Adopted
Cost of Service and Cost Allocation Report

2013–2014

Seattle City Light
December 2012

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Chapter 1: Introduction

The Cost of Service and Cost Allocation Report, or COSACAR details the costs of providing service to City Light customers and describes the Cost of Service Model (COSM) that is used to allocate revenue requirements to each customer class. Cost of service is the second step of a full three-step rate review process comprised of a revenue requirement analysis, a cost of service analysis, and a rate design.

The cost of service analysis allocates revenue requirements among classes starting with each class's share of the cost of providing service. It is a zero-sum game; revenue requirement not assigned to one class must be assigned to some other class(es). This process is repeated for each rate test year, 2013 and 2014.

1.1 Framework of the Analysis

The basic methodology used in this cost of service analysis is the same as the one used since 1980. That framework has the following features:

- In making its cost of service determination, City Light uses a marginal cost framework that measures the change in cost to the Department and society resulting from a change in the number of customers within a customer class and from a change in load on the system by class.

- Time differentiation of costs is used, corresponding to when the cost of providing energy to City Light's customers is more expensive versus less expensive.

There are two types of costs referenced in the title Cost of Service and Cost Allocation Report. The first, Cost of Service, refers to costs that the Department or society at large sees in doing business and providing services, for example, direct costs of power plus costs to society for water and air pollution in producing power. The second, Cost Allocation, refers to the revenue requirements to be recovered from retail customers. These revenue requirements are the costs that the retail customers see. As will be explained in detail below, costs seen by the Department or society associated with serving individual classes of customers are used in a process to allocate the revenue requirements among the individual rate classes. Though the two kinds of costs are related, they are not identical.

Before cost of service shares are determined, the revenue requirement is functionalized, or "unbundled". In this step, the revenue requirements are separated into functional cost categories such as energy, various distribution services, and customer service.

The COSM estimates the cost of providing service to each class, sums the results over all classes, and computes the share of total cost for each class. Those shares for all the classes are used to allocate the revenue requirements. After this initial allocation of revenue requirements by cost shares, adjustments reflecting franchise city agreements and policy directives are incorporated.

The various marginal costs are separated into seven major categories, two of which are further separated into network and non-network subgroups. Marginal cost shares by customer class for each of these individual cost categories are used to allocate the functionalized revenue requirements and the cost shares of the total of all marginal costs is used to allocate the revenue requirement associated with rate relief to low-income residential customers.

1.2 Organization of the Report

There are eleven chapters in the Adopted Cost of Service and Cost Allocation Report 2013-2014. This first chapter is introductory material. Chapter 2 presents background and details on the functionalization of the revenue requirements. A summary of the analysis of the allocation of these functionalized revenue requirements and some additional adjustments are presented in Chapter 3.

A review of the policy framework governing the cost of service is presented in Chapter 4. The fifth chapter gives an overview of the cost of service methodology and a short statement about the marginal values of energy by costing periods used in attaching value to the electricity used by different customer classes. Chapter 6 summarizes loads in terms of the patterns of energy use that correspond to the costing periods for each of the different customer classes. These patterns of use are referred to as time-of-use estimates. Chapter 6 also presents estimates of energy losses associated with serving the loads, as well as number of meters by major customer class. Chapter 7 presents estimates of the planning values for energy and transmission cost which, together, along with the load plus loss data in the previous chapter, determine energy cost shares to allocate energy-related revenue requirements.

Details about calculating the marginal cost by customer class for various components of distribution and customer costs are presented in Chapters 8 and 9, respectively. Chapter 10 presents a summary of all the marginal cost shares and, then, the initial allocation of revenue requirements based on those shares. Chapter 11 presents final adjustments including those associated with the franchise agreements. The final results from Chapter 11 are summarized in Chapter 3.

Chapter 2: Unbundled (Functionalized) Revenue Requirements

The revenue requirement is developed in the Department's financial planning model which creates cash flow, net income, balance sheet and other types of financial projections. For purposes of the Cost of Service Model (COSM), data in these financial planning reports need to be converted into revenue requirements that are assigned to functionalized categories such as energy, distribution, customer service and low-income assistance, including various sub-components of these categories. The conversion process is also known as "unbundling" the revenue requirements because an alternative would be to "bundle" the revenue requirement into one single dollar amount, as was the case prior to 1997. City Light has been unbundling the customer revenue requirement since the 1997/98 rate review.

The unbundling of revenue requirements for 2013/2014 follows the same methodology as that used in the 2007/2008 rate review, with a couple of minor exceptions related to streetlights and the historical years upon which forecasted expenses are based. The allocation of revenue requirements to streetlights was modified to avoid assigning them certain miscellaneous distribution expenses which have no relationship to the cost of operating and maintaining streetlights, and also to account for the lower streetlight O&M expense expected in the future as City Light converts high-pressure sodium lights to more efficient light-emitting diode lights (LEDs). Rather than base O&M expenses on percentages from one historical year, as in the past, the average of the years 2010 and 2011 are used in order to mitigate year-to-year differences.

Net wholesale revenue is allocated in the same manner as in the 2007/2008 rate case, but it is a much smaller amount than before. As a result, it acts as less of an offset to functionalized expenses than it did in the 2007/2008 unbundling process.

2.1 Overview of Unbundled Revenue Requirements

The unbundled revenue requirements for 2013 and 2014 are shown below.

Table 2.1.a
Unbundled 2013 Revenue Requirements

	Total	Net Direct Expenses	Depreciation & Amortization Net of Capital Cont. & Grants	Interest	Admin. and General	Rev. Taxes & County Payments	Net Income
Total Energy	**$471,863,799**	**$287,941,412**	**$41,428,425**	**$38,864,288**	**$17,819,498**	**$50,600,370**	**$35,209,806**
Power	383,517,947	248,893,750	24,977,582	27,196,473	14,942,528	41,904,959	25,602,654
Conservation	38,952,547	1,712,396	17,783,798	8,301,693	874,015	3,445,120	6,835,524
Transmission-Long Distance	49,393,306	37,335,266	(1,332,955)	3,366,122	2,002,954	5,250,291	2,771,628
Total Retail Services	**$329,170,401**	**$102,951,828**	**$42,059,485**	**$57,342,499**	**$49,356,705**	**$30,244,692**	**$47,215,193**
Total Distribution	255,473,689	59,039,534	38,390,510	56,887,226	31,936,469	22,379,625	46,840,325
Transmission-In Service Area	*15,918,360*	*3,542,189*	*4,686,775*	*2,548,246*	*1,560,496*	*1,482,457*	*2,098,198*
Stations	*43,126,317*	*17,783,046*	*4,747,617*	*3,548,913*	*9,811,994*	*4,312,611*	*2,922,136*
Wires and Related Equipment	*140,316,555*	*24,921,629*	*18,321,546*	*38,996,276*	*14,360,827*	*11,607,165*	*32,109,111*
non-network	*98,358,349*	*20,347,997*	*11,735,366*	*24,978,000*	*12,385,829*	*8,344,542*	*20,566,615*
network	*41,958,206*	*4,573,632*	*6,586,180*	*14,018,276*	*1,974,998*	*3,262,624*	*11,542,496*
Transformers	*30,413,925*	*4,889,565*	*6,500,699*	*7,922,529*	*2,015,116*	*2,562,690*	*6,523,325*
non-network	*14,449,988*	*748,367*	*3,845,140*	*4,686,147*	*175,688*	*1,136,122*	*3,858,523*
network	*15,963,937*	*4,141,198*	*2,655,559*	*3,236,382*	*1,839,428*	*1,426,568*	*2,664,802*
Meters	*14,305,175*	*3,866,345*	*2,432,332*	*2,163,581*	*2,718,058*	*1,343,389*	*1,781,469*
Streetlights/Floodlights	*11,393,357*	*4,036,760*	*1,701,541*	*1,707,681*	*1,469,977*	*1,071,312*	*1,406,086*
Customer Accounts & Services	61,212,298	33,240,474	3,589,585	445,422	17,043,297	6,526,762	366,756
Low-Income Assistance	12,484,415	10,671,819	79,389	9,851	376,939	1,338,305	8,111
Total	**$801,034,200**	**$390,893,240**	**$83,487,910**	**$96,206,787**	**$67,176,202**	**$80,845,062**	**$82,424,999**
Load (MWh)	9,654,834						
Average Cost per MWh	$82.97	$40.49	$8.65	$9.96	$6.96	$8.37	$8.54
Percent of Total Cost	100.0%	48.8%	10.4%	12.0%	8.4%	10.1%	10.3%
Net Wholesale Revenue	(90,000,000)						
Retail Revenue Requirement	**$711,034,200**						

Table 2.1.b
Unbundled 2014 Revenue Requirements

	Total	Net Direct Expenses	Depreciation & Amortization Net of Capital Cont. & Grants	Interest	Admin. and General	Rev. Taxes & County Payments	Net Income
Total Energy	**$504,529,004**	**$295,165,637**	**$47,672,570**	**$37,962,588**	**$17,726,896**	**$54,142,310**	**$51,859,004**
Power	410,516,394	255,926,343	26,191,039	26,985,524	14,864,877	44,539,831	42,008,781
Conservation	40,059,714	1,705,667	19,403,691	7,581,602	869,473	3,695,961	6,803,320
Transmission-Long Distance	53,952,895	37,533,626	2,077,841	3,395,462	1,992,545	5,906,518	3,046,904
Total Retail Services	**$336,392,837**	**$104,296,550**	**$40,706,235**	**$58,357,584**	**$49,100,214**	**$31,565,317**	**$52,366,938**
Total Distribution	259,490,416	59,212,384	36,901,303	57,168,767	31,770,505	23,137,297	51,300,159
Transmission-In Service Area	*15,791,657*	*3,239,221*	*4,618,983*	*2,573,435*	*1,552,386*	*1,498,371*	*2,309,261*
Stations	*44,466,195*	*18,253,382*	*5,001,496*	*3,565,655*	*9,859,861*	*4,586,174*	*3,199,626*
Wires and Related Equipment	*144,713,842*	*25,472,433*	*18,297,088*	*39,180,247*	*14,430,339*	*12,175,501*	*35,158,234*
non-network	*101,331,093*	*20,790,637*	*11,719,700*	*25,095,838*	*12,446,533*	*8,758,737*	*22,519,647*
network	*43,382,749*	*4,681,796*	*6,577,388*	*14,084,409*	*1,983,806*	*3,416,763*	*12,638,587*
Transformers	*29,194,092*	*5,013,600*	*4,603,030*	*7,959,905*	*2,024,090*	*2,450,679*	*7,142,788*
non-network	*13,643,832*	*764,715*	*2,722,675*	*4,708,255*	*176,480*	*1,046,773*	*4,224,933*
network	*15,550,260*	*4,248,884*	*1,880,354*	*3,251,650*	*1,847,610*	*1,403,907*	*2,917,855*
Meters	*14,830,333*	*3,978,899*	*2,562,299*	*2,173,788*	*2,733,317*	*1,431,389*	*1,950,640*
Streetlights/Floodlights	*10,494,297*	*3,254,849*	*1,818,408*	*1,715,737*	*1,170,512*	*995,182*	*1,539,609*
Customer Accounts & Services	63,671,577	33,827,288	3,722,600	1,163,093	16,954,728	6,960,171	1,043,697
Low-Income Assistance	13,230,844	11,256,877	82,331	25,724	374,980	1,467,849	23,083
Total	**$840,921,841**	**$399,462,186**	**$88,378,805**	**$96,320,172**	**$66,827,109**	**$85,707,627**	**$104,225,942**
Load (MWh)	9,746,397						
Average Cost per MWh	$86.28	$40.99	$9.07	$9.88	$6.86	$8.79	$10.69
Percent of Total Cost	100.0%	47.5%	10.5%	11.5%	7.9%	10.2%	12.4%
Net Wholesale Revenue	(85,000,000)						
Retail Revenue Requirement	**$755,921,841**						

The unbundling analysis takes its primary information from City Light's financial model. Other information used in the analysis includes non-administrative O&M labor hours by FERC account, depreciation and amortization schedules, and work order and accounting records. The latter information is used to assign and allocate expenses to functional categories.

There are two primary categories of expense within the functionalized revenue requirement analysis: direct expenses and assigned/allocated expenses. Direct expense is O&M and related revenue offsets. In the case of Transmission and Distribution, direct

expense is allocated to the sub-functions within these major functions. Assigned expenses include amortization, depreciation and county payments (in lieu of taxes) applied to one function. Allocated expenses are those expenses that are apportioned among multiple functions and sub-functions. Allocated expenses include general plant depreciation, contributions and grants, interest, administrative and general expense, taxes and net income. The basis for allocations is explained below.

A detailed comprehensive table of the functionalized revenue requirements that add up to the unbundled summary tables 2.1.a and 2.1.b is included in Appendix 1.

2.2 Direct Expenses (Net)

Direct expenses are O&M expenses that are directly incurred in providing City Light's services under each functional category. In some categories they are modified by revenue offsets.

Power Expenses (Energy Generation and Power Purchases)

Direct generation expenses include the costs of running City Light's seven hydroelectric plants (Boundary, Ross, Diablo, Gorge, Cedar Falls, Newhalem, and South Fork of the Tolt), as well as system control and dispatch expenses. Direct purchased power expenses include City Light's costs of buying long-term power from BPA, Lucky Peak, the High Ross Contract, the Grand Coulee Project, the State Line Wind Project and other projects.

Other direct expenses and offsets in this category include:

- Basis purchases and sales (paired power purchase and sale transactions at different locations at the same time at prices based on the difference in market value of energy at two locations).

- Other power costs, such as expenses associated with City Light's automated system control center, checking the metering apparatus associated with power purchases, and contract and environmental expenses.

- Other power revenues, such as the sale of capacity and RECs (environmental benefits of energy generated from green resources), sales to Pend Oreille PUD under Article 49 of the Boundary Project license, sales from the Priest Rapids Project (per contracts with Grant County PUD No. 1), and seasonal energy exchange deliveries.

Direct Generation and Purchased Power expenses and cost offsets are summarized in **Table 2.2**.

Table 2.2
Direct Expense: Power

	2013	2014
Generation O&M	$35,155,634	$35,620,494
Long-Term Purchased Power	227,993,759	235,389,834
Power-Related Wholesale Purchases	7,810,885	7,907,753
Other Power Costs	10,626,767	10,353,539
Article 49 Sales to Pend Oreille County	(1,799,799)	(1,842,094)
Sales from Priest Rapids	(4,400,000)	(4,800,000)
Seasonal Exchange Delivered	(3,450,873)	(3,612,868)
SMUD Exchange Revenue	(6,504,810)	(6,781,497)
Power-Related Wholesale Sales	(16,537,814)	(16,308,818)
Total	$248,893,750	$255,926,343

Conservation

Conservation is treated as an energy resource by City Light. It has been City policy since 1982 to avoid new physical resource costs by funding cost-effective conservation. All customers benefit because new (higher) resource costs are avoided. Costs of installed conservation measures are amortized over 20 years; therefore, direct conservation expenses include only annual planning, management, and customer information and assistance costs. Fees received from operation of the lighting lab are netted against these expenses. Revenues received from retail customers who make voluntary payments in support of City Light's GreenUp and Community Solar programs are also netted against direct conservation expenses because they offset the expense of acquiring local renewable energy resources. Conservation direct expense amounts are shown in **Table 2.3.**

Table 2.3
Direct Expense: Conservation

	2013	2014
Conservation	$4,813,845	$4,868,701
Operating Fees (Lighting Lab)	(300,000)	(300,000)
GreenUp & Community Solar Revenue	(2,801,449)	(2,863,034)
Total	$1,712,396	$1,705,667

Long-Distance Transmission

Transmission O&M expense is split between long-distance and in-service-area lines on the basis of actual 2010 and 2011 expenses recorded in FERC accounts. In most cases, FERC account names indicate whether the O&M should be one or the other. However, in a few cases (e.g., supervisory and engineering, load dispatching, and other expenses related to other sub-functions), expenses had to be allocated between the two transmission components; transmission labor hour percentages in 2010 and 2011 were used for this purpose. The result is that 58.6% of forecasted transmission O&M expense is allocated to long-distance transmission, while 41.4% goes to in-service-area transmission. The long-distance portion below, however, is shown net of Puget Intertie and Puget Stillwater Substation amortization, since these amounts are included in the amortization category of costs.

Direct expenses of long-distance transmission include the costs of operating and maintaining City Light's own transmission facilities, payments for the operation and maintenance of the utility's share of BPA's Third AC Intertie to the Southwest, and payments to other entities for transmitting power across their high voltage lines (called "wheeling"). These expenses are reduced by expected revenues from:

- Transmission services, which are all assigned to the long-distance sub-function because they are derived from wheeling to the North Mountain Substation of Snohomish PUD, miscellaneous wheeling, and City Light's contractual reassignment of its share of the Third AC Intertie to third parties.

- A portion of rental revenue for transmission line attachments and cellular antenna sites, allocated to both transmission functions by average 2010-2011 O&M percentages.

Expenses of City Light's own transmission include those associated with transmission load dispatching, switching stations, inspecting and testing lines, and engineering. City Light's long-distance transmission facilities include lines that come from the Skagit projects to the Department's service area and lines associated with Cedar Falls, Boundary the North Mountain Substation, and the South Fork Tolt plant, BPA connections, and Bothell-to-Renton lines. Wheeling payments cover transmission from the Boundary project, Lucky Peak, Grand Coulee and smaller projects across BPA lines and lines owned by other utilities.

Direct long-distance transmission expenses and revenue offsets are summarized below:

Table 2.4
Direct Expense: Long-Distance Transmission

	2013	2014
Transmission O&M	$6,571,263	$6,183,560
Wheeling	36,831,989	37,465,677
Transmission Services	(4,417,226)	(4,423,206)
Transmission Attachments & Cell Sites	(1,650,760)	(1,692,405)
Total	$37,335,266	$37,533,626

In-Service-Area Transmission

As discussed above, transmission has been separated into two components in this unbundling analysis. In-service-area transmission is included in the Retail Services category of expense.

Direct expenses of in-service-area transmission include the costs of operating and maintaining the transmission facilities associated with the Bothell and Beacon Hill switching stations, the Covington and Talbot Hill substations, Maple Valley to South Substation and South Renton to Duwamish substation facilities, Duwamish to Delridge and Delridge to South substation facilities, Bothell to Seattle lines, all underground transmission lines and equipment, and a few smaller transmission substations and lines. These expenses are reduced by allocated rental revenues from transmission line

attachments and cellular antenna sites. Expenses of in-service-area transmission include transmission load dispatching, switching stations, inspecting and testing lines, and engineering. Direct in-service-area transmission expenses are summarized below.

Table 2.5
Direct Expense: In-Service-Area Transmission

	2013	2014
Transmission O&M	$4,707,039	$4,433,459
Transmission Attachments & Cell Sites	(1,164,850)	(1,194,237)
Total	$3,542,189	$3,239,221

Distribution

Direct distribution expenses cover the costs of operating and maintaining the Department's distribution system, i.e., the lower voltage lines and associated equipment that bring energy to homes and businesses within the utility's service area. Expenses associated with distribution load dispatching and substations, overhead and underground lines, public lighting, meters, poles, vaults, ducts and transformers are included.

In the unbundled analysis, the direct expense for Distribution is allocated among five sub-functions: Stations, Wires and Related Equipment (Wires), Transformers, Meters, and Streetlights/Floodlights (Lights). The initial allocation of forecasted Distribution O&M expense prior to revenue offsets is carried out based on actual 2010 and 2011 expenses and labor hours recorded in FERC accounts.

Most of the Distribution FERC accounts already carry titles that relate directly to the five sub-functions. Some, however, must be allocated among the components. These accounts are allocated on the basis of 2010 and 2011 labor hours. Load dispatching is allocated to all categories except Meters and Lights, because no load dispatching work deals with these two sub-functions. General distribution expenses in the categories of supervision and engineering, apprenticeship programs, safety, and tools are allocated to all sub-functions. Other miscellaneous distribution expense is allocated to all sub-functions except lights.

Future distribution expenses allocated to lights are reduced from the amount they would be allocated based on 100% of 2010 and 2011 direct expenses for Streetlights/Floodlights because they are expected to be less expensive to maintain after being converted to light-emitting diode type of lights (LEDs). Another way to say this is that the 2010-2011 O&M expenses reflected in FERC accounts do not represent future O&M for lights. Since City Light expects that the saved distribution O&M related to lights will be redirected to other distribution O&M work, the saved O&M is allocated among the other Distribution sub-functions in the same proportions used to allocate other miscellaneous distribution expense. Based on the assumption that these savings will increase as more LEDs are installed, the percent of direct Streetlights/Floodlights expenses allocated to other distribution sub-functions increases slightly between 2013 and 2014. Because of this, the percentages used to allocate total direct O&M expenses for distribution among its sub-functions differ slightly for 2013 and 2014.

In 2013, 27.2% of total direct distribution O&M expense is allocated to Stations, 54.9% to Wires, 6.5% to Transformers, 5.6% to Meters and 5.8% to Lights. In 2014, 27.6% is allocated to Stations, 55.5% to Wires, 6.6% to Transformers, 5.7% to Meters and 4.6% to Lights,

Two distribution sub-functions have revenue offsets to O&M expense:

- Stations: O&M expense is offset by gains on the sale of distribution substation properties.

- Wires: O&M expense is offset by property rental and damages revenue, construction charge revenue, pole attachment revenue, revenue from customers who pay a penalty for having a low power factor, revenue from customers who pay a reserved distribution capacity charge, and other O&M revenue (mostly for equipment maintenance).

One distribution sub-function, Transformers, includes an additional expense for transformer investment discounts. Bills for customers that own their transformers are calculated initially as if all customer transformers were owned by City Light. However, these customers receive a discount on their bill and this discount adds a direct expense to the transformer sub-function. Direct distribution expenses and offsets are summarized below.

Table 2.6
Direct Expense: Distribution

	2013	2014
Distribution O&M-Stations	$18,884,029	$19,380,976
Gain on Sale of Distribution Assets	(1,100,983)	(1,127,593)
Subtotal Stations	$17,783,046	$18,253,382
Distribution O&M-Wires and Related Equipment	$38,187,744	$39,035,997
Property Rental Income	(1,351,676)	(1,383,964)
Revenue from Damage	(1,635,031)	($1,676,279)
Other O&M Revenue	(5,331,984)	($5,466,516)
Construction (Installation) Charge Revenue	(11,264)	($11,533)
Pole Attachment Revenue	(2,122,979)	($2,176,537)
Distribution Capacity Charge	(213,586)	($218,398)
Power Factor Revenue	(2,599,595)	(2,630,337)
Subtotal Wires	$24,921,629	$25,472,433
Distribution O&M-Transformers	$4,536,394	$4,652,665
Credits for Customer-Owned Transformers	353,171	360,935
Subtotal Transformers	$4,889,565	$5,013,600
Distribution O&M-Meters	$3,866,345	$3,978,899
Distribution O&M-Streetlights/Floodlights	$4,036,760	$3,254,849
Total	$55,497,346	$55,973,163

Customer Accounts and Services

Direct expenses in this category cover meter reading, records and collections, uncollectible accounts, and customer information and assistance (except amounts related to conservation and low-income assistance). These expenses are reduced by revenue from late payment fees and account change fees, detecting and reducing current diversion and unpermitted house rewires and charging penalty fees to enforce their elimination, no longer allowing flat-rate billing, miscellaneous equipment rentals, and reconnect charges. Customer Accounts and Services expenses are summarized below.

Table 2.7
Direct Expense: Customer Accounts and Services

	2013	2014
Customer Accounting and Advisory O&M	$41,125,978	$41,908,671
Late Payment Fees	(3,742,849)	(3,835,180)
Account Change Fee Revenue	(1,529,349)	(1,567,582)
Revenue from Current Diversion, Un-Permitted House Rewires and No Longer Allowing Flat-Rate Billings	(2,156,369)	(2,210,769)
Revenue from Miscellaneous Rentals	(196,659)	(201,356)
Revenue from Reconnect Charges	(260,278)	(266,496)
Total	$33,240,474	$33,827,288

Low-Income Assistance

The City's low-income assistance policies provide reduced electric rates, bill payment assistance, and fee waivers for qualified low-income residential customers. The direct expenses for this category include estimated O&M expenses related to low-income activities charged under Customer Accounts and Services (e.g., credit, collections and the work of customer service representatives). The O&M applicable to the low-income function is estimated based on 2010 and 2011 labor hours devoted to low-income activities, as a percent (2.06%) of all labor hours in the Customer Accounts and Services function before subtraction of Conservation and Low-Income hours. Other elements of the revenue requirement included in the low-income direct expense category are revenues foregone for the rate discount and account change fee waivers, contributions from City Light's low-income account for bill payment assistance, and administrative costs paid by City Light to the Human Services Department (HSD). Income from late payment fees offsets the foregoing expenses. Direct low-income assistance expenses are shown **Table 2.8**.

Table 2.8
Direct Expense: Low-Income Assistance

	2013	2014
Low-Income Assistance O&M	$921,682	$939,267
Rate Discount	9,057,430	9,606,146
Bill Payment Assistance from Low-Income Account	285,863	292,625
HSD Administration Payments	508,651	520,109
Account Change Fee Waiver	39,217	40,197
Late Payment Fees	(141,024)	(141,467)
Total	$10,671,819	$11,256,877

2.3 Assigned and Allocated Expenses

Depreciation

Depreciation is a gradual reduction in the book value of a physical asset. Assets are depreciated over their useful lives and the associated expense is charged against income each year. Depreciation categories include production plant, transmission plant, distribution plant, and general plant. For future years, the projected depreciation amount includes the depreciation associated with forecasted additions to capital plant.

Depreciation amounts associated with production, transmission and distribution plant are assigned directly to these categories. Depreciation amounts related to transmission and distribution are further disaggregated into unbundled categories based on the 2011 depreciation provisions in City Light's accounting records.

The following table shows the breakdown of production, transmission and distribution plant depreciation.

Table 2.9
Production, Transmission and Distribution Plant Depreciation

	2013	2014	Percent
Production	$14,638,145	$15,044,672	20.2%
Transmission	6,750,055	6,598,412	9.3%
Long-Distance Transmission	2,574,403	2,516,568	3.5%
In-Service-Area Transmission	4,175,652	4,081,844	5.8%
Distribution	51,192,343	54,153,346	70.5%
Stations	3,745,704	3,962,359	5.2%
Wires and Related Equipment	36,495,928	38,606,880	50.3%
Transformers	7,072,874	7,481,974	9.7%
Meters	1,916,581	2,027,438	2.6%
Streetlights/Floodlights	1,961,256	2,074,696	2.7%
Total	$72,580,544	$75,796,430	100.0%

General Plant depreciation was allocated to production and purchased power (power), conservation, transmission, distribution, customer accounts and services, and low-income assistance based on analysis of the items in the general plant depreciation schedule. The following assignments or allocations were made from this schedule:

- Microwave communications equipment and Skagit general plant – assigned to Production because the microwave equipment is used generally to control generation and because the Skagit project is a series of generation facilities.

- System Control Center – allocated to production, purchased power, transmission and distribution according to 2011 labor hour percentages.

- Customer service software (Banner and automated meter reading) – assigned to Customer Accounts and Services.

- Distribution training site, software and monitoring equipment – assigned to Distribution.

- Stores (shops and pole yards, tools, transportation equipment, materials management systems) – allocated to Production, Transmission and Distribution according to 2011 labor hour percentages.

- Office buildings and furniture, internally developed software, Summit financial system, and data processing, communications and miscellaneous equipment – allocated to all functions based on 2011 non-A&G labor hours, on the assumption that depreciation expense for these items is analogous to Administrative & General expenses, for which the non-A&G labor hour allocation procedure was also used.

General Plant depreciation amounts allocated to the principal functions are shown below.

Table 2.10
General Plant Depreciation Allocations

	2013	2014	Percent
Power (Production and Purchased Power)	$5,644,774	$5,853,945	22.8%
Conservation	184,081	190,903	0.7%
Transmission	1,515,276	1,571,446	6.1%
Long-Distance Transmission	577,911	599,334	2.3%
In-Service-Area Transmission	937,365	972,112	3.8%
Distribution	13,775,823	14,286,276	55.6%
Stations	1,007,966	1,045,316	4.1%
Wires and Related Equipment	9,821,028	10,184,939	39.6%
Transformers	1,903,305	1,973,831	7.7%
Meters	515,751	534,861	2.1%
Streetlights/Floodlights	527,773	547,329	2.1%
Customer Accounts and Services	3,589,585	3,722,600	14.5%
Low-Income Assistance	79,389	82,331	0.3%
Total	$24,788,929	$25,707,501	100.0%

Functionalized depreciation amounts after addition of General Plant depreciation are shown below.

Table 2.11
Depreciation Including General Plant Allocation

	2013	2014
Power	$20,282,919	$20,898,617
Conservation	184,081	190,903
Transmission	8,265,331	8,169,858
Long-Distance Transmission	3,152,314	3,115,901
In-Service-Area Transmission	5,113,017	5,053,956
Distribution	64,968,166	68,439,622
Stations	4,753,671	5,007,674
Wires and Related Equipment	46,316,956	48,791,819
Transformers	8,976,179	9,455,805
Meters	2,432,332	2,562,299
Streetlights/Floodlights	2,489,028	2,622,025
Customer Accounts and Services	3,589,585	3,722,600
Low-Income Assistance	79,389	82,331
Total	$97,369,473	$101,503,931

Amortization

Amortization is a gradual reduction in the book value of an intangible asset, or of an amount contributed by City Light to a tangible asset which is owned by another entity (e.g., the Puget Intertie). The value of such assets is amortized over a certain time period and the associated expense is charged against income each year. The amortization expense related to various City Light assets is assigned to related functional categories for purposes of unbundling the revenue requirements. These include:

- Power – Deferred O&M costs related to mitigation of environmental impacts associated with the 1995 relicensing of City Light's Skagit River projects and expected 2012 relicensing of the Boundary project, as well as fish habitat restoration at the Skagit and Tolt facilities in compliance with the federal Endangered Species Act. The contribution to the Skagit Environmental Endowment made by City light under the terms of the High Ross Contract is also included.

  The High Ross contract refers to the 1984 agreement between City Light and the Canadian Province of British Columbia, whereby City Light agreed not to raise the height of Ross Dam on the Skagit River (which would have flooded Canadian land) and the Province agreed to provide energy to City Light in exchange for payments approximating the cost of the proposed addition to the dam. In 2000, City Light began deferring $9.1 million of the annual $21.8 million payments over the period through 2035. At the same time, City Light began amortizing some of the costs associated with the High Ross contract.

  In order to comply with current accounting standards, City Light accountants reclassified Skagit, Boundary and Tolt relicensing environmental mitigation from Deferred O&M to General Plant at the end of 2010, and actual expenses and account balances recorded in the financial statements for 2010 and 2011 reflect this reclassification. In the budget, Boundary will be reclassified as a capital improvement project (CIP) in 2013 and Skagit and Tolt will be reclassified in 2014.

The financial forecast for this rate case does not yet reflect any of these reclassifications. It will be updated to reflect them whenever budgeted CIP is revised to take these reclassifications into account.

- Conservation – Costs of installed conservation measures are amortized over 20 years. Examples include installations under the Home Energy Loan Program, the Low-Income Electric Program, the Multifamily Conservation Program, the Smart Business Program, the Energy Smart Design Program and the Residential Efficient Lighting Program. The costs are offset by conservation credits and payments made to City Light by BPA.

- Long-Distance Transmission – Amortization associated with the Puget Stillwater Substation, which is used to transmit South Fork of the Tolt output via Puget Sound Energy facilities to City Light's service area.

Amortized expenses and offsets assigned to functions are shown below.

Table 2.12
Amortization

	2013	2014
Power		
Hydro Project Mitigation	$4,454,941	$5,054,906
High Ross Contract	347,404	347,404
Conservation		
Programmatic Conservation	17,925,292	19,739,197
BPA Payments for Conservation	(325,575)	(526,409)
Long-Distance Transmission		
Puget Stillwater Substation	99,286	99,286
Total	$22,501,348	$24,714,384

Contributions in Aid of Construction (CIAC) and Grants

Customers that install new electrical service or that upgrade their existing service pay installation charges that reimburse City Light for part of the cost of equipment and hookup. Customers also pay the capital cost of non-standard service that they request, such as an underground service or a second feeder. When large customers have buildings or other facilities under construction that require City Light to relocate or replace the utility's feeders or other equipment, the customers must also reimburse the utility for these costs. Some government agencies provide grants to cover costs of a requested project.

Nearly all forecasted contributions in 2013 and 2014 come from transmission and distribution projects. A small amount is also received from generation projects. These contributions are assigned to a sub-function, where appropriate, or allocated between sub-functions of a major function by percentages of forecasted depreciation in the sub-functions. Depreciation is used as the allocator because contributions are capitalized. **Table 2.13** summarizes information about contributions in aid of construction and grant revenues.

Table 2.13
Contributions and Grant Revenues

	2013	2014
Power	$107,683	$109,888
Transmission	5,010,798	1,572,320
Long-Distance Transmission	4,584,556	1,137,347
In-Service-Area Transmission	426,242	434,974
Distribution	31,264,431	36,157,302
Stations	6,054	6,178
Wires and Related Equipment	27,995,410	30,494,731
Transformers	2,475,480	4,852,775
Streetlights/Floodlights	787,487	803,617
Total	$36,382,911	$37,839,510

Interest

This expense category includes interest accrued on first- and second-lien debt and amortization of debt expenses, with an offset from interest earnings. Interest was allocated to all functional categories of expense based on the book value of plant and other deferred debits in those categories as of the end of 2011. Book values include shares of General Plant in all functional categories, computed as described under Depreciation, as well as the assignment of the book value of deferred debits to a related function. The latter include assignment of: unamortized hydro project relicensing, High Ross and Skagit endowment to Production and Purchased Power (Power), unamortized programmatic conservation measures to Conservation, and unamortized Puget Stillwater Substation expenses to Long-Distance Transmission.

