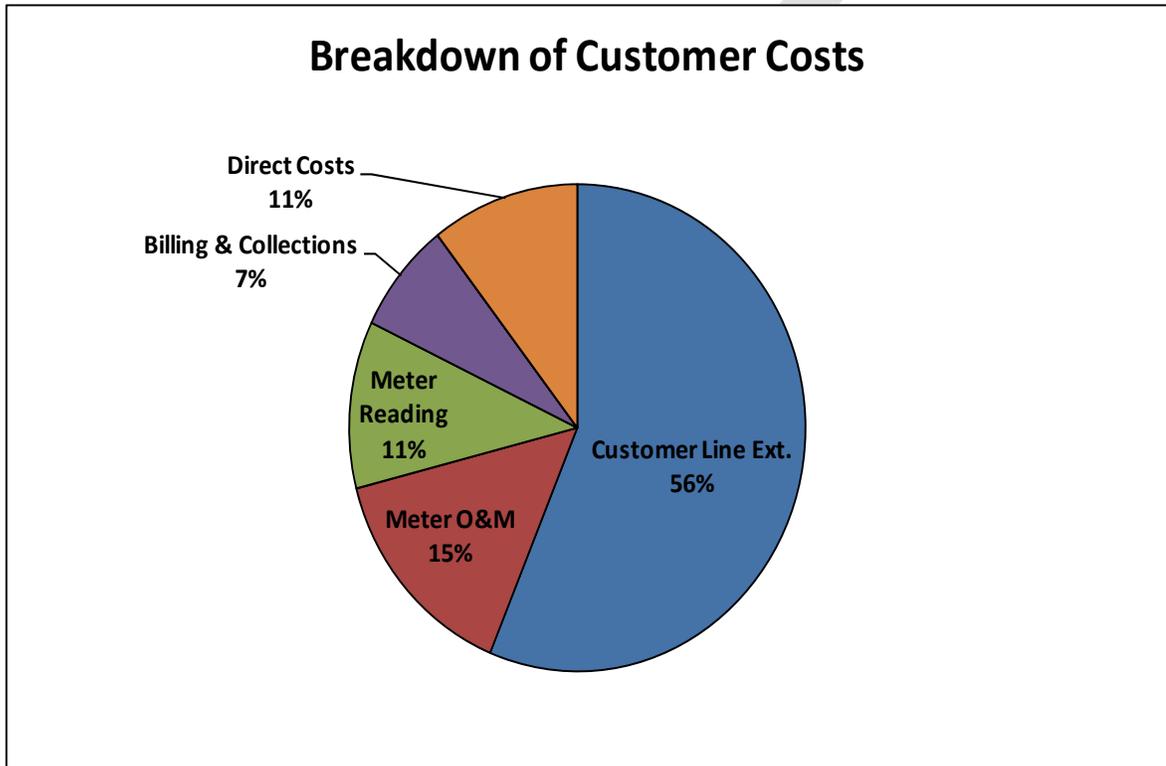
**BOROUGH OF SOUTH RIVER ELECTRIC DEPARTMENT
COST OF SERVICE & ELECTRIC UNBUNDLING STUDY**

EXECUTIVE SUMMARY – ELECTRIC UNBUNDLING

Customer-Related Cost Breakdown

Total expenses for customer-related costs are \$1.5 million for 2011 and broken down into the following components:

Graph Four – Breakdown of Customer Costs



Each component is broken down by customer class and the breakdown is included in the detailed analysis of this report.

**BOROUGH OF SOUTH RIVER ELECTRIC DEPARTMENT
COST OF SERVICE & ELECTRIC UNBUNDLING STUDY**

EXECUTIVE SUMMARY – ELECTRIC UNBUNDLING

POWER SUPPLY RATES

The table below identifies the average cost of providing power supply to customers of the Borough of South River’s Electric Department. The costs are broken down between demand related and energy related.

Table Nine - Power Supply Cost by Customer Class

Customer Class	Current Rates			
	Demand	Billing Basis	Energy	Billing Basis
Residential	\$ 0.0262	kWh	\$ 0.0684	kWh
General Service/Non Demand	0.0404	kWh	0.0679	kWh
Street Lighting	-	kWh	0.0678	kWh
Yard Lighting	-	kWh	0.0678	kWh
Municipal Buildings	0.0487	kWh	0.0656	kWh
Retail Power/Demand	10.19	KW	0.0687	kWh
Commercial Demand	10.16	KW	0.0681	kWh
Public School Building	10.36	KW	0.0681	kWh

**BOROUGH OF SOUTH RIVER ELECTRIC DEPARTMENT
COST OF SERVICE & ELECTRIC UNBUNDLING STUDY**

EXECUTIVE SUMMARY – ELECTRIC UNBUNDLING

DISTRIBUTION RATES

Separation of distribution rates is necessary to identify the customer charge for customers and to ensure the Department is recovering its operational costs if customers elect an alternative power provider or if special rates are developed for a customer.

