

City and Borough of Sitka

2004 Electric Rate Study

FINAL REPORT

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Prepared for

**City and Borough of Sitka
Municipal Electric Department**

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by



City and Borough of Sitka

2004 Electric Rate Study

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City and Borough of Sitka 2004 Electric Rate Study

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City and Borough of Sitka

2004 Electric Rate Study

Section 1

Introduction and Summary

Background

The 2004 rate study was authorized by the City and Borough of Sitka, Municipal Electric Department (Department) to review revenue requirement projections, develop a revised cost of service analysis and develop a set of revised retail electric rate schedules. The 2004 rate study was initially conducted in the spring and summer of 2003 and presented to the City and Borough Assembly (Assembly) in the fall of 2003. Following receipt of comment on the proposed rate design from the Assembly, the rate study was revised in early 2004. This report summarizes the revised 2004 rate study. Department and City staff participated in the 2004 rate study throughout the study period.

Prior to completion of the 2004 rate study, increased electric rates effective July 1, 2003 were adopted by the Assembly. This rate increase provided a 0.25 cent per kilowatt-hour (kWh) increase across the board for all billable kWh. The increase was projected by the Department to provide \$225,000 of additional revenue in fiscal year 2004 and was estimated to be necessary to ensure a minimum 1.25 debt service coverage ratio in accordance with the Department's bond covenants.

The primary reason for the 2004 Electric Rate Study is the impact of continuing inflation on the annual operating expenses of the Department when applied to essentially flat energy sales. Annual revenues from energy sales have remained relatively constant at between \$8.0 and \$8.5 million since 1993 whereas inflation has increased many operating expenses by 30% since that time. As a result, operating margins have continued to decrease since 1993 and the Department has become more and more reliant upon jobbing revenues and interest income to meet margin objectives. Variability in jobbing revenues and declining interest rates since 2000 make these two income components unpredictable.

Electric Department interest income in fiscal year 2004¹ is projected at \$683,000 compared to actual interest earnings of \$990,000 in 1999, a decrease of over \$300,000. In addition, the Department is drawing down its reserves to meet operating needs which reduces invested funds and further reduces interest income. Although the number of full-time Department employees was dropped from 26 to 24 in fiscal year 2004, inflation has increased the overall cost of employee salaries and benefits. Insurance costs have increased significantly over the past two years.

¹ The City's fiscal year is July 1 through June 30.

The Department provides electric service to approximately 4,900 customers in the general vicinity of Sitka. Total energy sales in fiscal year 2003 were 92,731 MWh and total energy requirements, including energy losses and 1,723 MWh of non-billed energy, were 96,656 MWh. Non-billed energy is provided to the Department and the City and Borough for operating certain facilities. The system's peak demand in fiscal year 2002 was 18,113 kW. Total annual energy sales have remained relatively constant the past four years. The Department's electric system is not connected to any other electric utility system. Power is supplied primarily from the Blue Lake and Green Lake hydroelectric projects and secondarily from diesel generators.

Prior to the July 1, 2003 rate increase, the Department last adjusted electric rates in late 1993 following the closure of the Alaska Pulp Company pulp mill in September 1993. The 1993 rate increase resulted in an effective average increase of approximately 21% in electric rates at that time.

Objectives

The primary objectives of the 2004 Electric Rate Study, as defined by the Department, are as follows:

- Determine revenue requirements of the Department based on the fiscal year 2004 budget for the Department approved by the Assembly that includes projected jobbing revenue and interest income. Total revenues will need to cover all operating expenses including debt service, budgeted interfund transfers (\$169,160) and capital expenditures (\$545,800).
- Determine the costs to provide "firm electric service" to residential customers, boat customers, and general service customers and allocate the revenue requirements to each customer class accordingly.
- Provide a rate design to achieve the required "firm electric service" revenues.
- Prepare an analysis that compares the monthly electric bills with existing rates to the new rates for all classes of consumers (residential, commercial, public authority, public safety, boats and the individual existing industrial consumers.)

In addition to these objectives, consumer-owned electric utilities typically incorporate other general objectives in the development of rates. These objectives provide for rates that accomplish the following:

- Continuity and stability of Department revenues.
- Practical rate structures that are understandable and acceptable to the public and relatively easy to administer.
- Reflect the cost of providing service, i.e. no significant subsidies between customer classes.
- Rates that are equitable and non-discriminatory.
- Encourage efficient consumption.

- Meet Department policy objectives such as bond covenants, budget targets and legal requirements.

Review and Approval Process

The City and Borough Assembly discussed the rate study and the proposed rate design in a work session on August 26, 2003. Following this work session, adjustments were made to the cost allocation and rate design to establish a proposed a single class rate structure to apply to all customers. This proposal was rejected by the Assembly on December 23, 2003. As a result of this Assembly decision, the rate design was reworked to retain the existing customer classes.

Summary

The electric rates established through the 2004 Electric Rate Study process were developed using actual electric loads and customer counts for fiscal year 2003, as provided by the Department. Projected revenue requirements of the Department were based primarily on budgeted operating costs for 2004.

In total, the Department will require an increase of 6.1% in its revenues when compared to revenues that would be recovered through existing rates. The proposed rate design defined in this report, and the rate schedules approved by the Assembly will accomplish this revenue requirement. Further, the proposed rates simplify the rate structure.

The proposed rates resulting from the 2004 Rate Study are provided in Table 13 of Section 4.

Section 2 Revenue Requirements

The Department establishes its annual budget in conjunction with the City and Borough's annual budget process. The Department's budgeted costs include staff salaries and benefits, insurance, supplies, repairs and maintenance, and debt service, among other expenses. Since nearly all of the Department's power requirement is supplied with City-owned hydroelectric generation, fuel expenses are minor. Most of the Department's expenses are considered "fixed" in that they don't change much as power requirements vary. For the purpose of the 2004 Electric Rate Study, the budget for fiscal year 2004 was used as the basis for determining the Department's annual revenue requirements.

The Department's major revenue requirement components are salaries and benefits, insurance, interdepartmental services, debt service and capital projects, representing approximately 24%, 6%, 6%, 45% and 5%, respectively, of total annual revenue requirements. Debt service costs are largely non-controllable costs. For the purpose of the 2004 Electric Rate Study, the Department's budgeted expenses have been reclassified into typical electric utility classifications². Table 1 summarizes the revenue requirements that were used to determine the recommended revenue level required for the Department to meet its financial goals which are based on the budgeted expenses in the fiscal year 2004 budget approved by the Assembly on June 10, 2003.

Revenue requirements shown in Table 1 are expected to increase somewhat with inflation over the next few years. At the present time, the annual increase from assumed inflation is forecasted to be about \$140,000 per year. This would mean that rates might need to be set to produce revenues somewhat higher than the fiscal year 2004 budgeted costs to provide some "inflation-proofing" of the rates for a few years. If energy sales increase, however, additional revenues from sales could cover any potential inflation in costs.

It should be noted that the revenue requirement shown in Table 1 provides for a slight margin above "breakeven" operation of the Department in that revenues would be set to pay all operating expenses, debt service and estimated capital improvement expenditures plus provide a contribution to reserves. If revenues are insufficient, as they have been in recent years on an annual basis, the Department would need to draw upon reserve funds to pay a portion of its expenses. Typically, electric utilities will set rates to achieve a net margin after paying all expenses to allow for contingencies as well as to provide a contribution to reserves. Reserve funds are often used for long-term capital renewals and replacement expenditures.

The Department has indicated that it intends to pursue marketing of surplus hydroelectric generation on a non-firm, interruptible basis to provide additional revenues to contribute to its reserves. Any revenues that could potentially be earned in this manner are uncertain at the

² Cost classifications for electric utilities are typically based on the business functional lines of generation, transmission, distribution and customer service.

present time. To the extent that the Department is successful in marketing surplus hydroelectric energy in the future, the continuing upward pressure on firm electric rates could potentially be reduced for the benefit of all electric consumers.

TABLE 1
2004 Projected Revenue and Revenue Requirements (Cash Based)

| | Estimated for Rate Study |
|---|-----------------------------|
| Energy Sales (MWh) ¹ | 91,321 |
| Revenues | |
| Revenues at Existing Rates ² | \$ 8,717,800 |
| Other Operating Revenues ³ | 429,000 |
| Other Income ⁴ | 744,700 |
| Total Revenues | \$ 9,891,500 |
| Expenses | |
| Power Production ⁵ | \$ 1,638,000 |
| Other Operating Costs | 3,132,000 |
| Debt Service ⁶ | 4,642,100 |
| Total Expenses | \$ 9,412,100 |
| Capital Budget and Reserves ⁷ | 1,015,000 |
| Total Revenue Requirement | \$ 10,427,100 |
| Required Revenue Increase | \$ 535,600 |
| Percent of Existing Revenues ⁸ | 6.1% |

¹ Based on actual energy sales for fiscal year 2003 sales plus approximately 400 MWh assumed energy sales to Sitka Beverage Company.

² Estimated revenues assuming fiscal year 2003 energy sales at rates effective July 1, 2003.

³ Includes \$344,000 budgeted for jobbing revenues.

⁴ Includes \$683,000 of estimated investment income.

⁵ Primarily hydroelectric facility operations and maintenance expense.

⁶ Includes interest and principal on bonds and on the State loan.

⁷ Includes \$715,000 budgeted for capital projects and \$300,000 for planned contribution to reserves.

⁸ Calculated as Required Revenue Increase divided by Revenues at Existing Rates.

The Department's budget for fiscal year 2004, as approved by the City and Borough Assembly is provided in Appendix A.

Billing Determinants and Power Requirements

Table 2 shows the number of customers and annual energy sales by customer class used for the rate study based on actual customer counts and energy sales for fiscal year 2003. As can be seen in Table 2, energy sales to residential customers represent 41.5% of total sales. Energy sales to commercial customers represent 33.6% and sales to public authority customers represent 21.6% of total energy sales. Approximately 20% of total commercial sales are to two seafood processors. Forecasted energy sales include 406 MWh to the Sitka Beverage Company at the Sawmill Cove industrial site (SCIS).

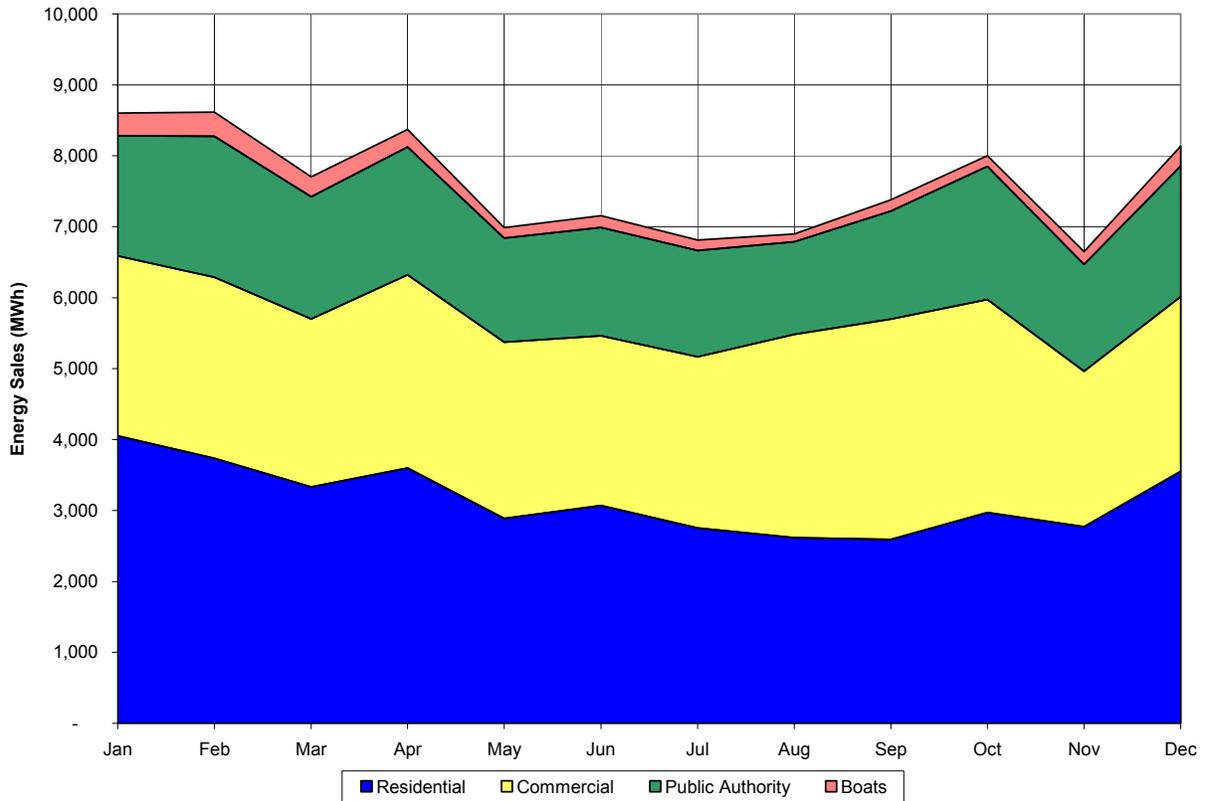
TABLE 2
Projected Number of Customers and Annual Energy Sales

| | Number of Customers ¹ | Energy Sales (MWh) | Percent of Total Sales |
|----------------------------|-------------------------------------|-----------------------|---------------------------|
| Residential | 3,484 | 37,935 | 41.5% |
| Commercial | 560 | 30,700 | 33.6% |
| Sitka Beverage Co. | 1 | 406 | 0.4% |
| Public Authority | 185 | 19,747 | 21.6% |
| Boats | 685 | 2,533 | 2.8% |
| Total Billed Sales | 4,915 | 91,321 | 100.0% |
| Non-billed Energy | 1 | 1,725 | |
| Total Energy Accounted For | | 93,046 | |

¹ Annual average.

Energy sales to the Department's commercial customers are relatively constant throughout the year with some increase in the late summer. Energy sales to residential customers are higher in the winter months than in other times of the year causing an overall winter peak for the Department. The Department's energy load on a monthly basis is shown in Figure 1. For the purpose of Figure 1, energy sales are shown on a calendar year basis and energy sales to Sitka Beverage Co. are included in the commercial class.

FIGURE 1
Forecasted Monthly Energy Sales – Based on 2003 Actual Sales
(Calendar Year Basis)



Based on recent experience, average system losses are estimated to be approximately 6.0% of total energy requirements. Combined with non-billed energy requirements of about 1,725 MWh, the total energy requirement is estimated to be 98,990 MWh in fiscal year 2004. This is well within the total average annual energy generation capability of the Department’s hydroelectric facilities, estimated at approximately 115,700 MWh.

Total annual energy requirements of the Department in 2002 were 99,202 MWh. The total peak demand of the Department for fiscal year 2004 is projected to be 20,170 kW, occurring in January. Total Department energy requirements and demands by month are shown in Table 3. Forecasted monthly energy sales and allocated demands by customer class are shown in Appendix B, Table B-2.

TABLE 3
Projected Power Requirements

| | Energy Requirements (MWh) | Demand (kW) |
|--------------|---------------------------------|----------------|
| January | 9,342 | 20,171 |
| February | 9,358 | 19,890 |
| March | 8,385 | 18,279 |
| April | 9,100 | 19,675 |
| May | 7,589 | 17,763 |
| June | 7,757 | 16,568 |
| July | 7,369 | 15,893 |
| August | 7,457 | 16,801 |
| September | 7,967 | 18,242 |
| October | 8,650 | 18,121 |
| November | 7,194 | 17,322 |
| December | 8,819 | 18,755 |
| Total / Peak | 98,987 | 20,171 |

Power Production Costs

Power production costs, including purchased power, are typically the highest cost component of most electric utilities, often representing 50% or more of total annual expenses. The Department relies almost entirely upon its hydroelectric facilities for its power supply with some supplemental generation from its diesel generators. The cost of operating and maintaining the hydroelectric facilities per unit of generation is very low compared to the cost of diesel generation. Hydroelectric facilities have high initial capital requirements, however, and debt is often incurred to fund the construction costs. Most of the Department's annual debt service payment is associated with debt incurred to develop and construct its generating facilities.

The Department's total estimated power production costs for fiscal year 2004 are shown in Table 4 based on essentially all power supply requirements being met with hydroelectric generation. The Department's debt service obligation for fiscal year 2004 is included in the total for power production costs to show the impact of debt service, which is largely attributable to generation plant, on the total cost of power. As previously indicated, the Department's budgeted costs have been reclassified to follow typical electric system functions. Consequently, the costs as shown in Table 4 are not immediately apparent in the Department's budget.