The book values on which interest allocations are based are shown in **Table 2.14**.

Table 2.14
Book Values of Plant and Deferred Debits

	2011	Percent
Power	$625,839,949	28.3%
Hydroelectric Plant	391,398,144	
Share of General Plant	30,754,127	
Unamortized Hydro Project Relicensing	83,228,619	
Unamortized High Ross	120,459,058	
Conservation	191,036,946	8.6%
Unamortized Conservation	190,511,306	
Share of General Plant	525,640	
Transmission		
Long-Distance Transmission	77,460,544	3.5%
Transmission Plant	72,011,178	
Share of General Plant	4,555,793	
Puget Intertie & Stillwater Substation	893,573	
In-Service-Area Transmission	58,639,733	2.6%
Transmission Plant	55,150,624	
Share of General Plant	3,489,109	
Distribution		
Stations	81,666,887	3.7%
Distribution Plant	77,055,401	
Share of General Plant	4,611,486	
Wires and Related Equipment	897,374,724	40.5%
Distribution Plant	846,702,641	
Share of General Plant	50,672,083	
Transformers	182,311,704	8.2%
Distribution Plant	172,017,104	
Share of General Plant	10,294,600	
Meters	49,787,914	2.2%
Distribution Plant	46,976,538	
Share of General Plant	2,811,375	
Streetlights/Floodlights	39,296,816	1.8%
Distribution Plant	37,077,842	
Share of General Plant	2,218,974	
Customer Accounts and Services	10,249,975	0.5%
Share of General Plant	10,249,975	
Low-Income Assistance	226,694	0.0%
Share of General Plant	226,694	
Total	$2,213,891,886	100.0%

Interest on debt is allocated to all functions, using the above percentages, as follows in **Table 2.15**:

Table 2.15
Interest

	2013	2014
Power	$27,196,473	$26,985,524
Conservation	8,301,693	7,581,602
Transmission	5,914,368	5,968,896
Long-Distance Transmission	3,366,122	3,395,462
In-Service-Area Transmission	2,548,246	2,573,435
Distribution	54,338,980	54,595,333
Stations	3,548,913	3,565,655
Wires and Related Equipment	38,996,276	39,180,247
Transformers	7,922,529	7,959,905
Meters	2,163,581	2,173,788
Streetlights/Floodlights	1,707,681	1,715,737
Customer Accounts and Services	445,422	1,163,093
Low-Income Assistance	9,851	25,724
Total	$96,206,787	$96,320,172

Administrative and General

The basic Administrative and General (A&G) expense category includes administrative salaries, office supplies, outside services, property insurance, injuries and damages, employee pensions and benefits, rents, general plant maintenance and miscellaneous general expenses. A&G from the financial model is adjusted by the addition of King County surface water management fees and by subtraction of miscellaneous income. These expenses are allocated by percentages of non-A&G labor hours in each functional category in 2011.

A&G expenses allocated to the functionalized revenue requirement categories and the corresponding labor hour percentages are shown in **Table 2.16**.

Table 2.16
Administrative and General Expense

	2013	2014	Percent
Production and Purchased Power	$14,942,528	$14,864,877	22.2%
Conservation	874,015	869,473	1.3%
Transmission	3,563,450	3,544,932	5.3%
Long-Distance Transmission	2,002,954	1,992,545	3.0%
In-Service-Area Transmission	1,560,496	1,552,386	2.3%
Distribution	30,375,973	30,218,119	45.2%
Stations	9,811,994	9,859,861	14.6%
Wires and Related Equipment	14,360,827	14,430,339	21.4%
Transformers	2,015,116	2,024,090	3.0%
Meters	2,718,058	2,733,317	4.0%
Streetlights/Floodlights	1,469,977	1,170,512	2.2%
Customer Accounts and Services	17,043,297	16,954,728	25.4%
Low-Income Assistance	376,939	374,980	0.6%
Total	$67,176,202	$66,827,109	100.0%

Revenue Taxes, County Payments and Franchise Payments

A public utility tax paid to the State of Washington (3.8734%), the City of Seattle's Occupation tax (6.0%), contract payments to suburban cities with which City Light has franchise agreements, an Oregon tax on City Light's portion of the 3rd AC transmission intertie, and a small Renton business tax comprise the Department's tax expense. Franchise payments amount to about 7.1% of the total. In order to allocate these amounts to all revenue requirement functions, the sum of all expenses except taxes in each category is multiplied by the effective tax rate.

In addition, payments are made to county governments for services provided in counties where City Light has generation facilities. Services include fire and police protection, schools, and road maintenance. Payments are made to Whatcom County and the Concrete School District for services associated with the Skagit projects, and to Pend Oreille County for services related to the Boundary project.

Taxes and franchise payments allocated to the various functions, together with county payments assigned to the Power function, are shown in **Table 2.17**.

Table 2.17
Revenue Taxes, County Payments and Franchise Payments

	2013	2014
Power	$41,904,959	$44,539,831
Whatcom County Contract Payments	981,638	1,004,384
Pend Oreille County Contract Payments	2,404,054	2,451,454
Payments to Concrete School District	126,511	129,771
Revenue Taxes and Franchise Payments	38,392,756	40,954,222
Conservation	3,445,120	3,695,961
Transmission	6,732,749	7,404,889
Long-Distance Transmission	5,250,291	5,906,518
Oregon Tax on 3rd AC Intertie	245,000	245,000
Revenue Taxes and Franchise Payments	5,005,291	5,661,518
In-Service-Area Transmission	1,482,457	1,498,371
Distribution	20,897,167	21,638,926
Stations	4,312,611	4,586,174
Wires and Related Equipment	11,607,165	12,175,501
Transformers	2,562,690	2,450,679
Meters	1,343,389	1,431,389
Streetlights/Floodlights	1,071,312	995,182
Customer Accounts and Services	6,526,762	6,960,171
Low-Income Assistance	1,338,305	1,467,849
Total	$80,845,062	$85,707,627
Effective Tax Rate	14.0%	14.4%

Net Income

City Light's net income to be collected from retail customers is a residual after all revenues and expenses are taken into account. Net income contributes to the Utility's equity. The net income allocation procedure first assumed a 7% return on expected equity for the revenue requirement year. This is a little lower than the norm in the electric utility business for private utilities, but corresponds generally to the City's

Discount Rate Policy (which, loosely speaking, could also be called the City's "Rate of Return Policy"). Then, the percentages of book values shown above under the discussion of interest expense were used as a proxy for each unbundled component's share of equity and that percentage was multiplied times the 7% return amount. The remainder of net income to be collected through the retail revenue requirement was assigned to the power component as a risk management premium due to the weather-related variability of power supply.

Allocations of net income for the forecast years are shown in **Table 2.18**.

Table 2.18
Net Income

	2013	2014
Power	$25,602,654	$42,008,781
Contribution to Equity	22,393,281	24,215,349
Risk Management Premium	3,209,373	17,793,431
Conservation	6,835,524	6,803,320
Transmission	4,869,826	5,356,165
Long-Distance Transmission	2,771,628	3,046,904
In-Service-Area Transmission	2,098,198	2,309,261
Distribution	44,742,127	48,990,898
Stations	2,922,136	3,199,626
Wires and Related Equipment	32,109,111	35,158,234
Transformers	6,523,325	7,142,788
Meters	1,781,469	1,950,640
Streetlights/Floodlights	1,406,086	1,539,609
Customer Accounts and Services	366,756	1,043,697
Low-Income Assistance	8,111	23,083
Total	$82,424,999	$104,225,942

Non-network and Network Expenses

For cost allocation purposes, two of the Distribution sub-functions, Wires and Related Equipment and Transformers, are further split into non-network and network components. The network cost components shown below include all City Light's network areas (downtown, First Hill and University District). For cost allocation purposes, approximately 85% of the network costs shown below are allocated to the downtown network; this allocation is based on historical consumption percentages. The other 15% of the network costs shown is reallocated back to non-network classes because at the present time First Hill and University District network customers are treated as non-network customers for rate-making purposes.

Percentages used to allocate O&M expenses for Wires and Related Equipment and Transformers between network and non-network noted in the following paragraphs are slightly different in 2013 from those used in 2014. This is because streetlight O&M expenses and labor hours allocated to these other distribution sub-categories changes between 2013 and 2014.

Non-network and Network Expenses: Wires and Related Equipment

The division of the Wires and Related Equipment O&M expenses into non-network and network components is based on an analysis of 2010 and 2011 distribution expenses recorded in FERC accounts. The process of distributing 2010 and 2011 expenses between non-network and network components uses direct assignment where the FERC account value clearly applies to one component (e.g., maintenance of underground network equipment is assigned to the network component); and 2010 and 2011 labor hours to allocate the expense where it applies to both components (e.g., supervision, load dispatching, safety programs).

Projected O&M expenses, as well as all adjustments to that expense except pole attachment revenue and reserved distribution capacity revenue, are multiplied by the percentage of 2010 and 2011 expenses calculated for each category (83.22% non-network and 16.78% network in 2013, 83.20% non-network and 16.80% network in 2014). Pole attachment revenue and reserved distribution capacity revenue are assigned only to the non-network category.

Plant depreciation, contributions and grants, interest expense and net income are distributed between non-network and network components based on a "capital" allocator. This allocator is based on an analysis of the 1993-2011 capital additions for FERC accounts 364-367 (Poles, Towers and Fixtures; Overhead Conductors and Devices; Underground Conduit; Underground Conductors and Devices) from depreciation schedules. Additions in FERC 36664 (Underground Conduit-Network) and FERC 36764 (Network UG Conductors and Devices) are assigned to the network component, while the other FERC sub-accounts are assigned to the non-network component. Amounts in each category are summed and the resulting percentages of the total are used as the non-network/network "capital" allocator (64.05% non-network and 35.95% network).

Administrative and General expense is allocated by 2011 labor hours in the non-network and network sub-categories of the Wires and Related Equipment category (86.25% non-network and 13.75% network).

Taxes are computed for the non-network and network expense components by multiplying the expenses calculated in the processes described above by the effective tax rate.

Net Income is allocated between non-network and network components based on the share each has of additions to wires-related capital investments, averaged over the past twenty years to avoid biases associated with short term investment decisions.

The non-network/network breakdown of projected revenue requirements in the category of Wires and Related Equipment is shown in **Tables 2.19.a and 2.19.b.**

Table 2.19.a
Non-network/Network Expenses: Wires and Related Equipment, 2013

	Non-network	Network
Distribution O&M-Wires and Related Equipment	$31,780,251	$6,407,493
Property Rental Income	(1,124,879)	(226,797)
Revenue from Damage	(1,360,690)	(274,341)
Other O&M Revenue	(4,437,334)	(894,650)
Construction (Installation) Charge Revenue	(9,374)	(1,890)
Pole Attachment Revenue	(2,122,979)	0
Distribution Capacity Charge	(213,586)	0
Power Factor Revenue	(2,163,411)	(436,184)
Subtotal Distribution O&M	$20,347,997	$4,573,632
Plant Depreciation	29,667,062	16,649,894
Contributions and Grant Revenues	(17,931,696)	(10,063,714)
Interest	24,978,000	14,018,276
Administrative and General	12,385,829	1,974,998
Taxes	8,344,542	3,262,624
Net Income	20,566,615	11,542,496
Total	$98,358,349	$41,958,206

Table 2.19.b
Non-network/Network Expenses: Wires and Related Equipment, 2014

	Non-network	Network
Distribution O&M-Wires and Related Equipment	$32,477,840	$6,558,157
Property Rental Income	(1,151,454)	(232,510)
Revenue from Damage	(1,394,659)	(281,620)
Other O&M Revenue	(4,548,126)	(918,390)
Construction (Installation) Charge Revenue	(9,595)	(1,938)
Pole Attachment Revenue	(2,176,537)	0
Distribution Capacity Charge	(218,398)	0
Power Factor Revenue	(2,188,433)	(441,904)
Subtotal Distribution O&M	$20,790,637	$4,681,796
Plant Depreciation	31,252,268	17,539,551
Contributions and Grant Revenues	(19,532,568)	(10,962,163)
Interest	25,095,838	14,084,409
Administrative and General	12,446,533	1,983,806
Taxes	8,758,737	3,416,763
Net Income	22,519,647	12,638,587
Total	$101,331,093	$43,382,749

Non-network and Network Expenses: Transformers

The division of Transformer O&M expenses into non-network and network components is also based on the analysis of 2010 and 2011 distribution expenses recorded in FERC accounts. The process of allocating 2010 and 2011 expenses between non-network and network components uses direct assignment where the FERC account value clearly applies to one component (e.g., maintenance of network underground line transformers and devices is assigned to the network component); and 2010 and 2011 labor hours to allocate the expense where it applies to both components (e.g., supervision, load dispatching, safety programs).

Projected O&M expenses are multiplied by the percentage of 2010 and 2011 expenses in each category (8.71% non-network and 91.29% network in 2013, 8.68% non-network and 91.32% network in 2014). The additional expense of Credits for Customer-Owned Transformers is assigned only to the non-network component because customers who receive this credit are located outside the network.

Plant depreciation, contributions and grants, interest and net income are distributed between non-network and network components based on a "capital" allocator. This allocator is based on an analysis of the 1993-2011 capital additions for FERC account 368 (Line Transformers) from depreciation schedules. Additions to FERC 36864 (Network UG Transformers-Installed Cost) are assigned to the network component, while the other FERC sub-accounts are assigned to the non-network component. Amounts in each category are summed and the resulting percentages of the total are used as the non-network/network "capital" allocator (59.15% non-network and 40.85% network).

Administrative and General expense is allocated by 2011 labor hours in the non-network and network sub-categories of the Transformer category (8.72% non-network and 91.28% network).

Taxes are computed for the non-network and network expense components by multiplying the expenses calculated in the processes described above by the effective tax rate.

Net Income related to transformers is allocated between non-network and network components based on the share each has of additions to transformer capital investments, averaged over the past twenty years to avoid biases associated with short term investment decisions.

The non-network/network breakdown of projected revenue requirements in the Transformer category is shown in **Tables 2.20.a and 2.20.b.**

Table 2.20.a
Non-network/Network Expenses: Transformers, 2013

	Non-network	Network
Distribution O&M-Transformers	$395,196	$4,141,198
Credits for Customer-Owned Transformers	353,171	0
Subtotal Distribution O&M	$748,367	$4,141,198
Plant Depreciation	5,309,377	3,666,802
Contributions and Grant Revenues	(1,464,237)	(1,011,242)
Interest	4,686,147	3,236,382
Administrative and General	175,688	1,839,428
Taxes	1,136,122	1,426,568
Net Income	3,858,523	2,664,802
Total	$14,449,988	$15,963,937

Table 2.20.b
Non-network/Network Expenses: Transformers, 2014

	Non-network	Network
Distribution O&M-Transformers	$403,780	$4,248,884
Credits for Customer-Owned Transformers	360,935	0
Subtotal Distribution O&M	$764,715	$4,248,884
Plant Depreciation	5,593,074	3,862,731
Contributions and Grant Revenues	(2,870,399)	(1,982,376)
Interest	4,708,255	3,251,650
Administrative and General	176,480	1,847,610
Taxes	1,046,773	1,403,907
Net Income	4,224,933	2,917,855
Total	$13,643,832	$15,550,260

Chapter 3: Summary and Conclusions

3.1 Rate Change Summary

Table 3.1.a shows a high-level summary of the Cost of Service rate change results for the year 2013. Note that the system average rate change is 4.4% but individual rate classes' impacts range greatly, from a 27% increase to 4% decrease. In contrast, the 2014 rate changes are much more uniform, as shown in **Table 3.1.b**.

Table 3.1.a
Summary of 2013 Rate Changes

	Total	Residential	Small	Medium	Large	High Demand	Lights
All Areas	4.4%	6.2%	3.4%	3.1%	5.3%	-3.3%	26.9%
City	3.6%	6.8%	3.8%	0.2%	0.2%	-4.1%	26.9%
Network	12.2%			12.0%	12.5%		
Tukwila+Shoreline	1.6%	4.8%	1.0%	-0.2%	-1.0%	-0.7%	
Other Suburbs	2.8%	4.0%	0.8%	-0.9%	0.2%		

Table 3.1.b
Summary of 2014 Rate Changes

	Total	Residential	Small	Medium	Large	High Demand	Lights
All Areas	5.6%	6.3%	5.4%	5.3%	4.4%	6.1%	4.6%
City	5.6%	6.3%	5.4%	5.3%	3.4%	6.1%	4.6%
Network	5.4%			5.2%	5.5%		
Tukwila+Shoreline	5.6%	6.2%	5.3%	5.2%	3.4%	6.0%	
Other Suburbs	6.0%	6.3%	5.4%	5.3%	3.5%		

The 2013 rate changes for various rate classes are disparate in order to true-up for substantial changes in costs since the 2007-2008 Cost of Service. In general, distribution cost of service has increased, while energy cost of service has declined slightly. High level observations of the 2013 results are:

1. **Medium, Large and High Demand Nonnetwork** customers' rates are flat or declining because energy cost of service has declined. The proportion of rates attributable to energy cost increases with customer size.
2. **Residential** customers, conversely, see higher than average rate increases because of an increase in the distribution cost of service, which adds rate pressure for smaller customers.
3. **Network** customers have high rate increases because their redundant distribution systems cause them to be hit twice as hard by distribution cost increases. Higher downtown network costs also impact City residential and City small commercial customers since there is no separate network rate for these classes. These two City classes absorb the higher costs associated with residential and small commercial customers in the

downtown network. Residential network growth (e.g., new high-rise condos in Belltown) is a compounding driver for City residential customers.

4. **Suburban** customers benefit from reduced energy costs since a major portion of franchise contract payments are calculated as a percent of energy cost.

5. **Streetlight** rate increases are large due to increases in costs for fixtures and poles, and a reduction in load due to installation of high efficiency LED fixtures. However the large average rate increase per kWh is misleading--the actual bill amounts for most streetlights will not increase substantially, due to declining usage per light.

3.2 Methodology

The methodology for the Cost of Service study (which includes revenue unbundling, cost of service calculation, and cost allocation) can be summarized in eight steps:

1. Unbundle revenue requirements, i.e., assign them to functional cost categories that correspond to the services provided plus the subsidy for low income residential customers (these categories and the subsidy, together, can be called the operating cost portion of revenue requirements) and a credit for net wholesale power revenue.

2. For Wires and Related Equipment and Customer Transformers only, separate the functionalized operating cost revenue requirements into network and non-network components.

3. Calculate marginal costs for various service types. Allocate the operating cost portion of revenue requirements among customer classes in the network and non-network areas based on marginal cost shares of providing service.

4. Apportion the operating cost revenue requirements for non-network customers among jurisdictions in Seattle, Tukwila + Shoreline and Other Suburbs, based on each area's class' share of the system total non-network corresponding class load. (Initial allocation)

5. Adjust for franchise agreements, adding approved contract percentages to suburban rates and reducing Seattle Residential customer rates by the amount added.

6. Allocate the net wholesale revenue credit among all the classes based on the allocation of the operating cost portion of revenue requirements by overall marginal cost shares.

7. Amalgamate network and non-network costs for Small and Residential classes, since they do not have separate network rates.

8. Compute new average rates based on the allocated revenue requirement divided by the rate class load. Average rates without a change are calculated based on billing determinants and current rates. The difference of the new average rate from the rate without a change yields the average percent rate change for each rate class.

The methodology used for this Cost of Service study is generally unchanged from the methodology used for the last study (2007-2008).

3.3 Customer Groups and Load

Differences in the cost of providing service distinguish one customer group from another. Revenue requirements and rates are constructed for the following 17 customer classes. Suburban franchises are grouped based on the payment terms in their franchise agreements. This is why Tukwila and Shoreline are aggregated and separated from the other suburbs. There is one set of streetlight rates, regardless of where the customers for the lights are located. Streetlight revenue requirements, though, are reported along with requirements for Seattle customer classes.

Seattle	Residential	Small	Medium	Large	High Demand	Street-lights
Downtown Network			Medium	Large		
Tukwila + Shoreline	Residential	Small	Medium	Large	High Demand	
Other Suburbs	Residential	Small	Medium	Large		

Table 3.2 presents a summary of load by group and class as well as summaries for the total non-network areas and for the total service territory.

Table 3.2
Load by Customer Class, Annual MWH

		Total	Residential	Small	Medium	Large	High Demand	Lights	Total	Residential	Small
Service Territory											
Actual	**2011**	9,610,146	3,248,242	1,170,405	2,466,756	1,466,835	1,162,993	94,915			
Forecast	**2012**	9,589,726	3,200,463	1,170,101	2,466,774	1,463,493	1,206,112	82,785			
	2013	9,654,834	3,192,967	1,177,448	2,479,809	1,527,488	1,195,924	81,198			
	2014	9,746,397	3,184,507	1,190,552	2,505,920	1,596,070	1,196,470	72,879			
Total Nonnetwork (Excludes Network Residential & Small)									**Includes Network Res & Small**		
Actual	**2011**	8,199,564	3,157,279	1,025,228	1,911,445	847,705	1,162,993	94,915	8,435,705	3,248,242	1,170,405
Forecast	**2012**	8,198,951	3,110,231	1,029,578	1,903,480	866,765	1,206,112	82,785	8,429,705	3,200,463	1,170,101
	2013	8,256,707	3,102,958	1,036,109	1,913,254	927,264	1,195,924	81,198	8,488,054	3,192,967	1,177,448
	2014	8,336,890	3,094,766	1,047,951	1,934,326	990,498	1,196,470	72,879	8,569,232	3,184,507	1,190,552
Downtown Network (Includes Network Residential & Small)									**Excludes Network Res & Small**		
Actual	**2011**	1,410,582	90,964	145,177	555,311	619,131			1,174,441		
Forecast	**2012**	1,390,776	90,232	140,522	563,294	596,727			1,160,021		
	2013	1,398,127	90,009	141,339	566,556	600,224			1,166,780		
	2014	1,409,507	89,741	142,601	571,594	605,571			1,177,165		
City of Seattle Nonnetwork (Excludes Network Residential & Small)									**Includes Network Res & Small**		
Actual	**2011**	6,640,300	2,445,955	859,947	1,614,989	710,719	913,775	94,915	6,876,441	2,536,919	1,005,124
Forecast	**2012**	6,637,727	2,399,443	867,284	1,604,187	727,753	956,276	82,785	6,868,481	2,489,675	1,007,806
	2013	6,696,782	2,393,843	872,749	1,612,581	788,788	947,623	81,198	6,928,129	2,483,852	1,014,088
	2014	6,773,569	2,387,483	882,579	1,629,917	851,894	948,817	72,879	7,005,911	2,477,224	1,025,180
Tukwila + Shoreline											
Actual	**2011**	935,811	297,448	74,059	193,819	121,267	249,218				
Forecast	**2012**	941,562	297,612	73,025	198,048	123,042	249,836				
	2013	940,194	296,755	73,526	198,943	122,669	248,301				
	2014	942,703	295,822	74,513	201,803	122,913	247,653				
Other Suburbs											
Actual	**2011**	623,453	413,876	91,221	102,637	15,719					
Forecast	**2012**	619,662	413,177	89,269	101,245	15,971					
	2013	619,731	412,360	89,834	101,730	15,807					
	2014	620,618	411,461	90,859	102,606	15,691					

Once the functionalized revenue requirements have been allocated to total network and total nonnetwork customers by class (discussed in following sections of this chapter),

each functionalized revenue requirement for each of the total nonnetwork classes is converted to a $/MWH. This amount is then multiplied by the corresponding class loads in Seattle, Tukwila/Shoreline, and Other Suburbs from Table 3.2 to create the allocation of revenue requirements among these three sets of customer classes. This process is equivalent to allocating the total nonnetwork class revenue requirements based on shares of load. **Table 3.3** presents share of load data derived from Table 3.2.

Table 3.3
Annual Share of Load

		Total	Residential	Small	Medium	Large	High Demand	Lights
					Service Territory			
Actual	**2011**	100.000%	33.800%	12.179%	25.668%	15.263%	12.102%	0.988%
Forecast	**2012**	100.000%	33.374%	12.202%	25.723%	15.261%	12.577%	0.863%
	2013	100.000%	33.071%	12.195%	25.685%	15.821%	12.387%	0.841%
	2014	100.000%	32.674%	12.215%	25.711%	16.376%	12.276%	0.748%
					Total Nonnetwork (Excludes Network Residential & Small)			
Actual	**2011**	100.000%	38.505%	12.503%	23.312%	10.338%	14.184%	1.158%
Forecast	**2012**	100.000%	37.935%	12.557%	23.216%	10.572%	14.711%	1.010%
	2013	100.000%	37.581%	12.549%	23.172%	11.230%	14.484%	0.983%
	2014	100.000%	37.121%	12.570%	23.202%	11.881%	14.352%	0.874%
					Downtown Network (Includes Network Residential & Small)			
Actual	**2011**	100.000%	6.449%	10.292%	39.367%	43.892%		
Forecast	**2012**	100.000%	6.488%	10.104%	40.502%	42.906%		
	2013	100.000%	6.438%	10.109%	40.522%	42.931%		
	2014	100.000%	6.367%	10.117%	40.553%	42.963%		
					City of Seattle Nonnet as % of Total Nonnetwork (both Exclude Network Res & Small)			
Actual	**2011**	80.984%	77.470%	83.879%	84.490%	83.840%	78.571%	100.000%
Forecast	**2012**	80.958%	77.147%	84.237%	84.277%	83.962%	79.286%	100.000%
	2013	81.107%	77.147%	84.233%	84.285%	85.066%	79.238%	100.000%
	2014	81.248%	77.146%	84.220%	84.263%	86.007%	79.301%	100.000%
					Tukwila + Shoreline as % of Total Nonnetwork (Which Excludes Network Res & Small)			
Actual	**2011**	11.413%	9.421%	7.224%	10.140%	14.305%	21.429%	
Forecast	**2012**	11.484%	9.569%	7.093%	10.405%	14.196%	20.714%	
	2013	11.387%	9.564%	7.096%	10.398%	13.229%	20.762%	
	2014	11.308%	9.559%	7.110%	10.433%	12.409%	20.699%	
					Other Suburbs as % of Total Nonnetwork (Which Excludes Network Res & Small)			
Actual	**2011**	7.603%	13.109%	8.898%	5.370%	1.854%		
Forecast	**2012**	7.558%	13.284%	8.670%	5.319%	1.843%		
	2013	7.506%	13.289%	8.670%	5.317%	1.705%		
	2014	7.444%	13.295%	8.670%	5.305%	1.584%		

3.4 Marginal Cost Shares

The functionalized revenue requirements (see Section 2.1) are allocated across customer groups based on the cost of providing each category of service. This is done by estimating marginal costs per unit for each type of service, and then these costs are multiplied by the projected number of units of that service (load or meters). This process is repeated to get estimates of the total cost of providing each service to each group. The costs for all customer groups are summed and each customer group's share of the total is computed. These shares, called marginal cost shares, are then used to allocate the corresponding functionalized revenue requirements.

Table 3.4 presents the 2013 marginal cost shares used to allocate revenue requirements among the total non-network and network classes. (The 2014 shares are very similar and can be found in Chapter 10.) Generally the totals sum to 100% across network and non-network. The exceptions are Wires and Transformers, which total to 100% in both

network and non-network categories, since these costs were already separated in the unbundling step. (Table 10.3.a in Chapter 10 has the same information along with sources for the shares indicated in the two tables.)

Table 3.4
Summary of Marginal Cost Shares by Functional Category, 2013

Total Nonnetwork (Excludes Network Residential & Small)							
	Total	Residential	Small	Medium	Large	High Demand	Lights
Energy							
Production	85.52%	32.36%	10.83%	19.84%	9.60%	12.09%	0.80%
Purchased Power	85.52%	32.36%	10.83%	19.84%	9.60%	12.09%	0.80%
Conservation	85.52%	32.36%	10.83%	19.84%	9.60%	12.09%	0.80%
Transmission - Long Distance	85.52%	32.36%	10.83%	19.84%	9.60%	12.09%	0.80%
Retail Service							
Distribution							
Transmission - In Service Area	86.08%	37.77%	10.46%	19.41%	8.95%	8.87%	0.61%
Stations	84.14%	36.92%	10.23%	18.98%	8.75%	8.67%	0.60%
Wires & Related Equipment	100.00%	50.95%	11.74%	19.19%	8.83%	8.69%	0.59%
Transformers	100.00%	36.62%	16.27%	34.17%	7.03%	4.99%	0.93%
Meters (excludes meter reading)	88.26%	61.58%	14.16%	3.54%	7.78%	1.20%	0.00%
Streetlights/Floodlights							100.00%
Customer Costs	94.34%	83.91%	7.87%	1.24%	1.04%	0.28%	0.00%
Low-Income Assistance	82.93%	37.89%	10.08%	17.13%	8.06%	9.15%	0.62%
Downtown Network							
	Total	Residential	Small	Medium	Large		
Energy							
Production	14.48%	0.94%	1.48%	5.86%	6.20%		
Purchased Power	14.48%	0.94%	1.48%	5.86%	6.20%		
Conservation	14.48%	0.94%	1.48%	5.86%	6.20%		
Transmission - Long Distance	14.48%	0.94%	1.48%	5.86%	6.20%		
Retail Service							
Total Distribution							
Transmission - In Service Area	13.92%	1.09%	1.44%	5.57%	5.81%		
Stations	15.86%	1.25%	1.65%	6.34%	6.63%		
Wires & Related Equipment	100.00%	10.32%	10.47%	38.07%	41.13%		
Transformers	100.00%	7.74%	12.16%	50.68%	29.42%		
Meters (excludes meter reading)	11.74%	3.99%	2.01%	0.71%	5.03%		
Streetlights/Floodlights							
Customer Costs	5.66%	4.08%	0.67%	0.24%	0.67%		
Low-Income Assistance	17.07%	1.63%	1.79%	6.70%	6.95%		

3.5 Initial Allocation of Revenue Requirements

Table 3.5 presents the initial allocation of 2013 functionalized revenue requirements by marginal cost shares. The 2014 allocation is very similar and can be found in Chapter 10.

Table 3.5
Initial Allocation of Functionalized Revenue Requirements, 2013

Total Service Territory							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$471,863,799**	**$157,135,556**	**$58,051,729**	**$121,280,629**	**$74,595,447**	**$57,043,283**	**$3,757,156**
Production	**124,764,790**	41,547,974	15,349,369	32,067,627	19,723,669	15,082,728	993,424
Purchased Power	**258,753,156**	86,167,494	31,833,482	66,505,940	40,905,463	31,280,487	2,060,289
Conservation	**38,952,547**	12,971,603	4,792,194	10,011,765	6,157,884	4,708,946	310,155
Transmission - Long Distance	**49,393,306**	16,448,485	6,076,683	12,695,297	7,808,431	5,971,122	393,288
Retail Service	**$329,170,401**	**$155,199,633**	**$36,457,199**	**$65,603,136**	**$42,708,312**	**$16,594,252**	**$12,607,869**
Distribution	**255,473,689**	96,403,756	29,747,151	61,723,730	39,784,656	15,283,726	12,530,669
Transmission - In Service Area	**15,918,360**	6,186,745	1,895,360	3,976,575	2,350,631	1,411,490	97,559
Stations	**43,126,317**	16,459,113	5,120,019	10,919,696	6,631,517	3,737,635	258,337
Wires & Related Equipment	**140,316,555**	57,126,680	16,022,180	33,606,285	23,819,105	9,118,031	624,273
Transformers	**30,413,925**	7,251,300	4,395,802	12,613,058	5,151,222	845,399	157,143
Meters (excludes meter reading)	**14,305,175**	9,379,918	2,313,790	608,116	1,832,181	171,171	0
Streetlights/Floodlights	**11,393,357**	0	0	0	0	0	11,393,357
Customer Costs	**61,212,298**	53,860,911	5,228,062	904,560	1,050,108	168,656	0
Low-Income Assistance	**12,484,415**	4,934,966	1,481,985	2,974,846	1,873,548	1,141,870	77,201
Total	**$801,034,200**	**$312,335,189**	**$94,508,927**	**$186,883,765**	**$117,303,759**	**$73,637,534**	**$16,365,025**
Percent of Service Territory	100.0%	39.0%	11.8%	23.3%	14.6%	9.2%	2.0%
Total Nonnetwork (Excludes Network Residential & Small)							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	
Energy	**$403,548,134**	**$152,705,392**	**$51,084,776**	**$93,641,178**	**$45,316,349**	**$57,043,283**	**$3,757,156**
Production	**$106,701,549**	$40,376,601	$13,507,248	$24,759,522	$11,982,027	$15,082,728	$993,424
Purchased Power	**$221,291,300**	$83,738,151	$28,013,056	$51,349,458	$24,849,858	$31,280,487	$2,060,289
Conservation	**$33,313,061**	$12,605,892	$4,217,069	$7,730,117	$3,740,883	$4,708,946	$310,155
Transmission - Long Distance	**$42,242,224**	$15,984,749	$5,347,403	$9,802,081	$4,743,581	$5,971,122	$393,288
Retail Service	**$264,019,350**	**$146,525,193**	**$29,258,517**	**$40,612,517**	**$18,421,003**	**$16,594,252**	**$12,607,869**
Distribution	**$195,916,444**	$90,429,818	$23,179,834	$37,716,284	$16,776,114	$15,283,726	$12,530,669
Transmission - In Service Area	**$13,702,886**	$6,012,642	$1,665,501	$3,090,522	$1,425,172	$1,411,490	$97,559
Stations	**$36,285,329**	$15,921,514	$4,410,257	$8,183,722	$3,773,865	$3,737,635	$258,337
Wires & Related Equipment	**$104,950,865**	$53,476,441	$12,318,427	$20,141,660	$9,272,033	$9,118,031	$624,273
Transformers	**$16,958,258**	$6,209,469	$2,759,839	$5,793,814	$1,192,594	$845,399	$157,143
Meters (excludes meter reading)	**$12,625,749**	$8,809,752	$2,025,810	$506,567	$1,112,450	$171,171	$0
Streetlights/Floodlights	**$11,393,357**						$11,393,357
Customer Costs	**$57,750,142**	$51,364,488	$4,820,442	$757,360	$639,196	$168,656	$0
Low-Income Assistance	**$10,352,763**	$4,730,887	$1,258,241	$2,138,872	$1,005,693	$1,141,870	$77,201
Total	**$667,567,484**	**$299,230,585**	**$80,343,293**	**$134,253,695**	**$63,737,351**	**$73,637,534**	**$16,365,025**
Percent of Service Territory	83.3%	37.4%	10.0%	16.8%	8.0%	9.2%	2.0%
Downtown Network							
	Total	**Residential**	**Small**	**Medium**	**Large**		
Energy	**$68,315,665**	**$4,430,163**	**$6,966,952**	**$27,639,451**	**$29,279,098**		
Production	**$18,063,241**	$1,171,373	$1,842,121	$7,308,105	$7,741,642		
Purchased Power	**$37,461,857**	$2,429,343	$3,820,426	$15,156,482	$16,055,606		
Conservation	**$5,639,486**	$365,712	$575,125	$2,281,648	$2,417,001		
Transmission - Long Distance	**$7,151,082**	$463,736	$729,280	$2,893,216	$3,064,849		
Retail Service	**$65,151,051**	**$8,674,440**	**$7,198,682**	**$24,990,620**	**$24,287,310**		
Distribution	**$59,557,244**	$5,973,938	$6,567,318	$24,007,446	$23,008,542		
Transmission - In Service Area	**$2,215,474**	$174,103	$229,859	$886,053	$925,459		
Stations	**$6,840,987**	$537,599	$709,762	$2,735,974	$2,857,652		
Wires & Related Equipment	**$35,365,690**	$3,650,240	$3,703,753	$13,464,625	$14,547,072		
Transformers	**$13,455,667**	$1,041,831	$1,635,964	$6,819,244	$3,958,629		
Meters (excludes meter reading)	**$1,679,426**	$570,166	$287,980	$101,549	$719,731		
Streetlights/Floodlights							
Customer Costs	**$3,462,155**	$2,496,423	$407,621	$147,200	$410,912		
Low-Income Assistance	**$2,131,652**	$204,079	$223,743	$835,974	$867,855		
Total	**$133,466,717**	**$13,104,604**	**$14,165,634**	**$52,630,070**	**$53,566,408**		
Percent of Service Territory	16.7%	1.6%	1.8%	6.6%	6.7%		

3.6 Subdivision by Jurisdiction and Adjustment for Franchise Agreements

Revenue requirements are further divided by jurisdiction based on forecasted load for each jurisdiction. **Table 3.6** presents this subdivision of revenue requirements for 2013, by Seattle, Tukwila + Shoreline, and Other Suburbs. (2014 is similar and can be found in Chapter 10.)