Distribution rates include the following cost components:

- 1) Operation and maintenance of distribution & transmission system
- 2) Payment in Lieu of Tax
- 3) Customer service
- 4) Customer accounting
- 5) Meter reading
- 6) Billing
- 7) Meter operation & maintenance
- 8) Administrative expenses

Distribution costs are typically recovered from customers using the following two billing components:

- 1) Monthly customer charge to recover the costs of meter reading, billing, customer service, and a portion of maintenance and operations of the distribution system.
- 2) Distribution rate based on billing parameter, (kW or kWh) to recover the cost to operate and maintain the distribution system. The table below identifies the cost based distribution rates for customer classes.

Table Ten – Distribution Rates by Customer

Customer Class	Monthly Customer Charge	Distribution Rate	Billing Basis
Residential	\$ 17.10	\$ 0.0616	kWh
General Service/Non Demand	35.42	0.1230	kWh
Street Lighting	-	0.7042	kWh
Yard Lighting	0.48	0.7042	kWh
Municipal Buildings	4.67	0.1452	kWh
Retail Power/Demand	87.23	0.0799	KW
Commercial Demand	91.60	19.97	KW
Public School Building	158.77	17.93	KW

**BOROUGH OF SOUTH RIVER ELECTRIC DEPARTMENT
COST OF SERVICE & ELECTRIC UNBUNDLING STUDY**

COMBINED COST SUMMARY

The table below identifies the cost of service rates for each customer class. Charging these rates would directly match the cost of providing service to customers identified in this study.

Table Eleven – Total Cost of Service Rates by Customer Class

Customer Class	Customer Charge	Annual	
		Demand	Energy
Residential	\$ 17.10	\$ -	\$ 0.1561
General Service/Non Demand	35.42	-	0.2314
Street Lighting	-	-	0.7720
Yard Lighting	0.48	-	0.7720
Municipal Buildings	4.67	-	0.2595
Retail Power/Demand	87.23	10.27	0.0687
Commercial Demand	91.60	30.13	0.0681
Public School Building	158.77	28.29	0.0681

**BOROUGH OF SOUTH RIVER ELECTRIC DEPARTMENT
COST OF SERVICE & ELECTRIC UNBUNDLING STUDY**

SIGNIFICANT ASSUMPTIONS

This section outlines the procedures used to develop the cost of service and unbundling study for the Borough of South River Electric Department and the related significant assumptions.

Forecasted Operating Expenses

Forecasted expenses were based on actual 2009 costs adjusted for power supply costs and inflation. The table below is a summary of Operating Expenses for 2008 - 2015.

	Actual 2008	Actual 2009	Projected 2010	Projected 2011	Projected 2012	Projected 2013	Projected 2014	Projected 2015
Salaries & Wages	\$ 955,163	\$ 1,109,222	\$ 1,300,000	\$ 1,325,000	\$ 1,350,000	\$ 1,397,250	\$ 1,446,154	\$ 1,496,769
Other Expenses - Operating	335,135	339,433	351,313	363,609	376,335	389,507	403,140	417,250
Other Expenses - Office/Administrative	39,733	20,601	21,322	22,068	22,841	23,640	24,468	25,324
Other Expenses - Insurance	745,926	771,630	875,000	1,000,000	1,035,000	1,071,225	1,108,718	1,147,523
Other Expenses - Professional Services	320,699	308,298	319,088	340,000	351,900	364,217	376,964	390,158
Other Expenses - Accumulated Absences	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Purchase of Power	8,155,125	7,199,154	6,725,262	6,769,392	7,006,321	8,006,321	8,286,542	8,576,571
LESS Surplus (General Budget)	-	443,000	458,505	474,553	491,162	508,353	526,145	544,560
Deferred Charges and Statutory Expenditures	157,353	186,108	192,622	199,364	206,341	213,563	221,038	228,774
Depreciation		248,334	258,534	270,534	281,334	292,134	302,934	313,734
Total O&M	\$ 10,724,134	\$ 10,396,809	\$ 10,516,646	\$ 10,779,520	\$ 11,136,234	\$ 12,281,210	\$ 12,711,102	\$ 13,155,663

Load Data

Load data is one of the most critical components of a cost of service study. Information from the billing statistics combined with information from PSEG's load research information and internal statistics provided by large customers was used to determine the usage patterns of each customer class.