TABLE 4
2004 Projected Wholesale Power Supply Costs

| | | |
|--|----|------------------|
| Fuel Expense ¹ | \$ | 34,000 |
| Diesel Operation & Maintenance | | 25,000 |
| Hydroelectric Operation & Maintenance | | <u>1,579,000</u> |
| Subtotal - Production Costs | \$ | 1,638,000 |
| Total Energy Generation (MWh) ² | | 98,987 |
| Unit Cost (¢/kWh) | | 1.7 |
| Debt Service ³ | | <u>4,642,100</u> |
| Total Net Wholesale Cost of Power | \$ | 6,280,100 |
| Total Net Wholesale Cost of Power (¢/kWh) | | 6.3 |

¹ Assumes diesel fuel price of \$1.25 per gallon.

² See Table 3. Net of station service energy requirements.

³ Includes debt service on bonds and State loan, both primarily attributable to generation plant.

As shown in Table 4, the unit cost of power production is estimated to be 1.7 cents per kWh. Although a significant portion of this cost is fixed, this cost would generally represent the minimum rate at which power could be sold if there are no costs of distribution, transmission or customer service to be recovered. Further, the 1.6 cents per kWh rate does not represent any recovery of debt service.

The total net cost of power of 6.3 cents per kWh shown in Table 4 is representative of the total cost of power the Department is estimated to incur in fiscal year 2004. This cost excludes all costs of distribution, transmission, and customer service, but does include the debt service associated with the Department's power plant investment. The unit costs shown in Table 4 are net of station service energy needs and as such, are the costs at the project buss.

Section 3

Cost of Service Analysis

The process to develop the cost of service analysis included the functionalization, classification and allocation of the Department's 2004 estimated revenue requirements. The various revenue requirements of the Department have been separated into the three main functions of electric service: power supply, transmission and distribution. Costs were then allocated to four main customer cost groups³ (residential, commercial, public authority, and boats) using certain factors that represent the functional contribution of each group to the total. To the extent that costs can be classified specifically as demand, energy or customer-related costs, allocation factors based on these classifications were used. An example of this classification is the portion of power supply costs based on energy. These energy costs can be directly allocated to each unit of energy sold, on a one for one basis. System demand-related costs have been allocated to each customer cost group in proportion to each customer class's load at the time of the system peak.

Assignment of capacity or demand to the various cost groups was accomplished by direct meter readings where available and, for non-demand metered accounts, by loadfactors assumed to be reasonably representative of residential and small commercial loads. The computed demand was adjusted to match the monthly billed demand of the Department. Distribution operation and maintenance (O&M) costs have been allocated based on the proportion of class peak loads, regardless of time of occurrence (non-coincident peak allocator).

The costs of customer accounting, primarily related to meter reading and billing, have been allocated to each customer based on a weighted customer allocator. Administrative and general costs have been allocated to each cost group in proportion to the total other operating costs allocated to each group, excluding power supply costs. The fixed debt service costs of the Department have been allocated to each cost group based on the percentage of utility plant allocated to the group.

Allocation Factors

The primary allocation factors developed for the cost of service analysis are shown in Appendix B, Table B-3A and B-3B, and are described below:

Coincident Peak (CP) – The coincident peak allocation factor represents the proportion of total system peak demand for each customer cost group.

³ Cost allocation is typically made to customer groupings with similar load and service characteristics. For most utilities, these groupings correspond to the customer classes, e.g. residential, commercial, industrial, irrigation, etc.

Non-Coincident Peak (NCP) – The non-coincident peak allocation factor relates the peak demand for each customer cost group, not necessarily coincident with the system peak, to the summed total maximum peak demand for all customer cost groups.

Energy (Sales) – This energy allocation factor reflects each group’s share of the total energy sold.

Energy (Req) – The energy allocation factor reflects each group’s share of the total energy generated.

Customers (Cust) – The customer allocation factor relates the number of customer accounts in each customer cost group to the total number of customers.

Weighted Customers (WtCust) – The weighted customer allocation factor adjusts the customer allocation factor by the relative service level for each customer cost group.

Revenue (Rev) – The revenue allocation factor reflects each group’s share of the total revenue.

Utility Plant (Plt) – The utility plant allocation factor reflects the allocation of the Department’s total utility plant to each customer cost group.

Distribution Plant (DPlt) – The distribution plant allocation factor reflects the allocation of the Department’s total distribution plant to each customer cost group. This allocation factor is based on a combination of the number of customers in a class and the demand on the class.

Table 5 provides a summary of certain allocation factors used in the cost of service analysis. The allocation factors are also shown in Appendix B, Table B-3A and B-3B.

TABLE 5
Summary of Allocation Factors

| | Coincident Peak (CP) | Non-coincident Peak (NCP) | Weighted Customers (WtCUST) | Energy (REQ) | Utility Plant (PLT) | Distribution Plant (DPLT) |
|--------------------|----------------------------|---------------------------------|-----------------------------------|-----------------|------------------------|---------------------------------|
| Residential | 38.813% | 35.791% | 35.792% | 41.540% | 38.980% | 42.809% |
| Commercial | 35.427% | 38.837% | 38.833% | 34.062% | 35.389% | 33.353% |
| Boats | 2.957% | 3.248% | 3.246% | 2.774% | 3.115% | 5.387% |
| Public Authorities | 22.803% | 22.125% | 22.129% | 21.624% | 22.515% | 18.451% |
| Total | 100.000% | 100.000% | 100.000% | 100.000% | 100.000% | 100.000% |

The allocation factors show the percentage that each customer group represents of the total for the entire Department. These ratios are subject to change as a result of variations in energy and demand data for each customer group. Also, as one customer group becomes more or less dominant, its allocation will change.

Using these allocation factors, the Department’s operating costs and debt service are allocated to each customer cost group. Debt service is a significant cost and is allocated in accordance with the percentage of utility plant allocated to each customer cost group. Production and transmission plant is allocated using the Coincident peak (CP) allocator while distribution plant is allocated using the Distribution Plant (DPLT) allocator which combines the Non-coincident peak (NCP) allocator and the Customer (CUST) allocator. This is reflected in Table 6, which summarizes the allocation of net production, transmission, distribution and total utility plant to the various customer cost groups. The information shown in Table 6 is provided in more detail in Appendix B, Table B-4B, page 1.

TABLE 6
Allocation of Net Utility Plant

| | Production Plant | | Transmission Plant | | Distribution Plant | | Total Utility Plant | |
|--------------------|-------------------|--------|--------------------|--------|--------------------|--------|---------------------|--------|
| Residential | \$24,401,513 | 38.8% | \$ 379,963 | 38.8% | \$ 1,879,682 | 42.8% | \$27,656,225 | 39.0% |
| Commercial | 22,272,310 | 35.4% | 346,809 | 35.4% | 1,464,504 | 33.4% | 25,108,733 | 35.4% |
| Boats | 1,859,078 | 3.0% | 28,948 | 3.0% | 236,524 | 5.4% | 2,210,229 | 3.1% |
| Public Authorities | <u>14,335,744</u> | 22.8% | <u>223,226</u> | 22.8% | <u>810,162</u> | 18.5% | <u>15,974,520</u> | 22.5% |
| Total | \$62,868,645 | 100.0% | \$ 978,946 | 100.0% | \$ 4,390,872 | 100.0% | \$70,949,706 | 100.0% |

The above ratios are used to allocate plant investment costs, specifically debt service and the annual costs of capital improvements.

Allocation of Expenses

The total operating expenses of the Department are shown in Appendix B, Table B-1 and Table B-5, page 2. The costs are summarized by function in Table 7, below. The costs in Table 7 vary from the costs in the Department’s budget primarily in the form of presentation.

In preparing Table 7, the Department’s detailed budget was reviewed and costs were placed in the table in accordance with their general function. Salaries and Benefits expenses, for example, are assigned to their respective functions based on the respective duties performed by Department staff and management. Insurance expenses are assigned to Production O&M and Administrative and General line items based on what facilities and functions are generally insured. Interdepartmental Service expenses are split in Table 7 between Administrative and General (70%) and Customer Accounting (30%) costs.

TABLE 7
Total Fiscal Year 2004 Costs by Electric System Function ¹

| | Total Cost | Production | Transmission | Distribution |
|------------------------------------|--------------|--------------|--------------|--------------|
| Operating Expenses | | | | |
| Power Production - Diesel | | | | |
| Fuel | \$ 34,000 | \$ 34,000 | \$ - | \$ - |
| O&M | 25,000 | 25,000 | - | - |
| Subtotal - Diesel Power Production | \$ 59,000 | \$ 59,000 | \$ - | \$ - |
| Power Production - Hydroelectric | 1,715,000 | 1,715,000 | - | - |
| Transmission O&M | 91,000 | - | 91,000 | - |
| Distribution O&M | 1,426,000 | - | - | 1,426,000 |
| Customer Accounting | 413,000 | - | - | 413,000 |
| Administrative & General | 1,066,000 | 505,000 | 26,000 | 535,000 |
| Total Operating Expenses | \$ 4,770,000 | \$ 2,279,000 | \$ 117,000 | \$ 2,374,000 |
| Less: Interest income | (683,000) | (615,600) | (9,400) | (57,900) |
| Less: Other Op. Revenues | (490,700) | - | - | (490,700) |
| Debt Service on Existing Debt | 4,012,100 | 3,616,500 | 55,400 | 340,300 |
| Debt Service on Subordinate Debt | 614,000 | 553,500 | 8,500 | 52,100 |
| Required Margins | 1,031,000 | 929,300 | 14,200 | 87,400 |
| Net Cost of Service | \$ 9,253,400 | \$ 6,762,700 | \$ 185,700 | \$ 2,305,200 |

¹ Department budget items such as Salaries and Benefits, Insurance, Repairs and Maintenance have been allocated to the various electric system functions based on detailed budget breakdowns provided by the Department. Interdepartmental Services expenses are included in Administrative & General (70%) and Customer Accounting (30%) line items.

Applying the allocation factors previously described to the overall revenue requirements of the Department results in allocated costs as summarized in Table 8, below, and shown in more detail in Appendix B, Table B-4B, page 2. The allocated costs shown in Table 9 represent the cost of service for each customer cost group.

TABLE 8
Allocation of Total Costs Based on Cost of Service

| | Production Cost | Other Operating Costs | Debt Service and Capital Budget | Less: Other Revenue and Income | Total Cost of Service | Cost of Service (¢/kWh) |
|--------------------|-----------------|-----------------------|---------------------------------|--------------------------------|-----------------------|-------------------------|
| Residential | \$ 689,478 | \$ 1,354,035 | \$ 2,205,140 | \$ (441,861) | \$ 3,806,793 | 10.04 |
| Commercial | 628,006 | 932,275 | 2,002,018 | (432,282) | 3,130,018 | 10.06 |
| Boats | 52,396 | 170,298 | 176,230 | (37,213) | 361,712 | 14.28 |
| Public Authorities | 404,119 | 539,392 | 1,273,712 | (262,345) | 1,954,878 | 9.90 |
| Total | 1,774,000 | 2,996,000 | 5,657,100 | (1,173,700) | 9,253,400 | 10.13 |

A detailed determination of revenues at existing rates using the billing determinants previously described, is summarized in Table 9, below. The calculation of these revenues is shown in more detail in Appendix B, Table B-4B. Table 9 also compares the estimated revenues at existing

rates, including the 0.25 cent/kWh increase implemented on July 1, 2003, to the allocated cost of service shown in Table 8.

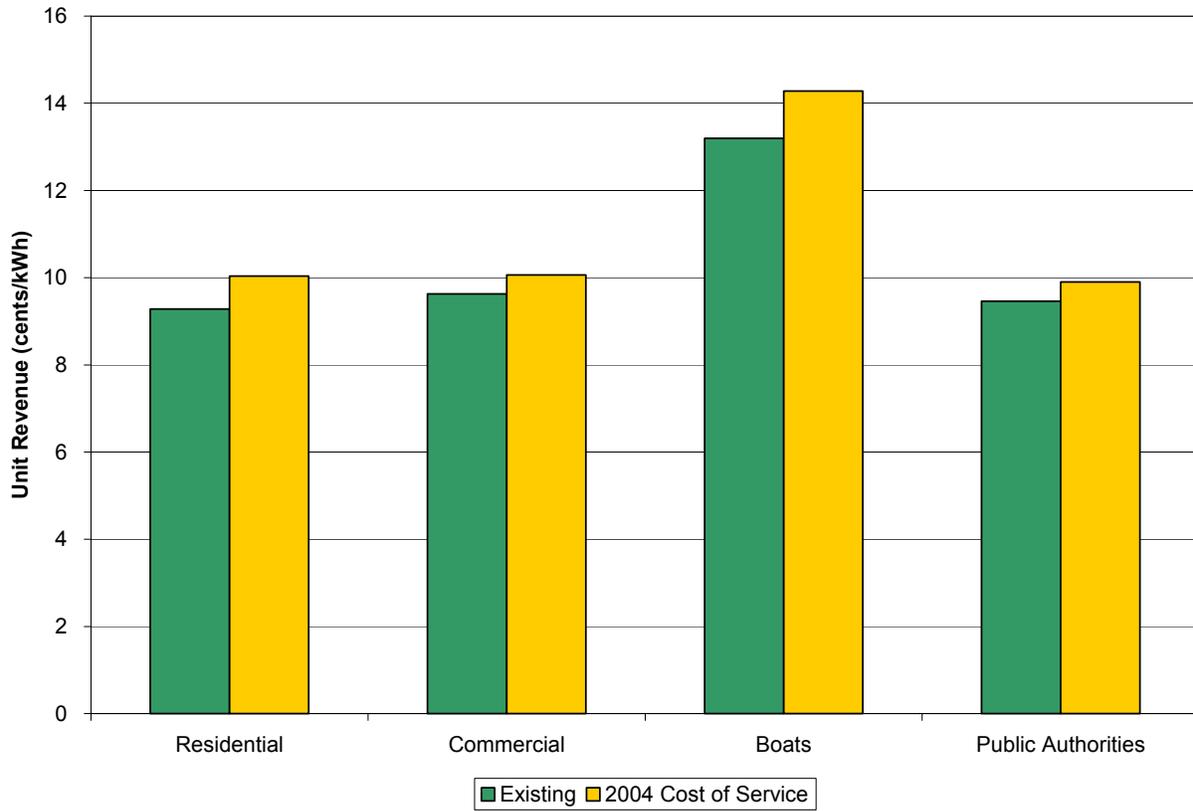
TABLE 9
Revenue at Existing Rates Compared to Allocated Cost of Service

| | Revenue at Existing Rates | Cost of Service | Necessary Increase | Necessary Increase (¢/kWh) | Necessary Increase (Percent) |
|--------------------|------------------------------|-----------------|-----------------------|----------------------------------|------------------------------------|
| Residential | \$ 3,521,389 | \$ 3,806,793 | \$ 285,403 | 0.75 | 8.1% |
| Commercial | 2,993,486 | 3,130,018 | 136,532 | 0.44 | 4.6% |
| Boats | 334,348 | 361,712 | 27,364 | 1.08 | 8.2% |
| Public Authorities | 1,868,611 | 1,954,878 | 86,266 | 0.44 | 4.6% |
| Total | \$ 8,717,835 | \$ 9,253,400 | \$ 535,565 | 0.59 | 6.1% |

As can be seen in Table 9, the total necessary increase required is 6.1% for the Department as a whole. To achieve cost of service based rates, certain cost groups need to be increased more than others. Residential customers will require an 8.1% increase as opposed to a 4.6% increase for commercial customers. Revenues at existing rates from commercial customers include estimated revenues from Sitka Beverage Company⁴. Although the Department's rates in the past have not been based on the true cost of service, moving rates more towards cost of service will help reduce any inter-class subsidies that may exist. It should be noted that cost of service is usually considered a guide for establishing retail electric rates. Other factors, such as existing contractual arrangements and local economic conditions, must also be considered. Figure 2 provides a graphical presentation of the comparison of existing rates to the allocated cost of service based on the 2004 revenue requirement.

⁴ Note that the special economic development rate to Sitka Beverage of 5.0 cents per kWh is scheduled to expire in July 2004. Revenues at existing rates shown for commercial customers include estimated revenues for Sitka Beverage at the existing General Service rate rather than the special rate that was in effect in fiscal year 2004.

FIGURE 2
Unit Revenue at Existing Rates Compared with Allocated Cost of Service



Section 4

Retail Rate Design

As shown in Table 1 in Section 2, the Department will need to increase its revenues by 6.1% over the revenues that would be recovered with existing rates. To achieve this revenue increase, most existing customer classes would see an increase in their respective rates. Table 9 provides the estimated increase in revenues for each customer class if allocated cost of service were to be used as the sole basis in adjusting the rates. The purpose of the rate design analysis is to establish an equitable rate structure for the Department that will recover the 2004 revenue requirement while meeting other factors and objectives. Depending on the basis of existing rates, adjusting to cost of service based rates may be considered to be overly burdensome on some customer classes. In addition, existing contractual arrangements may limit the ability of a utility to collect full cost of service allocated revenues from certain customers.