Table 3.6
Initial Allocation of 2013 Non-Network Revenue Requirements among Seattle, Tukwila + Shoreline and Other Suburbs

Seattle Nonnetwork							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$327,269,274**	**$117,807,813**	**$43,030,393**	**$78,925,221**	**$38,548,878**	**$45,199,813**	**$3,757,156**
Production	**86,532,772**	31,149,385	11,377,601	20,868,498	10,192,650	11,951,214	993,424
Purchased Power	**179,462,713**	64,601,572	23,596,322	43,279,756	21,138,820	24,785,954	2,060,289
Conservation	**27,016,210**	9,725,082	3,552,176	6,515,309	3,182,225	3,731,263	310,155
Transmission - Long Distance	**34,257,579**	12,331,773	4,504,294	8,261,659	4,035,183	4,731,383	393,288
Retail Service	**$213,342,355**	**$113,039,967**	**$24,645,414**	**$34,230,153**	**$15,670,040**	**$13,148,911**	**$12,607,869**
Distribution	**159,990,156**	69,764,000	19,525,139	31,789,071	14,270,796	12,110,481	12,530,669
Transmission - In Service Area	**11,074,656**	4,638,580	1,402,906	2,604,838	1,212,339	1,118,433	97,559
Stations	**29,325,760**	12,282,990	3,714,905	6,897,629	3,210,282	2,961,618	258,337
Wires & Related Equipment	**84,344,656**	41,255,534	10,376,218	16,976,345	7,887,363	7,224,922	624,273
Transformers	**13,839,943**	4,790,427	2,324,703	4,883,301	1,014,494	669,875	157,143
Meters (excludes meter reading)	**10,011,785**	6,796,470	1,706,407	426,958	946,318	135,632	0
Streetlights/Floodlights	**11,393,357**	0	0	0	0	0	11,393,357
Customer Costs	**45,002,359**	39,626,224	4,060,417	638,339	543,740	133,639	0
Low-Income Assistance	**8,349,840**	3,649,743	1,059,858	1,802,742	855,504	904,792	77,201
Total	**$540,611,629**	**$230,847,779**	**$67,675,808**	**$113,155,374**	**$54,218,918**	**$58,348,725**	**$16,365,025**
Percent of Service Territory	67.5%	28.8%	8.4%	14.1%	6.8%	7.3%	2.0%
Tukwila + Shoreline							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	
Energy	**$45,804,723**	**$14,604,156**	**$3,625,171**	**$9,736,964**	**$5,994,963**	**$11,843,469**	
Production	**$12,111,157**	$3,861,463	$958,526	$2,574,536	$1,585,119	$3,131,514	
Purchased Power	**$25,117,665**	$8,008,395	$1,987,913	$5,339,401	$3,287,423	$6,494,533	
Conservation	**$3,781,198**	$1,205,579	$299,259	$803,790	$494,887	$977,683	
Transmission - Long Distance	**$4,794,703**	$1,528,720	$379,472	$1,019,237	$627,535	$1,239,739	
Retail Service	**$26,194,638**	**$14,013,106**	**$2,076,296**	**$4,222,956**	**$2,436,940**	**$3,445,340**	
Distribution	**$19,607,672**	$8,648,360	$1,644,929	$3,921,801	$2,219,336	$3,173,246	
Transmission - In Service Area	**$1,496,169**	$575,026	$118,190	$321,358	$188,538	$293,057	
Stations	**$3,961,865**	$1,522,672	$312,969	$850,957	$499,250	$776,017	
Wires & Related Equipment	**$11,202,525**	$5,114,281	$874,163	$2,094,363	$1,226,610	$1,893,108	
Transformers	**$1,725,443**	$593,850	$195,849	$602,450	$157,770	$175,524	
Meters (excludes meter reading)	**$1,221,670**	$842,531	$143,759	$52,674	$147,168	$35,539	
Streetlights/Floodlights	**$0**	$0	$0	$0	$0	$0	
Customer Costs	**$5,452,707**	$4,912,302	$342,077	$78,752	$84,560	$35,017	
Low-Income Assistance	**$1,134,259**	$452,444	$89,290	$222,403	$133,044	$237,078	
Total	**$71,999,362**	**$28,617,262**	**$5,701,467**	**$13,959,920**	**$8,431,904**	**$15,288,810**	
Percent of Service Territory	9.0%	3.6%	0.7%	1.7%	1.1%	1.9%	
Other Suburbs							
	Total	**Residential**	**Small**	**Medium**	**Large**		
Energy	**$30,474,136**	**$20,293,423**	**$4,429,212**	**$4,978,994**	**$772,507**		
Production	**$8,057,620**	$5,365,753	$1,171,121	$1,316,488	$204,257		
Purchased Power	**$16,710,922**	$11,128,184	$2,428,821	$2,730,301	$423,615		
Conservation	**$2,515,652**	$1,675,230	$365,633	$411,018	$63,771		
Transmission - Long Distance	**$3,189,942**	$2,124,256	$463,637	$521,186	$80,864		
Retail Service	**$24,482,357**	**$19,472,120**	**$2,536,806**	**$2,159,407**	**$314,022**		
Distribution	**$16,318,617**	$12,017,458	$2,009,765	$2,005,412	$285,982		
Transmission - In Service Area	**$1,132,061**	$799,036	$144,404	$164,326	$24,295		
Stations	**$2,997,705**	$2,115,852	$382,383	$435,137	$64,333		
Wires & Related Equipment	**$9,403,684**	$7,106,626	$1,068,047	$1,070,952	$158,060		
Transformers	**$1,392,872**	$825,193	$239,287	$308,063	$20,330		
Meters (excludes meter reading)	**$1,392,294**	$1,170,751	$175,644	$26,935	$18,964		
Streetlights/Floodlights	**$0**	$0	$0	$0	$0		
Customer Costs	**$7,295,076**	$6,825,963	$417,948	$40,270	$10,896		
Low-Income Assistance	**$868,663**	$628,700	$109,094	$113,726	$17,144		
Total	**$54,956,493**	**$39,765,544**	**$6,966,019**	**$7,138,401**	**$1,086,529**		
Percent of Service Territory	6.9%	5.0%	0.9%	0.9%	0.1%		

All suburban customers pay a rate premium over City rates. In addition, suburbs including Burien, SeaTac and Lake Forest Park receive payments based on revenue from the power portion of rates, and Tukwila and Shoreline receive payments based on distribution services as well as power. **Table 3.7** presents the incremental revenue to be paid by customers in Tukwila/Shoreline and the Other Suburbs.

Table 3.7
Incremental Charges per Franchise Agreements

	2013	2014
Tukwila+Shoreline Adjustment	$5,236,056	$5,489,859
Energy	3,664,378	3,890,430
Non-Energy	1,571,678	1,599,429
Other Suburbs Energy Adjustment	2,437,931	2,598,052
Total	**$7,673,987**	**$8,087,911**

3.7 Allocation of Net Wholesale Revenue

Table 3.8 presents the allocation of net wholesale revenue among customer groups. The 2013 results use the total marginal cost shares derived in tables 3.5 and 3.6. Results for 2014 are derived in an analogous manner and are presented in Table 11.4.b in Chapter 11. The net wholesale revenue is a credit for each group, thereby decreasing the revenue requirements each must pay. Note that this table does not include the effects of the franchise adjustments (which are calculated in parallel), and that the Seattle Non-network component excludes Network Residential and Small General Service credit.

Table 3.8
Net Wholesale Revenue Credit

2013							
$M	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Total Service Territory	**$90.00**	**$35.09**	**$10.62**	**$21.00**	**$13.18**	**$8.27**	**$1.84**
Seattle Nonnetwork	60.74	25.94	7.60	12.71	6.09	6.56	$1.84
Tukwila + Shoreline	8.09	3.22	0.64	1.57	0.95	1.72	
Other Suburbs	6.17	4.47	0.78	0.80	0.12		
Downtown Network	15.00	1.47	1.59	5.91	6.02		
2014							
$M	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Total Service Territory	**$85.00**	**$33.05**	**$10.05**	**$19.84**	**$12.72**	**$7.80**	**$1.53**
Seattle Nonnetwork	57.41	24.43	7.20	12.02	6.05	6.19	1.53
Tukwila + Shoreline	7.61	3.03	0.61	1.49	0.87	1.62	
Other Suburbs	5.82	4.21	0.74	0.76	0.11		
Downtown Network	14.16	1.39	1.50	5.58	5.69		

3.8 Consolidation of Seattle Residential and Small General Service Groups

Table 3.9 presents the consolidation of the network Residential and network Small General Service customer groups into the Residential and Small General Service rate classes for City of Seattle. Additionally, this table shows the franchise adjustment credited to Seattle Residential customers.

Table 3.9
Consolidation of Seattle Residential and Small General Service
And Crediting Seattle Residential with Revenue from Franchise Adjustments

	2013		2014	
	Residential	**Small**	**Residential**	**Small**
Seattle	$204,910,934	$60,072,109	$217,237,080	$64,020,226
Downtown Network	$11,632,239	$12,574,058	$12,332,961	$13,364,571
Total	$216,543,173	$72,646,167	$229,570,041	$77,384,797
Franchise Adjustment	-$7,673,987	$0	-$8,087,911	$0
Adjusted Total	$208,869,186	$72,646,167	$221,482,129	$77,384,797

3.9 Summary of Cost of Service Results

Tables 3.10.a and 3.10.b on the next two pages present the Cost of Service analysis results. The total revenue requirement for each year for each class is divided by the class load for each year to get the average rate per MWh for each year. This rate is compared to the rate without a rate change to get the percentage change in rates for each class.

Table 3.10.a
Summary Results for 2013

	Total Service Territory						
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Mar Cost Shr Alloc of Rev Reqmnt	$801,034,200	$312,335,189	$94,508,927	$186,883,765	$117,303,759	$73,637,534	$16,365,025
Share of Initial Rev Reqmnt Alloc	100.000%	38.991%	11.798%	23.330%	14.644%	9.193%	2.043%
Net Wholesale Revenue Credit	($90,000,000)	(35,092,343)	(10,618,527)	(20,997,279)	(13,179,635)	(8,273,527)	(1,838,688)
Other Adjustments	-	(4,041,394)	768,928	1,430,654	687,614	1,154,198	-
Net Revenue Requirement	**$711,034,200**	**$273,201,452**	**$84,659,328**	**$167,317,140**	**$104,811,738**	**$66,518,205**	**$14,526,337**
Load, MWH	9,654,834	3,192,967	1,177,448	2,479,809	1,527,488	1,195,924	81,198
Average Rate, $/MWH	**$73.645**	**$85.564**	**$71.901**	**$67.472**	**$68.617**	**$55.621**	**$178.900**
Rate without Change, $/MWH	$70.542	$80.540	$69.538	$65.426	$65.156	$57.540	$141.000
Percent Change in Rate	4.40%	6.24%	3.40%	3.13%	5.31%	-3.33%	26.88%

	Total Nonnetwork (Includes Network Residential & Small)						
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Mar Cost Shr Alloc of Rev Reqmnt	$694,837,722	$312,335,189	$94,508,927	$134,253,695	$63,737,351	$73,637,534	$16,365,025
Share of Initial Rev Reqmnt Alloc	86.743%	38.991%	11.798%	16.760%	7.957%	9.193%	2.043%
Net Wholesale Revenue Credit	($78,068,321)	(35,092,343)	(10,618,527)	(15,084,041)	(7,161,194)	(8,273,527)	(1,838,688)
Other Adjustments	-	(4,041,394)	768,928	1,430,654	687,614	1,154,198	-
Net Revenue Requirement	**$616,769,401**	**$273,201,452**	**$84,659,328**	**$120,600,308**	**$57,263,771**	**$66,518,205**	**$14,526,337**
Load, MWH	8,488,054	3,192,967	1,177,448	1,913,254	927,264	1,195,924	81,198
Average Rate, $/MWH	**$72.663**	**$85.564**	**$71.901**	**$63.034**	**$61.756**	**$55.621**	**$178.900**
Rate without Change, $/MWH	$70.343	$80.540	$69.538	$62.990	$61.753	$57.540	$141.000
Percent Change in Rate	3.30%	6.24%	3.40%	0.07%	0.00%	-3.33%	26.88%

	Downtown Network (Excludes Network Residential & Small)				
	Total	**Residential**	**Small**	**Medium**	**Large**
Mar Cost Shr Alloc of Rev Reqmnt	$106,196,478			$52,630,070	$53,566,408
Share of Initial Rev Reqmnt Alloc	13.257%			6.570%	6.687%
Net Wholesale Revenue Credit	($11,931,679)			(5,913,239)	(6,018,441)
Other Adjustments	-			-	-
Net Revenue Requirement	**$94,264,799**			**$46,716,832**	**$47,547,967**
Load, MWH	1,166,780			566,556	600,224
Average Rate, $/MWH	**$80.791**			**$82.458**	**$79.217**
Rate without Change, $/MWH	$71.986			$73.653	$70.412
Percent Change in Rate	12.23%			11.95%	12.51%

	Seattle Nonnetwork (Includes Network Residential & Small)						
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Mar Cost Shr Alloc of Rev Reqmnt	$567,881,867	$243,952,383	$81,841,442	$113,155,374	$54,218,918	$58,348,725	$16,365,025
Share of Initial Rev Reqmnt Alloc	70.894%	30.455%	10.217%	14.126%	6.769%	7.284%	2.043%
Net Wholesale Revenue Credit	($63,804,227)	(27,409,210)	(9,195,275)	(12,713,544)	(6,091,753)	(6,555,757)	(1,838,688)
Other Adjustments	(7,673,987)	(7,673,987)	-	-	-	-	-
Net Revenue Requirement	**$496,403,653**	**$208,869,186**	**$72,646,167**	**$100,441,830**	**$48,127,165**	**$51,792,968**	**$14,526,337**
Load, MWH	6,928,129	2,483,852	1,014,088	1,612,581	788,788	947,623	81,198
Average Rate, $/MWH	**$71.650**	**$84.091**	**$71.637**	**$62.286**	**$61.014**	**$54.656**	**$178.900**
Rate without Change, $/MWH	$69.170	$78.709	$69.000	$62.175	$60.906	$56.973	$141.000
Percent Change in Rate	3.59%	6.84%	3.82%	0.18%	0.18%	-4.07%	26.88%

	Tukwila + Shoreline					
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**
Mar Cost Shr Alloc of Rev Reqmnt	$71,999,362	$28,617,262	$5,701,467	$13,959,920	$8,431,904	$15,288,810
Share of Initial Rev Reqmnt Alloc	8.988%	3.573%	0.712%	1.743%	1.053%	1.909%
Net Wholesale Revenue Credit	($8,089,471)	(3,215,285)	(640,587)	(1,568,463)	(947,364)	(1,717,770)
Other Adjustments	5,236,056	2,009,119	414,591	1,032,334	625,813	1,154,198
Net Revenue Requirement	**$69,145,947**	**$27,411,095**	**$5,475,471**	**$13,423,791**	**$8,110,353**	**$14,725,237**
Load, MWH	940,194	296,755	73,526	198,943	122,669	248,301
Average Rate, $/MWH	**$73.544**	**$92.369**	**$74.470**	**$67.475**	**$66.116**	**$59.304**
Rate without Change, $/MWH	$72.374	$88.121	$73.700	$67.636	$66.813	$59.704
Percent Change in Rate	1.62%	4.82%	1.04%	-0.24%	-1.04%	-0.67%

	Other Suburbs				
	Total	**Residential**	**Small**	**Medium**	**Large**
Mar Cost Shr Alloc of Rev Reqmnt	$54,956,493	$39,765,544	$6,966,019	$7,138,401	$1,086,529
Share of Initial Rev Reqmnt Alloc	6.861%	4.964%	0.870%	0.891%	0.136%
Net Wholesale Revenue Credit	($6,174,623)	(4,467,848)	(782,665)	(802,033)	(122,077)
Other Adjustments	2,437,931	1,623,474	354,337	398,319	61,801
Net Revenue Requirement	**$51,219,801**	**$36,921,170**	**$6,537,690**	**$6,734,687**	**$1,026,253**
Load, MWH	619,731	412,360	89,834	101,730	15,807
Average Rate, $/MWH	**$82.648**	**$89.536**	**$72.775**	**$66.202**	**$64.924**
Rate without Change, $/MWH	$80.387	$86.115	$72.200	$66.819	$64.791
Percent Change in Rate	2.81%	3.97%	0.80%	-0.92%	0.20%

Table 3.10.b
Summary Results for 2014

	Total Service Territory						
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Mar Cost Shr Alloc of Rev Reqmnt	$840,921,841	$326,976,350	$99,430,917	$196,281,378	$125,862,161	$77,206,582	$15,164,454
Share of Initial Rev Reqmnt Alloc	100.000%	38.883%	11.824%	23.341%	14.967%	9.181%	1.803%
Net Wholesale Revenue Credit	($85,000,000)	(33,050,622)	(10,050,432)	(19,840,033)	(12,722,090)	(7,804,006)	(1,532,816)
Other Adjustments	-	(4,249,338)	817,691	1,515,331	707,896	1,208,420	-
Net Revenue Requirement	**$755,921,841**	**$289,676,391**	**$90,198,175**	**$177,956,675**	**$113,847,967**	**$70,610,995**	**$13,631,638**
Load, MWH	9,746,397	3,184,507	1,190,552	2,505,920	1,596,070	1,196,470	72,879
Average Rate, $/MWH	**$77.559**	**$90.964**	**$75.762**	**$71.015**	**$71.330**	**$59.016**	**$187.045**
Rate without Change, $/MWH	$73.445	$85.563	$71.901	$67.466	$68.352	$55.618	$178.900
Percent Change in Rate	5.60%	6.31%	5.37%	5.26%	4.36%	6.11%	4.55%

	Total Nonnetwork (Includes Network Residential & Small)						
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Mar Cost Shr Alloc of Rev Reqmnt	$729,423,591	$326,976,350	$99,430,917	$141,098,890	$69,546,399	$77,206,582	$15,164,454
Share of Initial Rev Reqmnt Alloc	86.741%	38.883%	11.824%	16.779%	8.270%	9.181%	1.803%
Net Wholesale Revenue Credit	($73,729,807)	(33,050,622)	(10,050,432)	(14,262,212)	(7,029,719)	(7,804,006)	(1,532,816)
Other Adjustments	-	(4,249,338)	817,691	1,515,331	707,896	1,208,420	-
Net Revenue Requirement	**$655,693,784**	**$289,676,391**	**$90,198,175**	**$128,352,008**	**$63,224,577**	**$70,610,995**	**$13,631,638**
Load, MWH	8,569,232	3,184,507	1,190,552	1,934,326	990,498	1,196,470	72,879
Average Rate, $/MWH	**$76.517**	**$90.964**	**$75.762**	**$66.355**	**$63.831**	**$59.016**	**$187.045**
Rate without Change, $/MWH	$72.435	$85.563	$71.901	$63.035	$61.709	$55.618	$178.900
Percent Change in Rate	5.64%	6.31%	5.37%	5.27%	3.44%	6.11%	4.55%

	Downtown Network (Excludes Network Residential & Small)				
	Total	**Residential**	**Small**	**Medium**	**Large**
Mar Cost Shr Alloc of Rev Reqmnt	$111,498,250			$55,182,488	$56,315,762
Share of Initial Rev Reqmnt Alloc	13.259%			6.562%	6.697%
Net Wholesale Revenue Credit	($11,270,193)			(5,577,821)	(5,692,372)
Other Adjustments	-			-	-
Net Revenue Requirement	**$100,228,057**			**$49,604,667**	**$50,623,390**
Load, MWH	1,177,165			571,594	605,571
Average Rate, $/MWH	**$85.144**			**$86.783**	**$83.596**
Rate without Change, $/MWH	$80.791			$82.458	$79.217
Percent Change in Rate	5.39%			5.25%	5.53%

	Seattle Nonnetwork (Includes Network Residential & Small)						
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Mar Cost Shr Alloc of Rev Reqmnt	$596,569,209	$255,384,156	$86,086,369	$118,893,845	$59,814,509	$61,225,877	$15,164,454
Share of Initial Rev Reqmnt Alloc	70.942%	30.370%	10.237%	14.139%	7.113%	7.281%	1.803%
Net Wholesale Revenue Credit	($60,300,946)	(25,814,115)	(8,701,571)	(12,017,736)	(6,046,024)	(6,188,684)	(1,532,816)
Other Adjustments	(8,087,911)	(8,087,911)	-	-	-	-	-
Net Revenue Requirement	**$528,180,352**	**$221,482,129**	**$77,384,797**	**$106,876,109**	**$53,768,486**	**$55,037,193**	**$13,631,638**
Load, MWH	7,005,911	2,477,224	1,025,180	1,629,917	851,894	948,817	72,879
Average Rate, $/MWH	**$75.391**	**$89.407**	**$75.484**	**$65.572**	**$63.116**	**$58.006**	**$187.045**
Rate without Change, $/MWH	$71.389	$84.091	$71.637	$62.286	$61.014	$54.656	$178.900
Percent Change in Rate	5.60%	6.32%	5.37%	5.27%	3.45%	6.13%	4.55%

	Tukwila + Shoreline					
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**
Mar Cost Shr Alloc of Rev Reqmnt	$75,287,528	$29,943,496	$6,012,744	$14,720,448	$8,630,135	$15,980,705
Share of Initial Rev Reqmnt Alloc	8.953%	3.561%	0.715%	1.751%	1.026%	1.900%
Net Wholesale Revenue Credit	($7,610,029)	(3,026,675)	(607,765)	(1,487,936)	(872,330)	(1,615,322)
Other Adjustments	5,489,859	2,107,712	438,506	1,091,581	643,640	1,208,420
Net Revenue Requirement	**$73,167,358**	**$29,024,533**	**$5,843,485**	**$14,324,092**	**$8,401,445**	**$15,573,803**
Load, MWH	942,703	295,822	74,513	201,803	122,913	247,653
Average Rate, $/MWH	**$77.614**	**$98.115**	**$78.423**	**$70.981**	**$68.353**	**$62.886**
Rate without Change, $/MWH	$73.516	$92.369	$74.470	$67.475	$66.116	$59.304
Percent Change in Rate	5.57%	6.22%	5.31%	5.19%	3.38%	6.04%

	Other Suburbs				
	Total	**Residential**	**Small**	**Medium**	**Large**
Mar Cost Shr Alloc of Rev Reqmnt	$57,566,854	$41,648,698	$7,331,804	$7,484,597	$1,101,754
Share of Initial Rev Reqmnt Alloc	6.846%	4.953%	0.872%	0.890%	0.131%
Net Wholesale Revenue Credit	($5,818,832)	(4,209,832)	(741,095)	(756,540)	(111,365)
Other Adjustments	2,598,052	1,730,861	379,184	423,750	64,257
Net Revenue Requirement	**$54,346,074**	**$39,169,728**	**$6,969,893**	**$7,151,807**	**$1,054,646**
Load, MWH	620,618	411,461	90,859	102,606	15,691
Average Rate, $/MWH	**$87.568**	**$95.197**	**$76.711**	**$69.701**	**$67.211**
Rate without Change, $/MWH	$82.602	$89.536	$72.775	$66.202	$64.924
Percent Change in Rate	6.01%	6.32%	5.41%	5.29%	3.52%

3.10 Discussion of Differences 2013 vs. 2007/2008

Changes in Unbundled Revenue Requirements

Table 3.11 presents a comparison of unbundled revenue requirements for the current and last rate case. Numbers for the last rate case equal one half of the total for the two year period in that rate case. The table also shows the net wholesale credit and the final, net revenue requirement and shows the relationship to total operating costs of each cost or credit item.

Table 3.11
Change in Functionalized Revenue Requirements

	2013	2007/2008	Difference	Percent Difference	2013 % of Total	2007/08 % of Total
Energy	**$ 471,863,799**	**$ 477,083,685**	$ (5,219,885)	-1.1%	58.9%	67.3%
Production	$ 124,764,790	81,218,304	43,546,486	53.6%	15.6%	11.5%
Purchased Power	$ 258,753,156	328,003,308	-69,250,151	-21.1%	32.3%	46.3%
Transmission - Long Distance	$ 38,952,547	17,763,350	21,189,197	119.3%	4.9%	2.5%
Conservation	$ 49,393,306	50,098,723	-705,417	-1.4%	6.2%	7.1%
Retail Service	**$ 329,170,401**	**231,858,287**	97,312,114	42.0%	41.1%	32.7%
Total Distribution	$ 255,473,689	163,303,876	92,169,813	56.4%	31.9%	23.0%
- Transmission - In Service Area	*$ 15,918,360*	*9,669,703*	6,248,658	64.6%	2.0%	1.4%
- Stations	*$ 43,126,317*	*31,456,477*	11,669,840	37.1%	5.4%	4.4%
- Wires & Related Equipment	*$ 140,316,555*	*83,616,782*	56,699,773	67.8%	17.5%	11.8%
- Transformers	*$ 30,413,925*	*18,579,854*	11,834,071	63.7%	3.8%	2.6%
- Meters, (except Meter Reading)	*$ 14,305,175*	*10,419,947*	3,885,228	37.3%	1.8%	1.5%
- Streetlights/Floodlights	*$ 11,393,357*	*9,561,114*	1,832,242	19.2%	1.4%	1.3%
Customer Costs	*$ 61,212,298*	*59,826,099*	1,386,198	2.3%	7.6%	8.4%
Low-Income Assistance	$ 12,484,415	8,728,312	3,756,103	43.0%	1.6%	1.2%
Total Operating Costs	**$ 801,034,200**	**$ 708,941,972.00**	$ 92,092,228.33	13.0%	100.0%	100.0%
Net Wholesale Revenue (Credit)	$ (90,000,000)	-169,698,715	79,698,715	-47.0%		
Net Revenue Requirement	**$ 711,034,200**	**$ 539,243,257.50**	**$ 171,790,942.83**	**31.9%**		

Despite net revenue requirement increasing 31.9% since the last rate case, Energy operating costs have actually decreased by 1.1%. In contrast, Retail Service costs have increased significantly (42.0%). This cost shift means that heavier energy users are advantaged in the current rate case relative to the last rate case. Conversely, customers who have rates with a large distribution cost component are disadvantaged by this cost shift.

Distribution costs per MWh for network customers are approximately twice what they are for regular radial system customers, due to the service redundancy.

Increased distribution costs of service to residential network customers helps to explain the higher than system average rate for City residential customers. Distribution is a significant portion of residential customer rates, and for network residential customers, even more so. As mentioned earlier, network residential is combined with City residential as a single rate class, so the significantly higher costs for residential network customers are borne by all City residential customers. Residential growth in the downtown network is also a contributing factor. The increase in total City residential customer load is entirely from the network; non-network residential load actually decreased slightly.

Changes in Load

Table 3.12 presents load data by major customer class for the last and current rate cases. For the most part, load has grown only slightly and declined in some sectors. Two areas where there have been substantial load changes are in the network and streetlights.

Streetlight load has declined by 14.5% because of the installation of energy efficient Light Emitting Diode Streetlights (LEDs). Because much of streetlight rates is the fixed cost of maintaining the fixtures, this decline in load is the major driver for higher Streetlight rates.

Table 3.12
Load Data, MWH

	Total	Residential	Small	Medium	Large	High Demand	Street Lights
2013							
Total	**9,654,834**	3,192,967	1,177,448	2,479,809	1,527,488	1,195,924	81,198
City	**6,696,782**	2,393,843	872,749	1,612,581	788,788	947,623	81,198
Network	**1,398,127**	90,009	141,339	566,556	600,224		
Suburbs	**1,559,925**	709,115	163,360	300,673	138,476	248,301	
2007/2008 Average							
Total	**9,586,803**	3,205,867	1,215,620	2,375,323	1,534,403	1,160,677	94,915
City	**6,689,024**	2,412,687	883,478	1,573,751	769,819	954,375	94,915
Network	**1,372,550**	76,407	157,246	509,864	629,034		
Suburbs	**1,525,230**	716,774	174,897	291,708	135,551	206,302	
Difference							
Total	**68,031**	-12,900	-38,171	104,487	-6,914	35,247	-13,717
City	**7,758**	-18,844	-10,728	38,830	18,969	-6,752	-13,717
Network	**25,578**	13,602	-15,907	56,692	-28,810		
Suburbs	**34,696**	-7,658	-11,536	8,965	2,926	41,999	
Percent Difference							
Total	**0.7%**	-0.4%	-3.1%	4.4%	-0.5%	3.0%	-14.5%
City	**0.1%**	-0.8%	-1.2%	2.5%	2.5%	-0.7%	-14.5%
Network	**1.9%**	17.8%	-10.1%	11.1%	-4.6%		
Suburbs	**2.3%**	-1.1%	-6.6%	3.1%	2.2%	20.4%	

Meanwhile, Medium and Residential network loads have grown, while Small network load has shrunk. Generally, since marginal costs are allocated per unit and then multiplied by load, the differential changes in load do not materially impact rates for customer classes. Two exceptions however, are the Small and Residential Network classes which are amalgamated with regular City rate classes. Since network costs tend to be higher than regular radial costs, and because the network makes up a bigger part of the Residential City class in 2013, this increases rate pressure for that class. Conversely, the decline of network load for Small General Service customers reduces rate pressure for the Small City rate class.

Changes in Franchise Contract Payments

As illustrated in **Table 3.13**, below, contract payments to the franchise cities on energy increased a very small amount while payments on distribution increased by a more

substantial amount. The reason why there was any increase at all in payments related to energy, since total energy costs declined since the last rate review (Table 3.11), is that those classes that use energy the most intensively and whose bills are most heavily influenced by energy costs are the classes that grew most strongly in the suburbs since the last rate review (Table 3.12). The increase in payment for distribution is associated with the fact that Shoreline began taking payments on distribution whereas it took no payments on distribution in the last rate review. Altogether, total payments to franchise cities grew a modest amount in absolute terms since the last rate review (an increase of just over $1.1 million).

Initial revenue requirements assigned to the suburbs rose by more than $14.5 million. A small part of that increase was associated with the increase in energy revenue requirements because of the increase in consumption by the large customers in the suburbs. The major cause of the increase in revenue requirements assigned to the suburbs was associated with the substantial increase in revenue requirements for Retail Sales. Meanwhile, the net wholesale revenue credit declined substantially (down by over $12.6 million) because of the substantial decrease in the total of net wholesale revenue credits. Because of all these factors, the final revenue requirement for the suburbs increased by $28.3 million. Thus, franchise payments declined as a percent of the final allocation of revenue requirements--down to 6.5% from 7.1% in the last rate case. In this sense, franchise contract payments were relatively lower as a percent of total revenue requirements than in the last rate case.