**BOROUGH OF SOUTH RIVER ELECTRIC DEPARTMENT
COST OF SERVICE & ELECTRIC UNBUNDLING STUDY**

SIGNIFICANT ASSUMPTIONS

KWh Sales Forecast

The 2011 kWh sales forecast is based on actual 2009 adjusted for a two year total growth of -2.0%.

Customer Class	kWh Projections - 2011			
	On -Peak	Off - Peak	Mid-Peak	Total
Residential	20,268,067	18,662,285	6,009,232	44,939,583
General Service/Non Demand	5,170,110	1,731,458	1,272,494	8,174,062
Street Lighting	30,496	28,901	9,152	68,549
Yard Lighting	49,977	47,362	14,998	112,338
Municipal Buildings	1,325,352	669,884	525,963	2,521,199
Retail Power/Demand	1,919,849	627,006	492,786	3,039,641
Commercial Demand	6,468,718	2,135,946	1,558,460	10,163,124
Public School Building	2,113,416	732,144	560,789	3,406,349
Total	37,345,985	24,634,985	10,443,875	72,424,845

System Loss Factors

Losses occurring from the transmission and distribution of electricity can vary from year to year depending upon weather and system loading. Peak summer losses were estimated based on system losses during each time period.

Revenue Forecast

The revenue forecast was based on 2009 usages adjusted for an annual growth rate as stated above followed by 1.0% growth in 2011 -2015 and changes in purchased power costs.

	Actual 2008	Actual 2009	Projected 2010	Projected 2011	Projected 2012	Projected 2013	Projected 2014	Projected 2015
Electric Charges	\$ 15,346,384	\$ 14,152,008	\$ 14,580,912	\$ 14,712,674	\$ 14,859,800	\$ 15,008,398	\$ 15,158,482	\$ 15,310,067
Total Revenues	\$ 14,084,055	\$ 14,895,187	\$ 14,580,912	\$ 14,712,674	\$ 14,859,800	\$ 15,008,398	\$ 15,158,482	\$ 15,310,067

**BOROUGH OF SOUTH RIVER ELECTRIC DEPARTMENT
COST OF SERVICE & ELECTRIC UNBUNDLING STUDY**

SIGNIFICANT ASSUMPTIONS

Capital Improvement Program

The Borough of South River Electric Department provided a portion of capital improvement information and remaining capital information was estimated to reflect depreciation expense for 2011 – 2015 and is listed below:

Year	Projected Capital Improvement
2011	\$ 270,000
2012	270,000
2013	270,000
2014	270,000
2015	270,000

Depreciation Expense

Depreciation expense is currently not recorded by the Borough and is not required by the State of New Jersey. Depreciation expense was estimated through review of asset investments and used to estimate capital improvements.

**BOROUGH OF SOUTH RIVER ELECTRIC DEPARTMENT
COST OF SERVICE & ELECTRIC UNBUNDLING STUDY**

RECOMMENDATIONS

1. The study indicates current revenues are not adequate to maintain the long-term financial stability of the utility. The Borough should consider implementation of a power cost adjustment (PCA) using one of the two methodologies discussed in this report. Implementation of a PCA lowers the risk to the electric department lowers recommended minimum cash reserves. Implementation of a PCA is anticipated to allow a 3.4% reduction in electric rates and still maintain cash reserves above the minimum levels. The rate track listed below is projecting a 1.4% reduction in 2011, and 3.0% adjustments in 2012 – 2015. The rate track should be reviewed as part of the annual budget process as costs and revenues may vary from projections.

Fiscal Year	Projected Rate Adjustments	Projected Revenues	Projected Expenses	Transfer to Electric Reserve Account	Transfer to Borough	Projected Cash Balances - Electric Department	Capital Improvements	Bond/Note Issues	Debt Coverage Ratio
2011	-1.40%	\$14,506,696	\$ 10,779,520	\$ 19,275	\$ 2,892,308	\$ 3,649,310	\$ 270,000	\$ -	4.40
2012	3.00%	15,091,316	11,136,234	266,586	2,993,538	3,915,896	270,000	-	5.27
2013	3.00%	15,699,496	12,281,210	(393,776)	3,098,312	3,522,121	270,000	-	4.45
2014	3.00%	16,332,186	12,711,102	(282,694)	3,206,753	3,239,427	270,000	-	4.77
2015	3.00%	16,990,373	13,155,663	(186,760)	3,318,989	3,052,667	270,000	-	4.97
Recommended Target in 2011 (w/ PCA)				\$ 347,383		\$ 2,635,974			1.40
Recommended Target in 2015 (w/ PCA)				\$ 411,057		\$ 3,057,943			1.40

2. The cost of service study identified some customer classes are paying above cost of service and some below cost of service. It is recommended rates be designed to provide an overall revenue neutral rate adjustment with a plus or minus 3.0% bandwidth for each customer class. This would result in some classes having no rate increases and some having up to a 6.0% reduction.
3. If the Power Cost Adjustment is not implemented the following rate track would be recommended:

Fiscal Year	Projected Rate Adjustments	Projected Revenues	Projected Expenses	Transfer to Electric Reserve Account	Transfer to Borough	Projected Cash Balances - Electric Department	Capital Improvements	Bond/Note Issues	Debt Coverage Ratio
2011	2.00%	\$15,006,927	\$ 10,779,520	\$ 519,506	\$ 2,892,308	\$ 4,149,541	\$ 270,000	\$ -	4.93
2012	3.00%	15,611,706	11,136,234	799,482	2,993,538	4,949,023	270,000	-	5.91
2013	3.00%	16,240,858	12,281,210	173,415	3,098,312	5,122,438	270,000	-	5.10
2014	3.00%	16,895,365	12,711,102	320,493	3,206,753	5,442,931	270,000	-	5.48
2015	3.00%	17,576,248	13,155,663	454,202	3,318,989	5,897,133	270,000	-	5.72
Recommended Target in 2011 (w/o PCA)				\$ 347,383		\$ 4,890,181			1.40
Recommended Target in 2015 (w/o PCA)				\$ 411,057		\$ 5,913,941			1.40

**BOROUGH OF SOUTH RIVER ELECTRIC DEPARTMENT
COST OF SERVICE & ELECTRIC UNBUNDLING STUDY**

RECOMMENDATIONS

4. The Borough of South River Electric Department should consider adopting a Cash Reserve Policy based on the formula below to establish a minimum cash reserve for the Electric Utility.

Recommended cash reserve if PCA is implemented

	Percent Allocation	Projected 2011	Projected 2012	Projected 2013	Projected 2014	Projected 2015
Operation & Maintenance Less Depreciation Expense	20%	\$ 747,919	\$ 769,716	\$ 796,551	\$ 824,325	\$ 853,072
Purchased Power Expense	17%	1,130,488	1,170,056	1,337,056	1,383,853	1,432,287
Historical Rate Base	1%	101,194	103,894	106,594	109,294	111,994
Current Portion of Debt Service	50%	413,372	431,647	423,909	428,653	417,590
Next Years Capital Improvements - Net of bond proceeds	15%	40,500	40,500	40,500	40,500	40,500
Five Year Capital Improvements - Net of bond proceeds	15%	202,500	202,500	202,500	202,500	202,500
Recommended Minimum Cash Reserve with a PCA		\$ 2,635,974	\$ 2,718,312	\$ 2,907,110	\$ 2,989,125	\$ 3,057,943

Recommended cash reserve if PCA is not implemented

	Percent Allocation	Projected 2011	Projected 2012	Projected 2013	Projected 2014	Projected 2015
Operation & Maintenance Less Depreciation Expense	20%	\$ 747,919	\$ 769,716	\$ 796,551	\$ 824,325	\$ 853,072
Purchased Power Expense	50%	3,384,696	3,503,160	4,003,160	4,143,271	4,288,285
Historical Rate Base	1%	101,194	103,894	106,594	109,294	111,994
Current Portion of Debt Service Reserve	50%	413,372	431,647	423,909	428,653	417,590
Next Years Capital Improvements - Net of bond proceeds	15%	40,500	40,500	40,500	40,500	40,500
Five Year Capital Improvements - Net of bond proceeds	15%	202,500	202,500	202,500	202,500	202,500
Recommended Minimum Cash Reserve without a PCA		\$ 4,890,181	\$ 5,051,417	\$ 5,573,215	\$ 5,748,543	\$ 5,913,941

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ACCOUNTANTS' COMPILATION REPORT

Borough of South River Electric Department
Borough Council

The accompanying forecasted statements of revenues and expenses of the Borough of South River Electric Department were compiled for the year ending December 31, 2011 in accordance with guidelines established by the American Institute of Certified Public Accountants.

The purpose of this report is to assist management in forecasting revenue requirements and determining the cost to service each customer class. This report should not be used for any other purpose.

A compilation is limited to presenting, in the form of a forecast; information represented by management and does not include evaluation of support for any assumptions used in projecting revenue requirements. We have not audited the forecast and, accordingly, do not express an opinion or any other form of assurance on the statements or assumptions accompanying this report.

Differences between forecasted and actual results will occur since some assumptions may not materialize and events and circumstances may occur that were not anticipated. Some of these variations may be material. Utility Financial Solutions has no responsibility to update this report after the date of this report.

This report is intended for information and use by management and the Board of Directors for the purposes stated above. This report is not intended to be used by anyone except the specified parties.

UTILITY FINANCIAL SOLUTIONS

Mark Beauchamp, CPA, CMA, MBA
Holland, MI
July 14, 2011