A number of issues were discussed by the Department staff during the preparation of the 2004 Electric Rate Study. The primary factors resulting from these discussions that affected the design of the rates are as follows:

- Simplify the rate structure to limit the number of rate blocks and retain the monthly minimum charge.
- Provide a declining rate block structure, if possible, in which energy charges per unit of consumption decrease with increasing consumption.
- Commercial customers and public authority customers will pay the same rates within the General Service rate class.
- Rates should be based on a relatively uniform increase for each rate class when compared to existing rates.
- Demand charges will not be assessed for customers under 25 kW demand, consequently, the only rate components for these customer classes will be the energy charge.

In the earlier drafts of the 2004 Rate Study, alternative customer groupings were evaluated. One alternative included three rate classes: General Service under 25 kW, General Service 25 kW and larger, and Industrial. This grouping of customers would have caused higher increases to residential customers relative to the increases to small commercial customers. This alternative was not approved by the Assembly. A second alternative was a single rate class applicable to all customers. This alternative also caused higher increases to residential customers relative to commercial customers and was not approved by the Assembly.

Another significant problem related to rate design is caused by the inverted rate blocks (i.e. rates increase with increasing consumption) incorporated in the present rate structure. A change to declining rates can potentially cause significant impacts to electric bills for certain customers.

Consequently, it was considered necessary to retain a residential rate block structure somewhat similar to the existing structure.

Two primary alternatives were evaluated in development of the proposed rates. The alternatives included full cost of service to all customer cost groups and a uniform increase to all customer classes. The revenues to be recovered through each of these alternatives are shown in Appendix B, Table B-7B. Table 10 compares the revenue to be recovered from each customer class between full cost of service Option 2, and a uniform increase to all classes, Option 3.

TABLE 10
Revenue Increase Options by Customer Class

| | <u>System Total</u> | <u>Residential</u> | <u>Commercial</u> | <u>Public Authority</u> | <u>Boats</u> |
|---|---------------------|--------------------|-------------------|-------------------------|--------------|
| Estimated Sales (MWh) | 91,321 | 37,935 | 31,106 | 19,747 | 2,533 |
| Existing Rates | | | | | |
| Annual Revenues from Sales | \$ 8,717,835 | \$ 3,521,389 | \$ 2,993,486 | \$ 1,868,611 | \$ 334,348 |
| Unit Revenues (¢/kWh) | 9.55 | 9.28 | 9.62 | 9.46 | 13.20 |
| Option 1 - Allocated Cost of Service (FY 2004 Revenue Requirement) | | | | | |
| Annual Revenues from Sales | \$ 9,253,400 | \$ 3,806,793 | \$ 3,130,018 | \$ 1,954,878 | \$ 361,712 |
| Unit Revenues (¢/kWh) | 10.13 | 10.04 | 10.06 | 9.90 | 14.28 |
| Necessary Increase | \$ 535,565 | \$ 285,403 | \$ 136,532 | \$ 86,266 | \$ 27,364 |
| Necessary Increase (¢/kWh) | 0.59 | 0.75 | 0.44 | 0.44 | 1.08 |
| Percent Increase | 6.1% | 8.1% | 4.6% | 4.6% | 8.2% |
| Option 2 - Uniform % Increase in All Classes | | | | | |
| Annual Revenues from Sales | \$ 9,253,400 | \$ 3,737,720 | \$ 3,177,386 | \$ 1,983,406 | \$ 354,888 |
| Unit Revenues (mills/kWh) | 10.13 | 9.85 | 10.21 | 10.04 | 14.01 |
| Necessary Increase | \$ 535,565 | \$ 216,330 | \$ 183,900 | \$ 114,795 | \$ 20,540 |
| Necessary Increase (mills/kWh) | 0.59 | 0.57 | 0.59 | 0.58 | 0.81 |
| Percent Increase | 6.1% | 6.1% | 6.1% | 6.1% | 6.1% |

Table 10 provides two alternative approaches to achieving the Department's necessary revenue increase. Option 1 indicates necessary revenues to achieve the allocated cost of service for all customer classes. This option could be implemented but is unacceptable to the Assembly at the present time because of the significant differences in the adjustments for the various classes.

Option 2 provides a case with uniform increases for each of the customer classes. Typically, a modified set of customer class adjustments are made that move the rates closer to cost of service but acknowledge that limitations exist in how much adjustment each customer class can bear.

After the determination as to how much revenue each customer class will be responsible for, rates can be designed to achieve these revenues. Rates consist of components that relate to the measurable billing determinants for each customer class. The components typically are a customer or basic charge per month, a demand charge and an energy charge. Each of these components can be established in accordance with the allocation of the cost of service into

demand, energy and customer related classifications. An electric system like the Department with high fixed costs would generally have a high demand cost, however, demand charges can only be assessed of customers with demand meters, usually larger customers. Consequently, the demand charge assessed of smaller customers is generally applied through the energy charge.

The Department's existing rates do not include a monthly customer charge, employing a minimum monthly charge instead. The monthly customer charge can be based on a number of factors but is often related to the average cost of monthly customer service, billing and meter reading. A portion of the fixed costs of the Department could be applied through the monthly customer charge but generally the monthly customer charge, which is assessed regardless of the quantity of energy used in a month, is kept to a range of between \$6.00 and \$20.00 per month for a small consumer.

The classification of costs by customer, energy and demand components for the cost of service option (Option 1 in Table 10) is provided in Appendix B, Table B-6B. Page 1 of Table B-5 shows the allocation factors used in classifying the functional costs of power supply, transmission and distribution into the rate components of demand, energy and customer charges. The rate component charges shown in Table B-6B were used as a guideline for the eventual rate design, but were not strictly followed. Table 11 provides a comparison of alternative rate components for the revenue allocation options shown in Table 10 assuming that a basic monthly charge and a single energy block are used in the rates. In Tale 11, commercial and public authority loads are combined into one rate class, General Service.

TABLE 11
Example Rate Design Components
Alternative 1 – Basic Monthly Charge and Single Energy Block

| | Number of Accounts (Average) | Annual Energy Sales (MWh) | Annual Billing Demand (kw-month) | Basic Customer Charge (\$/month) | Energy Charge (¢/kWh) | Demand Charge (\$/kW>25kW) | Total Revenue (\$000) | Total Revenue (¢/kWh) |
|---|------------------------------------|------------------------------------|---|---|-----------------------------|----------------------------------|-----------------------------|-----------------------------|
| Option 1 - Allocated Cost of Service (FY 2004 Revenue Requirement) | | | | | | | | |
| Residential | 3,484 | 37,935 | - | \$ 12.00 | 8.71 | \$ - | \$ 3,807 | 10.04 |
| General Service | 746 | 50,853 | 98,856 | 25.00 | 8.68 | 4.50 | 5,085 | 10.00 |
| Boats | 685 | 2,533 | - | 12.00 | 10.38 | - | 362 | 14.28 |
| Total | 4,915 | 91,321 | 98,856 | | | | \$ 9,253 | 10.13 |
| Option 2 - Uniform % Increase in All Classes | | | | | | | | |
| Residential | 3,484 | 37,935 | - | \$ 12.00 | 8.53 | \$ - | \$ 3,738 | 9.85 |
| General Service | 746 | 50,853 | 98,856 | 25.00 | 8.83 | 4.50 | 5,161 | 10.15 |
| Boats | 685 | 2,533 | - | 12.00 | 10.11 | - | 355 | 14.01 |
| Total | 4,915 | 91,321 | 98,856 | | | | \$ 9,253 | 10.13 |

The rate components shown in Table 11 can be adjusted a number of ways to accomplish different objectives. For example, a higher basic charge could lower the energy charge. Multiple energy charge blocks can be employed to encourage greater or lesser energy consumption on the part of customers. The Department's existing rates recover a significant portion of the fixed costs of the system through the higher initial energy block charge. The significant issue, however, is that the total unit revenue for each customer group is the same as shown in Table 11 for either Option 1 or Option 2.

Based on input from the Assembly, the preferred alternative is Option 2 in which each customer class would realize approximately the same percentage increase in average rates as the other classes. Although Option 2 would not accomplish exact cost of service based rates, the rates would be reasonably close to cost of service. In the future, it is possible that adjustments can be made to rates to move closer to cost of service. This would primarily be achieved by increasing residential rates at a greater percentage than general service rates.

Table 12 presents the proposed rate structure based on the Option 2 revenue allocation to each of the three customer classes: residential, boats and general service. The proposed rate structure includes a minimum monthly charge and energy blocks somewhat similar to the existing rate structure. Although a declining rate structure was desired for the residential class, it was necessary to retain the increase between the second and third blocks to achieve relatively uniform increases in electric bills at various consumption levels. The rate structure for the general service class is fully declining which should provide some incentive for additional energy sales for large consumers, an objective of the Department.

The rate structure shown in Table 12 includes a minimum monthly charge of \$21.90 for all customers, based on 150 kWh at the first energy block price of 14.60 cents per kWh.

TABLE 12
Proposed Rate Design and Projected Revenue
Minimum Monthly Charge (\$21.90) and Multiple Energy Blocks

| | Option 2 - Uniform Class Increase | | | Revenue (\$000) |
|------------------------|-----------------------------------|-----------------|---------|--------------------|
| | Block % | Billing Unit | Rate | |
| Residential | | | | |
| Energy Charge (¢/kWh) | | | | |
| Block 1 (<200) | 19.5% | 7,381 | 14.60 | \$ 1,078 |
| Block 2 (201-1000) | 55.3% | 20,993 | 8.25 | 1,732 |
| Block 3 (1000-2000) | 19.7% | 7,467 | 9.45 | 706 |
| Block 4 (>2000) | <u>5.5%</u> | <u>2,094</u> | 9.45 | <u>198</u> |
| Subtotal | 100.0% | 37,935 | | \$ 3,713 |
| Demand Charge (\$/kW) | | - | - | - |
| Minimum Charge Impact | | 160 | 14.60 | <u>23</u> |
| Total (\$000) | | | | \$ 3,736 |
| Unit Revenue (¢/kWh) | | | | 9.85 |
| Boats | | | | |
| Energy Charge (¢/kWh) | | | | |
| Block 1 (<150) | 35.9% | 909 | 14.60 | \$ 133 |
| Block 2 (>150) | 64.1% | <u>1,624</u> | 9.80 | <u>159</u> |
| Subtotal | 100.0% | 2,533 | | \$ 292 |
| Demand Charge (\$/kW) | | - | - | - |
| Minimum Charge Impact | | 430 | 14.60 | <u>63</u> |
| Total (\$000) | | | | \$ 355 |
| Unit Revenue (¢/kWh) | | | | 14.00 |
| General Service | | | | |
| Energy Charge (¢/kWh) | | | | |
| Block 1 (<500) | 8.7% | 3,566 | 14.60 | \$ 521 |
| Block 2 (501-10000) | 42.6% | 18,479 | 9.30 | 1,719 |
| Block 3 (10001-100000) | 34.5% | 22,652 | 8.75 | 1,982 |
| Block 4 (>100000) | <u>14.2%</u> | <u>6,156</u> | 8.70 | <u>536</u> |
| Subtotal | 100.0% | 50,853 | | \$ 4,757 |
| Demand Charge (\$/kW) | | 98,856 | \$ 4.00 | 395 |
| Minimum Charge Impact | | 75 | 14.60 | <u>11</u> |
| Total (\$000) | | | | \$ 5,163 |
| Unit Revenue (¢/kWh) | | | | 10.15 |
| Total | | | | |
| Energy Charge | | 91,321 | | \$ 8,859 |
| Demand Charge | | 98,856 | | <u>395</u> |
| Total | | | - | \$ 9,254 |
| Unit Revenue (¢/kWh) | | | | 10.13 |

The proposed rates are shown in summary form in Table 13.

TABLE 13
Proposed Rate Design
Minimum Monthly Charge (\$21.90) and Multiple Energy Blocks

| | | |
|------------------------------|----|-------|
| Residential | | |
| Minimum Charge (\$/month) | \$ | 21.90 |
| Energy Charge (¢/kWh) | | |
| 0-200 kWh | | 14.60 |
| 201-1,000 kWh | | 8.25 |
| All other kWh | | 9.45 |
| Boats | | |
| Minimum Charge (\$/month) | \$ | 21.90 |
| Energy Charge (¢/kWh) | | |
| 0-150 kWh | | 14.60 |
| All other kWh | | 9.80 |
| General Service | | |
| Minimum Charge (\$/month) | \$ | 21.90 |
| Energy Charge (¢/kWh) | | |
| 0-500 kWh | | 14.60 |
| 501 -10,000 kWh | | 9.30 |
| 10,001 -100,000 kWh | | 8.75 |
| All other kWh | | 8.70 |
| Demand Charge (\$/kW >25 kW) | \$ | 4.00 |

Comparison of Monthly Charges for Electric Service

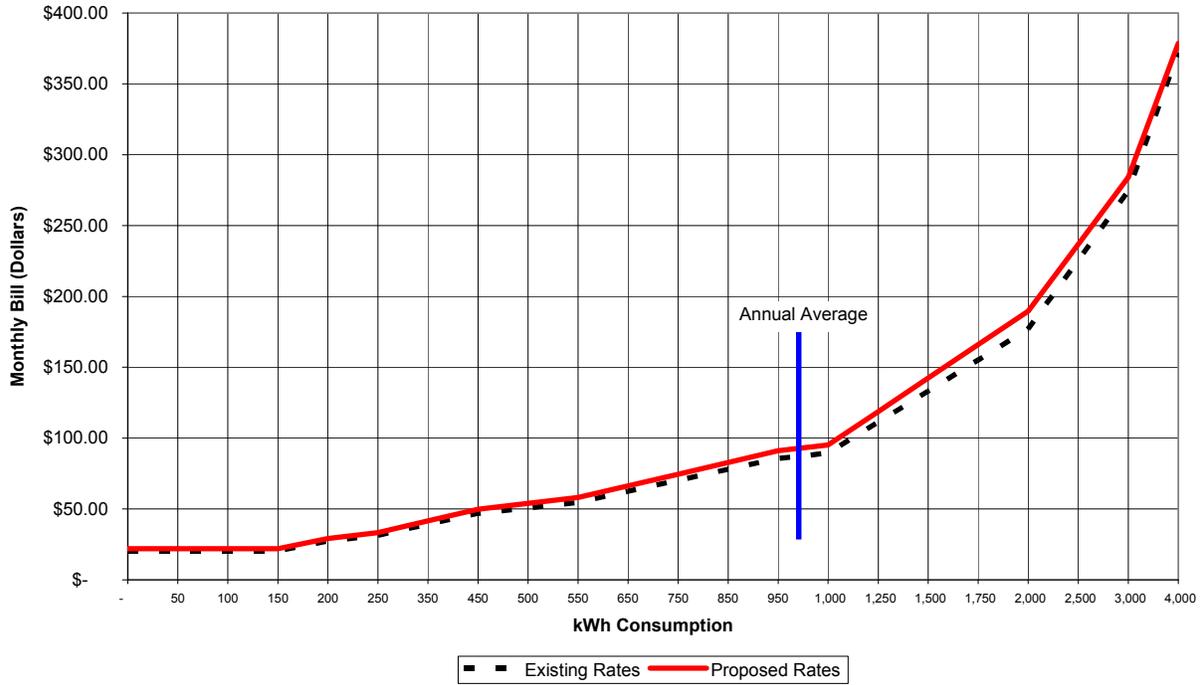
For the purpose of comparison, the monthly cost of electric service for residential and small general service customers has been calculated at alternative levels of service based on existing rates and the proposed rates shown in Table 13. The comparison for residential customers is shown in Table 14 and Figure 3. At the Department's average monthly level of residential energy consumption of approximately 950 kWh, the increase in the monthly electric bill would be \$5.45.

In Table 14, it can be seen that very large residential consumers would see a lower percentage increase in their monthly energy bills than would be experienced by smaller consumers. This is due to the decrease in the top energy block rate compared to existing rates, an objective of the Department in trying to eliminate the increasing rate block structure of the existing rates.