Table 3.13
Franchise Contract Payments and Net Wholesale Credits for Suburban Customers

	2013	2007/2008	Difference
Initial Allocation of Operating Revenue Requirements	$126,955,854	$112,375,804	$14,580,050
Total Franchise Contract Payments	7,673,987	6,546,927	1,127,060
For Energy	6,102,309	6,082,432	19,877
For Non-Energy	1,571,678	464,495	1,107,183
Adjusted Allocation of Revenue Requirements	134,629,842	118,922,731	15,707,111
Net Wholesale Revenue Credit	(14,264,094)	(26,899,281)	12,635,188
Final Allocation of Revenue Requirements	**$120,365,748**	**$92,023,450**	**$28,342,298**
Franchise Payments as % of Revenue Requirement	**6.4%**	**7.1%**	**-0.7%**

Relatively lower suburban franchise contract payments also contribute to increased Seattle Residential rates, because franchise payments are credited to the Seattle Residential customer class. **Table 3.14** presents information related to Seattle residential customers and the franchise payments that are applied as a credit to Seattle residential customers. That table also shows the reduction in the allocation of the net wholesale revenue credit to the Settle Residential class (discussed again, below) which also contributed to the increase in that class's rate increase.

Table 3.14
Franchise Contract Payment Credit and Net Wholesale Revenue Credit for Seattle Residential Class

	2013	2007/2008	Difference
Initial Allocation of Operating Revenue Requirements	$243,952,383	$212,335,464	$31,616,919
Credit Suburban Franchise Payments	($7,673,987)	($6,546,927)	($1,127,060)
Net Wholesale Revenue Credit	($27,409,210)	($50,826,523)	$23,417,313
Final Allocation of Revenue Requirements	**$208,869,186**	**$154,962,014**	**$53,907,172**
Franch Contract credits as % of Final Rev Req	**-3.7%**	**-4.2%**	**0.6%**

Streetlight Rate Increase: Higher Direct Costs and Lower Load

The high percentage rate change for streetlights in Table 3.10.a is related to the information in Tables 3.11 and 3.12. Recall that streetlights are assigned a share of all the other functionalized items (except meter and customer costs) plus 100% of the directly assigned streetlight costs. Table 3.11 indicates that operating costs assigned to streetlights directly increased over 19%. This increase reflects the major projects under way to retrofit streetlights with new LED lamps, as well as City Light's increased effort to rapidly repair non-functioning streetlights. Because of the more efficient LED lights, streetlight load is expected to decline (over 14% in 2013, as shown in Table 3.12), thereby increasing the cost per MWh. Note that because of the decrease in consumption, the actual bill percent impact is far lower than the rate increase percent.

Lower Net Wholesale Revenue Increases Rates for All

A change that affects all customers is that the credit for net wholesale energy sales is $79M less than it was in 2007-2008. This credit is allocated among all classes based on share of assigned operating costs, and the reduced credit increases rates for all customers.

3.11 Major Reasons for Differences in Percent Changes in Rates for 2014

While percent changes in average rates by customer class are more uniform in 2014 than in 2013 (see Table 3.1.b), there are still some notable differences which are explained by a relatively higher change in energy costs and a relatively lower change in distribution costs.

Table 3.15 indicates that the largest change in operating costs and functionalized revenue requirements occurs in the Energy component. Whereas Energy had the largest decrease in revenue requirements compared to the last rate case, in 2014 Energy has the largest increase over its counterpart in 2013. Just as the decrease in Energy revenue requirements led to a rate decrease for the largest customers (High Demand) in 2013, Table 3.15 indicates that these customers should see some of the relatively highest percentage increases in rates in 2014, which, in fact, is what is shown in Table 3.1.b.

Since Energy costs reflect a larger proportion of the increase in 2014, Distribution costs reflect a smaller proportion. Hence, customer classes whose rates have heavy distribution cost components see relatively smaller rate increases in 2014. For example, Table 3.1.b

indicates that the network customers have rate increases somewhat less than the system average in 2014 despite the redundancy in distribution equipment used in their service. Because Energy costs increase in 2014, franchise contract costs increase in that year. Therefore, the percent increase in suburban rates is higher than what was seen in 2013.

Although franchise costs increase and thereby contributions of revenues from franchise customers assigned to Seattle Residential customers increase somewhat, the revenue offset is not sufficient to offset the cost increase associated with absorbing the costs of network residential customers. Therefore, Seattle Residential customers have a rate increase higher than the system average increase in 2014.

Table 3.15
Comparison of Functionalized Revenue Requirements for 2013 and 2014

	2013	% of Op Cost	% of Net RR	2014	% of Op Cost	% of Net RR	2014 - 2013	% of Op Cost	% of Net RR
Energy	**$ 471,863,799**	58.91%	66.36%	**$ 504,529,004**	60.00%	66.74%	$ 32,665,205	81.89%	72.77%
Production	$ 124,764,790	15.58%	17.55%	$ 128,334,105	15.26%	16.98%	$ 3,569,315	8.95%	7.95%
Purchased Power	$ 258,753,156	32.30%	36.39%	$ 282,182,289	33.56%	37.33%	$ 23,429,133	58.74%	52.20%
Conservation	$ 38,952,547	4.86%	5.48%	$ 40,059,714	4.76%	5.30%	$ 1,107,168	2.78%	2.47%
Transmission - Long Distance	$ 49,393,306	6.17%	6.95%	$ 53,952,895	6.42%	7.14%	$ 4,559,589	11.43%	10.16%
Retail Service	**$ 329,170,401**	41.09%	46.29%	**$ 336,392,837**	40.00%	44.50%	$ 7,222,436	18.11%	16.09%
Total Distribution	**$ 255,473,689**	31.89%	35.93%	**$ 259,490,416**	30.86%	34.33%	$ 4,016,727	10.07%	8.95%
- Transmission - In Service Area	*$ 15,918,360*	1.99%	2.24%	*$ 15,791,657*	1.88%	2.09%	$ (126,703)	-0.32%	-0.28%
- Stations	*$ 43,126,317*	5.38%	6.07%	*$ 44,466,195*	5.29%	5.88%	$ 1,339,878	3.36%	2.98%
- Wires & Related Equipment	*$ 140,316,555*	17.52%	19.73%	*$ 144,713,842*	17.21%	19.14%	$ 4,397,287	11.02%	9.80%
- Transformers	*$ 30,413,925*	3.80%	4.28%	*$ 29,194,092*	3.47%	3.86%	$ (1,219,833)	-3.06%	-2.72%
- Meters (except Meter Reading)	*$ 14,305,175*	1.79%	2.01%	*$ 14,830,333*	1.76%	1.96%	$ 525,158	1.32%	1.17%
- Streetlights/Floodlights	*$ 11,393,357*	1.42%	1.60%	*$ 10,494,297*	1.25%	1.39%	$ (899,059)	-2.25%	-2.00%
Customer Costs	***$ 61,212,298***	7.64%	8.61%	***$ 63,671,577***	7.57%	8.42%	$ 2,459,280	6.17%	5.48%
Low-Income Assistance	**$ 12,484,415**	1.56%	1.76%	**$ 13,230,844**	1.57%	1.75%	$ 746,430	1.87%	1.66%
Total Operating Cost	**$ 801,034,200**	100.00%	112.66%	**$ 840,921,841**	100.00%	111.24%	$ 39,887,641	100.00%	88.86%
Load, MWH	**$ 9,654,834**			**$ 9,746,397**			$ 91,564	0.95%(1)	
Net Wholesale Revenue	**$ (90,000,000)**	-11.24%	-12.66%	**$ (85,000,000)**	-10.11%	-11.24%	$ 5,000,000	12.54%	11.14%
Net Revenue Requirement	**$ 711,034,200**			**$ 755,921,841**			$ 44,887,641		

(1) % chg over 2013 Load

Chapter 4: Policy Framework

4.1 Introduction

The underlying policy framework for cost of service analysis has been stable for several rate changes. Modifications have only been made to the details of its application. The allocation of City Light's revenue requirement to each customer class is based on reliable, up-to-date estimates of the cost of serving each class. The City informally proposed this policy after the first general rate increase, in 1970, and formally proposed it in 1977, in its first rate-making policy resolution (Resolution 25469).

From the beginning, a cost standard for revenue allocations was recognized as a guideline --deviations were allowed if they would accomplish some other goal. The first resolution talked about social objectives that "may justify giving special consideration to certain customers." It also recognized that in order to promote rate stability, deviations from the cost standard might be necessary. Indeed, this was the case in every rate increase since the goal of cost-based rates was first proposed until the last rate case in 2006 that established rates for the two year period 2007-08. That rate case discontinued a "gradualism" policy that shifted some revenue requirements away from cost-of-service allocations in order to satisfy social policy concerns. This rate case continues cost-of-service based rates as the standard, with the only deviation being the reflection of franchise agreement provisions.

This chapter presents an overview of the major policy framework and external agreement relationships that guide allocation of revenue requirements.

4.2 Franchise Agreements

City Light signed fifteen-year franchise agreements with four cities in the late 1990s (Shoreline, Burien, SeaTac, and Lake Forest Park) and agreed to a revised franchise agreement with Tukwila in 2003. These agreements required some changes in the way that City Light dealt with suburban customers. The first four franchises grant City Light "the right, privilege and authority … to construct, operate, maintain, replace and use all necessary equipment and facilities for an electric light and power system" [located within each of the four cities]. In exchange, all of the agreements require City Light to make contract payments to the suburban city governments based on the power portion of revenue collected from customers within those cities. The franchise agreements also contain a provision that, pursuant to a rate review process conducted by the Seattle City Council, allows City Light to charge a premium to customers in those cities that can be no "greater than an eight percent differential in the power portion of the rates to customers in [those cities], compared to the power portion of rates charged to similar customers in the City of Seattle."

The 2003 revised agreement with Tukwila has strong similarities to the other four agreements but requires City Light to make contract payments to the Tukwila city government based on the power portion and on the distribution portion of revenue collected from customers within Tukwila. The contract payments started at four percent

and went up to six percent in steps of an additional one percent in two-year intervals. The Tukwila agreement also included the provision that allows City Light to charge an eight percent differential on the power portion of Tukwila rates.

Subsequent to the initial implementation of the franchise agreement with Shoreline, that city activated a provision to receive a contract payment based on the Distribution portion of City Light revenue from customers within its boundaries. They requested three percent of that revenue starting in April of 2008, then six percent as of April 2009.

In summary, both Tukwila and Shoreline, as of this date, receive payments of six percent on both the Power and Distribution portions of revenues from City Light customers within those cities, and customers pay an eight percent premium over power costs and a six percent premium over distribution costs. The other franchise cities receive only six percent on the power portion of their customer rates and their customers pay an eight percent premium on that portion.

4.3 Long-Term Rate-Setting Objectives

The City Council reaffirmed long-term rate setting objectives and electric rate policies for the City Light Department in Resolution 31351 on May 7, 2012, which, essentially, reiterated the major objectives listed in earlier resolutions. Four of the objectives deal directly with cost allocation:

- **Customer Payment Based on Cost of Service.** To encourage the efficient use of resources, rates should be based on the marginal cost of service to the customer, and should reflect changes in the marginal cost over time.

- **Equity**. Rates should reflect a fair apportionment of the different costs of providing service among groups of customers.

- **Conservation Expense**. Since the City considers that conservation is a power resource, conservation expenditures shall be allocated to all customer rate classes

- **Low Income Rates and Bill Payment Assistance Expense**. The costs of providing low income rates and bill payment assistance to low-income residential customers shall be allocated to all customer classes.

The first two of these long-term rate-setting objectives are discussed below.

4.4 Customer Payment Based on Cost of Service

The objective, within the electric utility business, of basing rates on costs of service has been accomplished historically through either a marginal cost or an average (embedded) cost methodology. Both are generally regarded within the utility industry as providing appropriate cost standards. In addition, both methodologies will track cost changes that occur with the passage of time, but marginal cost estimates are much faster to respond to changes in technology and the price of inputs. The City of Seattle has evaluated these alternatives and has, for more than two decades, adopted a marginal cost methodology.

4.5 Equity

In all of the rate changes since 1980, City Light has grappled with difficult equity issues that influence how cost of service is determined. Since rates based on cost of service are designed for customer classes, the make-up of customer classes must be understood.

The definition of customer classes has changed over time. Prior to the mid-1980s, the type of customer (such as residential, commercial, industrial) generally defined customer classes. Since then, the intent has been to group customers into classes on the basis of the costs they impose on the Department to provide service to them. There was a concern that instant adoption of these new policies could lead to disproportionately high rate increases for some customers. Two methods were used to confront this problem.

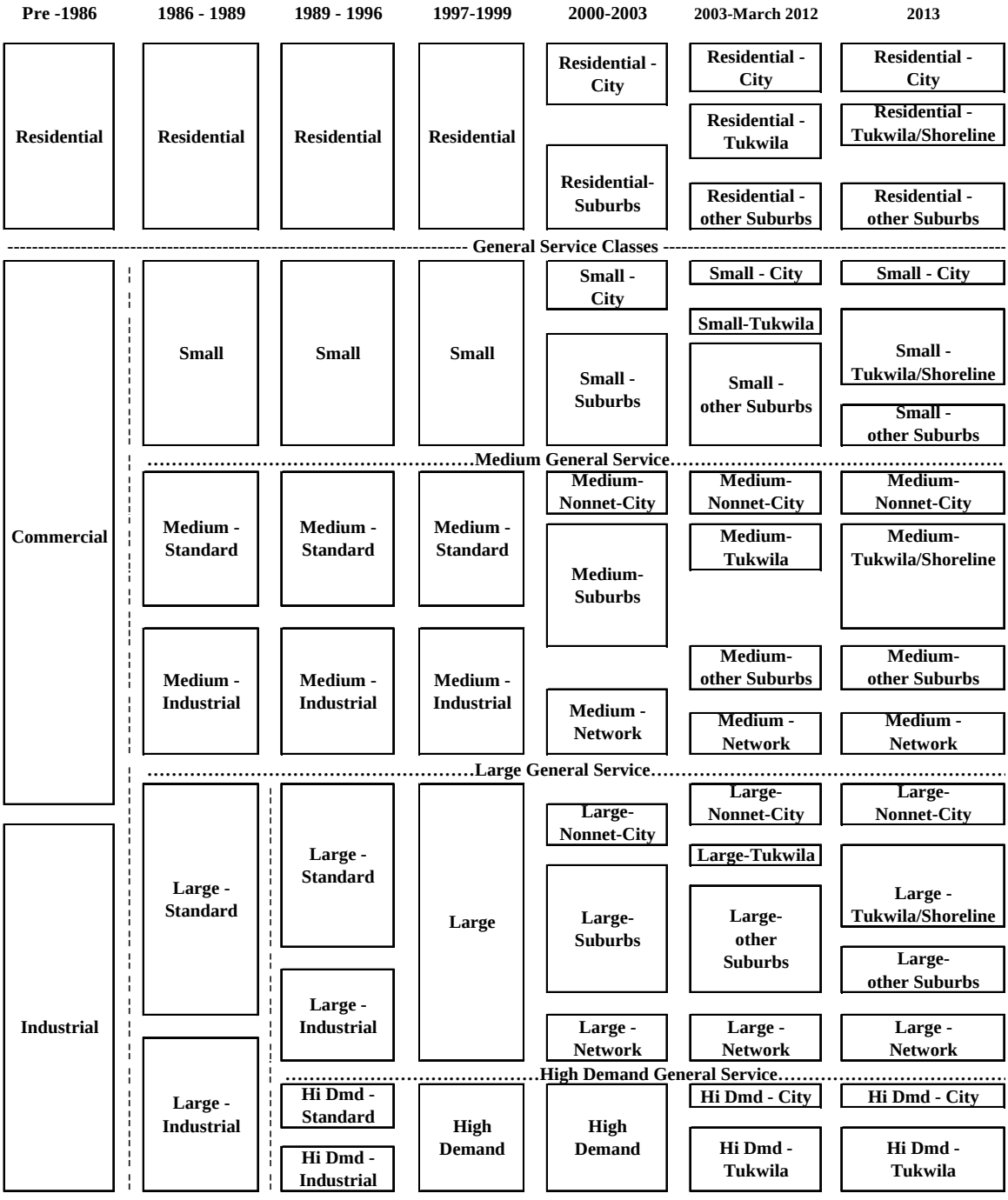
One method was to keep some customers separated into separate classes (or sub-classes) even though the costs to serve them were similar, e.g., "standard" and "industrial" classifications for medium, large, and high demand general service classes. A second method called "gradualism" imposed upper bounds on rate increases, which had the effect of phasing them in over several years. These tools were no longer needed in the 2006 rate case, and they have not been used since.

Evolution of Customer Classes

Figure 4.1 presents a simplified overview of the evolution of customer classes in recent years. Note, though, there is more detail than shown in Figure 4.1. Residential rates, in particular, have both a standard rate and a lower rate for low income customers. This figure illustrates the coalescence of "standard" and "industrial" classifications for non-residential customers, and the expansion to suburban and network rates.

Figure 4.1

Evolution of Customer Classes to Reflect Cost of Service



4.6 Other Long-Term Rate-Setting Objectives

Other long-term objectives specified in Resolution 31351 include efficiency and public involvement. Public involvement does not have a direct bearing on the choice of a costing methodology. The efficiency objective, however, is relevant.

"Rates should be structured so as to encourage the efficient use of resources needed to provide electrical service." … "This theme will find explicit expression in the allocation of costs among customers and in the design of rates to collect the appropriate shares." (Emphasis supplied.)

Economic efficiency is indirectly affected by the choice of a cost of service methodology. The City's policy is that the marginal cost framework for cost of service analysis and revenue allocations should promote economically efficient utility and customer decisions. The rate structure is usually the direct vehicle by which the efficiency objective is addressed. Rate design, not cost allocation, determines the rate structure, but some of the intermediate results of the cost allocation process are used in determining or evaluating rates which are further supported by the actual allocation of revenue requirements by functional elements among customer classes determined by marginal cost shares.

4.7 Changes in Policy Framework

While the basic policy of cost-based rates has remained unchanged since 1970, the details of the policy framework have changed over time. Changes that occurred during rate cases prior to this one are described in the COSACAR documents for those rate reviews.

A change in detail for the current rate case is a change in the composition of suburban customer groups. In the 2006 rate case, Tukwila had different provisions for contract payments than the other suburbs (see Section 4.2 above). Now, Tukwila and Shoreline have the same provisions so they are treated as one group, while the other franchise areas are in the second group.

Chapter 5: Overview of Methodology

5.1 Introduction

This chapter provides an introduction to the framework used to allocate functionalized revenue requirements among customer classes. The framework begins with determining how much it costs City Light to serve various types of customers. Two major aspects of the framework are discussed initially. One is the methodology used in estimating and applying costs to the revenue requirement. The other is a brief discussion of the functionalized revenue requirements and the specific cost elements whose shares are used to allocate them.

The fourth section discusses the allocation of net wholesale energy credits. The following section continues with a brief discussion of cost adjustments that reflect policy guidance and terms of agreements with several franchise cities. The next section then summarizes the general steps used in allocating revenue requirements among customer classes.

The final two sections discuss general issues that pertain to a number of cost estimations. One topic is the treatment of inflation so that all cost items over time are put on the same cost basis. The other topic is conversion of capital costs into annualized costs.

5.2 Marginal Cost Approach Used for Cost of Service Analysis

City Light uses a marginal cost approach in estimating the cost of providing services to customers for purposes of allocating revenue requirements. A marginal cost approach was used in the last ten City Light complete rate cases that included cost allocations (1980, 1982, 1984, 1986, 1989/90, 1993, 1995/96, 1997/98, 1999, and 2007/08). Marginal costs measure how a utility's cost picture changes when cost of inputs change, load is changed and/or the number of customers in the system changes. Only current (or near-term future) costs are included in the marginal cost estimates. Average costs, by contrast, are derived by dividing a utility's total costs by total load, maximum demand, or the number of customers.

Seattle's decision to use a marginal cost approach was largely in response to actions by OPEC during the 1970's that created fuel price shocks. These price shocks were the product of the set of circumstances existing in the last half of the 1970's that saw repercussions of the OPEC oil embargo in the first half of the 1970's and another OPEC oil crisis in the latter half of the decade. Both of these external fuel price shocks shifted some energy demand to electricity – especially in areas that had hydro supplies of energy. At that time, Seattle and the Northwest enjoyed low average rates but faced very high costs for new resources. Electric energy shortages were forecast, despite an aggressive construction program, in part because electricity demand was being fueled by low rates. The City was determined to avoid being blinded about the future by the existing low level of rates. Given this determination, the choice of a costing methodology was clear, since a marginal cost approach provided a good indication of the direction of change. In retrospect, the choice was fortuitous in that the next major issue to emerge in the

region—an energy surplus in the 1980s—was also an issue with significant financial implications that could be tracked by marginal cost calculations

After the decision was made to use marginal costs, other reasons emerged to support continuation of the framework. The framework provided an ideal tool for making resource evaluations for a wide range of generation and conservation projects. The marginal cost calculations also provided guidelines for the design of rates and a means for assessing the economic efficiency of rate options. Moreover, the framework could be used to identify the amount of "economic rent" from the hydro system. In other words, the methodology could be used to quantify the hydro benefits enjoyed by ratepayers. Finally, of course, since a marginal cost approach has been used in every rate change since 1980, consistency with past practice and the desire to create stability in the rate process have been important arguments for its continuation.

One further argument in favor of the marginal cost methodology is that it provides the most useful information to decision makers in a competitive environment. In a competitive situation, it is necessary to judge each spending decision in light of the earnings that can result from that decision. This judgment is, simply, marginal cost analysis. Even though the push to deregulate the industry prevalent in the late 1990s is no longer so evident, the need is as strong as ever for utilities to make 'good and competitive' economic decisions regarding both resource acquisition and pricing their product. So, it is important to have cost analyses based on marginal cost principles rather than average cost principles. Moreover, the new emphasis on separating out the component parts of the electricity industry implies a need to isolate actual revenue requirements and cost analyses into corresponding components.

5.3 Overview of Costs and Functionalized Revenue Requirements

Seattle City Light is in the business of assisting in the delivery or provision of many highly desired services, such as lighting, heating, cooling, and machine power. In general, it provides these services through electrical power delivered to customers who then use the power with equipment or facilities to produce the desired services. The amount of power desired is a function of, among other things, the demand for the ultimate services and the efficiency of the equipment for transforming the electrical power to the desired services. City Light, therefore, is involved in many activities that result in providing electricity and related services to retail customers.

First, there must be acquisition of bulk power through owned generation, long-term contracts or exchanges, or purchases from the wholesale spot markets. Actual power obtained for use by retail customers requires transmission to the local service area via high voltage lines. City light also provides retail customers with conservation measures and assistance with services that improve energy efficiency in order to minimize their consumption of electricity. City Light minimizes costs of providing ultimate services if improving the efficiency of transforming electrical power to ultimate services is less than the cost of providing additional electrical service directly. For that reason, costs of conservation are included as a component of power costs from the view of revenue

requirements. All power-related revenue requirements are allocated based on costs of actual power and long-distance transmission.

Once high voltage power is inside the service territory, the power must be distributed and high voltage must be transformed to lower voltage for customer use, which typically involves transformations at substations, with subsequent distribution through feeders, and further transformation at the customer's location. Next, individual customers must be connected, metered and billed. Finally, there are costs associated with public policies, in particular costs associated with subsidies provided to low-income residential customers.

There are two major forms of local distribution. The more common form is radial distribution. Each customer is served by one distribution line. The other form is network distribution in which each customer is fed by more than one distribution line. Network service requires more equipment to serve each customer than radial service and, therefore, is more costly, but it provides higher reliability; outages of service because of malfunction or repair of equipment are rare.

Each of these activities has associated costs. Some of the costs are affected by the nature of the individual customer but others costs are not. For instance, the per-unit cost of bulk power is not affected by the nature of the final customer. However, since the market price of bulk power varies over the course of a day and throughout the year, customers with different load profiles but with the same total load face different total power costs. Additionally, the magnitude of energy losses involved in providing power to retail customers varies based on the size of the customer and nature of the distribution system (radial or network) serving the customer. These differences among customers affect power costs allocated to them.

Distribution costs are a function of the size and type of equipment required to serve customers, losses from the equipment that change with temperature, and the load profiles of customers. Distribution costs also include costs of public lighting ("streetlights"). Some streetlights are provided by City Light for a governmental unit such as a city or county and others are purchased for use by specific customers. Each group pays for its own lights. Thus, streetlights are both a distribution cost item, because the costs can be identified at the revenue requirement level, and also a customer class[1].

Customer costs cover meter reading, billing, and other customer services. Larger customers, typically, receive more technical advice, which costs more than similar service to smaller customers. Therefore, customer costs for larger customers are higher.

In summary, costs for the above items are used to allocate the revenue requirements among customer classes. The next table indicates the shares of which cost items are used to allocate each of the individual revenue requirement categories.

[1] Distribution costs directly associated with streetlights are all assigned to the streetlight customer class in the COSM, in addition to power costs and shares of other distribution costs. As part of these distribution costs, most streetlights have the lights themselves and, often, poles or other equipment supplied by City Light. Average rates for Streetlights, therefore, include not only costs for power and distribution services but also some capital costs. Thus, the average cost of streetlights on a cost per unit of energy basis is higher than for other classes.

Revenue Requirement Category	Marginal Costs Used for Allocation
Energy	
Production	Power cost including long distance transmission
Purchased Power	Power cost including long distance transmission
Transmission - Long Distance	Power cost including long distance transmission
Conservation	Power cost including long distance transmission
Retail Service	
Total Distribution	
Transmission - In Service Area	Transmission - In Service Area
Stations	Stations
Wires & Related Equipment	Wires & Related Equipment by Nonnetwork & Network
Transformers	Transformers by Nonnetwork & Network
Meters (except Meter Reading)	Meters
Streetlights	All costs assigned to Streetlights
Customer Service Costs	Customer Service Costs
Low-Income Assistance	Shares of total other costs

5.4 Treatment of Wholesale Net Revenue

Chapter 2 describes how results from the Department's financial planning model (FPM) are converted into the functionalized revenue requirements indicated in the previous table. The large majority of the FPM items are various kinds of expenses that are assigned to one of the indicated revenue requirement categories. However, there are also several revenue sources that provide cost offsets. These revenues reduce the amount that retail customers need to pay for services provided by the Department. For these revenues to be properly treated by the cost of service model, they also must be functionalized. In general, there are reasonable guidelines indicating which functionalized revenue requirement should be offset by each of the revenue sources.

One substantial revenue item, though, has grown substantially since the 1999 review when it was of no material concern. This is net revenue from wholesale purchases and sales of bulk power. Growth of this net revenue is associated with the acquisition of a number of power resources since the 1999 rate review to provide power to all the Department's customers, even in distressingly low water conditions. All customers share the benefits and risks associated with the resources acquired that provide this net wholesale revenue. For this reason, this revenue source was removed in the 2006 rate case from the revenue requirements during their functionalization and allocation. Starting with the 2006 rate case, the revenue requirements indicated in the previous table have been allocated based on shares of the cost items mentioned; then the net wholesale revenue offset is apportioned among all customer classes on the basis of the shares of the revenue requirements allocated by marginal cost shares. That is the procedure for allocating net wholesale revenue used in this analysis.

5.5 Other Adjustments

Network Cost Adjustment

Network service uses several feeders, network protectors and other specialized equipment to serve each customer; therefore, it costs more per customer than radial distribution service. Separate rates for network customers that reflect this higher cost of service were established in 1999 and phased in gradually. In order to provide a bridge between previous rates and the rates implied by full cost of service for these customers, initially only 25 percent of the increased cost of network service was included in network rates. The cost differential percentage, though, was increased to 50 percent for rates starting in March 2002. The 2006 rate review allowed for a 100 percent pass-through of network costs to network customers and that 100 percent pass-through of network costs to network customers continues in this analysis.

Franchise Agreement Implementation

As discussed above in Section 4.2, suburban franchise agreements were signed with Shoreline, Lake Forest Park, SeaTac and Burien in the late 1990s, while Tukwila updated its long-standing franchise agreement with the Department in 2003. Implementation of these agreements increases total revenue to be collected from suburban customers and the extra amount is credited to those considered to be the owners of the Department's assets, i.e., Seattle residential customers.

As mentioned before, there have been a number of rate changes since the 2006 rate review. Each of these changes represented across-the-board changes in rates for all customers that did not differ between Seattle and the suburbs. Since actual Power and Distribution costs have not all increased at the same rate, the relationship between franchise Power and Distribution costs to the actual counterparts in Seattle are different today than in 2006. This cost of service study reinstalls the permitted differentials.

Consolidation of Network Residential and Small General Service Classes with Seattle Nonnetwork Residential and Small General Service Classes

The major beneficiaries of network service are the medium and large customers within the network area. The cost of service and an allocation of revenue requirements, however, are estimated for all classes within the network area. But as a final step in the allocation of revenue requirements, the revenue requirements and loads for the network residential and small commercial customers are consolidated with the revenue requirements and loads for Seattle non-network residential and small commercial customers. Thus, one set of rates is established for all residential and one set of rates for all small general service customers within Seattle.

5.6 Outline of Steps in Allocating Revenue Requirements

The process used to allocate revenue requirements among customer classes in this rate review is similar to the process used in the 2006 rate review, but as already indicated, there are a few differences in detail that reflect some differences in circumstances. Summarizing the previous discussion, the major steps after the revenue requirements have been unbundled in the current process are the following:

(1) Determine the marginal cost per appropriate unit for:
   (a) Energy, including long-distance transmission
   (b) In-service area transmission
   (c) Substations
   (d) Wires and related equipment, separately for network and nonnetwork customers
   (e) Customer transformers, separately for network and nonnetwork customers
   (f) Meters (except meter reading)
   (g) Customer service costs
(2) Compute the total cost of providing each of the above services to each customer class in each year of the rate review when services are valued at marginal cost.
(3) Compute the share of the total marginal cost by type of service by customer class for each year. Do this separately for network and nonnetwork wires and transformers.
(4) Use these shares to allocate the revenue requirements for each of the two years that have been separated into corresponding functional categories. Do this separately for network and nonnetwork wires and transformers.
(5) Incorporate the effects of agreements with suburban cities that permit the Department to charge differentially higher rates on the power, or power and distribution, portions of rates to customers in those cities relative to corresponding customers in Seattle. Apply the allowed differential rates to the suburban customers. Follow policy direction that this incremental revenue from suburban customers be credited to Seattle residential customers.
(6) Follow policy direction that residential and small general service customers in the network rate area be charged the same rate as corresponding customers in Seattle. This objective is achieved by melding the revenue requirements and loads for these network customers with their counterparts in Seattle, creating average annual rates that apply to all similar customers.
(7) Distribute the revenue credit from net wholesale energy purchases and sales among customer classes according to the allocation of revenue requirements based on cost shares.

5.7 Inflation Rates

The numbers in this report are displayed in both constant-year and current-year dollar terms. Future year costs expressed in present day constant dollars can be interpreted as a projection of future costs if no general inflation occurs between the present and the future year--that is, if future dollars retain the same purchasing power as they have today. Usually, figures in this report associated with determining the marginal cost of providing services to customers are denominated in 2011 constant dollars that are then converted to dollars of the year in question. All figures in the COSACAR model that are ultimately used to allocate revenue requirements among customer classes, regardless of the year's dollars in which they are originally denominated, are inflated to dollars for the year being analyzed for the actual cost allocation process, since the cost of service report is geared to each of those individual years. This adjustment has no effect on marginal cost shares by class but does affect the final marginal cost per unit which is used to help set marginal retail rates where possible.

Conversions of dollars from one year into those of another are made via the inflation index for consumer prices for workers (cpi-w) shown in **Table 5.1**.

Table 5.1
Inflation Index, 1982-84=100, and Annual Percent Change

	cpi-w	percent chg.
2008	219.69	4.48%
2009	220.66	0.44%
2010	222.38	0.78%
2011	229.44	3.17%
2012	234.30	2.12%
2013	239.53	2.23%
2014	245.16	2.35%

5.8 Annualization of Capital Costs: The General Case

In computing costs for generation, transmission, and distribution, a procedure is needed for annualizing capital costs. The capital investments in generation, transmission, and distribution equipment and facilities provide service for an extended period of time. For instance, a substation may have an economic life of 32 years, but the initial investment to build the facility is substantial. In lieu of charging all the capital cost in the first year of operation, the costs are spread (or annualized) over the economic life of the capital asset. In this way, the capital costs of an asset are recovered over its economic life.

The process of converting the total initial cost of an asset to a series of annual costs is usually referred to as annualization (the calculation of annual carrying charges). Rather than just dividing the total initial cost by the economic life of the investment, allowance has been made for the cost of capital over time. In other words, the present value of the sum of the annual payments has to equal the total initial cost.

Through annualization, the capital costs of City Light's capital investments are distributed or annualized over the economic lives of those investments to account for their use in any single year. The formula used in the calculation of the annual charges is shown below. (Detailed derivation of the annualization formula is shown in Appendix C of the *1989/90 COSACAR* and a similar derivation is presented in Appendix E of the *1983 Energy Resource Report Users' Guide*.)

$$AC = k\left[\frac{r(1+r)^n}{(1+r)^n - 1}\right]$$

where:

AC = annualized cost
k = investment (initial capital cost)
r = real discount rate
n = asset life in years

This formula assumes that the annual costs occur at the end of each year. If costs are assumed to occur at mid-year, an additional half-year shift needs to be incorporated.

A real discount rate of 3 percent is assumed in this analysis. This discount rate is used in other financial analyses and represents the "real" cost of capital to Seattle City Light. For the purpose of this analysis, assumptions are also made concerning the asset lives of generation, transmission, and distribution equipment and facilities. By applying these assumptions to the formula for annualized charges, annualized factors can be computed, which, when multiplied by the investment (k), will produce the annualized charge (AC) for the particular asset. For example, the annualization factor is computed as follows for an asset with a useful life of 24 years:

$$Annualization\_Factor = \frac{r(1+r)^n}{(1+r)^n - 1}$$

$$= \frac{.03(1+.03)^{24}}{(1+.03)^{24} - 1}$$

$$= .05905$$

Thus, if the capital cost (k) is $100 and the asset life is 24 years, the annualized charge (AC) is $100 x .05905, which is $5.91 per year. In addition to annualizing the capital investments of energy-related facilities, the capital costs related to providing service to customers, such as meters, are also annualized by the same approach.

Table 5.2 shows the asset lives assumed for the equipment and facilities used in this study and the corresponding annualization factors based on a three percent interest rate and an assumption costs are incurred in mid-year. The asset lives are based on a study prepared for City Light by EBASCO Consulting Service (*Seattle City Light: Depreciation Study of Electric Plant in Service at December 31, 1980*). In its February 1985 *Financial Plan*, City Light recommended adopting the economic life figures from the EBASCO study. This recommendation was formally adopted by the City Council in its resolution on the *Financial Plan* in December 1985 (Resolution 27372).

Table 5.2
Assumed Asset Lives and Annualization Factors

Facilities	Economic Life (Years)	Annualization Factor (AF)
Transmission Plant	45	0.0401868
Substations and Feeders	32	0.0483271
General Plant	28	0.0525114
Transformers	30	0.0502708
Meters & Service Connections (related to customer service)	35	0.0458565

Chapter 6: Load, Losses and Meters

6.1 Load Data

Revenue requirements associated with energy are the largest among all revenue requirements. These revenues are allocated based on shares of the marginal cost of energy. The energy involved is final customer load by class plus energy losses associated with getting energy from the generation source to the customer.

The basic allocation of revenue requirements is done by class for all nonnetwork classes and for all network classes. The nonnetwork revenue requirement is then prorated among Seattle, Tukwila+Shoreline and the Other Suburbs, by class, based on share of total MWh by class. Though network residential and small general service classes are, ultimately, combined with their Seattle nonnetwork counterparts, they are initially considered as part of network load.

Tables 6.1 through 6.4 present MWh load information by two costing periods per month for the years 2013 and 2014. Table 6.1 summarizes the load for each class, regardless of location of the class. Table 6.2 presents load data for all the nonnetwork customer classes. Table 6.3 presents load data for all the network classes.

The two costing periods correspond with the data on prices of wholesale energy so that, later, the product of the load plus loss data and the price data are compatible with each other.

Table 6.4 presents an annual summary of loads for the areas just mentioned as well as for Seattle, Tukwila+Shoreline and the Other Suburbs. As mentioned, network residential and small general service loads are initially considered a part of the total network load. Ultimately, though, those loads are combined with their Seattle counterparts. Hence, there is a side-bar to Table 6.4 that indicates appropriate totals when the network residential and small general service customers are consolidated with their Seattle counterparts.

Table 6.5 presents shares of load by class and area. These shares are used to allocate the total nonnetwork revenue requirement by customer class among Seattle, Tukwila+Shoreline and the Other Suburbs.

Table 6.1
Service Territory Load, MWH, for 2013-2014 by Two Costing Periods/Month

		Total System Consumption, MWH						
Calendar Year		Total	Residential	Small	Medium	Large	Hi Dmd	St Lts
2013		9,654,834	3,192,967	1,177,448	2,479,809	1,527,488	1,195,924	81,198
2014		9,746,397	3,184,507	1,190,552	2,505,920	1,596,070	1,196,470	72,879
Jan	Mon-Sa HLH	570,110	229,081	69,536	136,961	77,849	52,974	3,710
Jan	Other hrs	357,615	147,987	40,267	77,869	47,366	38,989	5,137
2013	**Jan Total**	927,725	377,068	109,802	214,829	125,215	91,964	8,847
Feb	Mon-Sa HLH	512,598	200,209	62,794	124,211	70,981	51,411	2,992
Feb	Other hrs	305,720	119,764	34,738	68,351	41,437	36,942	4,489
2013	**Feb Total**	818,318	319,973	97,531	192,562	112,418	88,353	7,481
Mar	Mon-Sa HLH	520,939	189,068	65,536	134,725	74,356	54,937	2,318
Mar	Other hrs	332,951	123,720	37,994	77,500	45,562	43,325	4,850
2013	**Mar Total**	853,890	312,788	103,530	212,225	119,918	98,262	7,168
Apr	Mon-Sa HLH	493,754	161,810	61,848	131,678	77,494	59,538	1,385
Apr	Other hrs	291,001	97,720	33,121	69,157	43,423	43,103	4,476
2013	**Apr Total**	784,755	259,530	94,970	200,835	120,917	102,642	5,862
May	Mon-Sa HLH	460,472	134,417	59,977	130,628	76,048	58,480	922
May	Other hrs	288,780	86,899	34,134	72,405	45,640	45,126	4,576
2013	**May Total**	749,252	221,315	94,111	203,033	121,688	103,606	5,499
Jun	Mon-Sa HLH	435,266	116,691	57,239	125,361	77,362	58,170	443
Jun	Other hrs	277,847	76,951	33,102	71,343	47,170	44,942	4,340
2013	**Jun Total**	713,113	193,641	90,341	196,704	124,532	103,112	4,782
Jul	Mon-Sa HLH	456,975	117,519	61,004	134,525	83,349	60,119	460
Jul	Other hrs	281,011	73,205	33,836	73,969	49,224	46,302	4,475
2013	**Jul Total**	737,986	190,724	94,839	208,494	132,573	106,421	4,935
Aug	Mon-Sa HLH	475,674	118,680	63,142	139,713	90,068	63,117	954
Aug	Other hrs	268,742	67,300	32,046	70,591	49,327	44,958	4,522
2013	**Aug Total**	744,417	185,980	95,187	210,304	139,394	108,076	5,476
Sep	Mon-Sa HLH	427,829	115,051	56,284	124,202	76,687	53,912	1,693
Sep	Other hrs	291,976	80,741	34,881	75,701	50,624	45,373	4,657
2013	**Sep Total**	719,804	195,792	91,165	199,903	127,310	99,285	6,350
Oct	Mon-Sa HLH	512,440	157,395	64,009	138,134	88,068	61,980	2,853
Oct	Other hrs	289,255	88,366	33,067	69,948	48,518	44,564	4,791
2013	**Oct Total**	801,695	245,761	97,076	208,082	136,587	106,544	7,644
Nov	Mon-Sa HLH	520,621	187,397	62,883	132,139	80,468	54,223	3,511
Nov	Other hrs	335,256	123,493	37,661	77,194	50,495	41,480	4,932
2013	**Nov Total**	855,877	310,891	100,544	209,333	130,963	95,703	8,443
Dec	Mon-Sa HLH	563,628	224,291	66,142	137,366	81,453	50,863	3,513
Dec	Other hrs	384,374	155,213	42,210	86,139	54,519	41,094	5,199
2013	**Dec Total**	**948,002**	**379,504**	**108,352**	**223,505**	**135,972**	**91,957**	**8,712**
Jan	Mon-Sa HLH	578,310	228,713	70,286	138,332	84,613	52,885	3,480
Jan	Other hrs	362,408	147,750	40,701	78,647	51,567	38,924	4,819
2014	**Jan Total**	940,718	376,463	110,987	216,980	136,180	91,809	8,299
Feb	Mon-Sa HLH	520,112	199,844	63,482	125,481	77,169	51,351	2,786
Feb	Other hrs	309,950	119,546	35,119	69,049	45,158	36,899	4,178
2014	**Feb Total**	830,062	319,390	98,601	194,530	122,327	88,250	6,964
Mar	Mon-Sa HLH	529,166	188,669	66,266	136,130	81,059	54,901	2,141
Mar	Other hrs	337,759	123,459	38,418	78,308	49,797	43,297	4,480
2014	**Mar Total**	866,925	312,129	104,684	214,437	130,856	98,198	6,621
Apr	Mon-Sa HLH	502,074	161,434	62,548	133,079	84,213	59,530	1,270
Apr	Other hrs	295,420	97,493	33,497	69,891	47,338	43,098	4,102
2014	**Apr Total**	797,494	258,927	96,045	202,971	131,552	102,628	5,372
May	Mon-Sa HLH	467,979	134,125	60,476	131,505	82,519	58,515	839
May	Other hrs	294,498	86,613	34,717	73,729	50,147	45,131	4,161
2014	**May Total**	762,477	220,738	95,193	205,235	132,666	103,646	4,999
Jun	Mon-Sa HLH	441,319	116,249	58,092	127,280	81,103	58,196	399
Jun	Other hrs	279,752	76,823	33,303	71,598	49,104	45,010	3,914
2014	**Jun Total**	721,071	193,072	91,395	198,878	130,207	103,205	4,313
Jul	Mon-Sa HLH	462,482	117,154	61,713	136,011	87,002	60,189	411
Jul	Other hrs	283,816	72,978	34,230	74,787	51,460	46,357	4,004
2014	**Jul Total**	746,297	190,133	95,944	210,799	138,462	106,546	4,415
Aug	Mon-Sa HLH	461,460	113,716	61,781	136,781	87,597	60,771	815
Aug	Other hrs	286,011	71,679	34,492	75,805	52,557	47,434	4,044
2014	**Aug Total**	747,471	185,395	96,273	212,585	140,154	108,205	4,859
Sep	Mon-Sa HLH	446,349	119,680	58,979	129,965	79,925	56,248	1,552
Sep	Other hrs	276,018	75,484	33,204	72,065	48,070	43,158	4,036
2014	**Sep Total**	722,367	195,165	92,184	202,030	127,995	99,406	5,588
Oct	Mon-Sa HLH	514,273	156,892	64,709	139,578	88,547	62,057	2,490
Oct	Other hrs	289,762	88,084	33,429	70,676	48,772	44,620	4,181
2014	**Oct Total**	804,035	244,976	98,139	210,254	137,319	106,677	6,671
Nov	Mon-Sa HLH	502,033	178,761	61,276	128,881	78,037	52,162	2,916
Nov	Other hrs	355,735	131,121	40,345	82,594	53,623	43,662	4,389
2014	**Nov Total**	857,768	309,882	101,621	211,475	131,660	95,824	7,305
Dec	Mon-Sa HLH	586,016	232,644	69,168	143,449	84,739	52,882	3,134
Dec	Other hrs	363,695	145,594	40,319	82,297	51,951	39,194	4,340
2014	**Dec Total**	**949,711**	**378,238**	**109,487**	**225,746**	**136,690**	**92,076**	**7,474**

Table 6.2
Nonnetwork Load, MWH, for 2013-2014 by Two Costing Periods/Month

		Total Nonnetwork Consumption (excludes Netwk Res & Small), MWH						
Calendar Year		Total	Residential	Small	Medium	Large	Hi Dmd	St Lts
2013		8,256,707	3,102,958	1,036,109	1,913,254	927,264	1,195,924	81,198
2014		8,336,890	3,094,766	1,047,951	1,934,326	990,498	1,196,470	72,879
Jan	Mon-Sa HLH	492,071	222,631	61,162	106,356	45,239	52,974	3,710
Jan	Other hrs	311,624	143,835	35,454	59,404	28,804	38,989	5,137
2013	**Jan Total**	803,695	366,466	96,616	165,761	74,043	91,964	8,847
Feb	Mon-Sa HLH	441,739	194,673	55,217	96,255	41,191	51,411	2,992
Feb	Other hrs	266,016	116,352	30,602	52,335	25,296	36,942	4,489
2013	**Feb Total**	707,755	311,025	85,820	148,589	66,487	88,353	7,481
Mar	Mon-Sa HLH	445,982	183,688	57,641	104,322	43,077	54,937	2,318
Mar	Other hrs	289,156	120,322	33,457	59,404	27,798	43,325	4,850
2013	**Mar Total**	735,139	304,010	91,097	163,726	70,875	98,262	7,168
Apr	Mon-Sa HLH	419,109	157,171	54,353	101,886	44,775	59,538	1,385
Apr	Other hrs	251,644	95,114	29,213	53,044	26,693	43,103	4,476
2013	**Apr Total**	670,754	252,286	83,566	154,931	71,468	102,642	5,862
May	Mon-Sa HLH	387,798	130,577	52,723	101,184	43,911	58,480	922
May	Other hrs	247,773	84,542	30,088	55,447	27,993	45,126	4,576
2013	**May Total**	635,571	215,119	82,811	156,631	71,905	103,606	5,499
Jun	Mon-Sa HLH	365,068	113,368	50,268	96,879	45,940	58,170	443
Jun	Other hrs	237,854	74,807	29,227	54,872	29,667	44,942	4,340
2013	**Jun Total**	602,921	188,175	79,494	151,751	75,607	103,112	4,782
Jul	Mon-Sa HLH	381,741	114,232	53,593	103,924	49,413	60,119	460
Jul	Other hrs	239,678	71,098	29,861	56,932	31,011	46,302	4,475
2013	**Jul Total**	621,419	185,330	83,454	160,855	80,423	106,421	4,935
Aug	Mon-Sa HLH	397,327	115,342	55,517	107,744	54,653	63,117	954
Aug	Other hrs	229,484	65,374	28,246	54,512	31,873	44,958	4,522
2013	**Aug Total**	626,811	180,716	83,762	162,255	86,526	108,076	5,476
Sep	Mon-Sa HLH	359,723	111,861	49,479	96,096	46,681	53,912	1,693
Sep	Other hrs	249,846	78,380	30,745	58,136	32,556	45,373	4,657
2013	**Sep Total**	609,569	190,241	80,224	154,232	79,237	99,285	6,350
Oct	Mon-Sa HLH	434,367	152,901	56,243	106,838	53,551	61,980	2,853
Oct	Other hrs	249,490	85,930	29,185	53,714	31,305	44,564	4,791
2013	**Oct Total**	683,857	238,831	85,428	160,552	84,856	106,544	7,644
Nov	Mon-Sa HLH	446,554	182,071	55,212	102,313	49,225	54,223	3,511
Nov	Other hrs	291,071	120,030	33,269	59,206	32,154	41,480	4,932
2013	**Nov Total**	737,625	302,100	88,482	161,519	81,379	95,703	8,443
Dec	Mon-Sa HLH	486,467	218,017	58,074	106,395	49,605	50,863	3,513
Dec	Other hrs	335,124	150,641	37,281	66,055	34,853	41,094	5,199
2013	**Dec Total**	**821,591**	**368,658**	**95,355**	**172,450**	**84,458**	**91,957**	**8,712**
Jan	Mon-Sa HLH	499,639	222,275	61,836	107,453	51,709	52,885	3,480
Jan	Other hrs	316,048	143,605	35,846	60,017	32,837	38,924	4,819
2014	**Jan Total**	815,687	365,881	97,682	167,470	84,546	91,809	8,299
Feb	Mon-Sa HLH	448,674	194,320	55,837	97,272	47,109	51,351	2,786
Feb	Other hrs	269,926	116,142	30,946	52,889	28,871	36,899	4,178
2014	**Feb Total**	718,600	310,462	86,783	150,161	75,980	88,250	6,964
Mar	Mon-Sa HLH	453,592	183,302	58,299	105,452	49,496	54,901	2,141
Mar	Other hrs	293,606	120,070	33,839	60,048	31,872	43,297	4,480
2014	**Mar Total**	747,198	303,372	92,138	165,500	81,369	98,198	6,621
Apr	Mon-Sa HLH	426,806	156,808	54,984	103,018	51,197	59,530	1,270
Apr	Other hrs	255,736	94,895	29,553	53,632	30,456	43,098	4,102
2014	**Apr Total**	682,542	251,703	84,537	156,650	81,653	102,628	5,372
May	Mon-Sa HLH	394,917	130,299	53,170	101,875	50,219	58,515	839
May	Other hrs	252,918	84,262	30,619	56,535	32,210	45,131	4,161
2014	**May Total**	647,835	214,560	83,790	158,411	82,429	103,646	4,999
Jun	Mon-Sa HLH	370,300	112,939	51,043	98,456	49,267	58,196	399
Jun	Other hrs	239,641	74,684	29,407	55,058	31,568	45,010	3,914
2014	**Jun Total**	609,940	187,623	80,449	153,515	80,834	103,205	4,313
Jul	Mon-Sa HLH	386,605	113,879	54,235	105,132	52,757	60,189	411
Jul	Other hrs	242,134	70,878	30,219	57,595	33,081	46,357	4,004
2014	**Jul Total**	628,739	184,757	84,454	162,728	85,838	106,546	4,415
Aug	Mon-Sa HLH	385,030	110,516	54,336	105,593	52,999	60,771	815
Aug	Other hrs	243,848	69,634	30,410	58,514	33,813	47,434	4,044
2014	**Aug Total**	628,879	180,150	84,746	164,107	86,812	108,205	4,859
Sep	Mon-Sa HLH	375,144	116,360	51,866	100,544	48,574	56,248	1,552
Sep	Other hrs	236,086	73,272	29,281	55,413	30,925	43,158	4,036
2014	**Sep Total**	611,230	189,633	81,146	155,958	79,499	99,406	5,588
Oct	Mon-Sa HLH	435,578	152,414	56,875	108,011	53,731	62,057	2,490
Oct	Other hrs	249,682	85,656	29,514	54,301	31,410	44,620	4,181
2014	**Oct Total**	685,260	238,071	86,389	162,312	85,141	106,677	6,671
Nov	Mon-Sa HLH	430,094	173,676	53,811	99,902	47,627	52,162	2,916
Nov	Other hrs	308,519	127,447	35,644	63,351	34,026	43,662	4,389
2014	**Nov Total**	738,613	301,124	89,455	163,252	81,653	95,824	7,305
Dec	Mon-Sa HLH	505,538	226,140	60,752	111,097	51,534	52,882	3,134
Dec	Other hrs	316,830	141,291	35,629	63,166	33,210	39,194	4,340
2014	**Dec Total**	**822,368**	**367,431**	**96,381**	**174,262**	**84,744**	**92,076**	**7,474**

Table 6.3
Network Load, MWH, for 2013-2014 by Two Costing Periods/Month

		Downtown Network Consumption, MWH				
Calendar Year		Total	Residential	Small	Medium	Large
2013		1,398,127	90,009	141,339	566,556	600,224
2014		1,409,507	89,741	142,601	571,594	605,571
Jan	Mon-Sa HLH	78,039	6,450	8,374	30,604	32,610
Jan	Other hrs	45,991	4,152	4,812	18,464	18,563
2013	**Jan Total**	124,030	10,603	13,186	49,069	51,172
Feb	Mon-Sa HLH	70,859	5,536	7,576	27,957	29,790
Feb	Other hrs	39,704	3,412	4,135	16,016	16,141
2013	**Feb Total**	110,563	8,947	11,712	43,973	45,932
Mar	Mon-Sa HLH	74,957	5,380	7,895	30,403	31,279
Mar	Other hrs	43,795	3,398	4,537	18,096	17,764
2013	**Mar Total**	118,752	8,778	12,432	48,499	49,043
Apr	Mon-Sa HLH	74,645	4,638	7,496	29,791	32,719
Apr	Other hrs	39,357	2,606	3,908	16,113	16,730
2013	**Apr Total**	114,001	7,244	11,404	45,904	49,449
May	Mon-Sa HLH	72,674	3,840	7,254	29,443	32,137
May	Other hrs	41,007	2,356	4,046	16,958	17,647
2013	**May Total**	113,681	6,196	11,300	46,402	49,783
Jun	Mon-Sa HLH	70,198	3,323	6,971	28,482	31,422
Jun	Other hrs	39,994	2,144	3,875	16,471	17,503
2013	**Jun Total**	110,192	5,467	10,847	44,953	48,925
Jul	Mon-Sa HLH	75,234	3,287	7,410	30,601	33,936
Jul	Other hrs	41,333	2,107	3,975	17,037	18,213
2013	**Jul Total**	116,567	5,394	11,385	47,638	52,150
Aug	Mon-Sa HLH	78,347	3,338	7,625	31,970	35,415
Aug	Other hrs	39,258	1,926	3,800	16,079	17,454
2013	**Aug Total**	117,606	5,263	11,425	48,049	52,868
Sep	Mon-Sa HLH	68,106	3,190	6,805	28,106	30,005
Sep	Other hrs	42,129	2,361	4,136	17,565	18,068
2013	**Sep Total**	110,235	5,551	10,941	45,670	48,073
Oct	Mon-Sa HLH	78,073	4,493	7,766	31,296	34,517
Oct	Other hrs	39,765	2,436	3,882	16,234	17,213
2013	**Oct Total**	117,838	6,930	11,648	47,530	51,730
Nov	Mon-Sa HLH	74,067	5,326	7,671	29,827	31,243
Nov	Other hrs	44,185	3,464	4,392	17,988	18,341
2013	**Nov Total**	118,252	8,790	12,062	47,815	49,584
Dec	Mon-Sa HLH	77,161	6,274	8,068	30,971	31,848
Dec	Other hrs	49,250	4,572	4,928	20,084	19,666
2013	**Dec Total**	**126,411**	**10,846**	**12,997**	**51,055**	**51,514**
Jan	Mon-Sa HLH	78,671	6,438	8,450	30,880	32,904
Jan	Other hrs	46,360	4,144	4,856	18,630	18,730
2014	**Jan Total**	125,031	10,582	13,305	49,510	51,634
Feb	Mon-Sa HLH	71,437	5,524	7,645	28,209	30,060
Feb	Other hrs	40,024	3,404	4,173	16,161	16,287
2014	**Feb Total**	111,462	8,928	11,818	44,369	46,347
Mar	Mon-Sa HLH	75,574	5,367	7,967	30,678	31,563
Mar	Other hrs	44,153	3,389	4,579	18,260	17,925
2014	**Mar Total**	119,727	8,756	12,545	48,937	49,488
Apr	Mon-Sa HLH	75,268	4,626	7,564	30,062	33,017
Apr	Other hrs	39,684	2,599	3,944	16,259	16,882
2014	**Apr Total**	114,952	7,224	11,508	46,321	49,899
May	Mon-Sa HLH	73,062	3,826	7,306	29,630	32,300
May	Other hrs	41,580	2,352	4,098	17,194	17,937
2014	**May Total**	114,642	6,177	11,404	46,824	50,237
Jun	Mon-Sa HLH	71,020	3,310	7,049	28,824	31,836
Jun	Other hrs	40,112	2,139	3,897	16,540	17,536
2014	**Jun Total**	111,131	5,449	10,946	45,363	49,373
Jul	Mon-Sa HLH	75,877	3,275	7,478	30,879	34,245
Jul	Other hrs	41,682	2,100	4,011	17,192	18,379
2014	**Jul Total**	117,559	5,375	11,489	48,071	52,623
Aug	Mon-Sa HLH	76,430	3,200	7,445	31,188	34,597
Aug	Other hrs	42,163	2,045	4,083	17,290	18,744
2014	**Aug Total**	118,593	5,245	11,528	48,478	53,342
Sep	Mon-Sa HLH	71,205	3,320	7,113	29,421	31,352
Sep	Other hrs	39,932	2,212	3,924	16,652	17,145
2014	**Sep Total**	111,137	5,532	11,037	46,072	48,496
Oct	Mon-Sa HLH	78,695	4,478	7,834	31,567	34,817
Oct	Other hrs	40,080	2,427	3,915	16,375	17,362
2014	**Oct Total**	118,775	6,905	11,749	47,942	52,179
Nov	Mon-Sa HLH	71,939	5,085	7,465	28,979	30,410
Nov	Other hrs	47,216	3,674	4,700	19,244	19,597
2014	**Nov Total**	119,155	8,759	12,166	48,223	50,007
Dec	Mon-Sa HLH	80,478	6,504	8,417	32,352	33,205
Dec	Other hrs	46,865	4,303	4,689	19,131	18,741
2014	**Dec Total**	**127,343**	**10,808**	**13,106**	**51,484**	**51,946**

Table 6.4
Annual Summary MWH Load Data

		Total	Residential	Small	Medium	Large	High Demand	Lights	Total	Residential	Small
Service Territory											
Actual	**2011**	9,610,146	3,248,242	1,170,405	2,466,756	1,466,835	1,162,993	94,915			
Forecast	**2012**	9,589,726	3,200,463	1,170,101	2,466,774	1,463,493	1,206,112	82,785			
	2013	9,654,834	3,192,967	1,177,448	2,479,809	1,527,488	1,195,924	81,198			
	2014	9,746,397	3,184,507	1,190,552	2,505,920	1,596,070	1,196,470	72,879			
Total Nonnetwork (Excludes Network Residential & Small)									**Includes Ntwk Res & Small**		
Actual	**2011**	8,199,564	3,157,279	1,025,228	1,911,445	847,705	1,162,993	94,915	8,435,705	3,248,242	1,170,405
Forecast	**2012**	8,198,951	3,110,231	1,029,578	1,903,480	866,765	1,206,112	82,785	8,429,705	3,200,463	1,170,101
	2013	8,256,707	3,102,958	1,036,109	1,913,254	927,264	1,195,924	81,198	8,488,054	3,192,967	1,177,448
	2014	8,336,890	3,094,766	1,047,951	1,934,326	990,498	1,196,470	72,879	8,569,232	3,184,507	1,190,552
Downtown Network (Includes Network Residential & Small)									**Excludes Ntwk Res & Small**		
Actual	**2011**	1,410,582	90,964	145,177	555,311	619,131			1,174,441		
Forecast	**2012**	1,390,776	90,232	140,522	563,294	596,727			1,160,021		
	2013	1,398,127	90,009	141,339	566,556	600,224			1,166,780		
	2014	1,409,507	89,741	142,601	571,594	605,571			1,177,165		
City of Seattle Nonnetwork (Excludes Network Residential & Small)									**Includes Ntwk Res & Small**		
Actual	**2011**	6,640,300	2,445,955	859,947	1,614,989	710,719	913,775	94,915	6,876,441	2,536,919	1,005,124
Forecast	**2012**	6,637,727	2,399,443	867,284	1,604,187	727,753	956,276	82,785	6,868,481	2,489,675	1,007,806
	2013	6,696,782	2,393,843	872,749	1,612,581	788,788	947,623	81,198	6,928,129	2,483,852	1,014,088
	2014	6,773,569	2,387,483	882,579	1,629,917	851,894	948,817	72,879	7,005,911	2,477,224	1,025,180
Tukwila + Shoreline											
Actual	**2011**	935,811	297,448	74,059	193,819	121,267	249,218				
Forecast	**2012**	941,562	297,612	73,025	198,048	123,042	249,836				
	2013	940,194	296,755	73,526	198,943	122,669	248,301				
	2014	942,703	295,822	74,513	201,803	122,913	247,653				
Other Suburbs											
Actual	**2011**	623,453	413,876	91,221	102,637	15,719					
Forecast	**2012**	619,662	413,177	89,269	101,245	15,971					
	2013	619,731	412,360	89,834	101,730	15,807					
	2014	620,618	411,461	90,859	102,606	15,691					

Table 6.5
Annual Share of Load

		Total	Residential	Small	Medium	Large	High Demand	Lights
Service Territory								
Actual	**2011**	100.000%	33.800%	12.179%	25.668%	15.263%	12.102%	0.988%
Forecast	**2012**	100.000%	33.374%	12.202%	25.723%	15.261%	12.577%	0.863%
	2013	100.000%	33.071%	12.195%	25.685%	15.821%	12.387%	0.841%
	2014	100.000%	32.674%	12.215%	25.711%	16.376%	12.276%	0.748%
Total Nonnetwork (Excludes Network Residential & Small)								
Actual	**2011**	100.000%	38.505%	12.503%	23.312%	10.338%	14.184%	1.158%
Forecast	**2012**	100.000%	37.935%	12.557%	23.216%	10.572%	14.711%	1.010%
	2013	100.000%	37.581%	12.549%	23.172%	11.230%	14.484%	0.983%
	2014	100.000%	37.121%	12.570%	23.202%	11.881%	14.352%	0.874%
Downtown Network (Includes Network Residential & Small)								
Actual	**2011**	100.000%	6.449%	10.292%	39.367%	43.892%		
Forecast	**2012**	100.000%	6.488%	10.104%	40.502%	42.906%		
	2013	100.000%	6.438%	10.109%	40.522%	42.931%		
	2014	100.000%	6.367%	10.117%	40.553%	42.963%		
City of Seattle Nonnetwork (Excludes Network Residential & Small) as Percent of Total Nonnetwork by Class								
Actual	**2011**	80.984%	77.470%	83.879%	84.490%	83.840%	78.571%	100.000%
Forecast	**2012**	80.958%	77.147%	84.237%	84.277%	83.962%	79.286%	100.000%
	2013	81.107%	77.147%	84.233%	84.285%	85.066%	79.238%	100.000%
	2014	81.248%	77.146%	84.220%	84.263%	86.007%	79.301%	100.000%
Tukwila + Shoreline as Percent of Total Nonnetwork by Class								
Actual	**2011**	11.413%	9.421%	7.224%	10.140%	14.305%	21.429%	
Forecast	**2012**	11.484%	9.569%	7.093%	10.405%	14.196%	20.714%	
	2013	11.387%	9.564%	7.096%	10.398%	13.229%	20.762%	
	2014	11.308%	9.559%	7.110%	10.433%	12.409%	20.699%	
Other Suburbs as Percent of Total Nonnetwork by Class								
Actual	**2011**	7.603%	13.109%	8.898%	5.370%	1.854%		
Forecast	**2012**	7.558%	13.284%	8.670%	5.319%	1.843%		
	2013	7.506%	13.289%	8.670%	5.317%	1.705%		
	2014	7.444%	13.295%	8.670%	5.305%	1.584%		
Total Nonnetwork (Excludes Network Residential & Small) as Percent of Total Service Territory								
Actual	**2011**	85.322%	32.854%	10.668%	19.890%	8.821%	12.102%	0.988%
Forecast	**2012**	85.497%	32.433%	10.736%	19.849%	9.038%	12.577%	0.863%
	2013	85.519%	32.139%	10.732%	19.817%	9.604%	12.387%	0.841%
	2014	85.538%	31.753%	10.752%	19.847%	10.163%	12.276%	0.748%
Downtown Network (Includes Network Residential & Small) as Percent of Total Service Territory								
Actual	**2011**	14.678%	0.947%	1.511%	5.778%	6.442%		
Forecast	**2012**	14.503%	0.941%	1.465%	5.874%	6.223%		
	2013	14.481%	0.932%	1.464%	5.868%	6.217%		
	2014	14.462%	0.921%	1.463%	5.865%	6.213%		

6.2 Peak Load Data

The marginal cost by class for several distribution revenue requirements is estimated by summing over the classes appropriate estimates of $/MW multiplied by load (in MW) during the coincident peak period. This section focuses on the development of the coincident peak MW for each class.

The calculation of peak loads by class begins with hourly consumption data from a sample of customers in the residential, small and medium classes. Hourly consumption data are collected for all large and high demand customers. The sample data are inflated to estimate the hourly consumption for the total class (each hour's consumption is converted to a percentage of the sample's total consumption in the year and then multiplied by the class's total annual energy billed). Since there is potential for measurement error in the sample and since the sample may not be totally representative at all times of the total class, there is always a question of how reliable are the estimates for totals of those classes whose data are only sampled. Even for the classes in which the entire population of customers is represented, there is always a question of whether weather or idiosyncratic economic factors contribute to peak loads in certain hours. Hence, for the last several rate reviews, estimates of projected consumption for aggregations of the hourly data were used (four costing periods each month) with the expectation that statistical errors in individual hours would, on average, balance out in the forecast periods. The total energy estimated for each period is then divided by the number of hours in the period to estimate the expected average hourly consumption. The peak period by class and coincident peak periods for nonnetwork and network classes as total groups are then determined by the costing period with the largest hourly average consumption.

Table 6.6 presents average annual MW data for the total service territory, nonnetwork and network areas. Data are presented for the annual average load by customer class, as well as the average MW per hour in the costing period with the maximum load for the years 2013 and 2014. Additionally, since much of the distribution system is sized to meet the coincident peak load for nonnetwork and network areas, the load at the time of the peak for each of those two areas is presented. These latter peak loads are used in determining costs for several of the distribution functions.

Table 6.6
Average Annual MW and Peak Load by Costing Period

		Total Service Territory						
		Total	Residential	Small	Medium	Large	High Demand	Lights
Average Annual Load, MW	2013	1,102.15	364.49	134.41	283.08	174.37	136.52	9.27
	2014	1,112.60	363.53	135.91	286.06	182.20	136.58	8.32
Peak Load, MW during year	2013	1,432.96	618.30	172.69	357.97	215.84	157.70	17.84
	2014	1,431.72	617.31	174.56	358.85	218.30	157.55	16.73
Period of Peak Load	2013	Dec WD HLH	Jan SU HLH	Jan WD HLH	Dec WD HLH	Aug WD HLH	Aug SA HLH	Jan LLH
	2014	Dec WD HLH	Jan SU HLH	Jan WD HLH	Dec WD HLH	Aug WD HLH	Aug SA HLH	Jan LLH

		Total Nonnetwork (EXcludes Network Residential & Small that are billed at nonnetwork rates)						
		Total	Residential	Small	Medium	Large	High Demand	Lights
Average Annual Load, MW	2013	942.55	354.22	118.28	218.41	105.85	136.52	9.27
	2014	951.70	353.28	119.63	220.81	113.07	136.58	8.32
Peak Load, MW during year	2013	1,233.53	602.20	152.12	278.21	129.75	157.70	17.84
	2014	1,231.97	601.24	153.79	278.83	130.79	157.55	16.73
Period of Peak Load	2013	Dec WD HLH	Jan SU HLH	Jan WD HLH	Dec WD HLH	Aug WD HLH	Aug SA HLH	Jan LLH
	2014	Dec WD HLH	Jan SU HLH	Jan WD HLH	Dec WD HLH	Aug WD HLH	Aug SA HLH	Jan LLH
Load at time of Coincident Nonnet Peak	2013	1,233.53	541.26	149.93	278.21	128.29	127.06	8.78
	2014	1,231.97	539.97	150.62	278.83	127.99	127.03	7.53

		Downtown Network				
		Total	Residential	Small	Medium	Large
Average Annual Load, MW	2013	159.60	10.27	16.13	64.68	68.52
	2014	160.90	10.24	16.28	65.25	69.13
Peak Load, MW during year	2013	199.44	16.10	20.69	79.76	86.09
	2014	199.75	16.07	20.76	80.02	87.50
Period of Peak Load	2013	Dec WD HLH	Jan SU HLH	Jan WD HLH	Dec WD HLH	Aug WD HLH
	2014	Dec WD HLH	Jan SU HLH	Jan WD HLH	Dec WD HLH	Aug WD HLH
Load at time of Coincident Netwk Peak	2013	199.44	15.67	20.69	79.76	83.31
	2014	199.75	15.62	20.73	80.02	83.37

6.3 System Losses

As electrical energy is generated, transmitted and distributed to consumers, energy losses are incurred. Since load losses vary with the amount of current flowing, each increment in load will cause an associated incremental energy loss. This means that the total output of the system must be greater than the aggregate of all loads measured at the point of consumption. These losses increase the costs of providing electrical energy and must be accounted for in the marginal cost analysis.