TABLE 14
Comparison of Monthly Charges for Residential Service

| kWh Use | Residential Monthly Charge | | | | |
|---------|----------------------------|----------------|----------|------------|--|
| | Existing | Proposed Rates | Increase | % Increase | |
| - | \$ 20.63 | \$ 21.90 | \$ 1.27 | 6.2% | |
| 50 | 20.63 | 21.90 | 1.27 | 6.2% | |
| 100 | 20.63 | 21.90 | 1.27 | 6.2% | |
| 150 | 20.63 | 21.90 | 1.28 | 6.2% | |
| 200 | 27.50 | 29.20 | 1.70 | 6.2% | |
| 250 | 31.38 | 33.33 | 1.95 | 6.2% | |
| 350 | 39.13 | 41.58 | 2.45 | 6.3% | |
| 450 | 46.88 | 49.83 | 2.95 | 6.3% | |
| 500 | 50.75 | 53.95 | 3.20 | 6.3% | |
| 550 | 54.63 | 58.08 | 3.45 | 6.3% | |
| 650 | 62.38 | 66.33 | 3.95 | 6.3% | |
| 750 | 70.13 | 74.58 | 4.45 | 6.3% | |
| 850 | 77.88 | 82.83 | 4.95 | 6.4% | |
| 950 | 85.63 | 91.08 | 5.45 | 6.4% | |
| 1,000 | 89.50 | 95.20 | 5.70 | 6.4% | |
| 1,250 | 111.38 | 118.83 | 7.45 | 6.7% | |
| 1,500 | 133.25 | 142.45 | 9.20 | 6.9% | |
| 1,750 | 155.13 | 166.08 | 10.95 | 7.1% | |
| 2,000 | 177.00 | 189.70 | 12.70 | 7.2% | |
| 2,500 | 225.75 | 236.95 | 11.20 | 5.0% | |
| 3,000 | 274.50 | 284.20 | 9.70 | 3.5% | |
| 4,000 | 372.00 | 378.70 | 6.70 | 1.8% | |

FIGURE 3
Comparison of Monthly Charges for Residential Service

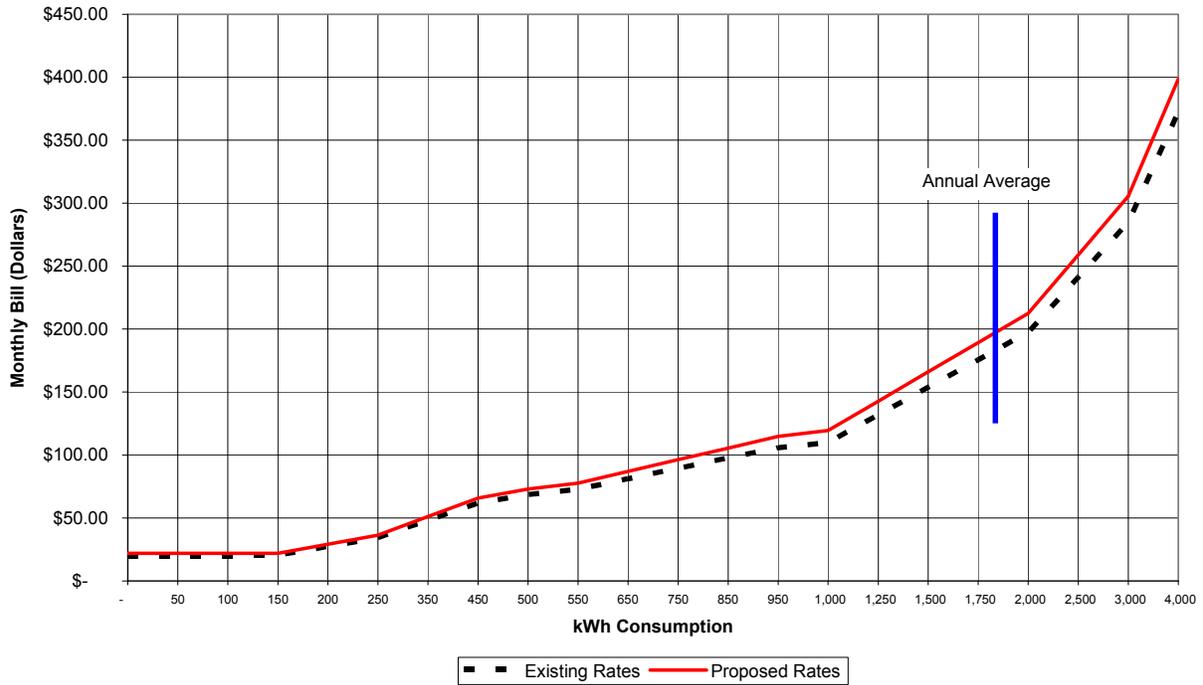


The comparison of monthly charges for small general service customers is shown in Table 15 and Figure 4. At a monthly consumption of 1,750 kWh, a small general service customer would realize an increase of \$13.63 per month when comparing the proposed rates shown in Table 13 to the existing rates.

TABLE 15
Comparison of Monthly Charges for Small General Service Customers

| kWh Use | Small General Service Monthly Charge | | | | |
|---------|--------------------------------------|----------------|----------|------------|--|
| | Existing | Proposed Rates | Increase | % Increase | |
| - | \$ 20.25 | \$ 21.90 | \$ 1.65 | 8.1% | |
| 50 | 20.25 | 21.90 | 1.65 | 8.1% | |
| 100 | 20.25 | 21.90 | 1.65 | 8.1% | |
| 150 | 20.63 | 21.90 | 1.28 | 6.2% | |
| 200 | 27.50 | 29.20 | 1.70 | 6.2% | |
| 250 | 34.38 | 36.50 | 2.13 | 6.2% | |
| 350 | 48.13 | 51.10 | 2.97 | 6.2% | |
| 450 | 61.88 | 65.70 | 3.83 | 6.2% | |
| 500 | 68.75 | 73.00 | 4.25 | 6.2% | |
| 550 | 72.88 | 77.65 | 4.78 | 6.6% | |
| 650 | 81.13 | 86.95 | 5.83 | 7.2% | |
| 750 | 89.38 | 96.25 | 6.88 | 7.7% | |
| 850 | 97.63 | 105.55 | 7.93 | 8.1% | |
| 950 | 105.88 | 114.85 | 8.97 | 8.5% | |
| 1,000 | 110.00 | 119.50 | 9.50 | 8.6% | |
| 1,250 | 131.88 | 142.75 | 10.88 | 8.2% | |
| 1,500 | 153.75 | 166.00 | 12.25 | 8.0% | |
| 1,750 | 175.63 | 189.25 | 13.63 | 7.8% | |
| 2,000 | 197.50 | 212.50 | 15.00 | 7.6% | |
| 2,500 | 241.25 | 259.00 | 17.75 | 7.4% | |
| 3,000 | 285.00 | 305.50 | 20.50 | 7.2% | |
| 4,000 | 372.50 | 398.50 | 26.00 | 7.0% | |
| 5,000 | 460.00 | 491.50 | 31.50 | 6.8% | |

FIGURE 4
Comparison of Monthly Charges for Small General Service

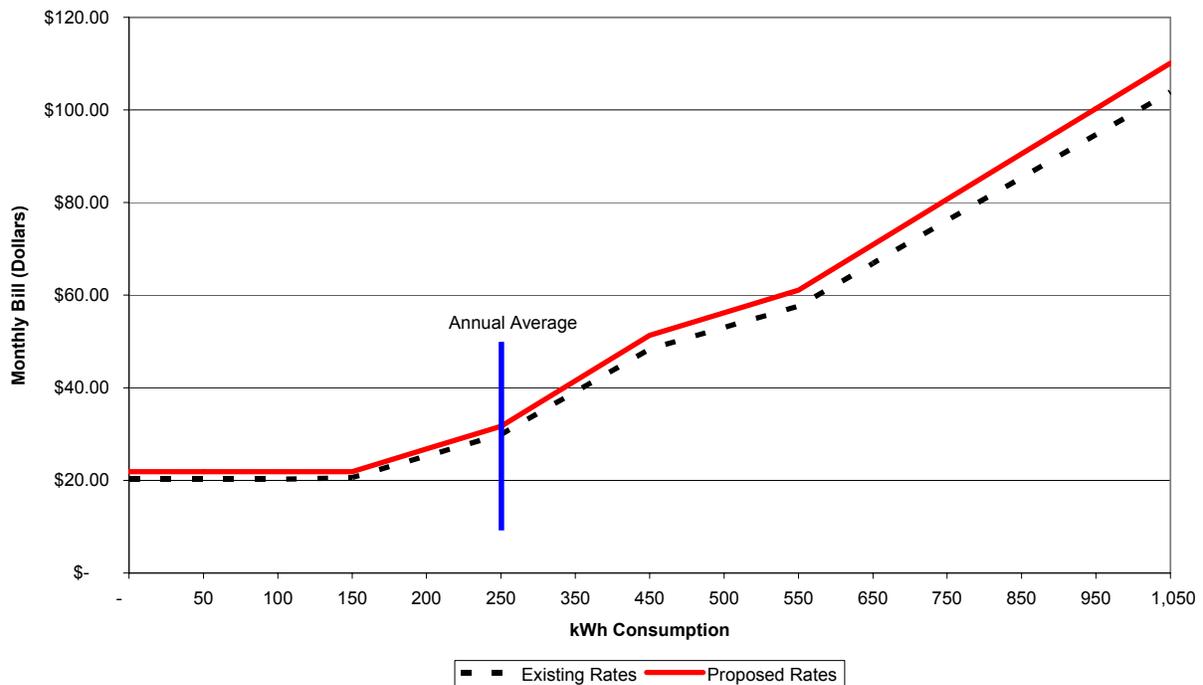


The comparison of monthly charges for boat customers is shown in Table 15 and Figure 5. At a monthly consumption of 250 kWh, a boat customer would realize a monthly increase of \$8.38. In Figure 5, the monthly charges at existing rates are compared to the proposed rates shown in Table 12.

TABLE 16
Comparison of Monthly Charges for Boat Service

| kWh Use | Boats Monthly Charge | | | | |
|---------|----------------------|----------------|----------|------------|--|
| | Existing | Proposed Rates | Increase | % Increase | |
| - | \$ 20.25 | \$ 21.90 | \$ 1.65 | 8.1% | |
| 50 | 20.25 | 21.90 | 1.65 | 8.1% | |
| 100 | 20.25 | 21.90 | 1.65 | 8.1% | |
| 150 | 20.63 | 21.90 | 1.28 | 6.2% | |
| 200 | 25.25 | 26.80 | 1.55 | 6.1% | |
| 250 | 29.88 | 31.70 | 1.83 | 6.1% | |
| 350 | 39.13 | 41.50 | 2.38 | 6.1% | |
| 450 | 48.38 | 51.30 | 2.93 | 6.0% | |
| 500 | 53.00 | 56.20 | 3.20 | 6.0% | |
| 550 | 57.63 | 61.10 | 3.48 | 6.0% | |
| 650 | 66.88 | 70.90 | 4.03 | 6.0% | |
| 750 | 76.13 | 80.70 | 4.57 | 6.0% | |
| 850 | 85.38 | 90.50 | 5.13 | 6.0% | |
| 950 | 94.63 | 100.30 | 5.68 | 6.0% | |
| 1,050 | 103.88 | 110.10 | 6.22 | 6.0% | |

FIGURE 5
Comparison of Monthly Charges for Boat Service



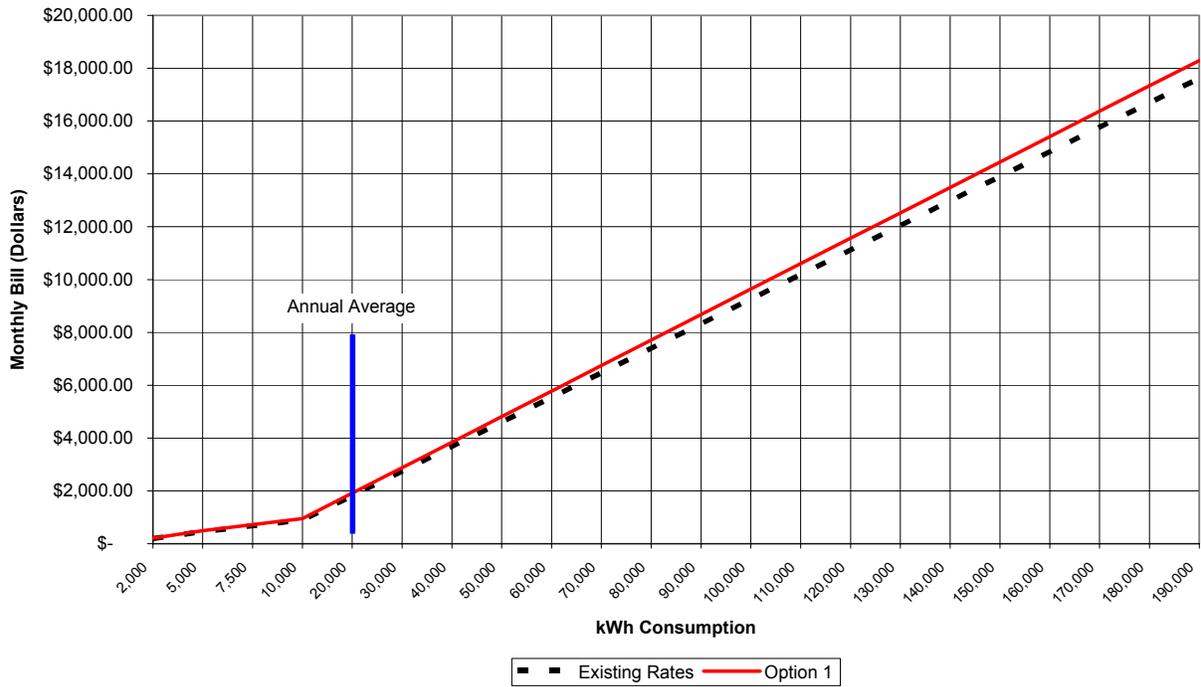
The comparison of monthly charges for large general service customers is shown in Table 17 and Figure 6. Note that in the proposed rate structure defined in Table 13, these customers are

charged in accordance with the same rates as small general service. Because of the declining rate structure in the proposed rates, the increase to the large general service customers is smaller at higher consumption levels. At a monthly consumption of 40,000 kWh, a large general service customer would realize an increase in the monthly charge for electric service of \$164.76 or 4.5%. At 100,000 kWh, however, the customer would realize an increase of \$383.32 or 4.1%, when compared to existing rates. In Table 17 and Figure 6, the kW demand has been calculated assuming a 60% monthly loadfactor.

TABLE 17
Comparison of Monthly Charges for Large General Service

| kWh Use | kW | Large General Service Monthly Charge | | | |
|---------|-------|--------------------------------------|----------------|----------|------------|
| | | Existing | Proposed Rates | Increase | % Increase |
| 2,000 | 4.6 | \$ 197.50 | \$ 212.50 | \$ 15.00 | 7.6% |
| 5,000 | 11.4 | 460.00 | 491.50 | 31.50 | 6.8% |
| 7,500 | 17.1 | 678.75 | 724.00 | 45.25 | 6.7% |
| 10,000 | 22.8 | 897.50 | 956.50 | 59.00 | 6.6% |
| 20,000 | 45.5 | 1,821.70 | 1,913.50 | 91.80 | 5.0% |
| 30,000 | 68.3 | 2,751.42 | 2,879.70 | 128.28 | 4.7% |
| 40,000 | 91.1 | 3,681.14 | 3,845.90 | 164.76 | 4.5% |
| 50,000 | 113.8 | 4,610.62 | 4,811.70 | 201.08 | 4.4% |
| 60,000 | 136.6 | 5,540.34 | 5,777.90 | 237.56 | 4.3% |
| 70,000 | 159.4 | 6,470.06 | 6,744.10 | 274.04 | 4.2% |
| 80,000 | 182.1 | 7,399.54 | 7,709.90 | 310.36 | 4.2% |
| 90,000 | 204.9 | 8,329.26 | 8,676.10 | 346.84 | 4.2% |
| 100,000 | 227.7 | 9,258.98 | 9,642.30 | 383.32 | 4.1% |
| 110,000 | 250.5 | 10,188.70 | 10,603.50 | 414.80 | 4.1% |
| 120,000 | 273.2 | 11,118.18 | 11,564.30 | 446.12 | 4.0% |
| 130,000 | 296.0 | 12,047.90 | 12,525.50 | 477.60 | 4.0% |
| 140,000 | 318.8 | 12,977.62 | 13,486.70 | 509.08 | 3.9% |
| 150,000 | 341.5 | 13,907.10 | 14,447.50 | 540.40 | 3.9% |
| 160,000 | 364.3 | 14,836.82 | 15,408.70 | 571.88 | 3.9% |
| 170,000 | 387.1 | 15,766.54 | 16,369.90 | 603.36 | 3.8% |
| 180,000 | 409.8 | 16,696.02 | 17,330.70 | 634.68 | 3.8% |
| 190,000 | 432.6 | 17,625.74 | 18,291.90 | 666.16 | 3.8% |
| 200,000 | 455.4 | 18,555.46 | 19,253.10 | 697.64 | 3.8% |
| 210,000 | 478.1 | 19,484.94 | 20,213.90 | 728.96 | 3.7% |
| 220,000 | 500.9 | 20,414.66 | 21,175.10 | 760.44 | 3.7% |

FIGURE 6
Comparison of Monthly Charges for Large General Service



Additional rate comparisons, comparing existing and proposed Sitka rates to selected Southeast Alaska utilities are provided in Appendix C.