This report accounts for the system losses by applying estimates which are representative of Seattle City Light's system. Losses that characterize City Light's system are differentiated by type of facilities and by time periods. System losses for the periods of maximum loads are shown in **Table 6.7**.[2] Since voltage on the system is held essentially constant, percent losses at time of other than maximum load, where load is expressed as average MW during the period, are related to the percent loss at the time of maximum load by the equation:

$$\left(\frac{load\_in\_costing\_period}{maximum\_load\_over\_all\_costing\_periods}\right)^2 * (\%\_loss\_in\_peak\_period)$$

Losses as a percentage of loads from the point of generation or the wholesale electricity trading hub to the high side of the receiving substation are the same for all classes, as are losses through the substation and feeders to the high side of the customer's transformer. However, the time periods in which customer transformer losses are incurred vary, because the time period of peak demand on the distribution system varies by class, as indicated in Table 6.6. Losses through the customers' transformers depend entirely on the load characteristics of the customers.

Network Losses

Separate estimates are made for system losses when network service is analyzed. Load losses created in a network are less than in a nonnetwork for transformers and feeders due to N-1 design loading. For example, a three-transformer spot network would load each transformer up to two-thirds of its capacity under normal conditions. The load losses would be 4/9 of the transformer's rated load losses.[3] This same 4/9 factor would apply to losses through network feeders since there are typically three feeders per customer. There would be no distinction in losses between network and nonnetwork customers, though, from the service territory boundary to the low side of a substation's transformer, nor in the service drop from a customer's transformer to the customer. In the case of network service for Medium and Large General Service customers, therefore, maximum losses for feeders and customer transformers equal 4/9 times the losses in Table 6.7. Maximum losses for feeders and customer transformers for Residential and Small General Service customers in a network are estimated to equal the corresponding network losses for Medium General Service customers, i.e., 4/9*0.82% and 4/9*0.95%, respectively.

[2] The majority of the Department's bulk transmission flows over BPA lines. BPA charges for transmission losses at 1.9 percent of load on the line. This energy is returned to BPA 168 hours (one week) later. Thus, the computation of long-distance transmission losses does not use the equation in the text, but, rather, uses 0.019* MWh in a period.
[3] $4/9 = (2/3)^2$, derived from the preceding equation.

Table 6.7
System Losses for Periods of Maximum Loads
(% of Load)[(1)]

	Residential	Small General Service	Medium General Service	Large and High Demand General Service
From generation stations				
Through BPA high voltage lines outside the service area	1.90	1.90	1.90	1.9 0
To boundary of the service area				
Through high voltage lines within the service area	1.14	1.14	1.14	1.14
To high side of substations				
Through Substation	0.74	0.74	0.74	0.74
To low side of substations				
Through 26/13 kV lines	0.82	0.82	0.82	0.82
To high side of line transformers				
Through distribution transformer	1.36	1.45	0.95	0.86
To low side of distribution transformer				
Through lines and services	0.41	0.86	0.03	0.03
Subtotal of Losses from the Service Area Boundary to the Customer's Transformer	2.70	2.70	2.70	2.70
Subtotal of ServiceDrop and Line Transformer Loses	1.77	2.31	0.98	0.89

(1) The energy and demand loss figures apply to the various components of the transmission and distribution system based on a fully converted 26 kV distribution system.

Table 6.8 presents an annual summary of all the losses which were derived by using projections of load in terms of average MW per hour by four costing periods for each month and the equations mentioned above. The table also presents the annual summary of total energy required to serve each customer class. Detailed tables by month by four costing periods each month, not shown here, are used to produce these estimates of annual losses. There also are detailed tables by month by two costing periods each month (also not shown here) that show peak and off-peak energy requirements to serve loads by class by area. These peak and offpeak energy requirements correspond to the peak and offpeak wholesale energy markets for which there are separate prices each month used in computing marginal values of energy by class by area.

Table 6.8
Energy Loss Data

MWH Energy Loss Data							
	Total	Residential	Small	Medium	Large	High Demand	Lights
Service Territory							
2013	428,533	143,695	60,962	106,037	63,678	50,087	4,074
2014	436,801	144,516	62,112	108,310	67,724	50,555	3,585
Total Nonnetwork (Excludes Residential & Small Network)							
2013	369,705	139,750	53,884	82,636	39,275	50,087	4,074
2014	377,120	140,560	54,909	84,507	43,004	50,555	3,585
Downtown Network							
2013	58,828	3,945	7,078	23,402	24,403		
2014	59,681	3,956	7,203	23,803	24,720		

MWH Load + Energy Loss Data							
	Total	Residential	Small	Medium	Large	High Demand	Lights
Service Territory							
2013	10,083,367	3,336,662	1,238,410	2,585,847	1,591,166	1,246,011	85,272
2014	10,183,198	3,329,023	1,252,664	2,614,230	1,663,794	1,247,024	76,463
Total Nonnetwork (Excludes Residential & Small Network)							
2013	8,626,412	3,242,708	1,089,993	1,995,889	966,539	1,246,011	85,272
2014	8,714,010	3,235,326	1,102,860	2,018,833	1,033,503	1,247,024	76,463
Downtown Network							
2013	1,456,955	93,954	148,417	589,957	624,627		
2014	1,469,188	93,696	149,804	595,397	630,291		

Share of Load + Energy Loss							
	Total	Residential	Small	Medium	Large	High Demand	Lights
Service Territory							
2013	100.000%	33.091%	12.282%	25.645%	15.780%	12.357%	0.846%
2014	100.000%	32.691%	12.301%	25.672%	16.339%	12.246%	0.751%
Total Nonnetwork (Excludes Residential & Small Network) as % of Tot. Svc. Terr.							
2013	85.551%	32.159%	10.810%	19.794%	9.585%	12.357%	0.846%
2014	85.572%	31.771%	10.830%	19.825%	10.149%	12.246%	0.751%
Downtown Network as % of Tot. Svc. Terr.							
2013	14.449%	0.932%	1.472%	5.851%	6.195%		
2014	14.428%	0.920%	1.471%	5.847%	6.190%		

6.4 Meters and Consumption per Meter

Table 6.9 presents estimates of meters by class for the forecast horizon. There is only slow and episodic change in the classes with larger consumption (Medium General Service and larger); therefore, their numbers are frozen at values currently known. Modest growth in Residential and Small General Service classes is projected.

Table 6.9
Meters

	Total	Residential	Small	Medium	Large	High Demand	Lights	Total	Residential	Small
Service Territory										
2013	415,853	369,234	43,326	3,144	138	12				
2014	420,039	373,345	43,401	3,144	138	12				
Total Nonnetwork (Excludes Network Residential & Small)								**Includes Ntwk Res & Small**		
2013	395,777	352,981	40,082	2,619	84	12		415,274	369,234	43,326
2014	399,766	356,895	40,157	2,619	84	12		419,460	373,345	43,401
Downtown Network (Includes Network Residential & Small)								**Excludes Ntwk Res & Small**		
2013	20,076	16,253	3,244	525	54			579		
2014	20,273	16,450	3,244	525	54			579		
City of Seattle Nonnetwork (Excludes Network Residential & Small)								**Includes Ntwk Res & Small**		
2013	322,543	286,684	33,604	2,176	71	8		342,039	302,936	36,848
2014	326,078	290,152	33,671	2,176	71	8		345,772	306,602	36,915
Tukwila + Shoreline										
2013	31,129	28,432	2,441	241	11	4				
2014	31,433	28,736	2,441	241	11	4				
Other Suburbs										
2013	42,106	37,865	4,037	202	2					
2014	42,255	38,007	4,044	202	2					

Table 6.10 presents the average hourly consumption per meter for the year 2011 by class. Network residential customers consume less per meter than their nonnetwork counterparts. Network small, medium and large customers consume more per hour than their nonnetwork counterparts.

The profiles of hourly consumption per meter would look the same as the previous figures on total hourly consumption by class. The differences would be in the scale of the consumption. Table 6.10 provides an approximation of what the adjusted scales would be.

Table 6.10
Average Hourly kWh Consumption per Meter for 2011

	Total	Residential	Small	Medium	Large	High Demand
Service Territory	2.692	1.027	3.09	91.2	1,213	11,063
Nonnetwork(1)	2.413	1.044	2.93	83.3	1,152	11,063
Network	8.196	0.654	5.11	134.9	1,309	
Seattle Nonnetwork(1)	2.404	0.998	2.93	84.7	1,143	13,039
Tukwila+Shoreline	3.496	1.219	3.46	91.8	1,258	7,112
Other Suburbs	1.695	1.251	2.59	58.1	897	

(1) Excludes network Residential and Small

Chapter 7: Marginal Values of Energy

7.1 Introduction

Energy cost is the largest cost factor for the utility. The goal of this chapter is to derive total energy costs for each customer class by location and their corresponding cost shares. Total energy cost is a sum of energy consumption plus losses valued at wholesale market electricity price that includes externalities and transmission costs. Table 7.1 presents total energy costs for 2013-2014 and each class' share for the service territory.

Table 7.1
Total Energy Costs and Shares

		Total	Residential	Small	Medium	Large	High Demand	Lights
		Total Service Territory						
2013	Energy + Losses	$345,402,900	$115,114,014	$42,536,257	$88,784,137	$54,598,769	$41,637,269	$2,732,453
	Transmission	$39,698,448	13,128,742	4,841,395	10,196,404	6,280,678	4,917,362	333,867
	Total Energy Cost	$385,101,348	$128,242,757	$47,377,652	$98,980,540	$60,879,447	$46,554,631	$3,066,321
	Share	**100.000%**	**33.301%**	**12.303%**	**25.702%**	**15.809%**	**12.089%**	**0.796%**
2014	**Energy + Losses**	$360,120,690	$119,726,105	$44,365,468	$92,227,532	$58,339,388	$42,901,555	$2,560,642
	Transmission	$40,094,712	13,100,419	4,897,691	10,308,849	6,565,908	4,922,035	299,809
	Total Energy Cost	$400,215,402	$132,826,524	$49,263,160	$102,536,381	$64,905,297	$47,823,590	$2,860,450
	Share	**100.000%**	**33.189%**	**12.309%**	**25.620%**	**16.218%**	**11.949%**	**0.715%**
		Total Nonnetwork*						
		Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
2013	**Energy + Losses**	$295,397,336	$111,868,528	$37,431,483	$68,556,347	$33,171,254	$41,637,269	$2,732,453
	Transmission	$33,949,672	12,758,647	4,260,242	7,866,858	3,812,696	4,917,362	333,867
	Total Energy Cost	$329,347,008	$124,627,175	$41,691,726	$76,423,205	$36,983,950	$46,554,631	$3,066,321
	Share	**85.522%**	**32.362%**	**10.826%**	**19.845%**	**9.604%**	**12.089%**	**0.796%**
2014	**Energy + Losses**	$308,267,599	$116,354,650	$39,054,070	$71,252,987	$36,143,696	$42,901,555	$2,560,642
	Transmission	$34,296,285	12,731,244	4,311,061	7,957,427	4,074,710	4,922,035	299,809
	Total Energy Cost	$342,563,884	$129,085,894	$43,365,131	$79,210,413	$40,218,406	$47,823,590	$2,860,450
	Share	**85.595%**	**32.254%**	**10.835%**	**19.792%**	**10.049%**	**11.949%**	**0.715%**
		Downtown Network						
		Total	**Residential**	**Small**	**Medium**	**Large**		
2013	**Energy + Losses**	$50,005,564	$3,245,486	$5,104,774	$20,227,789	$21,427,515		
	Transmission	$5,748,776	370,095	581,152	2,329,546	2,467,983		
	Total Energy Cost	$55,754,340	$3,615,581	$5,685,926	$22,557,335	$23,895,498		
	Share	**14.478%**	**0.939%**	**1.476%**	**5.858%**	**6.205%**		
2014	**Energy + Losses**	$51,853,091	$3,371,455	$5,311,398	$20,974,545	$22,195,692		
	Transmission	$5,798,427	369,176	586,631	2,351,423	2,491,198		
	Total Energy Cost	$57,651,518	$3,740,630	$5,898,029	$23,325,968	$24,686,890		
	Share	**14.405%**	**0.935%**	**1.474%**	**5.828%**	**6.168%**		

*Excludes Network Residential & Small that are billed at nonnetwork rates

The following discussion explains how individual components to compute total energy costs were derived. The chapter is organized as follows: Section 7.2 presents the wholesale market electricity price forecast; Section 7.3 explains the derivation of the environmental externality costs; Section 7.4 computes the cost of energy plus losses; and Section 7.5 computes transmission costs.

7.2 Wholesale Market Electricity Price Forecast

City Light buys and sells power at the Mid-Columbia Trading Hub (Mid-C). Currently, City Light buys forward market price data from SunGard (via its Kiodex web-based trading and risk management software system) for a short-term price forecast and from

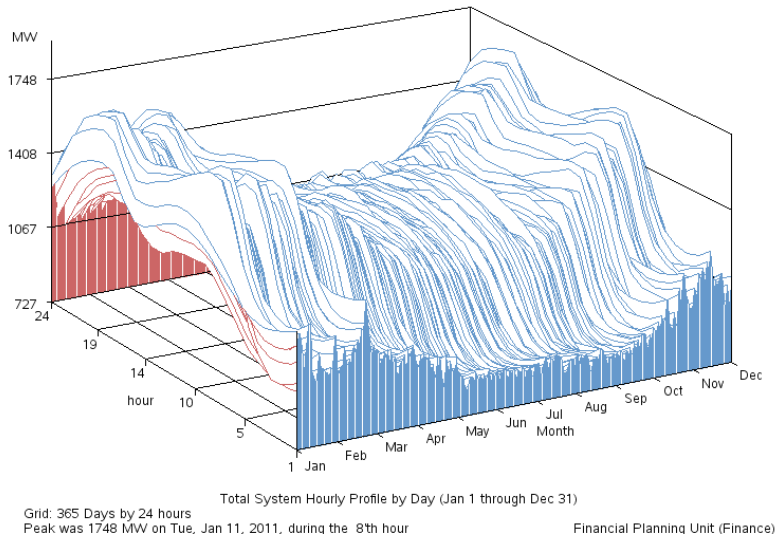
Ventyx for a long-term price forecast. Both of these companies are highly regarded and their price projections are widely used in the industry.

Market prices are determined by supply and demand. Supply conditions of many hydroelectric plants in the Mid-C region are dictated to a great extent by rainfall and snow accumulation. Also affecting supply are the many rules and regulations imposed on the operation of hydro plants to protect against flooding and to provide for irrigation, boating and support of fish and wildlife.

The demand is driven by temperature, time of the day, and day of the week. Examples include: (1) people crank their thermostats up on a colder day; (2) demand for electricity is higher during the day than at night when people are asleep and businesses are closed; (3) weekend demand, when many businesses close or curtail their operations, is less than weekday demand. **Figure 7.1** shows the variation in electricity consumption by month and hour for Seattle City Light. This consumption pattern is similar across the Pacific Northwest.

Figure 7.1

2011 MW-Surface, Seattle City Light



Energy is traded hourly during peak and off-peak hours. Peak hours are 16 hours starting from 6 a.m. and ending at 10 p.m. Off-Peak hours are 8 hours starting at 10 p.m. and ending at 6 a.m.

Figure 7.2 shows Dow-Jones Mid-C average electricity prices for the period 2008-2011. Market prices have fallen in the last three years following the financial crisis in the Fall of 2008; however, the seasonal pattern still remains. Prices are high during winter months due to increased heating demand and lower supply. Prices fall in the spring during the run-off season when there is an abundance of hydro and wind resources.

Prices start to pick up in the summer due to drier weather and continue to increase in the fall. Off-peak prices are generally lower than peak prices.

Figure 7.3 presents the forecast of Mid-C monthly electricity prices for 2013 and 2014. **Figure 7.4** shows the Mid-C annual electricity prices for the period 2013-2021. Prices are expected to rise starting in 2014.

Figure 7.2
Mid-C Dow-Jones Average Monthly Prices, $/MWh

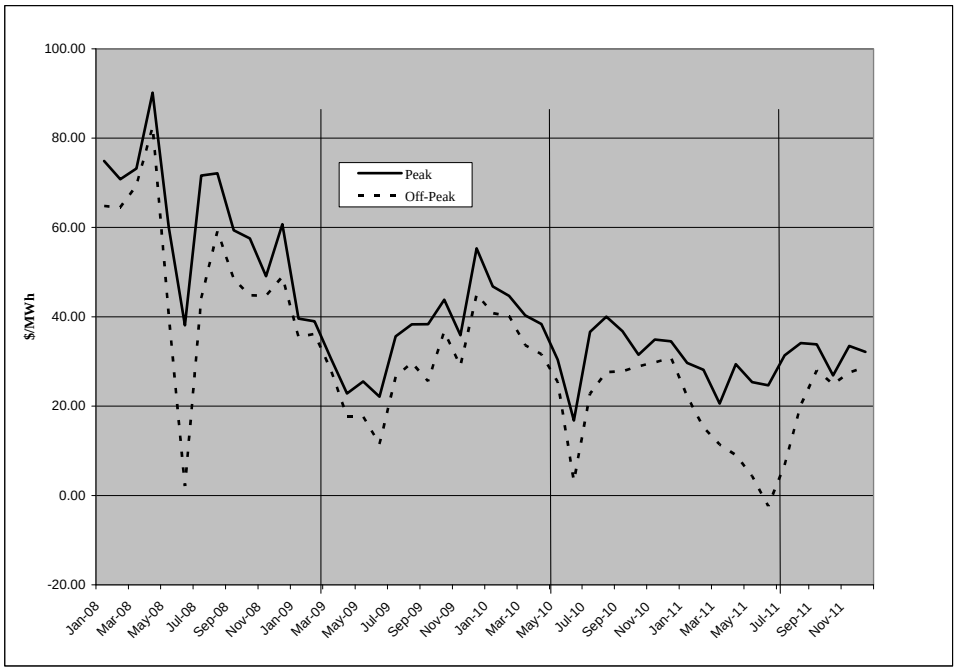


Figure 7.3
Mid-C Monthly Price Forecast for 2013-2014, $/MWh

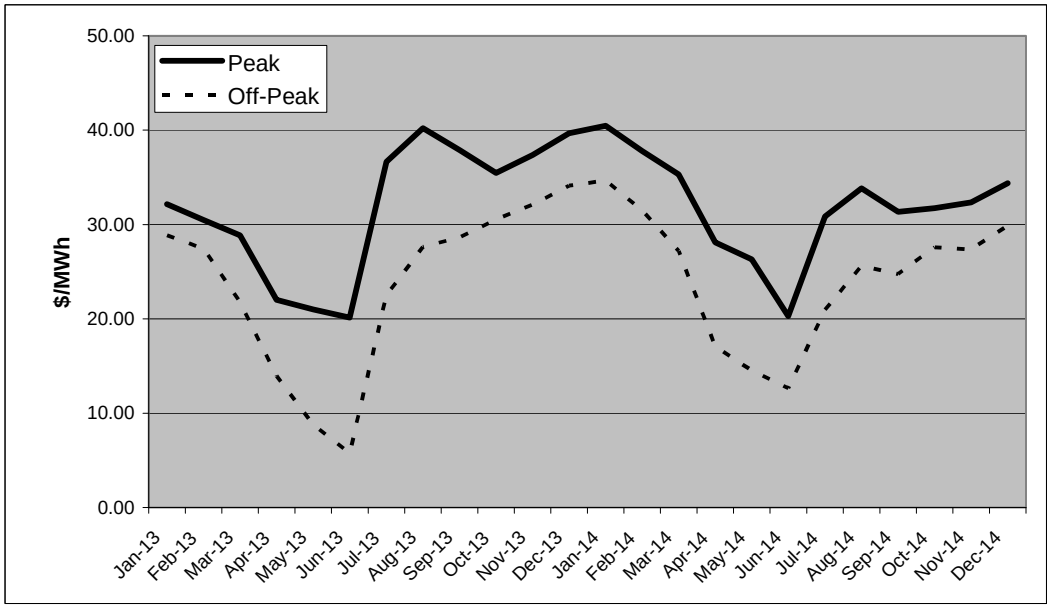
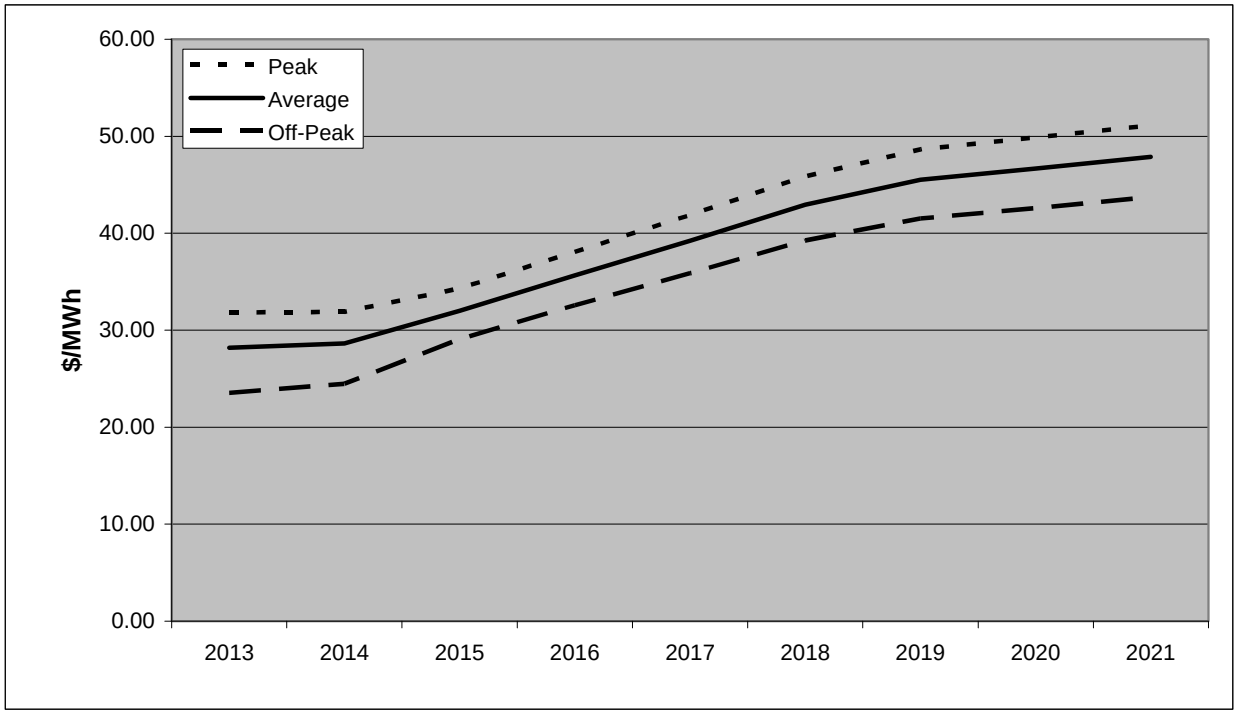


Figure 7.4
Mid-C Annual Price Forecast for 2013-2021, $/MWh



7.3 Externalities

Production and delivery of electricity imposes negative externalities such as air, water, and soil pollution, respiratory health problems, reduced visibility, damage to fish and wildlife, and global warming. These effects impose their own costs on people, the environment, and society. Therefore, a more complete accounting for total cost of electricity includes estimates of these externalities, which we refer to as "environmental externality adders."

In March 2012, City Light updated its environmental externality adders in preparation for the 2012 Integrated Resources Plan (IRP). The 2013/2014 Cost of Service Study adds them to the marginal costs of energy determined as described above. The adder assumes that carbon dioxide (CO_2) emissions are the primary driver of externality impacts from the marginal use of electricity, and so the adder is determined by the amount of CO_2 emitted per MWh multiplied by the cost to the environment per unit of CO_2 emitted.

Amount of CO_2 per MWh of Electricity

The amount of CO_2 emitted in electricity production on the margin was estimated by determining emission rates for the years 2012 and 2030 and then performing a straight line interpolation between the two for the intervening years. This is a very simplistic approach, but it is impossible to know precisely what the mix of resources that make up the marginal MWh is going to be over the next few years, and impossible to know how the mix will change over the next 18 years.

The 2012 emission factor is 0.583 metric tons of CO_2 per MWh, which was published by the Environmental Protection Agency (EPA) in 2011 for the Northwest Power Pool (NWPP) region of the Western Electric Coordinating Council (WECC) and was calculated from 2007 actual plant emissions. The 2030 emission factor is 0.389 metric tons of CO_2 per MWh and represents the emission rate of a new natural gas combined-cycle combustion turbine. This power plant type was chosen to represent market electricity because, if current conditions persist into the future, natural gas plants will be the marginal electricity resource in the NWPP.

Price of Emitting CO_2

Determining an exact dollar figure for the environmental impact of CO_2 emissions is not possible. Several ways of considering the environmental cost of emitting (or taking action to avoid emitting) CO_2 are described below:

- *Allowance Price* – assumes a regulation is enacted that requires power plants that emit CO_2 to pay a fee in order to be "allowed" to emit CO_2. The emissions, and any associated damage to human health and the environment, will still occur, but the power plant will incur an economic cost.
- *Control Cost* – if regulations are enacted that require power plants to install equipment or change operations to actually reduce emissions, there will be a cost associated with those actions, and emissions and the human health and environmental cost will decrease.
- *Damage Cost* – in this approach the actual cost of human health and environmental impacts, such as cost of hospitalization or early mortality, or lost crop production, is estimated.

Each of these approaches has strengths and weaknesses.

Based on the recommendation from the consulting firm Energy and Environmental Economics, City Light has assumed that there will be regulation of CO_2 emissions from power plants beginning in the year 2018. The regulation could result in either an allowance or a control system, or some combination of the two.

For the period 2012–2017 the price of CO_2 emissions is assumed to be the price that City Light forecasts it will pay for greenhouse gas offsets in those years. Starting in 2018 the price of CO_2 emissions is based on a Synapse (a consulting firm) study of the federal Waxman-Markey and American Power Act proposals as of 2010. The prices are applied to all CO_2 emissions, though it is likely that regulations would actually not apply a price to all emissions, since the resulting cost would be very high for many existing plants.

Environmental Externality Adders Plus Marginal Energy Costs

The environmental externality adder is calculated by multiplying the amount of CO_2 emitted per MWh by the price of CO_2 emissions. **Figure 7.5** presents the projected annual values for externality costs in constant $2011/MWh and in current year dollars for

the period 2012-2021. Externality costs are expected to increase both in constant dollar terms and in terms of current year prices.

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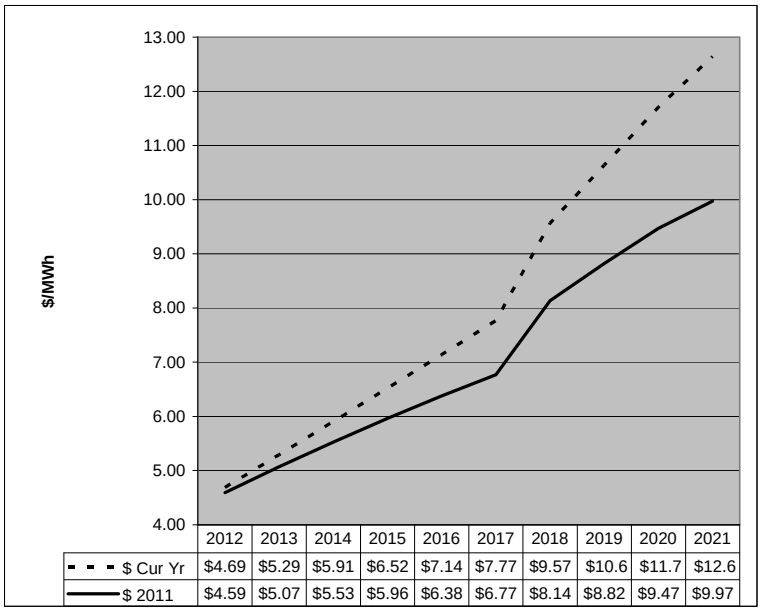
Figure 7.5
Environmental Externality Adders



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
$ Cur Yr	$4.69	$5.29	$5.91	$6.52	$7.14	$7.77	$9.57	$10.6	$11.7	$12.6
$ 2011	$4.59	$5.07	$5.53	$5.96	$6.38	$6.77	$8.14	$8.82	$9.47	$9.97

To calculate the true marginal social cost of electricity the calculated externality costs are added to the market price. **Figure 7.6** presents the forecast of Mid-C monthly electricity prices plus externality costs for 2013 and 2014. **Figure 7.7** shows the Mid-C annual electricity prices plus externality costs for the period 2013-2021. Prices are expected to rise starting in 2014.

Figure 7.6
Mid-C Monthly Price Forecast plus Externality Costs for 2013-2014, $/MWh

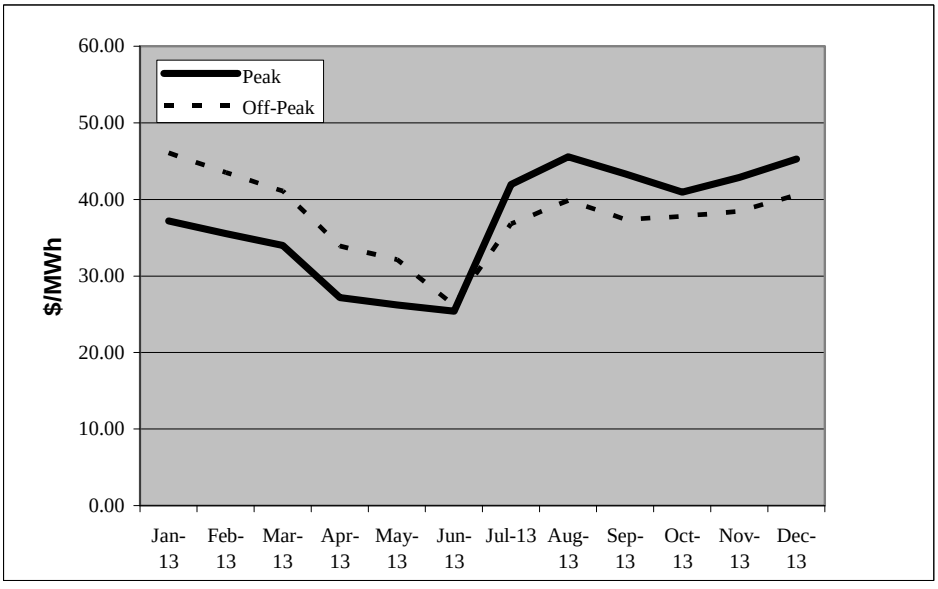
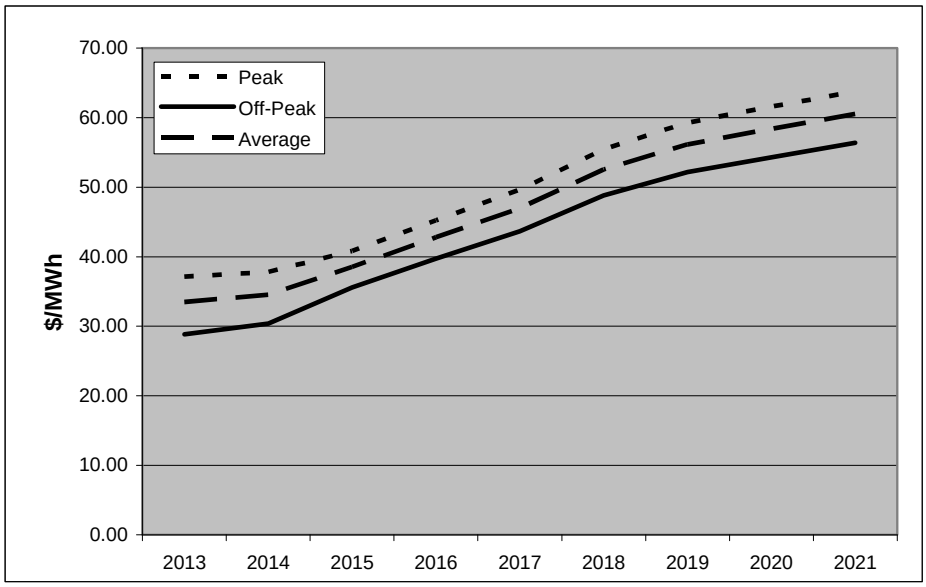


Figure 7.7
Mid-C Annual Price Forecast plus Externality Costs for 2013-2021, $/MWh



7.4 Total Energy plus Losses Costs

Table 7.2 presents total costs of energy plus losses by customer class and by location for 2013 and 2014. These costs were calculated by multiplying, for each class, total load plus losses during peak and off-peak hours by projected market price plus externality adder, and then summing results for each year. Note that the costs increase in 2014 for all customer classes except Lights, reflecting the expected slight increase in off-peak wholesale electricity prices and the projected increase in the externality costs. The dip in costs for lights reflects the lower consumption that year for Lights. Appendix 2 provides detailed tables on how total costs of energy plus losses were calculated for each class for peak and off-peak periods.