APPENDIX A

Department Fiscal Year 2004 Budget

City and Borough of Sitka

**Schedule of Expenditure Budgets
Electric Fund
Fiscal Year 2004**

| | <u>2002 Actual</u> | | <u>2003 Proj.</u> | | <u>2004 Budget</u> |
|----------------------------------|--------------------|---------|--------------------|--------|--------------------|
| 1 Salaries and Benefits | \$ 2,277,448 | -10.5% | \$ 2,037,421 | 18.2% | \$ 2,408,575 |
| 2 Travel and Training | 28,886 | 84.0% | 53,158 | -10.4% | 47,609 |
| 3 Uniform Allowance | 4,578 | -4.2% | 4,388 | 35.0% | 5,924 |
| 4 Utilities | 2,420 | 19.4% | 2,889 | -64.3% | 1,030 |
| 5 Heating Fuel | 34,532 | 59.0% | 54,899 | 0.4% | 55,120 |
| 6 Telephone | 14,471 | -6.0% | 13,596 | 51.5% | 20,600 |
| 7 Insurance | 379,810 | 41.1% | 536,091 | 15.0% | 616,508 |
| 8 Supplies | 219,351 | 9.2% | 239,448 | -24.3% | 181,230 |
| 9 Repairs and Maintenance | 88,329 | -12.8% | 77,037 | 88.0% | 144,795 |
| 10 Building Maintenance Fees | 7,411 | 3.9% | 7,702 | 71.6% | 13,213 |
| 11 MIS Fees | 82,372 | 5.0% | 86,477 | 6.4% | 91,982 |
| 12 Contracted/Purchased Services | 161,811 | 116.6% | 350,462 | -40.0% | 210,358 |
| 13 Interdepartmental Services | 451,542 | 4.7% | 472,667 | 21.5% | 574,276 |
| 14 Transportation/Vehicles | 203,258 | -9.5% | 183,873 | 13.4% | 208,487 |
| 15 Postage | 18,960 | 9.6% | 20,789 | 9.0% | 22,660 |
| 16 Tools & Small Equipment | 15,515 | 67.2% | 25,938 | 60.4% | 41,595 |
| 17 Dues & Publications | 36,419 | 1.3% | 36,880 | 0.0% | 36,885 |
| 18 Advertising | 2,418 | 764.7% | 20,908 | -80.3% | 4,120 |
| 19 Rental-Buildings/Equipment | 45,297 | 46.5% | 66,360 | -32.5% | 44,805 |
| 20 Other | (43,030) | -331.8% | 99,730 | -59.9% | 40,000 |
| 21 Interest | 3,145,545 | -2.7% | 3,060,398 | -2.2% | 2,992,090 |
| 22 Debt Administrative Expense | 18,341 | -3.3% | 17,729 | -9.8% | 16,000 |
| 23 Debt Principal Payment | 1,463,128 | 5.4% | 1,541,691 | 6.3% | 1,639,031 |
| 24 Operating Transfers | 34,228 | -100.0% | - | 0.0% | 169,160 |
| 25 Fixed Asset Acquisition | 9,060 | 598.7% | 63,300 | -27.6% | 45,800 |
| 26 Capital Project Transfers | <u>1,272,000</u> | -48.1% | <u>660,000</u> | -24.2% | <u>500,000</u> |
| 27 | \$ 9,974,100 | | \$ 9,733,831 | | \$ 10,131,853 |
| 28 Less: DS, Transfers | <u>(5,942,302)</u> | | <u>(5,343,118)</u> | | <u>(5,362,081)</u> |
| 29 Net Cost | \$ 4,031,798 | 8.9% | \$ 4,390,713 | 8.6% | \$ 4,769,772 |

APPENDIX B

Detailed Cost of Service and Rate Analysis Model Tables

| | |
|------------|---|
| Table B-1 | Projected Revenue Requirements |
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TABLE B-1
City and Borough of Sitka
2004 Electric Rate Study
Projected Revenues and Expenses

| | | Cash Basis (\$000) | | | | |
|---------------------------|---|-----------------------|-----------|----------|----------|----------|
| | | Actual | Projected | | | |
| | | 2002 | 2003 | 2004 | 2005 | 2006 |
| Operating Revenues | | | | | | |
| 1 | Revenues at Existing Rates | | | | | |
| 2 | Residential | \$ 3,540 | \$ 3,540 | \$ 3,527 | \$ 3,562 | \$ 3,597 |
| 3 | Commercial | 2,130 | 2,130 | 2,294 | 2,317 | 2,339 |
| 4 | Seafood Processors | 522 | 522 | 532 | 532 | 532 |
| 5 | Public Authority | 1,709 | 1,709 | 1,598 | 1,614 | 1,630 |
| 6 | Public Safety | 3 | - | - | - | - |
| 7 | Boats | 298 | 298 | 366 | 370 | 374 |
| 8 | Subtotal - Retail | \$ 8,202 | \$ 8,200 | \$ 8,317 | \$ 8,395 | \$ 8,472 |
| 9 | SCIS | 55 | 19 | 25 | 61 | 61 |
| 10 | Revenues from Energy Sales (1) | \$ 8,257 | \$ 8,219 | \$ 8,343 | \$ 8,456 | \$ 8,534 |
| 11 | Other Op. Revs. - Jobbing Revenues | 609 | 380 | 344 | 402 | 402 |
| 12 | Other Op. Revenues / Misc. | 82 | 79 | 85 | 85 | 85 |
| 13 | Non-Operating Revenues | 63 | 61 | 62 | 62 | 62 |
| 14 | Total Revenues at Existing Rates | \$ 9,011 | \$ 8,739 | \$ 8,833 | \$ 9,005 | \$ 9,083 |
| 15 | Additional Required Revenues (2) | - | - | 911 | 861 | 910 |
| 16 | Total Revenues | \$ 9,011 | \$ 8,739 | \$ 9,744 | \$ 9,867 | \$ 9,993 |
| 17 | Operating Expenses | | | 0.0627 | | |
| 18 | Power Production | | | | | |
| 19 | Fuel (4) | 29 | 34 | 34 | 34 | 34 |
| | Diesel O&M (5) | 15 | 16 | 18 | 19 | 20 |
| 20 | Diesel O&M -Variable (5) | 27 | 7 | 7 | 7 | 7 |
| 21 | Subtotal - Diesel | \$ 71 | \$ 57 | \$ 59 | \$ 60 | \$ 61 |
| 22 | Hydro O&M (6) | 1,253 | 1,400 | 1,579 | 1,627 | 1,676 |
| 23 | Subtotal - Production | \$ 1,324 | \$ 1,457 | \$ 1,638 | \$ 1,687 | \$ 1,737 |
| 24 | Stores | 125 | 119 | 136 | 140 | 144 |
| 25 | Transmission O&M (7) | 88 | 78 | 91 | 94 | 97 |
| 26 | Distribution O&M (7) | 777 | 782 | 834 | 859 | 885 |
| 27 | Customer Accounting (7) | 228 | 356 | 413 | 426 | 439 |
| 28 | Jobbing | 498 | 609 | 592 | 610 | 628 |
| 29 | General & Administrative (7) | 1,056 | 989 | 1,066 | 1,098 | 1,131 |
| 30 | Total Operating Expenses - Electric | \$ 4,096 | \$ 4,390 | \$ 4,770 | \$ 4,914 | \$ 5,061 |
| 31 | Net Operating Income | \$ 4,915 | \$ 4,349 | \$ 4,974 | \$ 4,953 | \$ 4,932 |
| 32 | Other Income (8) | 770 | 785 | 683 | 703 | 724 |
| 33 | Net Income Before Debt Service | \$ 5,685 | \$ 5,134 | \$ 5,657 | \$ 5,656 | \$ 5,656 |
| 34 | Bond Interest Expense | \$ 2,714 | \$ 2,625 | \$ 2,562 | \$ 2,461 | \$ 2,352 |
| 35 | Bond Principal Payment | 1,285 | 1,360 | 1,450 | 1,550 | 1,660 |
| 36 | Subtotal - Bond Debt Service | \$ 3,999 | \$ 3,985 | \$ 4,012 | \$ 4,011 | \$ 4,012 |
| 37 | Debt Service Coverage (13) | 1.42 | 1.29 | 1.41 | 1.41 | 1.41 |
| 38 | Balance Available for Other Purposes | \$ 1,686 | \$ 1,149 | \$ 1,645 | \$ 1,645 | \$ 1,644 |
| 39 | Debt Service on Subordinate Note | 614 | 614 | 614 | 614 | 613 |
| 40 | Debt Administrative Expense | 12 | 16 | 16 | 16 | 16 |
| 41 | Capital Imps. from Annual Revenues (14) | 1,272 | 660 | 715 | 715 | 715 |
| 42 | Increase (Decrease) in Cash Reserves | \$ (212) | \$ (141) | \$ 300 | \$ 300 | \$ 300 |
| 43 | Total System Energy Sales (MWh) (15) | 92,773 | 92,190 | 91,321 | 92,780 | 93,640 |
| 44 | Average Unit Revenue (¢/kWh) (16) | 8.9 | 8.9 | 10.1 | 10.0 | 10.1 |
| 45 | Increase (Decrease) Over Previous Year (17) | -1.8% | 0.2% | 13.7% | -0.9% | 0.4% |
| 46 | Power Production Cost (¢/kWh Sold) (18) | 5.7 | 5.9 | 6.2 | 6.1 | 6.1 |

TABLE B-2
City and Borough of Sitka
2004 Electric Rate Study

Estimated Billing Determinants

| | Jul-02 | Aug-02 | Sep-02 | Oct-02 | Nov-02 | Dec-02 | Jan-03 | Feb-03 | Mar-03 | Apr-03 | May-03 | Jun-03 | Total |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Hours in Period | 744 | 744 | 720 | 744 | 720 | 744 | 744 | 672 | 744 | 720 | 744 | 720 | 8,760 |
| RESIDENTIAL | | | | | | | | | | | | | |
| 1 Number of Customers | 3,444 | 3,443 | 3,522 | 3,491 | 3,489 | 3,485 | 3,487 | 3,476 | 3,493 | 3,471 | 3,506 | 3,500 | 3,484 |
| 2 Energy Sold (MWh) | 2,755 | 2,615 | 2,592 | 2,973 | 2,772 | 3,553 | 4,052 | 3,736 | 3,331 | 3,597 | 2,890 | 3,069 | 37,935 |
| 3 % Block 1 (<200) | 19.5% | 19.5% | 19.5% | 19.5% | 19.5% | 19.5% | 19.5% | 19.5% | 19.5% | 19.5% | 19.5% | 19.5% | 19.5% |
| 4 % Block 2 (201-1000) | 55.3% | 55.3% | 55.3% | 55.3% | 55.3% | 55.3% | 55.3% | 55.3% | 55.3% | 55.3% | 55.3% | 55.3% | 55.3% |
| 5 % Block 3 (1000-2000) | 19.7% | 19.7% | 19.7% | 19.7% | 19.7% | 19.7% | 19.7% | 19.7% | 19.7% | 19.7% | 19.7% | 19.7% | 19.7% |
| 6 % Block 4 (>2000) | 5.5% | 5.5% | 5.5% | 5.5% | 5.5% | 5.5% | 5.5% | 5.5% | 5.5% | 5.5% | 5.5% | 5.5% | 5.5% |
| 7 Average Usage per Customer (kWh) | 800 | 760 | 736 | 852 | 794 | 1,020 | 1,162 | 1,075 | 954 | 1,036 | 824 | 877 | 10,889 |
| 8 Losses | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% |
| 9 MWh at Input | 2,981 | 2,829 | 2,805 | 3,217 | 2,999 | 3,844 | 4,384 | 4,042 | 3,604 | 3,892 | 3,127 | 3,321 | 41,046 |
| 10 Loadfactor | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 54.5% |
| 11 Non-Coincident Peak (kW) | 5,724 | 5,433 | 5,565 | 6,177 | 5,951 | 7,382 | 8,418 | 8,593 | 6,920 | 7,722 | 6,004 | 6,589 | 8,593 |
| 12 Coincidence Factor | 93% | 93% | 93% | 93% | 93% | 93% | 93% | 93% | 93% | 93% | 93% | 93% | 93% |
| 13 Coincident Peak (kW) | 5,323 | 5,053 | 5,175 | 5,744 | 5,534 | 6,865 | 7,829 | 7,992 | 6,436 | 7,182 | 5,584 | 6,127 | 7,829 |
| 14 | | | | | | | | | | | | | |
| BOATS | | | | | | | | | | | | | |
| 16 Number of Customers | 703 | 698 | 705 | 691 | 669 | 667 | 655 | 651 | 689 | 690 | 698 | 708 | 685 |
| 17 Energy Sold (MWh) | 147 | 112 | 160 | 152 | 180 | 278 | 319 | 339 | 281 | 250 | 148 | 167 | 2,533 |
| 18 % Block 1 (<150) | 35.9% | 35.9% | 35.9% | 35.9% | 35.9% | 35.9% | 35.9% | 35.9% | 35.9% | 35.9% | 35.9% | 35.9% | 35.9% |
| 19 % Block 2 (>150) | 64.1% | 64.1% | 64.1% | 64.1% | 64.1% | 64.1% | 64.1% | 64.1% | 64.1% | 64.1% | 64.1% | 64.1% | 64.1% |
| 20 Average Usage per Customer (kWh) | 209 | 160 | 227 | 220 | 269 | 417 | 487 | 521 | 408 | 362 | 212 | 236 | |
| 21 Losses | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% |
| 22 Energy at Input (MWh) | 159 | 121 | 173 | 164 | 195 | 301 | 345 | 367 | 304 | 271 | 160 | 181 | 2,741 |
| 23 Loadfactor | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 40.1% |
| 24 Non-Coincident Peak (kW) | 305 | 233 | 343 | 316 | 386 | 578 | 663 | 780 | 584 | 537 | 307 | 359 | 780 |
| 25 Coincidence Factor | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% |
| 26 Coincident Peak (kW) | 275 | 209 | 309 | 284 | 348 | 520 | 596 | 702 | 525 | 483 | 277 | 323 | 596 |
| 27 | | | | | | | | | | | | | |
| TOTAL COMMERCIAL | | | | | | | | | | | | | |
| 29 Number of Customers | 559 | 558 | 556 | 557 | 557 | 557 | 564 | 578 | 568 | 569 | 546 | 555 | 560 |
| 30 Energy Sold (MWh) | 2,371 | 2,830 | 3,054 | 2,955 | 2,151 | 2,429 | 2,514 | 2,531 | 2,350 | 2,702 | 2,454 | 2,359 | 30,700 |
| 31 Losses | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% |
| 32 Energy at Input (MWh) | 2,565 | 3,062 | 3,304 | 3,197 | 2,327 | 2,628 | 2,720 | 2,739 | 2,543 | 2,924 | 2,655 | 2,552 | 33,217 |
| 33 Loadfactor | 43% | 43% | 46% | 48% | 40% | 45% | 43% | 52% | 42% | 45% | 39% | 46% | 38% |
| 34 Non-Coincident Demand (kW) | 7,342 | 8,789 | 9,215 | 8,286 | 7,433 | 7,249 | 7,857 | 7,256 | 7,469 | 8,355 | 8,454 | 7,056 | 9,215 |
| 35 Billed kW >25 | 5,384 | 5,384 | 5,384 | 5,384 | 5,384 | 5,384 | 5,384 | 5,384 | 5,384 | 5,384 | 5,384 | 5,384 | 5,384 |
| 36 Coincidence Factor | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% |
| 37 Coincident Peak (kW) | 6,608 | 7,910 | 8,293 | 7,458 | 6,690 | 6,524 | 7,071 | 6,530 | 6,722 | 7,520 | 7,608 | 6,351 | 7,071 |
| 38 | | | | | | | | | | | | | |