Table 7.2
Total Energy plus Losses Costs 2013-2014

	Total Service Territory						
	Total	Residential	Small	Medium	Large	High Demand	Lights
2013	$345,402,900	$115,114,014	$42,536,257	$88,784,137	$54,598,769	$41,637,269	$2,732,453
2014	$360,120,690	$119,726,105	$44,365,468	$92,227,532	$58,339,388	$42,901,555	$2,560,642

	Total Nonnetwork (EXcludes Network Residential & Small that are billed at nonnetwork rates)						
	Total	Residential	Small	Medium	Large	High Demand	Lights
2013	$295,397,336	$111,868,528	$37,431,483	$68,556,347	$33,171,254	$41,637,269	$2,732,453
2014	$308,267,599	$116,354,650	$39,054,070	$71,252,987	$36,143,696	$42,901,555	$2,560,642

	Downtown Network				
	Total	Residential	Small	Medium	Large
2013	$50,005,564	$3,245,486	$5,104,774	$20,227,789	$21,427,515
2014	$51,853,091	$3,371,455	$5,311,398	$20,974,545	$22,195,692

7.5 Long Distance Transmission Costs

Energy generation occurs outside the service territory and requires transmission services to get power to the service territory. Every customer class utilizes transmission services, regardless of the size and timing of their load. The majority of transmission services used by the Department are sold by the Bonneville Power Administration (BPA). A fixed quantity of transmission services is purchased for a multi-year period. The analysis here, though, acts as if transmission services were purchased one year at a time so that an 'optimal' amount of transmission can be obtained for each year. The amount purchased has to be large enough to serve the peak MW load during the year in order to guarantee serving the load throughout the year.[4] The following discussion presents the derivation of transmission cost by customer class assuming that City Light were a distribution company only, buying all the energy needed to serve its retail load from the wholesale market.

The planned amount of transmission capacity to purchase is calculated by multiplying annual average load by a percent, which is assumed to equal 200% since it approximates the relationship between the annual average City Light system load and the peak system load observed in the past**.** From Table 6.6 we see that annual average load for 2013 equals 1,102 MW and for 2014 equals 1,113 MW. Transmission capacity required for 2013, therefore, equals 2,204 MW and capacity required for 2014 equals 2,226 MW.

The price for BPA transmission services is $1,501/MW per month. The annual long distance transmission costs, therefore, are $39,698,448 for 2013 and $40,094,712 for 2014, which must be allocated among customer classes. If the total cost is assigned on the basis of each class' share of the peak load, it would be possible for a class to receive a small share if it had small load during the peak period. In this case, the class with a small load would have transmission services paid for by the classes taking a bigger load. This fact would reflect the reality of the particular load configuration served. However, it would violate the commonsense notion that every class requires the same amount of transmission services to get wholesale energy delivered to it. Thus, a different procedure that acknowledges the latter was developed.

An estimate of the quantity of transmission services needed to serve each class on its own was developed as if it were the only class being served.[5] The results were summed over all classes. Shares of the cost of transmission from this set of calculations were then used to allocate the costs of transmission from the analysis of the actual system load. This process allows assignment of a "reasonable" fraction of the net cost of transmission services to each customer class and at the same time preserves a useful estimate of the marginal value of transmission services for each customer class. **Table 7.3** presents the annual transmission costs by customer class and location.

[4] "Guarantee" is meant in a common contractual sense. There cannot be a guarantee against catastrophes caused by natural forces, war, or such.

[5] Following the procedure for calculating the amount of capacity for the total system, the amount of capacity 'purchased' for each class in this synthetic exercise would be 200% of the average load for each class. Inspection reveals that each class will, therefore, be allocated the same percentage of the total system transmission costs as their share of load, as shown in Table 6.5.

Table 7.3
Long Distance Transmission Costs

	Total Service Territory						
	Total	Residential	Small	Medium	Large	High Demand	Lights
2013 Total	$39,698,448	$13,128,742	$4,841,395	$10,196,404	$6,280,678	$4,917,362	$333,867
	100.000%	33.071%	12.195%	25.685%	15.821%	12.387%	0.841%
2014 Total	$40,094,712	$13,100,419	$4,897,691	$10,308,849	$6,565,908	$4,922,035	$299,809
	100.000%	32.674%	12.215%	25.711%	16.376%	12.276%	0.748%

	Total Nonnetwork (EXcludes Network Residential & Small that are billed at nonnetwork rates)						
	Total	Residential	Small	Medium	Large	High Demand	Lights
2013 Total	$33,949,672	$12,758,647	$4,260,242	$7,866,858	$3,812,696	$4,917,362	$333,867
	85.519%	32.139%	10.732%	19.817%	9.604%	12.387%	0.841%
2014 Total	$34,296,285	$12,731,244	$4,311,061	$7,957,427	$4,074,710	$4,922,035	$299,809
	85.538%	31.753%	10.752%	19.847%	10.163%	12.276%	0.748%

	Downtown Network				
	Total	Residential	Small	Medium	Large
2013 Total	$5,748,776	$370,095	$581,152	$2,329,546	$2,467,983
	14.481%	0.932%	1.464%	5.868%	6.217%
2014 Total	$5,798,427	$369,176	$586,631	$2,351,423	$2,491,198
	14.462%	0.921%	1.463%	5.865%	6.213%

Treatment of Sales of Long Distance Transmission

City Light earns a small amount of revenue from sales of surplus transmission capacity available during the year when the total transmission capacity is not used. In this analysis the long-distance transmission costs are allocated gross of this revenue. An argument for allocating transmission costs net of these revenues is that the value of surplus transmission sales is higher during peak hours than in off-peak, so classes with low usage during the off-peak period could be charged less. However, the share of load in peak hours is very similar among all classes except streetlights and the cost assigned to streetlights without that adjustment is already low, so the relative adjustment would be negligible.

7.6 Total Energy Cost Shares

The total marginal cost of energy equals the sum of the energy consumption plus losses valued at market prices plus externality costs and costs of transmission. Table 7.1 of the introduction to this chapter presents the results from the two components of total energy costs, derives the sum of the two, and computes each class' share of the total for the service territory. The shares derived from the sum of the marginal costs for the two years are used to allocate all components of the functionalized energy revenue requirements summed for those years.

Chapter 8: Distribution Costs

8.1 Overview

Distribution revenue requirements are composed of:

- In-service area transmission
- Substations
- Wires and related equipment
- Customer transformers
- Meters (excluding meter reading)
- Streetlights

This chapter presents the derivation of cost shares by customer class that allocates all but one of these revenue requirements related to distribution. The exception is streetlights, all of whose revenue requirements are assigned to the streetlight rate class. Customer classes refer specifically to all classes in the total nonnetwork area and all classes in the downtown network area. Network residential and small general service customers are, at this stage, treated as network customers.

All of the indicated equipment and facilities are necessary to provide distribution service to existing and new customers. Maintenance and replacement when the equipment and facilities reach the end of their service life are necessary to provide service to existing and new load. Cost shares by customer class are developed in four steps. First, estimates of annualized capital costs and annual operations and maintenance costs per MW (per meter for meter costs) for the indicated component are developed. Second, these per unit costs are multiplied by an appropriate peak load (or number of meters) for each class. Third, the sum of these costs over all classes is computed. Finally, each class' share of these total costs is computed. These costs also are converted to costs of the forecast year, which has no effect on computing shares of cost, but is important later in providing information on marginal cost to analysts who, to the extent possible, set marginal rates as close as practicable to marginal costs.

8.2 In-Service Area Transmission

This functional revenue requirement is associated with the cost of facilities to transport energy from the boundary of the service territory through high voltage lines to substations where the energy is transformed to lower voltage to be distributed over feeders to retail customers.

Capital Costs: In-Service Area Transmission

The department's in-service area high-voltage transmission lines have a peak capacity of 2,892 MW. **Table 8.1** presents, in terms of $2011, the capital cost associated with replacing the in-service area transmission lines. The cost estimates per mile come from the Department's engineers, reflecting their recent experience in replacing some major in-service area transmission lines. The mileage data represent the miles of line within the service territory at the two voltage levels indicated. Chapter 5 indicated that the expected service life for this type of equipment is 45 years. Using the annualization factor from Chapter 5, the annualized cost of this equipment, therefore, is (0.040189 x

$1,057,570,000) which equals $42,500,383. Dividing this by the capacity of the system, ($42,500,383/2,892), indicates that the annual capital cost per MW equals $14,696.

Table 8.1
In-Service Area Transmission, Replacement Cost of Capital
$2011

	Miles	Cost Per Mile ($M)	Total Cost ($M)
115 kV			
OH	97.2	$3.0	$291.7
UG	21.1	$10.0	$211.0
Subtotal	**118.3**	**$4.2**	**$502.7**
230 kV			
OH	92.9	$3.5	$325.1
UG	19.2	$12.0	$229.8
Subtotal	**112.0**	**$5.0**	**$554.9**
Total	**230.4**	**$4.6**	**$1,057.6**

The capacity must cover all the losses on the system. To somewhat simplify the analysis, the losses over all shared equipment cover the in-service transmission losses, substation losses and feeder losses. The sum of these common losses, from Table 6.7, is 2.7 percent. Thus, the cost per MW, adjusted for losses is ($14,696/(1-0.027)), which equals $15,104.

Annual Operations and Maintenance Costs: In-Service Area Transmission

Annual O&M costs for the in-service area transmission system have fluctuated for a number of years. See **Figure 8.1**. The actual costs, though, have been subjected to various financial constraints and 'catch-up' imposed on the Department over the past several years. Hence, an average of costs over a three-year period was considered to be the most reasonable representation of O&M costs for these facilities. **Table 8.2** presents the costs associated with in-service area transmission per FERC (Federal Energy Regulatory Commission) account for 2009 through 2011. The average of these costs, $1,713,964, was used as a representation for annual O&M costs. The total annual O&M cost divided by the capacity of the in-service system ($1,713,964/2,892) produces an annual O&M cost per MW of $592.66.

Figure 8.1
Total Annual FERC Costs for In-Service Transmission

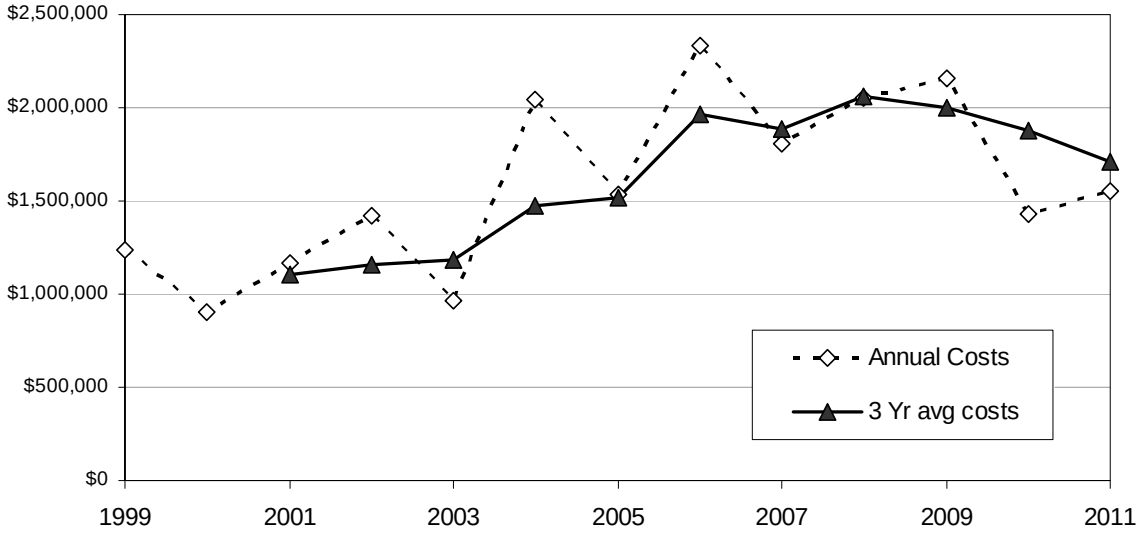


Table 8.2
Annual FERC Costs for In-Service Area Transmission

FERC Code	FERC #	2006	2007	2008	2009	2010	2011
OS&E-INSIDE SEATTLE	56016	$18,831	$40,328	$7,150	$23,865	$30,012	$12,234
O-STATION EXP, INSIDE SEATTLE	56216	95,885	82,637	119,251	96,884	103,698	78,001
OP OV LINE EXP-INSIDE SEATTLE	56316	6,592	16,744	10,558	50,379	14,107	2,444
OP UN LINE EXP-INSIDE SEATTLE	56416	48,737	24,232	22,239	30,529	30,995	5,727
OP MISC L EXP-INSIDE SEATTLE	56616	0	35	67	1,011	56,959	8,517
MS&E-INSIDE SEATTLE	56816	25,889	39,423	19,185	16,537	97,826	45,015
MAINT TRANS ST-INSIDE SEATTLE	56916	29,754	44,041	39,595	90,076	111,805	92,279
MAINT RELAY SE-INSIDE SEATTLE	57016	147,750	337,808	312,652	231,642	163,062	95,641
MAINT STAT EQ-INSIDE SEATTLE	57026	552,012	764,064	563,063	634,791	432,256	615,035
ROADS & TRAILS-INSIDE SEATTLE	57116	123,295	99,154	179,915	229,952	117,128	168,328
TOWERS & POLES-INSIDE SEATTLE	57126	41,727	116	7,521	38,010	6,241	28,567
M O/H TRANS CO-INSIDE SEATTLE	57136	521,927	225,799	531,944	608,578	14,443	12,503
CLR TREE&BRSH-INSIDE SEATTLE	57146	631,781	131,931	185,949	99,788	272,121	393,276
MAINT O/H ENG-INSIDE SEATTLE	57156	0	0	0	0	0	141
U/G NON ELEC EQ-INSIDE SEATTLE	57216	701	0	0	0	0	0
U/G ELEC EQ-INSIDE SEATTLE	57226	6,312	16,604	13,511	19,237	9,631	3,638
U/G ELEC ACCESS-INSIDE SEATTLE	57236	3,529	2,544	4,618	637	0	367
U/G MAINT ENG-INSIDE SEATTLE	57246	769	8,498	15,210	0	0	0
MISC TRANS PLA-INSIDE SEATTLE	57316	93,503	11,397	25,123	8,655	2,343	3,091
SUBTOTAL (excl 56016 - a supervisory cost)		$2,330,163	$1,805,029	$2,050,402	$2,156,706	$1,432,614	$1,552,572
three year running average				$2,061,864	$2,004,046	$1,879,907	$1,713,964

Cost Shares: In-Service Area Transmission

Cost shares by class for the nonnetwork and network classes are developed in **Table 8.3**. These cost calculations begin with the load of each class at the time of the system peak load. These data come from Table 6.6 in Chapter 6. Calculation of results in Table 8.3 requires understanding the derivation of the cost and load numbers.

In general, the capital cost equals the Peak Average Hourly MW per Costing Period at time of System Peak multiplied by the in-service area network capital cost per MW (adjusted for system losses).

Next, it is necessary to notice that the per unit capital cost is based on a total cost divided by the capacity of the in-service system, and this is multiplied by each class' load at time of system peak load. Hence there is a difference in the types of units that are involved (system capacity in a denominator versus load at time of peak in a numerator). Note that the sum of the loads over all classes is less than the capacity of the system. This is a necessary feature of designing the system; there needs to be excess capacity to allow for growth and to allow for unexpectedly high peaks. The problem of different units in the numerator and denominator can be rectified by multiplying the initial calculation by the ratio of in-service system capacity to the total over all classes of in-service system peak load.

Another way to view the insertion of this ratio is that the sum of these adjusted per unit capital costs over all classes (i.e., the system total capital cost) is equal to the actual (annualized) cost of the in-service area transmission system adjusted for system losses.[6]

As an example of the calculations for the year 2013, where data all come from Table 8.3, below, consider the $2011 capital cost for the High Demand Class. This amount equals the load at time of peak period (127.06 MW) multiplied by the $2011 capital cost per unit ($15,103.64) multiplied by the total capacity (2,892 MW) divided by the System Peak Load (1,432.96 MW), or $3,873,107 (this result is shown in the top row 'Capital Cost' for High Demand for the year 2013 in Table 8.3).

Similar calculations are done for the annual O&M costs. The sum of the capital and O&M costs for each class in terms of $2011 is then converted from $2011 to $2013 and $2014 by making adjustments based on projected inflation. The service territory total of costs over all classes is computed, as are shares by class of this total cost. These shares are used to allocate the In-Service Area Transmission revenue requirements for 2013 and 2014.

[6] The base equation for an individual class is to multiply the peak MW for that class by the $/MW for in-service transmission. This latter term, in turn, is derived as the total capital cost for in-service transmission divided by the in-service transmission capacity. Thus, the basic equation (neglecting specific reference to adjustment for energy losses and the adjustment for annualizing the total capital cost) is: Peak MW * Total Cap Cost/ System peak capacity. Now, if we multiply by [System Peak capacity / sum of peak MW over all classes] and then take the sum over all classes we get: Total Capital Cost. This final result, when adjusted for the energy losses and the factor to annualize the capital cost and then multiply by the adjustment from $2011 to $2013 gives the total system cost for in-service transmission for 2013. If this ratio term were omitted, the total in-service transmission cost would be substantially smaller and would not reflect the practical fact that the in-service transmission system *needs* to have some excess capacity built-in, as explained.

Table 8.3
Derivation of Cost Shares for In-Service Area Transmission

In Service Area Transmission Capital & O&M Costs ($2011)

Capital Cost per MW	$15,104		
O&M Cost per MW	$593	Total In Service Area Transmission Capacity (MW)	2,892

Loads at Time of System Peak Load (MW) — Period of Peak Coincident Load for 2013 and 2014: December Weekday HLH

Total Nonnetwork[(1)]	**Total Nonnetwork**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
2013 Peak Load	1,233.5	541.3	149.9	278.2	128.3	127.1	8.8
2014 Peak Load	1,232.0	540.0	150.6	278.8	128.0	127.0	7.5

Downtown Network	**Total Network**	**Residential**	**Small**	**Medium**	**Large**
2013 Peak Load	199.4	15.7	20.7	79.8	83.3
2014 Peak Load	199.8	15.6	20.7	80.0	83.4

Total Service Territory	**Total**
2013 Peak Load	1,433.0
2014 Peak Load	1,431.7

2013 Costs for In Service Area Transmission — $2013 inflation adjustment = 1.04401

Total Nonnetwork[(1)]	**Total Nonnetwork**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Capital Cost $2011	$37,600,509	$16,498,597	$4,570,109	$8,480,345	$3,910,650	$3,873,107	$267,700
O&M Cost $2011	$1,475,419	$647,394	$179,328	$332,763	$153,451	$151,978	$10,504
Total	$39,075,928	$17,145,991	$4,749,437	$8,813,108	$4,064,102	$4,025,086	$278,205
Total Cost $2013	$40,795,765	$17,900,633	$4,958,473	$9,200,997	$4,242,974	$4,202,241	$290,449
Share of Service Territory	86.082%	37.772%	10.463%	19.415%	8.953%	8.867%	0.613%

Downtown Network	**Total Network**	**Residential**	**Small**	**Medium**	**Large**
Capital Cost $2011	$6,079,227	$477,736	$630,728	$2,431,317	$2,539,446
O&M Cost $2011	$238,545	$18,746	$24,749	$95,403	$99,646
Total	$6,317,772	$496,482	$655,478	$2,526,720	$2,639,092
Total Cost $2013	$6,595,834	$518,334	$684,327	$2,637,928	$2,755,245
Share of Service Territory	13.918%	1.094%	1.444%	5.566%	5.814%

Total Service Territory	**Total**
Capital Cost $2011	$43,679,736
O&M Cost $2011	$1,713,964
Total	$45,393,700
Total Cost $2013	$47,391,600
Share of Service Territory	100.000%

2014 Costs for In Service Area Transmission — $2014 inflation adjustment = 1.06854

Total Nonnetwork[(1)]	**Total Nonnetwork**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Capital Cost $2011	$37,585,641	$16,473,837	$4,595,186	$8,506,709	$3,904,698	$3,875,361	$229,850
O&M Cost $2011	$1,474,836	$646,423	$180,312	$333,798	$153,218	$152,067	$9,019
Total	$39,060,477	$17,120,260	$4,775,498	$8,840,507	$4,057,916	$4,027,427	$238,869
Total Cost $2013	$41,737,788	$18,293,729	$5,102,824	$9,446,459	$4,336,056	$4,303,478	$255,242
Share of Service Territory	86.048%	37.715%	10.520%	19.475%	8.939%	8.872%	0.526%

Downtown Network	**Total Network**	**Residential**	**Small**	**Medium**	**Large**
Capital Cost $2011	$6,094,095	$476,624	$632,586	$2,441,380	$2,543,505
O&M Cost $2011	$239,128	$18,702	$24,822	$95,798	$99,805
Total	$6,333,224	$495,326	$657,408	$2,537,178	$2,643,311
Total Cost $2013	$6,767,320	$529,277	$702,469	$2,711,083	$2,824,491
Share of Service Territory	13.952%	1.091%	1.448%	5.589%	5.823%

Total Service Territory	**Total**
Capital Cost $2011	$43,679,736
O&M Cost $2011	$1,713,964
Total	$45,393,700
Total Cost $2013	$48,505,108
Share of Service Territory	100.000%

(1) Excludes Network Residential & Small that are billed at nonnetwork rates

8.3 Substations

High voltage power delivered by the in-service area transmission lines must be transformed to lower voltages to be carried over distribution feeder lines that deliver power to a location near individual customers. Whereas there are no differences in cost for in-service-area transmission (nor for costs of power delivered to the service territory boundary) between network and nonnetwork customers, there are some differences in the capital costs of substations that serve nonnetwork and those that serve network customers.

Capital Costs: Substations

The Department anticipates building a new180 MW substation in the Denny Triangle area. This substation will support 26 kV and 13 kV network feeders as well as the standard 27 kV radial feeders. Engineering estimates and costs were developed for this project. That information is the source of capital cost estimates for 'pure' network and 'pure' nonnetwork substations.

The cost for a standard nonnetwork substation, including labor, material and contingency, was estimated to be $33,255,046 in $2011. This cost included necessary fiber-optic communication equipment and a SCADA system (system control and data analysis system). Dividing this cost by the 180 MW of capacity indicates that the capital cost for a nonnetwork substation equals $179,195/MW.

Table 5.2 in Chapter 5 indicated that substations are expected to have a service life of about 32 years. Using the annualization factor for that life indicates the annual capital cost for a nonnetwork substation equals 0.0483271 x $179,195, or $8,660/MW. Adjusting those costs for losses at 1.56 percent ($8,660/(1-0.0156)) gives an annual capital cost adjusted for losses of $8,797/MW.

Based on the new substation capital cost information, the total cost for a 180 MW network substation (that has additional switchgear compared to a nonnetwork substation) is $39,881,190. The capital cost per MW ($39,881,190/180) equals $221,562. The annual capital cost for a network substation (0.0483271 x $221,562) equals $10,707/MW. The annual capital cost for a network substation, adjusted for losses ($10,707/ (1-0.0156)), equals $10,877/MW.

Operations and Maintenance Costs: Substations

Table 8.4 presents data on the annual O&M costs associated with the system's substations. Rather than relating all the individual FERC accounts, sums of data by ranges of FERC accounts associated with specific functions are reported.

Substation operations and maintenance costs are adjusted for the age of facilities.

Table 8.4
Substation O& M Costs

	Item	FERC Accounts	2011
1	Load Dispatching	58100 - 58199	$2,668,213
2	Station Operation	58200 - 58299	$4,105,421
	Maintenance of Station Equipment(1)	59200 - 59299	$1,669,648
	Base Factor		1.879
	Age Adjustment Factor (= 1/ Base Factor)		0.673
3	Maintenance of Station Equipment, Adjusted		$1,123,673
4	Station building O & M	59100 - 59199	$1,260,197
	Total (1+2+3+4)		$9,157,504
	Substation Capacity (MW)	2,458	
	Annual Substation O&M, $/MW		$3,725.59

(1) This line item must be adjusted for age, see discussion in text for more information.

Since reported O&M expenses cover all substations of all ages, there has been, in the past, a concern that the average cost per MW derived from these data would not adequately predict the cost for servicing a new marginal substation. Regression analysis conducted during the 1989/90 rate case established a relationship between age of a substation and the amount of maintenance needed. The *1989/90 COSACAR* discussed an analysis of labor hours spent on preventive and corrective maintenance, which constitute the bulk of substation maintenance work (see pages 4.31 and 4.32 of that earlier study.) That analysis established a regression relationship between labor costs per MW and the age of the substations upon which the maintenance was done, finding that labor hours spent on preventive and corrective maintenance increased with substation age.

The regression results became an estimate of annual labor costs expected to be incurred for every year the substation was in service. The present value of these costs for 35 years was estimated and the annualized cost, desired for the analysis here, equaled the predicted annual cost at age 14. At the time of that study, the average age of the substations was 26.5 years. A ratio of the regression predicted costs for the ages of 26.5 and 14 years was estimated to be 1.3731.[7] The reported expenses were then adjusted by the reciprocal of this number.

At the time of the *1993/94 COSACAR*, the average age of substations had advanced by four years.[8] No account was taken of any of the improvements made to substations in the intervening time. City Light's distribution engineers at that time believed that these general results were still valid, but should be applied to an average existing substation age of 30.5 years, four years more than the 26.5 year estimate used in the 1989/90 study. A value of 1.485 was obtained for the ratio of labor costs for a plant 30.5 years old and a 14 year old plant. The reciprocal of this value is 0.673, which was the factor used to

[7] Page 4.31a of the *1989/90 COSACAR* presents a graph of the regression results. The ratio of the value of 26.5 years and 14 years equals 1.37.

[8] Major rehabilitation projects can essentially renew substations. That rehabilitation retards the increase in average age of substations. No major rehabilitations occurred in the period of time between the study referred to in the *1989/90 COSACAR* and 1991 whose data were used in the *1993/94 COSACAR*, hence the average age of substations increased by the number of years between these two studies.

adjust for differences in costs that could be expected for a system composed of all new equipment in the *1993/94 COSACAR.*

For purposes of this *COSACAR*, it is still important to recognize that maintenance costs for the existing system of substations may not reflect the annualized costs of a marginal, *new* substation. But it is also difficult to develop a precise correction factor for adjusting the costs of the existing system to reflect the costs of maintaining a new substation. The *2000/2002 and 2007-08 COSACARs* faced the same issue. Discussions with senior engineers in Power System & Substation Engineering at the time of the *2000/2002 COSACAR* and the *2007-08 COSACAR* led to an agreement to use the adjustment factor from the *1993/94 COSACAR*, again, to adjust current maintenance costs for age. Recent discussions with senior engineers led to the same conclusion regarding analyses for this *COSACAR*. Substations have desired schedules for regular replacement and upgrading of major equipment. However, sometimes budget constraints require postponement of some of this work. The adjustment factor of 0.673 acknowledges that some adjustments must be made to reported costs and that the adjustment has become larger since the research was done for the *1989/90 COSACAR*, but also acknowledges that some life-enhancing improvements to the existing substations have been undertaken since that initial research project. Table 8.4, therefore, uses this factor with the reported substation maintenance of station equipment costs to adjust for differences in costs that could be expected for a system composed of all new equipment.

Derivation of Cost Shares: Substations

The development of cost shares for substation revenue requirements by class for the nonnetwork and network classes are presented in **Table 8.5** on the next page. These calculations are similar to those used in the development of cost shares for in-service area transmission. Calculations begin with the load of each class at the time of the system peak load that comes from Table 6.6 in Chapter 6.

Similar to the calculations for In-Service Area Transmission, the unit costs are based on a cost per unit of total capacity that exceeds the load placed on the substations. Thus, to calculate the costs that reflect costs for actual substation usage by a class, the $2011 cost per unit of total capacity is multiplied by the class load and that result is multiplied by the total substation capacity divided by the system peak load.[9]

Similar calculations are done for both capital and O&M costs. The sum of these costs are converted from $2011 to future dollar values by the forecast inflation indices; the total over all classes is computed, then shares of this total cost for each class are computed. These shares are used to allocate the sum of Substation revenue requirements for 2013 and 2014.

[9] Unlike in-service transmission, though, is the fact that the capital cost for in-service transmission started with the total capital cost of all in-service-transmission whereas substation capital costs start with capital costs of individual network and nonnetwork substations. Thus, the total cost over all customers for in-service transmission equals the adjusted cost of the total in-service system, but the corresponding cost for substations is simply non-comparable because of the different starting point on capital costs.

Table 8.5
Derivation of Cost Shares for Substations

Substation Capital & O&M Costs ($2011)								
	Capital Cost per MW	O&M Cost per MW						
Nonnetwork	$8,797	$3,726						
Network	$10,877	$3,726	Total Substation Capacity (MW)					2,458
Loads at Time of System Peak Load (MW)			Period of Peak Coincident Load for 2013 and 2014: December Weekday HLH					
Total Nonnetwork[1]	**Total Nonnetwork**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**		**Lights**
2013 Peak Load	1,233.5	541.3	149.9	278.2	128.3	127.1		8.8
2014 Peak Load	1,232.0	540.0	150.6	278.8	128.0	127.0		7.5
Downtown Network	**Total Network**	**Residential**	**Small**	**Medium**	**Large**			
2013 Peak Load	199.4	15.7	20.7	79.8	83.3			
2014 Peak Load	199.8	15.6	20.7	80.0	83.4			
Total Service Territory	**Total**							
2013 Peak Load	1,433.0							
2014 Peak Load	1,431.7							
2013 Costs for Substations					$2013 inflation adjustment =			1.04401
Total Nonnetwork[1]	**Total Nonnetwork**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**		**Lights**
Capital Cost $2011	$18,613,996	$8,167,571	$2,262,416	$4,198,164	$1,935,953	$1,917,368		$132,524
O&M Cost $2011	$7,882,988	$3,458,949	$958,128	$1,777,914	$819,872	$812,001		$56,124
Total	$26,496,983	$11,626,520	$3,220,544	$5,976,078	$2,755,825	$2,729,369		$188,648
Total Cost $2013	$27,663,187	$12,138,234	$3,362,289	$6,239,101	$2,877,117	$2,849,496		$196,951
Share of Service Territory	84.137%	36.918%	10.226%	18.976%	8.751%	8.667%		0.599%
Downtown Network	**Total Network**	**Residential**	**Small**	**Medium**	**Large**			
Capital Cost $2011	$3,721,043	$292,418	$386,064	$1,488,188	$1,554,373			
O&M Cost $2011	$1,274,517	$100,158	$132,233	$509,728	$532,398			
Total	$4,995,560	$392,576	$518,296	$1,997,916	$2,086,770			
Total Cost $2013	$5,215,428	$409,855	$541,108	$2,085,850	$2,178,615			
Share of Service Territory	15.863%	1.247%	1.646%	6.344%	6.626%			
2014 Costs for Substations					$2014 inflation adjustment =			1.06854
Total Nonnetwork[1]	**Total Nonnetwork**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**		**Lights**
Capital Cost $2011	$18,606,635	$8,155,313	$2,274,830	$4,211,215	$1,933,007	$1,918,483		$113,786
O&M Cost $2011	$7,879,871	$3,453,758	$963,386	$1,783,441	$818,624	$812,474		$48,188
Total	$26,486,506	$11,609,071	$3,238,216	$5,994,656	$2,751,631	$2,730,957		$161,975
Total Cost $2013	$28,301,963	$12,404,789	$3,460,172	$6,405,546	$2,940,235	$2,918,144		$173,077
Share of Service Territory	84.099%	36.861%	10.282%	19.034%	8.737%	8.671%		0.514%
Downtown Network	**Total Network**	**Residential**	**Small**	**Medium**	**Large**			
Capital Cost $2011	$3,730,144	$291,737	$387,201	$1,494,348	$1,556,858			
O&M Cost $2011	$1,277,634	$99,925	$132,622	$511,838	$533,249			
Total	$5,007,777	$391,662	$519,823	$2,006,186	$2,090,107			
Total Cost $2013	$5,351,024	$418,508	$555,453	$2,143,695	$2,233,368			
Share of Service Territory	15.901%	1.244%	1.651%	6.370%	6.636%			

(1) Excludes Network Residential & Small that are billed at nonnetwork rates

8.4 Wires and Related Equipment

Wires and related equipment are used to transport or facilitate transport of power over 26 kV lines (or 27 MW for nonnetwork customers) or 13 kV lines (for network customers) from substations to a point near the location of retail consumers. At that point, the power is put through a final transformer (the customer transformer) and fed through a service drop to a meter and then to the customer. The next two sections discuss costs for meters and customer transformers. This section discusses the costs of the wires and related equipment as well as the costs for customer service drop.

Revenue requirements associated with these items are assigned separately to nonnetwork and network customers at the stage of the functionalization of revenue requirements. Cost shares, therefore, are developed separately for nonnetwork and network customers.

Capital Costs: Wires and Related Equipment

Table 8.6 presents a listing of the wires and related equipment associated with distributing power over the nonnetwork portion of the system. The total $2011 capital cost equals $3.213 billion. This equipment serves 160 feeders of 27 MW each, or a total capacity of 4,320 MW. Thus, the capital cost per MW equals $743,791. The expected lifetime for this equipment is 45 years. Using the annualization factor for 45 years with a half-year shift as shown in Chapter 5, the annual cost for this equipment equals $29,891. Adjusting this for line losses from Table 6.7 (0.82%) indicates the adjusted $2011 capital cost per MW of load for nonnetwork wires and related equipment is $30,138.