TABLE B-2
City and Borough of Sitka
2004 Electric Rate Study

Estimated Billing Determinants

| | Jul-02 | Aug-02 | Sep-02 | Oct-02 | Nov-02 | Dec-02 | Jan-03 | Feb-03 | Mar-03 | Apr-03 | May-03 | Jun-03 | Total |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Hours in Period | 744 | 744 | 720 | 744 | 720 | 744 | 744 | 672 | 744 | 720 | 744 | 720 | 8,760 |
| 71 TOTAL PUBLIC AUTHORITY | | | | | | | | | | | | | |
| 72 Number of Customers | 174 | 174 | 174 | 175 | 176 | 177 | 181 | 188 | 191 | 209 | 197 | 200 | 185 |
| 73 Energy Sold (MWh) | 1,501 | 1,302 | 1,523 | 1,876 | 1,506 | 1,841 | 1,694 | 1,987 | 1,721 | 1,800 | 1,469 | 1,527 | 19,747 |
| 74 Average usage per Customer (kWh) | 8,626 | 7,483 | 8,753 | 10,720 | 8,557 | 10,401 | 9,359 | 10,569 | 9,010 | 8,612 | 7,457 | 7,635 | |
| 75 Losses | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | |
| 76 Energy at Input (MWh) | 1,624 | 1,409 | 1,648 | 2,030 | 1,629 | 1,992 | 1,833 | 2,150 | 1,862 | 1,948 | 1,589 | 1,652 | 21,366 |
| 77 Loadfactor | 50% | 44% | 43% | 49% | 40% | 47% | 45% | 58% | 46% | 51% | 42% | 52% | 42% |
| 78 Non-Coincident Demand (kW) | 4,047 | 3,989 | 4,916 | 5,100 | 5,217 | 5,312 | 5,111 | 5,093 | 4,997 | 4,891 | 4,689 | 4,113 | 5,312 |
| 79 Coincidence Factor | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | |
| 114 | | | | | | | | | | | | | |
| 115 SBC | | | | | | | | | | | | | |
| 116 Number of Customers | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 117 Energy Sold (MWh) | 24 | 21 | 21 | 24 | 28 | 35 | 40 | 40 | 53 | 46 | 40 | 34 | 406 |
| 118 Average usage per Customer (kWh) | 24,000 | 21,000 | 21,000 | 24,000 | 28,000 | 35,000 | 40,000 | 40,000 | 53,000 | 46,000 | 40,000 | 34,000 | |
| 119 Losses | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | |
| 120 Energy at Input (MWh) | 26 | 23 | 23 | 26 | 30 | 38 | 43 | 43 | 57 | 50 | 43 | 37 | 439 |
| 121 Loadfactor | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 42% |
| 122 Non-Coincident Demand (kW) | 50 | 44 | 45 | 50 | 60 | 73 | 83 | 92 | 110 | 99 | 83 | 73 | 110 |
| 123 Coincidence Factor | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | |
| 124 Coincident Peak (kW) | 45 | 39 | 41 | 45 | 54 | 65 | 75 | 83 | 99 | 89 | 75 | 66 | 75 |
| 125 | | | | | | | | | | | | | |
| 126 TOTAL SYSTEM | | | | | | | | | | | | | |
| 127 Number of Customers | 4,881 | 4,874 | 4,958 | 4,915 | 4,892 | 4,887 | 4,888 | 4,894 | 4,942 | 4,940 | 4,948 | 4,964 | 4,915 |
| 128 Energy Sold (MWh) | 6,798 | 6,880 | 7,350 | 7,980 | 6,637 | 8,136 | 8,619 | 8,633 | 7,736 | 8,395 | 7,001 | 7,156 | 91,321 |
| 129 Energy at Input (MWh) | 7,355 | 7,444 | 7,953 | 8,634 | 7,181 | 8,803 | 9,326 | 9,341 | 8,370 | 9,083 | 7,575 | 7,743 | 98,809 |
| 130 System LF (Based on est. peak) | 52% | 50% | 51% | 54% | 48% | 53% | 52% | 59% | 52% | 54% | 48% | 55% | 52% |
| 131 Sum Class NCP (kW) | 17,468 | 18,487 | 20,084 | 19,929 | 19,048 | 20,593 | 22,132 | 21,814 | 20,080 | 21,604 | 19,537 | 18,189 | 22,132 |
| 132 Coincident Peak (kW) ** | 15,893 | 16,801 | 18,242 | 18,121 | 17,322 | 18,755 | 20,171 | 19,890 | 18,279 | 19,675 | 17,763 | 16,568 | 20,171 |
| 133 | | | | | | | | | | | | | |
| 166 | | | | | | | | | | | | | |
| 167 TOTAL CHECK | | | | | | | | | | | | | |
| 168 Number of Customers | 4,881 | 4,874 | 4,958 | 4,915 | 4,892 | 4,887 | 4,888 | 4,894 | 4,942 | 4,940 | 4,948 | 4,964 | |
| 169 Energy Sold (MWh) | 6,798 | 6,880 | 7,350 | 7,980 | 6,637 | 8,136 | 8,619 | 8,633 | 7,736 | 8,395 | 7,001 | 7,156 | 91,321 |
| 170 Non-Coincident Demand (kW) | 17,468 | 18,487 | 20,084 | 19,929 | 19,048 | 20,593 | 22,132 | 21,814 | 20,080 | 21,604 | 19,537 | 18,189 | 23,154 |
| 171 Coincident Peak (kW) | 15,721 | 16,638 | 18,075 | 17,936 | 17,143 | 18,533 | 19,918 | 19,632 | 18,072 | 19,444 | 17,583 | 16,370 | |
| 172 | | | | | | | | | | | | | |
| 173 SUBTOTAL - GENERAL SERVICE | | | | | | | | | | | | | |
| 174 Number of Customers | 734 | 733 | 731 | 733 | 734 | 735 | 746 | 767 | 760 | 779 | 744 | 756 | 746 |
| 175 Energy Sold (MWh) | 3,896 | 4,153 | 4,598 | 4,855 | 3,685 | 4,305 | 4,248 | 4,558 | 4,124 | 4,548 | 3,963 | 3,920 | 50,853 |

TABLE B-2
City and Borough of Sitka
2004 Electric Rate Study

Estimated Billing Determinants

| | Jul-02 | Aug-02 | Sep-02 | Oct-02 | Nov-02 | Dec-02 | Jan-03 | Feb-03 | Mar-03 | Apr-03 | May-03 | Jun-03 | Total |
|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Hours in Period | 744 | 744 | 720 | 744 | 720 | 744 | 744 | 672 | 744 | 720 | 744 | 720 | 8,760 |
| 176 Average usage per Customer (kWh) | 5,308 | 5,666 | 6,290 | 6,623 | 5,020 | 5,857 | 5,694 | 5,943 | 5,426 | 5,838 | 5,327 | 5,185 | |
| 177 Losses | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | 8.2% | |
| 178 Energy at Input (MWh) | 4,215 | 4,494 | 4,975 | 5,253 | 3,987 | 4,658 | 4,596 | 4,932 | 4,462 | 4,921 | 4,288 | 4,241 | 55,023 |
| 179 Loadfactor | 46% | 44% | 45% | 49% | 40% | 46% | 44% | 55% | 44% | 47% | 40% | 48% | 41% |
| 180 Non-Coincident Demand (kW) | 11,439 | 12,822 | 14,176 | 13,436 | 12,711 | 12,633 | 13,050 | 12,440 | 12,576 | 13,345 | 13,225 | 11,242 | 14,176 |
| 181 Coincidence Factor | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | 90% | |
| 182 Coincident Peak (kW) | 10,295 | 11,539 | 12,758 | 12,093 | 11,440 | 11,370 | 11,745 | 11,196 | 11,318 | 12,011 | 11,903 | 10,118 | 11,745 |
| 183 | | | | | | | | | | | | | |
| 184 TOTAL CHECK | | | | | | | | | | | | | |
| 185 Number of Customers | 4,881 | 4,874 | 4,958 | 4,915 | 4,892 | 4,887 | 4,888 | 4,894 | 4,942 | 4,940 | 4,948 | 4,964 | |
| 186 Energy Sold (MWh) | 6,798 | 6,880 | 7,350 | 7,980 | 6,637 | 8,136 | 8,619 | 8,633 | 7,736 | 8,395 | 7,001 | 7,156 | 91,321 |
| 187 Non-Coincident Demand (kW) | 17,468 | 18,487 | 20,084 | 19,929 | 19,048 | 20,593 | 22,132 | 21,814 | 20,080 | 21,604 | 19,537 | 18,189 | 23,549 |
| 188 Coincident Peak (kW) | 15,893 | 16,801 | 18,242 | 18,121 | 17,322 | 18,755 | 20,171 | 19,890 | 18,279 | 19,675 | 17,763 | 16,568 | 20,171 |

TABLE B-3A
City and Borough of Sitka
2004 Electric Rate Study

Independent Allocation Factors

| | Factor Reference | Total System | Residential | Commercial | Boats | Public Authorities | |
|----|------------------------------|--------------|-------------|------------|---------|--------------------|-------|
| 1 | DEMAND ALLOCATORS | | | | | | |
| 2 | Single CP Demand | 20,171 | 7,829 | 7,146 | 596 | 4,600 | |
| 3 | Percent Responsibility | CP | 100.0% | 38.8% | 35.4% | 3.0% | 22.8% |
| 4 | NCP Demand | 24,010 | 8,593 | 9,325 | 780 | 5,312 | |
| 5 | Percent Responsibility | NCP | 100.0% | 35.8% | 38.8% | 3.2% | 22.1% |
| 6 | | | | | | | |
| 7 | ENERGY ALLOCATOR | | | | | | |
| 8 | Energy Sales (MWh) | 91,321 | 37,935 | 31,106 | 2,533 | 19,747 | |
| 9 | Percent Responsibility | SALES | 100.0% | 41.5% | 34.1% | 2.8% | 21.6% |
| 10 | Energy Usage | 98,809 | 41,046 | 33,657 | 2,741 | 21,366 | |
| 11 | Percent Responsibility | REQ | 100.0% | 41.5% | 34.1% | 2.8% | 21.6% |
| 12 | | | | | | | |
| 13 | CUSTOMER ALLOCATORS | | | | | | |
| 14 | Number of Customers | 4,915 | 3,484 | 561 | 685 | 185 | |
| 15 | Percent Responsibility | CUST | 100.0% | 70.9% | 11.4% | 13.9% | 3.8% |
| 16 | Weighted No. of Customers | 9,734 | 3,484 | 3,780 | 316 | 2,154 | |
| 17 | Percent Responsibility | WtCUST | 100.0% | 35.8% | 38.8% | 3.2% | 22.1% |
| 18 | | | | | | | |
| 19 | REVENUES | | | | | | |
| 20 | Present Base Revenues | 8,717,835 | 3,521,389 | 2,993,486 | 334,348 | 1,868,611 | |
| 21 | Percent Responsibility | REV | 100.0% | 40.4% | 34.3% | 3.8% | 21.4% |
| 22 | | | | | | | |
| 23 | DEPENDENT ALLOCATORS | | | | | | |
| 24 | Plant Allocator | PLT | 100.0% | 39.0% | 35.4% | 3.1% | 22.5% |
| 25 | Distribution Plant Allocator | DPLT | 100.0% | 42.8% | 33.4% | 5.4% | 18.5% |
| 26 | Labor Allocator | LBR | 100.0% | 44.0% | 31.9% | 5.1% | 19.0% |

TABLE B-4
City and Borough of Sitka
2004 Electric Rate Study

Allocation Analysis

Allocation of Plant in Service (Rate Base)

| Description | Weight Factor | Allocation Factor | Gross Utility Plant | Accum. Depr. | Net Utility Plant | Residential | Commercial | Boats | Public Authorities |
|-----------------------------------|---------------|-------------------|---------------------|--------------|-------------------|-------------|------------|-----------|--------------------|
| PLANT IN SERVICE | | | | | | | | | |
| 1 Intangible Plant (Land) | | CP | 823,704 | 7,077 | 816,627 | 316,961 | 289,304 | 24,148 | 186,213 |
| 2 Production Plant | | | | | | | | | |
| 3 Blue Lake | | CP | 13,762,045 | 5,714,612 | 8,047,433 | 3,123,489 | 2,850,943 | 237,969 | 1,835,031 |
| 4 Green Lake | | CP | 76,333,279 | 23,762,880 | 52,570,399 | 20,404,405 | 18,623,977 | 1,554,550 | 11,987,467 |
| 5 Diesel | | CP | 4,196,002 | 1,945,189 | 2,250,813 | 873,619 | 797,390 | 66,558 | 513,246 |
| 6 Transmission Plant | | CP | 2,023,426 | 1,044,480 | 978,946 | 379,963 | 346,809 | 28,948 | 223,226 |
| 7 Distribution Plant | | | | | | | | | |
| 8 | 20% | CUST | 1,921,154 | 1,042,979 | 878,174 | 622,448 | 100,290 | 122,444 | 32,993 |
| 9 | 80% | NCP | 7,684,615 | 4,171,918 | 3,512,698 | 1,257,235 | 1,364,214 | 114,080 | 777,169 |
| 10 Subtotal - Distribution Plant | | | 9,605,769 | 5,214,897 | 4,390,872 | 1,879,682 | 1,464,504 | 236,524 | 810,162 |
| 11 General Plant | | NCP | | | - | - | - | - | - |
| 12 Buildings | | NCP | 2,060,900 | 241,591 | 1,819,309 | 651,151 | 706,559 | 59,085 | 402,514 |
| 13 Equipment/Machinery | | NCP | 689,921 | 614,614 | 75,307 | 26,953 | 29,247 | 2,446 | 16,661 |
| 14 | | | | | | | | | |
| 15 Grand Total - Plant in Service | | | 109,495,046 | 38,545,340 | 70,949,706 | 27,656,225 | 25,108,733 | 2,210,229 | 15,974,520 |
| 16 % Responsibility | | | | | | 39.0% | 35.4% | 3.1% | 22.5% |

TABLE B-4
City and Borough of Sitka
2004 Electric Rate Study

Allocation Analysis

Allocation of Total Costs

| Account | Allocation Factor | Total Cost | Residential | Commercial | Boats | Public Authorities |
|---------------------------|--|------------|-------------|------------|----------|--------------------|
| OPERATING EXPENSES | | | | | | |
| 17 | Power Production - Diesel | | | | | |
| 18 | Fuel | 34,000 | 14,124 | 11,581 | 943 | 7,352 |
| 19 | O&M | 25,000 | 9,703 | 8,857 | 739 | 5,701 |
| 20 | Total - Diesel Power Production | 59,000 | 23,827 | 20,438 | 1,682 | 13,053 |
| 21 | Power Production - Hydroelectric | 1,715,000 | 665,651 | 607,569 | 50,714 | 391,066 |
| 22 | Transmission O&M | 91,000 | 35,320 | 32,238 | 2,691 | 20,750 |
| 23 | Distribution O&M | 1,426,000 | 610,454 | 475,619 | 76,815 | 263,112 |
| 24 | Customer Accounting | 413,000 | 292,733 | 47,166 | 57,585 | 15,516 |
| 25 | Administrative & General | 1,066,000 | 415,527 | 377,252 | 33,208 | 240,013 |
| 26 | Total Operating Expenses | 4,770,000 | 2,043,514 | 1,560,281 | 222,694 | 943,511 |
| 27 | | | | | | |
| 28 | Less: Interest income | (683,000) | (266,234) | (241,710) | (21,277) | (153,779) |
| 29 | Less: Other Op. Revenues | (490,700) | (175,627) | (190,572) | (15,936) | (108,565) |
| 29 | Debt Service on Existing Debt | 4,012,100 | 1,563,918 | 1,419,861 | 124,985 | 903,335 |
| 30 | Debt Service on Subordinate Debt | 614,000 | 239,337 | 217,291 | 19,127 | 138,244 |
| 31 | Required Margins | 1,031,000 | 401,884 | 364,866 | 32,118 | 232,132 |
| 32 | NET COST OF SERVICE | 9,253,400 | 3,806,793 | 3,130,018 | 361,712 | 1,954,878 |
| 33 | | | | | | |
| 34 | Energy Sales (MWh) | 91,321 | 37,935 | 31,106 | 2,533 | 19,747 |
| 35 | Average Cost of Service (cents per kWh) | 10.13 | 10.04 | 10.06 | 14.28 | 9.90 |
| 36 | | | | | | |
| 37 | Revenues from Existing Rates (2004 Loads) | 8,717,835 | 3,521,389 | 2,993,486 | 334,348 | 1,868,611 |
| 38 | Average Revenue (cents per kWh) | 9.55 | 9.28 | 9.62 | 13.20 | 9.46 |
| 39 | | | | | | |
| 40 | Over (Under) Cost of Service | (535,565) | (285,403) | (136,532) | (27,364) | (86,266) |
| 41 | Over (Under) Cost of Service (cents per kWh) | (0.59) | (0.75) | (0.44) | (1.08) | (0.44) |
| 42 | Over (Under) Cost of Service (%) | -6.1% | -8.1% | -4.6% | -8.2% | -4.6% |

TABLE B-5
City and Borough of Sitka
2004 Electric Rate Study

Functionalization and Classification of Costs

| Account | Total Cost | Functionalized Production | Functionalized Transmission | Functionalized Distribution | Classify Demand | Classify Energy | Classify Customer |
|-----------------------------------|------------|------------------------------|--------------------------------|--------------------------------|--------------------|--------------------|----------------------|
| 1 PLANT IN SERVICE | | | | | | | |
| 2 Intangible Plant (Land) | 816,627 | 326,651 | - | 489,976 | 85% | 0% | 15% |
| 3 Production Plant | | | | | | | |
| 4 Blue Lake | 8,047,433 | 8,047,433 | - | - | 100% | 0% | 0% |
| 5 Green Lake | 52,570,399 | 52,570,399 | - | - | 100% | 0% | 0% |
| 6 Diesel | 2,250,813 | 2,250,813 | - | - | 100% | 0% | 0% |
| 7 Transmission Plant | 978,946 | - | 978,946 | - | 100% | 0% | 0% |
| 8 Distribution Plant | 4,390,872 | | | 4,390,872 | 80% | 0% | 20% |
| 9 General Plant | | 40% | 0% | 60% | | | |
| 10 Buildings | 1,819,309 | 727,724 | - | 1,091,585 | 85% | 0% | 15% |
| 11 Equipment/Machinery | 75,307 | 30,123 | - | 45,184 | 85% | 0% | 15% |
| 12 | | | | | | | |
| 13 Grand Total - Plant in Service | 70,949,706 | 63,953,142 | 978,946 | 6,017,618 | 98% | 0% | 2% |
| 14 | | 90.1% | 1.4% | 8.5% | | | |

TABLE B-5
City and Borough of Sitka
2004 Electric Rate Study

Functionalization and Classification of Costs

| Account | Total Cost | Functionalized Production | Functionalized Transmission | Functionalized Distribution | Classify Demand | Classify Energy | Classify Customer |
|-------------------------------------|--------------|------------------------------|--------------------------------|--------------------------------|--------------------|--------------------|----------------------|
| 15 OPERATING EXPENSES | | | | | | | |
| 16 Power Production - Diesel | | | | | | | |
| 17 Fuel | \$ 34,000 | \$ 34,000 | \$ - | \$ - | 0% | 100% | 0% |
| 18 O&M | 25,000 | 25,000 | - | - | 100% | 0% | 0% |
| 19 Total - Diesel Power Production | \$ 59,000 | \$ 59,000 | \$ - | \$ - | | | |
| 20 Power Production - Hydroelectric | 1,715,000 | 1,715,000 | - | - | 100% | 0% | 0% |
| 21 Transmission O&M | 91,000 | - | 91,000 | - | 100% | 0% | 0% |
| 22 Distribution O&M | 1,426,000 | - | - | 1,426,000 | 90% | 0% | 10% |
| 23 Customer Accounting | 413,000 | - | - | 413,000 | 0% | 0% | 100% |
| 24 Administrative & General | 1,066,000 | 505,000 | 26,000 | 535,000 | 80% | 0% | 20% |
| 25 Total Operating Expenses | \$ 4,770,000 | \$ 2,279,000 | \$ 117,000 | \$ 2,374,000 | | | |
| 26 | | | | | | | |
| 27 Less: Interest income | (683,000) | (615,600) | (9,400) | (57,900) | 98% | 0% | 2% |
| 28 Less: Other Op. Revenues | (490,700) | - | - | (490,700) | 95% | 0% | 5% |
| 29 Debt Service on Existing Debt | 4,012,100 | 3,616,500 | 55,400 | 340,300 | 98% | 0% | 2% |
| 30 Debt Service on Subordinate Debt | 614,000 | 553,500 | 8,500 | 52,100 | 98% | 0% | 2% |
| 31 Required Margins | 1,031,000 | 929,300 | 14,200 | 87,400 | 98% | 0% | 2% |
| 32 NET COST OF SERVICE | 9,253,400 | 6,762,700 | 185,700 | 2,305,200 | | | |
| 33 | | | | | | | |
| 34 Energy Sales (MWh) | 91,321 | 91,321 | 91,321 | 91,321 | | | |
| 35 Average Cost (cents per kWh) | 10.13 | 7.41 | 0.20 | 2.52 | | | |

TABLE B-6
City and Borough of Sitka
2004 Electric Rate Study

Summary of Cost of Service

| | Residential | | | | Boats | | | |
|--|----------------------|-------------------|------------------------|------------------|----------------------|-------------------|------------------------|------------------|
| | Demand (\$/kW-Yr) | Energy (¢/kWh) | Customer (\$/month) | Total (¢/kWh) | Demand (\$/kW-Yr) | Energy (¢/kWh) | Customer (\$/month) | Total (¢/kWh) |
| 1 Billing Determinants (NCP kW, MWh, # Cust) | 8,593 | 37,935 | 3,484 | | 780 | 2,533 | 685 | |
| 2 | | | | | | | | |
| 3 Power Production - Diesel | | | | | | | | |
| 4 Fuel | \$ - | 0.04 | \$ - | 0.04 | \$ - | 0.04 | \$ - | 0.04 |
| 5 O&M | 1.13 | - | - | 0.03 | 0.95 | - | - | 0.03 |
| 6 Total - Diesel Power Production | \$ 1.13 | 0.04 | \$ - | 0.06 | \$ 0.95 | 0.04 | \$ - | 0.07 |
| 7 Power Production - Hydroelectric | 77.46 | - | - | 1.75 | 65.04 | - | - | 2.00 |
| 8 Transmission O&M | 4.11 | - | - | 0.09 | 3.45 | - | - | 0.11 |
| 9 Distribution O&M | 63.93 | - | 1.46 | 1.61 | 88.66 | - | 0.93 | 3.03 |
| 10 Customer Accounting | - | - | 7.00 | 0.77 | - | - | 7.00 | 2.27 |
| 11 Administrative & General | 38.68 | - | 1.99 | 1.10 | 34.07 | - | 0.81 | 1.31 |
| 12 Total Operating Expenses | \$ 185.32 | 0.04 | \$ 10.45 | 5.39 | \$ 192.17 | 0.04 | \$ 8.74 | 8.79 |
| 13 | | | | | | | | |
| 14 Less: Interest income | (30.42) | - | (0.12) | (0.70) | (26.79) | - | (0.05) | (0.84) |
| 15 Less: Other Op. Revenues | (19.42) | - | (0.21) | (0.46) | (19.42) | - | (0.10) | (0.63) |
| 16 Debt Service on Existing Debt | 178.69 | - | 0.68 | 4.12 | 157.38 | - | 0.28 | 4.93 |
| 17 Debt Service on Subordinate Debt | 27.35 | - | 0.10 | 0.63 | 24.09 | - | 0.04 | 0.76 |
| 18 Required Margins | 45.92 | - | 0.17 | 1.06 | 40.44 | - | 0.07 | 1.27 |
| 19 NET COST OF SERVICE | \$ 387.44 | 0.0372 | \$ 11.08 | 10.04 | \$ 367.87 | 0.04 | \$ 8.99 | 14.28 |
| 20 Energy Rate w/o Demand Charge | | 8.81 | | | | 11.36 | | |

TABLE B-6
City and Borough of Sitka
2004 Electric Rate Study

Summary of Cost of Service

| | Commercial | | | | Public Authorities | | | |
|---|----------------------|-------------------|------------------------|------------------|----------------------|-------------------|------------------------|------------------|
| | Demand (\$/kW-Yr) | Energy (¢/kWh) | Customer (\$/month) | Total (¢/kWh) | Demand (\$/kW-Yr) | Energy (¢/kWh) | Customer (\$/month) | Total (¢/kWh) |
| 20 Billing Determinants (NCP kW, MWh, # Cust) | 9,325 | 31,106 | 561 | | 5,312 | 19,747 | 185 | |
| 21 | | | | | | | | |
| 22 Power Production - Diesel | | | | | | | | |
| 23 Fuel | \$ - | 0.04 | \$ - | 0.05 | \$ - | 0.04 | \$ - | 0.04 |
| 24 O&M | 0.95 | - | - | 0.03 | 1.07 | - | - | 0.03 |
| 25 Total - Diesel Power Production | \$ 0.95 | 0.04 | \$ - | 0.08 | \$ 1.07 | 0.04 | \$ - | 0.07 |
| 26 Power Production - Hydroelectric | 65.16 | - | - | 2.14 | 73.62 | - | - | 1.98 |
| 27 Transmission O&M | 3.46 | - | - | 0.11 | 3.91 | - | - | 0.11 |
| 28 Distribution O&M | 45.91 | - | 7.06 | 1.96 | 44.58 | - | 11.87 | 1.33 |
| 29 Customer Accounting | - | - | 7.00 | 0.94 | - | - | 7.00 | 0.08 |
| 30 Administrative & General | 32.37 | - | 11.20 | 1.34 | 36.15 | - | 21.66 | 1.22 |
| 31 Total Operating Expenses | \$ 147.84 | 0.04 | \$ 25.26 | 6.57 | \$ 159.32 | 0.04 | \$ 40.54 | 4.78 |
| 32 | | | | | | | | |
| 33 Less: Interest income | (25.45) | - | (0.65) | (0.86) | (28.42) | - | (1.26) | (0.78) |
| 34 Debt Service on Existing Debt | 149.51 | - | 3.82 | 5.03 | 166.97 | - | 7.38 | 4.57 |
| 35 Debt Service on Subordinate Debt | 22.88 | - | 0.58 | 0.77 | 25.55 | - | 1.13 | 0.70 |
| 36 Required Margins | 38.42 | - | 0.98 | 1.29 | 42.91 | - | 1.90 | 1.18 |
| 37 NET COST OF SERVICE | \$ 333.20 | 0.04 | \$ 30.00 | 12.80 | \$ 366.33 | 0.04 | \$ 49.69 | 10.45 |
| | \$ 27.77 | 10.03 | | | | 9.89 | | |

TABLE 7
City and Borough of Sitka
2004 Electric Rate Study

Revenue Increase Options

| | <u>System Total</u> | <u>Residential</u> | <u>Commercial</u> | <u>Public Authority</u> | <u>Boats</u> |
|---|---------------------|--------------------|-------------------|-----------------------------|--------------|
| Estimated Sales (MWh) | 91,321 | 37,935 | 31,106 | 19,747 | 2,533 |
| Existing Rates | | | | | |
| Annual Revenues from Sales | \$ 8,717,835 | \$ 3,521,389 | \$ 2,993,486 | \$ 1,868,611 | \$ 334,348 |
| Unit Revenues (¢/kWh) | 9.55 | 9.28 | 9.62 | 9.46 | 13.20 |
| Option 1 - Allocated Cost of Service (FY 2004 Revenue Requirement) | | | | | |
| Annual Revenues from Sales | \$ 9,253,400 | \$ 3,806,793 | \$ 3,130,018 | \$ 1,954,878 | \$ 361,712 |
| Unit Revenues (¢/kWh) | 10.13 | 10.04 | 10.06 | 9.90 | 14.28 |
| Necessary Increase | \$ 535,565 | \$ 285,403 | \$ 136,532 | \$ 86,266 | \$ 27,364 |
| Necessary Increase (¢/kWh) | 0.59 | 0.75 | 0.44 | 0.44 | 1.08 |
| Percent Increase | 6.1% | 8.1% | 4.6% | 4.6% | 8.2% |
| Option 2 - Uniform % Increase in All Classes | | | | | |
| Annual Revenues from Sales | \$ 9,253,400 | \$ 3,737,720 | \$ 3,177,386 | \$ 1,983,406 | \$ 354,888 |
| Unit Revenues (mills/kWh) | 10.13 | 9.85 | 10.21 | 10.04 | 14.01 |
| Necessary Increase | \$ 535,565 | \$ 216,330 | \$ 183,900 | \$ 114,795 | \$ 20,540 |
| Necessary Increase (mills/kWh) | 0.59 | 0.57 | 0.59 | 0.58 | 0.81 |
| Percent Increase | 6.1% | 6.1% | 6.1% | 6.1% | 6.1% |

TABLE B-8
City Borough of Sitka
2004 Electric Rate Study
Alternative Rate Design Options

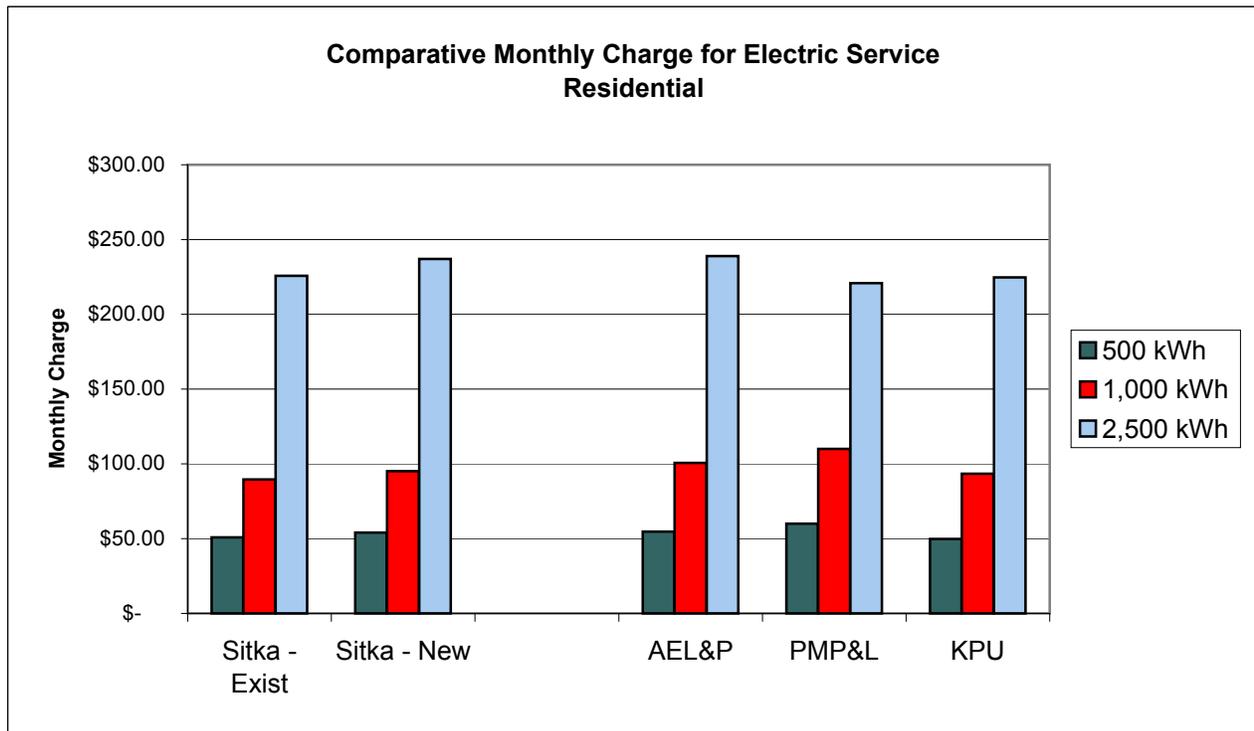
| | Option 2 - Uniform Class Increase | | | Revenue (\$000) |
|------------------------|-----------------------------------|-----------------|---------|--------------------|
| | Block % | Billing Unit | Rate | |
| Residential | | | | |
| Energy Charge (¢/kWh) | | | | |
| Block 1 (<200) | 19.5% | 7,381 | 14.60 | \$ 1,078 |
| Block 2 (201-1000) | 55.3% | 20,993 | 8.25 | 1,732 |
| Block 3 (1000-2000) | 19.7% | 7,467 | 9.45 | 706 |
| Block 4 (>2000) | 5.5% | 2,094 | 9.45 | 198 |
| Subtotal | 100.0% | 37,935 | | \$ 3,713 |
| Demand Charge (\$/kW) | | - | - | - |
| Minimum Charge Impact | | 160 | 14.60 | 23 |
| Total (\$000) | | | | \$ 3,736 |
| Unit Revenue (¢/kWh) | | | | 9.85 |
| Boats | | | | |
| Energy Charge (¢/kWh) | | | | |
| Block 1 (<150) | 35.9% | 909 | 14.60 | \$ 133 |
| Block 2 (>150) | 64.1% | 1,624 | 9.80 | 159 |
| Subtotal | 100.0% | 2,533 | | \$ 292 |
| Demand Charge (\$/kW) | | - | - | - |
| Minimum Charge Impact | | 430 | 14.60 | 63 |
| Total (\$000) | | | | \$ 355 |
| Unit Revenue (¢/kWh) | | | | 14.00 |
| General Service | | | | |
| Energy Charge (¢/kWh) | | | | |
| Block 1 (<500) | 8.7% | 3,566 | 14.60 | \$ 521 |
| Block 2 (501-10000) | 42.6% | 18,479 | 9.30 | 1,719 |
| Block 3 (10001-100000) | 34.5% | 22,652 | 8.75 | 1,982 |
| Block 4 (>100000) | 14.2% | 6,156 | 8.70 | 536 |
| Subtotal | 100.0% | 50,853 | | \$ 4,757 |
| Demand Charge (\$/kW) | | 98,856 | \$ 4.00 | 395 |
| Minimum Charge Impact | | 75 | 14.60 | 11 |
| Total (\$000) | | | | \$ 5,163 |
| Unit Revenue (¢/kWh) | | | | 10.15 |
| Total | | | | |
| Energy Charge | | 91,321 | | \$ 8,859 |
| Demand Charge | | 98,856 | | 395 |
| Total | | | - | \$ 9,254 |
| Unit Revenue (¢/kWh) | | | | 10.13 |

APPENDIX C

Regional Rate Comparisons

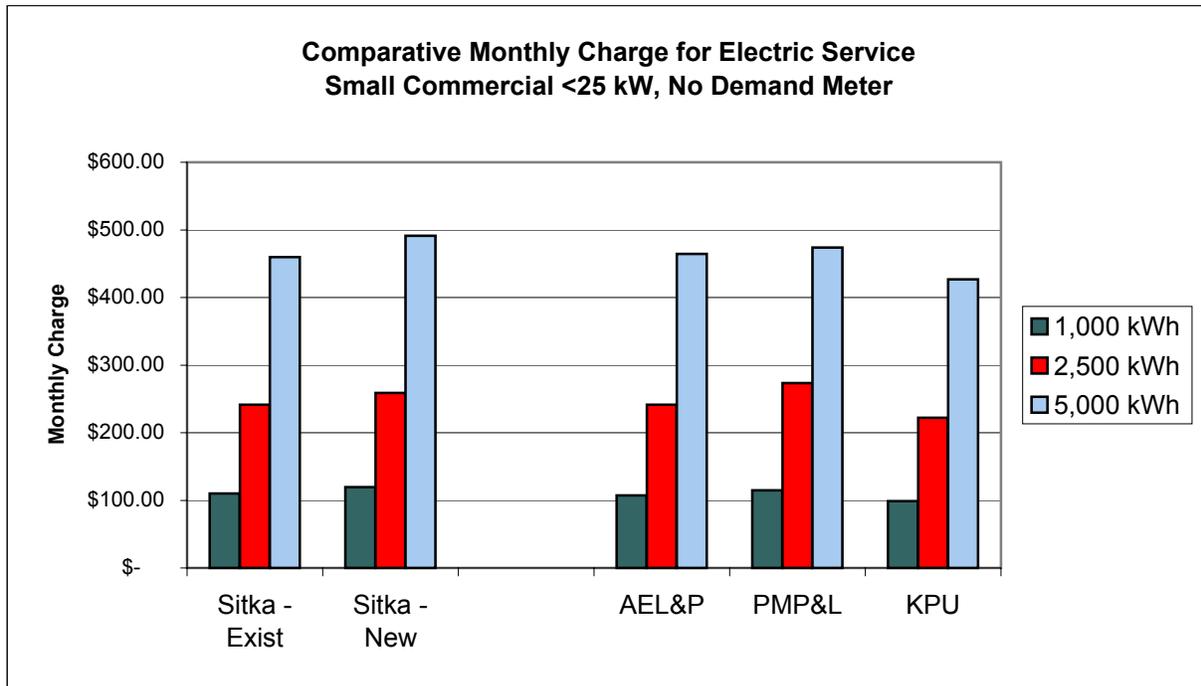
**City and Borough of Sitka
2004 Electric Rate Study
Comparative Monthly Charges for Electric Service**

| | Sitka Existing | Sitka Proposed | AEL&P | Petersburg MP&L | Ketchikan Public Utilities |
|-------------------------------|-------------------|-------------------|---------|--------------------|----------------------------------|
| RESIDENTIAL | | | | | |
| Customer Charge (\$/month) | \$ - | \$ - | \$ 8.50 | \$ 8.00 | \$ 6.00 |
| Minimum Bill | \$ 20.63 | \$ 21.90 | \$ 8.50 | \$ 8.00 | \$ 6.00 |
| Energy Charge (¢/kWh) | | | | | |
| Sitka | | | | | |
| 0 - 200 kWh | 13.75 | 14.60 | | | |
| 201 - 1,000 kWh | 7.75 | 8.25 | | | |
| 0 - 500 kWh | | | | | |
| 500 - 1,000 kWh | | | | | |
| 1,001 - 2,000 kWh | 8.75 | 9.45 | | | |
| All Additional kWh | 9.75 | 9.45 | | | |
| AEL&P | | | | | |
| Nov - May (Peak) | | | 9.22 | | |
| June - Oct (Off-peak) | | | 7.58 | | |
| Petersburg | | | | | |
| 0 - 500 kWh | | | | 9.50 | |
| 500 - 1,000 kWh | | | | 9.10 | |
| All Additional kWh | | | | 6.50 | |
| Tye Surchage | | | | 0.90 | |
| KPU All Energy | | | | | 8.75 |
| Total Monthly Charge (Winter) | | | | | |
| 500 kWh | \$ 50.75 | \$ 53.95 | 54.60 | 59.98 | 49.75 |
| 1,000 kWh | 89.50 | 95.20 | 100.70 | 109.95 | 93.50 |
| 2,500 kWh | 225.75 | 236.95 | 239.00 | 220.88 | 224.75 |



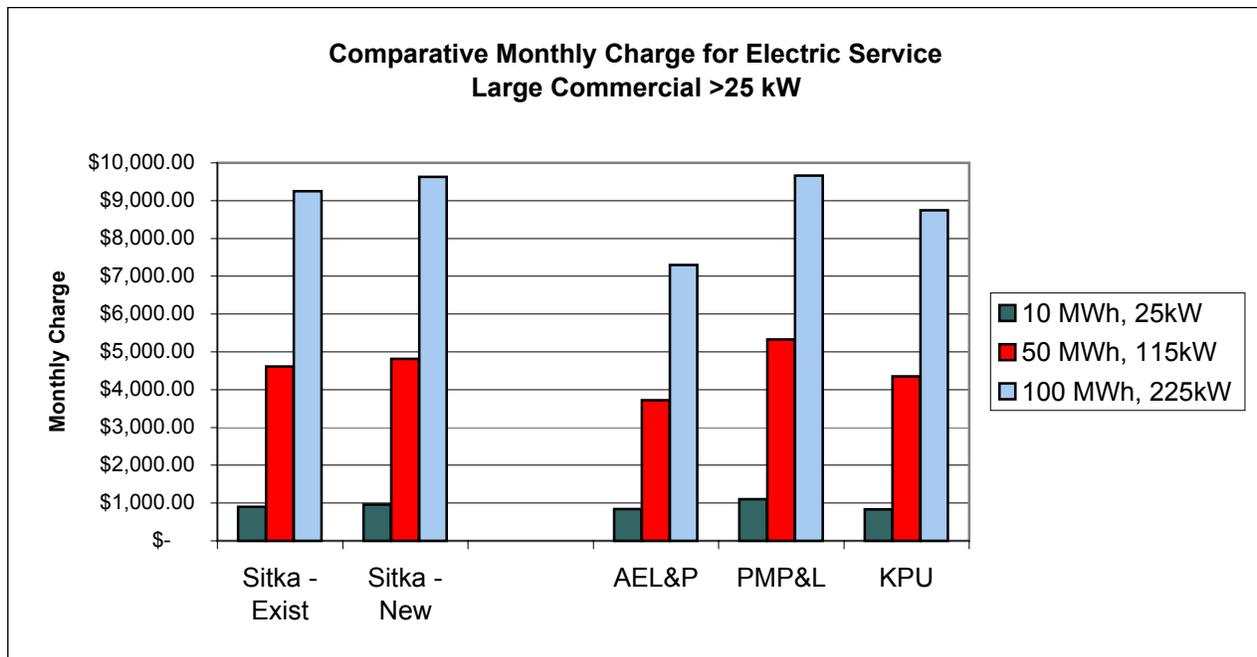
**City and Borough of Sitka
2004 Electric Rate Study
Comparative Monthly Charges for Electric Service**

| | <u>Sitka Existing</u> | <u>Sitka Proposed</u> | <u>AEL&P</u> | <u>Petersburg MP&L</u> | <u>Ketchikan Public Utilities</u> |
|---------------------------------------|---------------------------|---------------------------|------------------|--------------------------------|---|
| SMALL COMMERCIAL (Under 25 kW) | | | | | |
| Customer Charge (\$/month) | \$ - | \$ - | \$ 18.00 | \$ 8.00 | \$ 17.00 |
| Minimum Bill | \$ 20.63 | \$ 21.90 | \$ 18.00 | \$ 8.00 | \$ 17.00 |
| Energy Charge (¢/kWh) | | | | | |
| Sitka | | | | | |
| 0 - 500 kWh | 13.75 | 14.60 | | | |
| 500 - 1,000 kWh | 8.25 | | | | |
| 0 - 200 kWh | | | | | |
| 501 - 10,000 kWh | | 9.30 | | | |
| 10,000 - 100,000 kWh | | 8.75 | | | |
| All Additional kWh | 8.75 | 8.70 | | | |
| AEL&P | | | | | |
| Nov - May (Peak) | | | 8.93 | | |
| June - Oct (Off-peak) | | | 7.10 | | |
| Petersburg | | | | | |
| 0 - 1,500 kWh | | | | 9.80 | |
| 1,500 - 3,000 kWh | | | | 9.60 | |
| All Additional kWh | | | | 6.50 | |
| Tyee Surcharge | | | | 0.90 | |
| KPU All Energy | | | | | 8.20 |
| Total Monthly Charge (Winter) | | | | | |
| 1,000 kWh | \$ 110.00 | \$ 119.50 | 107.30 | 114.95 | 99.00 |
| 2,500 kWh | 241.25 | 259.00 | 241.25 | 273.38 | 222.00 |
| 5,000 kWh | 460.00 | 491.50 | 464.50 | 473.75 | 427.00 |



**City and Borough of Sitka
2004 Electric Rate Study
Comparative Monthly Charges for Electric Service**

| | <u>Sitka Existing</u> | <u>Sitka Proposed</u> | <u>AEL&P</u> | <u>Petersburg MP&L</u> | <u>Ketchikan Public Utilities</u> |
|--------------------------------------|---------------------------|---------------------------|------------------|--------------------------------|---|
| LARGE COMMERCIAL (Over 25 kW) | | | | | |
| Customer Charge (\$/month) | \$ - | \$ - | \$ 95.00 | \$ 25.00 | \$ 17.00 |
| Minimum Bill | \$ 20.63 | \$ 21.90 | \$ 95.00 | \$ 25.00 | \$ 17.00 |
| Demand Charge (\$/kW >25) | \$ 2.40 | \$ 4.00 | \$ - | \$ - | \$ 2.65 |
| Demand Charge (All kW) | | | \$ 11.04 | \$ 3.85 | |
| Energy Charge (¢/kWh) | | | | | |
| Sitka | | | | | |
| 0 - 500 kWh | 13.75 | 14.60 | | | |
| 500 - 1,000 kWh | 8.25 | | | | |
| 0 - 200 kWh | | | | | |
| 501 - 10,000 kWh | | 9.30 | | | |
| 10,000 - 100,000 kWh | | 8.75 | | | |
| All Additional kWh | 8.75 | 8.70 | | | |
| AEL&P | | | | | |
| Nov - May (Peak) | | | 4.72 | | |
| June - Oct (Off-peak) | | | 4.42 | | |
| Petersburg | | | | | |
| 0 - 30,000 kWh | | | | 8.90 | |
| 30,000 - 60,000 kWh | | | | 8.70 | |
| All Additional kWh | | | | 6.50 | |
| Tyee Surcharge | | | | 0.90 | |
| KPU All Energy | | | | | 8.20 |
| Total Monthly Charge (Winter) | | | | | |
| 10,000 kWh, 25kW | \$ 897.50 | \$ 956.50 | 843.00 | 1,100.75 | 837.00 |
| 50,000 kWh, 115 kW | 4,613.50 | 4,816.50 | 3,724.60 | 5,325.25 | 4,355.50 |
| 100,000 kWh, 225 kW | 9,252.50 | 9,631.50 | 7,299.00 | 9,666.25 | 8,747.00 |



APPENDIX D

Proposed Rate Schedules

**City & Borough of Sitka
Electric Department
Sitka, Alaska**

**Schedules for Electric Service
Within the City of Sitka**

Draft _____, 2004

Schedule 1

Residential

Applicable to:

Residential consumers with a 15 minute interval average demand less than 25 kW.

Character of service:

Continuous – alternating current 60 cycles 120/240 or 120/208 volts single phase.
Characteristics depend upon available circuits.

Rate per month:

Minimum Charge: \$21.90

Energy charge:

| | |
|----------------------------|------------------------------|
| 0 to 200 kilowatthours | 14.60 cents per kilowatthour |
| 201 to 1,000 kilowatthours | 8.25 cents per kilowatthour |
| over 1,000 kilowatthours | 9.45 cents per kilowatthour |

Demand charge: None

Schedule 2

General Service

Applicable to:

All non-residential, non-boat/harbor consumers.

Character of service:

Continuous – alternating current 60 cycles 120/208 or 277/480 volts single phase or three phase. Characteristics depend upon available circuits.

Rate per month:

Minimum Charge: \$21.90

Energy charge:

| | |
|---------------------------------|------------------------------|
| 0 to 500 kilowatthours | 14.60 cents per kilowatthour |
| 501 to 10,000 kilowatthours | 9.30 cents per kilowatthour |
| 10,001 to 100,000 kilowatthours | 8.75 cents per kilowatthour |
| over 100,000 kilowatthours | 8.70 cents per kilowatthour |

Demand charge:

| | |
|--------------------|--|
| First 25 kilowatts | no charge |
| Over 25 kilowatts | \$ 4.00 per kilowatt of average demand over a 15 minute interval |

Schedule 3

Boat/Harbor Service

Applicable to:

Boats and harbor consumers with a 15 minute interval average demand less than 25 kW.

Character of service:

Continuous – alternating current 60 cycles 120/208 or 277/480 volts single phase or three phase. Characteristics depend upon available circuits.

Rate per month:

Minimum Charge: \$21.90

Energy charge:

 0 to 150 kilowatthours 14.60 cents per kilowatthour

 over 150 kilowatthours 9.80 cents per kilowatthour

Demand charge: None

APPENDIX E

Rate Schedules in Effect Prior to 2004 Electric Rate Study

JOHN - 2 PAGES
 SITKA'S CURRENT
 RATES
 checked
 7-18-03

CITY AND BOROUGH OF SITKA

ORDINANCE NO. 03-1733

**AN ORDINANCE OF THE CITY AND BOROUGH OF SITKA, ALASKA
 AUTHORIZING AN INCREASE IN ELECTRIC USER FEES**

BE IT ENACTED by the Assembly of the City and Borough of Sitka, Alaska as follow:

1. **CLASSIFICATION.** This ordinance is not of a permanent nature and is not intended to become a part of the Sitka General Code.

2. **SEVERABILITY.** If any provision of this ordinance or any application thereof to any person or circumstance is held invalid, the remainder of this ordinance and application thereof to any person or circumstances shall not be affected thereby.

3. **PURPOSE.** The purpose of this ordinance is to authorize an increase in electric user fees to be effective with the first billing cycle starting after July 1, 2003. The debt payment ratio to adjusted net income would not exceed the 1.25 ratio that is within the bond covenants without an adjustment to the electric user fees.

4. **ENACTMENT.** The Assembly of the City and Borough of Sitka hereby authorizes an increase in electric user fees in accordance with Section 3.01 of the Charter of the City and Borough of Sitka, Alaska. In accordance with Section 3.01 of the Charter of the City and Borough of Sitka, Alaska the following electric user fees are hereby established:

| USAGE CLASS | kwh USAGE | RATE |
|-------------|---------------------------|-------------------|
| Residential | First 200 kwh | \$0.13750 per kwh |
| | Next 800 kwh | \$0.07750 per kwh |
| | Next 1000 kwh | \$0.08750 per kwh |
| | Over 2000 kwh | \$0.09750 per kwh |
| | Minimum \$20.63 Per Month | |
| Commercial | First 500 kwh | \$0.13750 per kwh |
| | Next 500 kwh | \$0.08250 per kwh |
| | Over 1000 kwh | \$0.08750 per kwh |
| | Minimum \$20.63 Per Month | |

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Governmental

First 500 kwh

\$0.13750 per kwh

Next 500 kwh

\$0.08250 per kwh

Over 1000 kwh

\$0.08750 per kwh

Minimum \$20.63 Per Month

Boat/Harbor

First 150 kwh

\$0.13750 per kwh

Over 150 kwh

\$0.09250 per kwh

Minimum \$20.63 Per Month

EXPLANATION:

An increase in electric user fees is required in order to increase the profitability and positive cash flow of the City and Borough of Sitka Electric Enterprise Fund. The increase in user fees will also maintain the 1.25 bond debt ratio that is required within the covenants that the City and Borough of Sitka agreed to upon the issuance of Electric Revenue Bonds. The ordinance formalizes proposed electric user fee increases discussed in Fiscal Year 2004 Budget Work Sessions.

5. **EFFECTIVE DATE.** This ordinance shall become effective for the first billing cycle after July 1, 2003.

PASSED, APPROVED, AND ADOPTED by the Assembly of the City and Borough of Sitka, Alaska this 10th day of June, 2003.



Fred Reeder, Mayor

ATTEST:


Colleen Pellett, CMC
Municipal Clerk