Table 8.6
Nonnetwork Wires and Related Equipment Capital Cost, $2011

Item	Labor Unit Material Cost	Cost	Total Labor & Material Cost	System Quantity	Total Cost
Anchor	$429	$275	$704	19,157	$13,486,528
Pipe brace anchor	708	415	1,123	5,560	6,243,880
Sectionalizers	1,903	1,087	2,990	194	580,060
600 amp OH switch	4,764	5,624	10,388	1,394	14,480,872
1200 amp OH switch	6,605	10,043	16,648	212	3,529,376
Capacitor	0	0	0	48	0
Cutouts	184	105	289	6,190	1,788,910
Cutouts with limiters	228	542	770	1,224	942,480
< 29' pole	1,114	530	1,644	575	945,300
30-35' pole	1,123	619	1,742	14,603	25,438,426
36-40' pole	1,139	779	1,918	11,668	22,379,224
41-45' pole	1,177	1,160	2,337	18,161	42,442,257
46-50' pole	1,206	1,444	2,650	32,923	87,245,950
51-55' pole	1,231	1,700	2,931	6,535	19,154,085
56-60' pole	1,523	1,961	3,484	3,155	10,992,020
61-70' pole	1,485	1,580	3,065	2,106	6,454,890
71'+ pole	1,528	2,013	3,541	881	3,119,621
#4 bare copper wire/ft, 1 phase	4	2	7	4,230,252	28,399,092
#4 bare copper wire/ft, 3 phase	9	5	14	1,680,553	23,034,780
397 ACSR, 3 phase, 600 amp	10	6	15	2,779,395	42,191,216
954 ACSR, 3 phase, 1200 amp	27	15	42	465,966	19,539,508
954 ACSR, 34 kV	31	18	49	19,440	955,800
1/0 triplex; inc open 2-#2 & 1-#4	2	1	3	5,648,361	18,639,591
1/0 quadplex	4	2	6	295,019	1,897,956
1/0 27 kV UG inc duct, trench, vault	409	335	744	2,051,440	1,527,030,393
1000 kCM UG inc duct, trench & vau	579	492	1,072	456,908	489,741,409
2-1000kCM UG inc duct, trench & va	652	579	1,231	62,545	76,962,873
Handholes, ave 233 & 444	5,279	4,523	9,802	9,290	91,064,203
Manholes, 712	28,836	27,885	56,721	162	9,188,757
Vaults, ave, 577, 612, 814 & 818	35,981	33,012	68,993	7,424	512,201,508
Pads, ave	3,516	2,490	6,005	993	5,963,313
PMH5 switch	95,083	46,792	141,875	21	2,979,375
PMH5 E switch	95,083	46,792	141,875	32	4,540,000
PMH 9 switch	58,818	41,096	99,913	99	9,891,426
PMH10 switch	55,168	30,258	85,426	24	2,050,225
PMH12 switch	60,167	45,651	105,817	37	3,915,245
UG terminations, ave	2,638	593	3,231	3,112	10,053,752
J Boxes, ave	5,254	1,063	6,317	11,669	73,711,556
Total					**$3,213,175,855**

Table 8.7 presents a listing of the wires and related equipment associated with distributing power through the network portion of the system. Total $2011 capital costs equal $0.91 billion.

Table 8.7
Network Wires and Related Equipment Capital Cost, $2011

	Per Unit Cost	No. of units	Total Cost	Assumptions
System Man Hole/Vaults	$277,000	1,372	$380,044,000	Install 8'x18'x10'
System Hand Holes[(1)]	$111,000	476	52,836,000	Install 6'x8'x7'
System Ducts	$1,198	303,222	363,259,956	Duct w/10 conductors and downtown ducts 81% of total
System Primary Feeder Cable	$17,126	4,672	80,009,932	Each unit includes 200 ft of cable & one splice per unit
System Secondary Cables	$10,128	1,885	19,091,331	Each unit is terminated/200 ft
Service Cables	$10,128	455	4,612,544	Each unit is terminated/200 ft
Cable Limiters	$100	43,179	4,317,900	Downtown is 81% of total
Secondary Bus Bars	$4,707	1,148	5,403,636	
Total			**$909,575,299**	

(1) An ordinary hand hole is a box about 2 * 3 * 3 feet in dimension with a top that can be opened that has conductor wires entering and leaving and other apparatus with enough space inside to allow manual work. The box may be on top of the ground or it may be sunk so that only the top is at the surface. Handholes for network systems, which are referenced here, can be substantially larger and will often have panels and/or other equipment inside as well as the conductors.

The network distribution system has a capacity of 660 MW at unitary power factor. Therefore, the capital cost per MW equals $1,378,788. The various kinds of equipment have expected lives ranging from 15 to 100 years. The modal expected life is estimated to be 30 years. Using the annualization factor for this lifetime, the annual capital cost for network wires and related equipment equals $69,313 per MW. Adjusting this for losses through feeders (0.82%) gives a $2011 adjusted annual capital cost for network wires, etc., of $69,886 per MW.

Annual Operations and Maintenance Cost-Nonnetwork: Wires and Related Equipment

Table 8.8 presents the annual O&M costs for nonnetwork service for the years 2009 through 2011. The network costs discussed in the next subsection pertain to only the downtown network area. There are two smaller network areas, First Hill and the University District, that have different characteristics than the downtown network, so they are excluded from network rates. Their O&M costs, however, are combined in the accounting records with the costs of the downtown network. The downtown network load comprised 85.6 percent of total network load in 2011. Thus, the remainder of the total network comprised 14.4 percent of the total load. The latter figure is used to estimate the 'nonnetwork' portion of costs recorded as network in Table 8.8. Thus, there are two portions of Table 8.8. The top portion pertains to costs that clearly are associated with nonnetwork service. The bottom portion lists the costs that are reported as 'network' but 14.4 percent of those costs are categorized as 'nonnetwork' costs for purposes of analysis here. As can be seen in the table, there is substantial variability in annual operations and maintenance costs; therefore, a three-year average of historical costs is used to normalize for this year-to-year variability. Total O&M costs for 2011, therefore, equal $14,292,051. Dividing this total cost by the 4,320 MW capacity of the nonnetwork system produces an annual $2011 O&M cost of $3,308/MW for nonnetwork wires.

Table 8.8
Nonnetwork Operations and Maintenance Costs

FERC Line Name[1]	FERC #	2009	2010	2011
Nonnetwork Costs (100%)				
INSP TEST & PATROL OH DIST LIN	58352	$66,632	$51,964	$457,456
OH LINE ENGR EXP	58359	12,890	18,900	156,749
CLEAR TREES & TRIM BRUSH OH LI	59350	4,572,466	3,923,058	2,690,600
MAINT POLES CONDCTRS & SERVICE	59352	5,048,911	4,484,811	7,086,558
INSP & TEST UG DIST	58462	910,570	972,614	1,175,624
UG ENGR LINE EXP	58469	20,158	21,930	48,169
MAINT NON-ELECT UG EQUIP	59460	762,200	379,676	601,127
MAINT ELECT UG EQUIP	59462	3,096,212	2,847,853	2,647,729
Subtotal		**$14,490,040**	**$12,700,808**	**$14,864,011**
Network Costs[2]				
INSPECT & TEST NETWORK UG DIST	58442	248,179	223,055	264,050
MAINT NETWORK UG LINES	59440	429,702	1,151,206	436,861
MAINT NETWORK UG EQUIP	59442	832,628	972,865	695,964
MISC NETWK UG DIST SYS EXP	58841	287,523	138,859	22,534
Subtotal x 14.4%		**$258,917**	**$357,982**	**$204,395**
Total Nonnetwork Rate Classes O&M expenses		**$14,748,956**	**$13,058,790**	**$15,068,406**
Three Year Running Average				**$14,292,051**

(1) Listed as they appear in the system; some line items may look abbreviated or truncated
(2) 14.4% of all network costs apply to areas outside the downtown network.

Annual Operations and Maintenance Cost-Network: Wires and Related Equipment

Table 8.9 presents the annual O&M costs for network service for the years 2009 through 2011. As mentioned above, these O&M costs have been erratic so a three year average is used in estimating future O&M costs. Also as mentioned above, historical network cost data include costs for the downtown network as well as costs for two smaller, and different, network areas on First Hill and in the University District that are not charged network rates and, therefore, are categorized as nonnetwork costs during cost allocation. Load in the downtown network accounted for 85.6 percent of the total of all network loads in 2011 so the total network cost data were adjusted by that percentage to estimate the annual O&M costs of $1,627,378 for the downtown network. Dividing this total annual cost by the 660 MW capacity of the downtown network produces an annual $2011 O&M cost of $2,466/MW for network service.

Table 8.9
Network Operations and Maintenance Costs

FERC Line Name[1]	FERC #	2009	2010	2011
INSPECT & TEST NETWORK UG DIST	58442	$248,179	$223,055	$264,050
MAINT NETWORK UG LINES	59440	429,702	1,151,206	436,861
MAINT NETWORK UG EQUIP	59442	832,628	972,865	695,964
MISC NETWK UG DIST SYS EXP	58841	287,523	138,859	22,534
Total x 85.6%[2]		**$1,539,116**	**$2,128,004**	**$1,215,015**
Three Year Running Average				**$1,627,378**

(1) Listed as they appear in the system; some line items may look abbreviated or truncated
(2) 85.6% of network distribution is in the downtown network. The remaining 14.4% is outside the downtown network and that cost is included in nonnework costs, shown in the previous table.

Annual Capital and Operations and Maintenance Costs: Service Drops

Service drops refer to the wires that lead from a customer's transformer to the customer. These costs are added to the costs of the distribution nonnetwork and network feeders that were derived above to create a total cost for 'wires'. Service drops have both capital and annual O&M costs. The capital costs vary by the configuration and size of wires required for the service drop (e.g., one or three phase service, ampere rating of the wires). **Table 8.10.a** presents a summary of the results of the capital and operations and maintenance costs per meter as well as the meter count in 2011. **Table 8.10.b** shows the meter count projections for 2013 and 2014 and the derivation for those years of the total capital plus O&M costs for service drops.

Table 8.10.a
Service Drop Capital and O&M Costs

Annualized Service Drop Capital and O&M Cost, $2011					
	Residential	**Small**	**Medium**	**Large**	**High Demand**
Nonnetwork					
Annualized Capital Cost	$22,097,337	$2,491,074	$584,554	$250,176	$141,557
Number of Meters (2011)	346,876	40,207	2,613	84	12
Capital Cost per Meter	$63.70	$61.96	$223.71	$2,978.29	$11,796.38
O&M Cost per Meter	$6.33	$6.33	$6.33	$12.26	$12.26
Total Cost per Nonnetwork Meter	**$70.03**	**$68.29**	**$230.04**	**$2,990.55**	**$11,808.65**
Network					
Annualized Capital Cost	$1,325,508	$312,452	$103,459	$814,018	
Number of Meters (2011)	15,908	3,257	469	54	
Capital Cost per Meter	$83.32	$95.93	$220.59	$15,074.41	
O&M Cost per Meter	$6.33	$6.33	$6.33	$12.26	
Total Cost per Network Meter	**$89.65**	**$102.26**	**$226.92**	**$15,086.68**	

Table 8.10.b
Derivation of Service Drop Annual Capital and O&M Cost

2013 Costs for Service Drops					$2013 inflation adjustment =	1.04401
Total Nonnetwork[(1)]	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**
Total Cost per Nonnetwork Meter		$70.03	$68.29	$230.04	$2,990.55	$11,808.65
Number of Meters	395,777	352,981	40,082	2,619	84	12
Capital + O&M Cost ($2011)	$28,452,800	$24,720,428	$2,737,011	$602,451	$251,206	$141,704
Capital + O&M Cost ($2013)	**$29,705,085**	**$25,808,440**	**$2,857,474**	**$628,967**	**$262,263**	**$147,941**
Downtown Network	**Total**	**Residential**	**Small**	**Medium**	**Large**	
Total Cost per Network Meter		$102.26	$226.92	$15,086.68	$89.65	
Number of Meters	20,076	16,253	3,244	525	54	
Capital + O&M Cost ($2011)	$2,722,658	$1,457,106	$331,737	$119,135	$814,680	
Capital + O&M Cost ($2013)	**$2,842,490**	**$1,521,237**	**$346,337**	**$124,379**	**$850,537**	
2014 Costs for Service Drops					$2014 inflation adjustment =	1.06854
-1	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**
Total Cost per Nonnetwork Meter		$70.03	$68.29	$230.04	$2,990.55	$11,808.65
Number of Meters	399,766	356,895	40,157	2,619	84	12
Capital + O&M Cost ($2011)	$28,732,002	$24,994,520	$2,742,120	$602,451	$251,206	$141,704
Capital + O&M Cost ($2014)	**$30,701,372**	**$26,707,713**	**$2,930,072**	**$643,745**	**$268,425**	**$151,417**
Downtown Network	**Total**	**Residential**	**Small**	**Medium**	**Large**	
Total Cost per Network Meter		$102.26	$226.92	$15,086.68	$89.65	
Number of Meters	20,273	16,450	3,244	525	54	
Capital + O&M Cost ($2011)	$2,740,381	$1,474,829	$331,737	$119,135	$814,680	
Capital + O&M Cost ($2014)	**$2,928,214**	**$1,575,918**	**$354,475**	**$127,301**	**$870,521**	

(1) Excludes Network Residential & Small that are billed at nonnetwork rates

Derivation of Cost Shares: Wires and Related Equipment

Cost shares for wires and related equipment revenue requirements by class for the nonnetwork and network classes are developed in **Table 8.11**. Note that the annual capital and O&M costs for both Nonnetwork and Network in Table 8.11 are derived in the text above following the presentations of historical data for capital and O&M costs. Similar to the development of cost shares for the previous distribution functions, these cost calculations begin with the load of each class at the time of the system peak. And, as with the development of the previous distribution functions, the per MW capital and O&M costs for just Wires are based on total costs divided by Wires capacity. Hence, to get to the cost for just Wires to serve each class load, the product of load and cost per unit of capacity is multiplied by total Nonnetwork or Network capacity divided by Nonnetwork or Network peak load.

Here is an example of the calculation for the Medium Network Wires capital cost for 2013. First, it is necessary to recognize the actual calculations use more decimal points than are presented in Table 8.11, hence the final answer by using numbers in the table will differ slightly from the final results in the table. The capital costs for Medium Network wires = capital cost/MW ($69,885.79 in $2011) x peak load for class (79.76 MW) x inflation adjustment for 2013 (1.04401) x Total Network capacity (660 MW) / Total Network load at time of peak load (199.44 MW) = $19,257,963, which is very close to the Table 8.11 result of $19,258,914 (2013$).

The O&M costs for this same class for 2013 = O&M cost/MW ($2,465.72 in $2011) x peak load for class (79.76 MW) x inflation adjustment for 2013 (1.04401) x Total

Network capacity (660 MW) / Total Network load at time of peak load (199.44 MW) = $679,462, which is very close to the Table 8.11 result of $679,497 ($2013).

Service Drop Costs from Table 8.10.d are then added ($124,379 in $2013) for Medium Network. Total costs for Nonnetwork and Network are computed and shares contingent on Nonnetwork or Network are computed. (Total cost for Medium Network in 2013 equals $20,062,789, which comprises 38.073% of the total for Network costs in 2013.) Those shares are used to allocate the revenue requirements for Nonnetwork and Network Wires and Related Equipment revenue requirements.

Table 8.11
Derivation of Cost Shares for Wires and Related Equipment

Wires and Related Equipment Capital & O&M Costs ($2011)

	Capital Cost per MW	O&M Cost per MW	Total Capacity (MW)
Nonnetwork	$30,138	$3,308	660
Network	$69,886	$2,466	4,320

Loads at Time of System Peak Load (MW) — Period of Peak Coincident Load for 2013 and 2014: December Weekday HLH

Total Nonnetwork[1]	**Total Nonnetwork**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
2013 Peak Load	1,233.5	541.3	149.9	278.2	128.3	127.1	8.8
2014 Peak Load	1,232.0	540.0	150.6	278.8	128.0	127.0	7.5

Downtown Network	**Total Network**	**Residential**	**Small**	**Medium**	**Large**
2013 Peak Load	199.4	15.7	20.7	79.8	83.3
2014 Peak Load	199.8	15.6	20.7	80.0	83.4

Total Service Territory	**Total**
2013 Peak Load	1,433.0
2014 Peak Load	1,431.7

2013 Costs for Substations ($2013) — $2013 inflation adjustment = 1.04401

Total Nonnetwork[1]	**Total Nonnetwork**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Wires Capital Cost	$135,925,174	$59,642,136	$16,520,863	$30,656,297	$14,136,931	$14,001,215	$967,731
Wires O&M Cost	14,921,082	6,547,170	1,813,565	3,365,272	1,551,871	1,536,973	106,232
Service Drop Cap.+O&M Cost	29,705,085	25,808,440	2,857,474	628,967	262,263	147,941	0
Total Cost	**$180,551,341**	**$91,997,747**	**$21,191,903**	**$34,650,536**	**$15,951,065**	**$15,686,128**	**$1,073,963**
Share of Total Nonnetwork[1]	**100.000%**	**50.954%**	**11.737%**	**19.192%**	**8.835%**	**8.688%**	**0.595%**

Downtown Network	**Total Network**	**Residential**	**Small**	**Medium**	**Large**
Wires Capital Cost	$48,154,692	$3,784,238	$4,996,118	$19,258,914	$20,115,422
Wires O&M Cost	1,699,004	133,516	176,274	679,497	709,716
Service Drop Cap.+O&M Cost	2,842,490	1,521,237	346,337	124,379	850,537
Total Cost	**$52,696,185**	**$5,438,992**	**$5,518,729**	**$20,062,789**	**$21,675,675**
Share of Downtown Network	**100.000%**	**10.321%**	**10.473%**	**38.073%**	**41.133%**

2014 Costs for Substations ($2014) — $2014 inflation adjustment = 1.06854

Total Nonnetwork[1]	**Total Nonnetwork**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Wires Capital Cost	$139,118,859	$60,975,984	$17,008,544	$31,486,590	$14,452,783	$14,344,195	$850,763
Wires O&M Cost	15,271,667	6,693,592	1,867,100	3,456,416	1,586,543	1,574,623	93,392
Service Drop Cap.+O&M Cost	30,701,372	26,707,713	2,930,072	643,745	268,425	151,417	0
Total Cost	**$185,091,898**	**$94,377,289**	**$21,805,716**	**$35,586,751**	**$16,307,751**	**$16,070,235**	**$944,155**
Share of Total Nonnetwork[1]	**100.000%**	**50.989%**	**11.781%**	**19.227%**	**8.811%**	**8.682%**	**0.510%**

Downtown Network	**Total Network**	**Residential**	**Small**	**Medium**	**Large**
Wires Capital Cost	$49,286,130	$3,854,706	$5,116,053	$19,744,715	$20,570,655
Wires O&M Cost	1,738,923	136,003	180,506	696,637	725,778
Service Drop Cap.+O&M Cost	2,928,214	1,575,918	354,475	127,301	870,521
Total Cost	**$53,953,268**	**$5,566,626**	**$5,651,034**	**$20,568,653**	**$22,166,954**
Share of Downtown Network	**100.000%**	**10.317%**	**10.474%**	**38.123%**	**41.085%**

(1) Excludes Network Residential & Small that are billed at nonnetwork rates

8.5 Customer Transformers

General Discussion of Transformers

Transformers near the customer are used to convert voltage on feeder lines (13 or 26 kV) to a lower voltage the customer will use directly. These transformers must be sized to carry the maximum demand placed on them. For larger customers, each customer has one (or more) transformers – the transformers are not shared with other customers. For smaller customers, several customers share one transformer.

The Problem of Many Types of Transformers

One problem in a marginal cost study is that there is not just one type of transformer that is used for all customers. Pole-mount, pad-mount, submersible, and network are some of the different types of transformers used on the City Light system, and each of these types comes in different sizes at different unit costs.

Conceptually, this problem of multiple transformer types could be solved either by selecting a typical transformer for each class and proceeding with the analysis of its costs, or by taking the composite cost of all the types of transformers used in a particular class. In this cost study, both approaches have been employed. For the Residential and Small General Service classes, a typical transformer has been used in the analysis.

For the Medium, Large General Service and High Demand classes, where the presence of economies of scale and network service complicate the picture, a more refined analysis, developed and used since the *1989/90 COSACAR*, has been used. The number of transformers in each size category needed to serve each individual customer was estimated based on engineering design guidelines the Department would use if it were setting up the service for the first time to serve each customer's maximum recorded demand in 2011. The "frequencies" of each transformer size appear in column (E) of Tables 8.17 through 8.19. Averages of recent transformer purchase prices and current installed labor costs associated with each transformer have been summed over all the transformers used in the class to produce a total cost for the class. This total cost is converted to unit costs for the class by dividing by the class non-coincidental maximum demand.

Some costs that would normally be part of an <u>average</u> cost study are excluded or, at least, measured differently in this analysis of <u>marginal</u> transformer costs. The purchase cost used to calculate the marginal cost of a transformer is the approximate <u>current</u> replacement price, not the original purchase price. The marginal installation cost of setting a transformer is based on <u>current</u> labor costs, not the cost of labor when transformers already in service were actually installed. In other words, it is not actual historical costs that determine marginal costs but rather, the costs of <u>adding</u> new transformers to the system.

There are a number of loaded costs (loadings) associated with transformers. Some of the loadings reflect variable costs, but others are more representative of fixed costs. Since,

by definition, fixed costs do not change when a marginal unit is added, they should be excluded from the calculation of marginal cost. The loadings for labor, transportation, and exempt materials represent variable costs of setting transformers and are included in the analysis. However, the administrative and general (A&G) and materials handling loadings are more on the fixed cost side of the spectrum. A&G costs would likely be unaffected by a marginal increase in transformer installations. Classifying the materials handling loading as a fixed cost is less clear cut. This loading primarily represents the labor costs in the warehouse of stocking the transformer, handling it, and loading it up for transport to the site. The implicit assumption is that there are sufficient labor resources at the warehouses to absorb a marginal increase in workload without adding new employees or increasing overtime.

The basic design rule used in the selection of a transformer for a particular customer is to match the transformer rating with the customer's recent maximum demand. Since transformers come in discrete sizes, the rule is that the transformer must be at least as large as the customer's maximum demand. In general, then, there will always be more transformation capability than the amount required to meet the maximum demand of customers.

An exception to this rule occurs for residential transformers. Ambient temperature affects the loading of transformers. Since residential customers typically reach their maximum demand in the winter, often on the coldest day of the year, residential transformers are undersized. The expected maximum demand on residential transformers typically exceeds the transformer ratings by 50%. This is possible because the load capability of the transformers rises as ambient temperature falls. On very cold days, the actual capacity of the transformer can be half again or more as great as its nameplate rating. Therefore, residential transformers can be sized taking both peak demand and expected temperatures at time of peak consumption into account.

In the network area, redundant transformer capacity is installed to increase the reliability of service and to permit maintenance work without service interruption. Network customers are fed by more than one distribution line. As a result, a break in one feeder does not result in loss of service (as is the case in non-network areas) as long as sufficient transformer capacity exists to carry the load. In a typical network configuration, three lines are brought to three transformers sized such that service can be maintained with any two of the three lines in service. By loading three transformers in a vault to 67% (i.e., 2/3) capacity each, if one goes out the remaining two will still be able to carry the entire load, with their loading going up to about 100% of their rating. Similarly, banks of four transformers are loaded to 75% so that if one fails, the load will not exceed 100% of the rating for the other three. This "N-1 rule" is followed for the network transformer assignments made in this study[10]. In other words, this analysis assumes that the number of transformers needed to carry the load in the network areas is augmented by one in order to provide increased reliability. If multiple banks of two or three transformers are

[10] Smaller network customers were assigned using this "N-1" capacity approach, but were assigned fictitious transformer capacities and converted to the minimum network size of 500 kVA.

needed to handle a customer's load, each bank will be augmented by a similar transformer to make banks of three or four similar-size transformers.

Transformer Costs and Cost-Related Factors

Calculation of transformer costs, estimation of the noncoincident maximum demand (connected load) for the test year, and application of the unit costs to the connected loads by class are required to determine each class' share of total marginal cost of transformation services. The cost categories and related factors discussed separately below are capital costs, O&M costs, load factors, and losses. The last column of **Table 8.12** summarizes the total annual cost per kW of providing transformation services to each of the customer classes. Background information related to developing the costs in Table 8.12 is presented in **Tables 8.13 and 8.14**. The actual calculations of the transformer costs summarized in Table 8.12 are developed in **Tables 8.15 through 8.19.**

A specialized analysis was performed for network and nonnetwork customers. Several of the tables in this chapter present data for consolidated classes, i.e., for nonnetwork and network customers combined, as well as for network and nonnetwork customers considered separately. The detailed information on network and nonnetwork customers is used in the basic analysis for this cost of service study.

Table 8.12

Annual Capital & Total Cost of Transformers, $2011

	Annual MWH	Connected Load[1] (MW)	Levelized Capital Cost[2] ($/kW/Yr)	Total Annual Capital Cost	Annualized O & M Cost[3] ($/kW/Yr)	Total Levelized Cost[4] ($/kW/Yr)
Residential	3,248,242	970.0	$4.41	$4,277,044	$0	$4.41
Small	1,170,405	343.3	5.87	2,014,768	0	$5.87
Medium, Combined	2,466,756	621.1	11.281	7,006,011	0.350	11.63
Medium, Nonnetwork	1,911,445	510.0	7.145	3,644,190	0.069	7.21
Medium, Network	555,311	111.0	24.767	2,749,975	1.267	26.03
Large, Combined	1,466,835	356.8	8.141	2,904,962	0.416	8.56
Large, Nonnetwork	847,705	200.4	3.157	632,653	0.161	3.32
Large, Network	619,131	156.5	14.552	2,276,863	0.744	15.30
High Demand	1,162,993	257.8	1.941	500,254	0.099	2.04
Streetlights	94,915	20.7	5.87	121,439	0	5.87
TOTAL	**9,610,146**	**2,569.6**		**$16,824,478**		

(1) i.e., Total Noncoincident Maximum Demand by class from Table 8.14
(2) Levelized Capital Cost Adjusted for Losses + Annual O&M. See Tables 8.15 - 8.19
(3) Annualized O&M costs. See Tables 8.17 - 8.19
(4) Levelized Capital Cost Adjusted for Losses + Share of Annual O&M Cost.
(Res, Small & St.Lts have no O&M)
See Tables 8.15 - 8.19

Capital Costs: Transformers

The capital costs of transformers include the current purchase price of the transformer and associated equipment and materials, the labor to set the transformer, an allotment for inventory reserves, and an adjustment for losses through the transformer. The purchase prices used in this analysis are averages of recent actual purchases, usually from 2011. The purchase price for each size and type of transformer, network protector and ancillary equipment, including sales tax, is shown in **Table 8.13**. The labor to install the transformer includes the cost of setting the transformer, testing it, installing related equipment when needed (such as network protectors, disconnect switches, etc.) and, in some cases, assembling the transformer. The customer is not billed for any of these tasks except through rates so this labor is included in marginal transformer costs. However, the labor cost involved in connecting the transformer to the customer's service and the distribution system is recovered through a separate Installation Charge, so the cost for that labor is not included as part of marginal transformer costs. Material costs, including taxes, are used in tables 8.15-8.19 to estimate total transformer costs per kW per year for each customer class.

Table 8.13
Purchase Cost of Transformers, Network Protectors and Ancillary Equipment (including sales tax), 2011 data

	Transformers	Ancillary Equipment and Materials	Network Protectors	Installation Cost	Total Cost
25 kVA Transformer, Overhead	$2,228	$326	------	$1,338	$3,892
25 kVA Transformer, Underground	$3,929	$469	------	$6,430	$10,828
50 kVA Transformer, Overhead	$3,038	$399	------	$1,432	$4,869
50 kVA Transformer, Underground	$5,371	$469	------	$6,430	$12,270
75 kVA Transformer, Overhead	$4,063	$448	------	$1,526	$6,037
75 kVA Transformer, Underground	$5,923	$928	------	$6,545	$13,396
100 kVA Transformer, Overhead	$5,151	$448	------	$2,091	$7,690
100 kVA Transformer, Underground	$7,957	$928	------	$8,565	$17,450
167 kVA Transformer, Overhead	$7,162	$858	------	$2,624	$10,644
167 kVA Transformer, Underground	$10,443	$1,690	------	$8,755	$20,888
750 kVA Commercial Subway Transformer	$40,188	$646	------	$11,314	$52,148
1000 kVA Commercial Subway Transformer	$44,063	$646	------	$11,314	$56,023
1500 kVA Commercial Subway Transformer	$69,406	$646	------	$11,314	$81,366
2000 kVA Commercial Subway Transformer	$84,197	$646	------	$11,314	$96,157
2500 kVA Commercial Subway Transformer	$91,276	$646	------	$11,314	$103,236
5000 kVA Commercial Subway Transformer	$172,825	$37,846	------	$46,922	$257,593
7500 kVA Commercial Subway Transformer	$207,959	$37,846	------	$46,922	$292,727
15000 kVA Commercial Subway Transformer	$479,477	$37,846	------	$46,922	$564,245
500 kVA Network Transformer	$36,620	$4,049	$40,000	$51,793	$132,462
750 kVA Network Transformer	$43,627	$4,049	$40,000	$51,793	$139,469
1000 kVA Network Transformer	$42,601	$4,049	$40,000	$51,793	$138,443
1500 kVA Network Transformer	$58,917	$4,049	$40,000	$51,793	$154,759
2000 kVA Network Transformer	$66,850	$4,049	$40,000	$51,793	$162,692
Padmount, 150 kVA Transformer	$15,861	$261		$5,446	$21,568
Padmount, 225 kVA Transformer	$19,945	$261		$5,446	$25,652
Padmount, 300 kVA Transformer	$20,521	$261		$5,446	$26,228
Padmount, 500 kVA Transformer	$24,462	$261		$5,446	$30,169
Padmount, 750 kVA Transformer	$21,154	$261		$6,246	$27,661
Padmount, 1500 kVA Transformer	$40,213	$261		$6,246	$46,720

Based on estimates made in an EBASCO depreciation study, the expected life of transformers is 30 years. The 30-year life results in an annualization rate of .051019 at a 3% discount rate.

Operation and Maintenance Costs: Transformers

Annual O&M costs for transformers are tracked in FERC Account 595. Reported O&M in this account in 2011 was $1,648,410.

Not all transformers incur O&M expenses. After installation, transformers of 167 kVA and smaller receive no maintenance. They are left alone unless they fail, at which time they are replaced, not repaired. Therefore, in this analysis, annual O&M costs are applied only to "large" transformers, i.e., those 500 kVA and larger. In the calculation of total annual marginal transformer costs for the current study, the O&M component for these large transformers is estimated as 5.11% of the annual capital cost, which is the same percentage used in the cost of service analysis carried out for 2007-2008 rates. This percentage was based on an analysis of the relationship of recorded transformer O&M costs to the recorded cost of transformers subject to O&M.

Class Load Factors: Transformers

Information on load factors for transformers is needed for several reasons. For the Residential and Small General Service classes, load factors are used to estimate the noncoincident maximum demand (connected load). This is shown in **Table 8.14**. Because customers in the Medium, Large and High Demand classes have demand meters, their 2011 connected loads can be obtained directly from the billing records. Connected load for these classes does not have to be estimated from load factors. However, load factors for all the classes are necessary to forecast future connected load. Table 8.14 includes data for network and nonnetwork customers, separately, and for all customers combined for each class.

Table 8.14
Load Factors by Class, 2011

	Adjusted Annual MWH	Connected Load, MW		Load Factor	
Residential	**3,248,242**	**970.0**	(1)	**0.3823**	
Residential Nonnetwork	3,157,279	947.2	(2)	0.3805	
Residential Network	90,964	22.5	(3)	0.4620	
Small General Service	**1,170,405**	**343.3**	(1)	**0.3892**	
Small Nonnetwork	1,025,228	307.6	(2)	0.3805	
Small Network	145,177	35.9	(3)	0.4620	
Medium General Service	**2,466,756**	**621.1**		**0.4215**	(4)
Medium Nonnetwork	1,911,445	510.0		0.4111	(4)
Medium Network	555,311	111.0		0.4620	(4)
Large General Service	**1,466,835**	**356.8**		**0.4655**	(4)
Large Nonnetwork	847,705	200.4		0.4457	(4)
Large Network	619,131	156.5		0.4956	(4)
High Demand General Service	**1,162,993**	**257.8**		**0.4983**	(4)
Streetlights	**94,915**	**20.7**		**0.5237**	(5)

(1) Sum of Nonnetwork and Network

(2) Because customers in these classes do not have demand meters, connected load must be estimated by taking adjusted annual MWH divided by the number of hours in the year (8760) divided by load factor.

(3) Residential and Small Network customers are assumed to use same transformers and have same load factor as Medium Network customers.

(4) For the 3 largest classes, the load factors are calculated by first dividing the adjusted annual MWH by 8760 to get average MW and then dividing that by the class noncoincident maximum demand (i.e. connected load) from 2011 billing data, shown in the table.

(5) Streetlight load factor comes from engineering estimates.

Special Transformer Information by Class

Residential

Through experience, transformer loadings for residential customers are estimated by the following formula:

$$\text{Maximum demand} = 12 \text{ kW} + .0003 \text{ (annual kWh)}$$

"Annual kWh" is the total for all the customers on that transformer. So, for each 1,000 kWh of added annual load on a transformer, the maximum demand increases by 0.3 kW.

We know that

$$\text{Load Factor} = \frac{\text{Average kW}}{\text{Peak kW}}$$

So the Marginal Load Factor is:

$$\text{Marginal L. F.} = \frac{\text{Change in Average kW}}{\text{Change in Peak kW}} = \frac{1000 \text{ kWh}/8760 \text{ h}}{.3 \text{ kW}} = 0.3805$$

Individual residential customers have a load factor smaller than this (in the neighborhood of .15), but since several residential customers are tied in to one transformer, some diversity results. In other words, not all of them will peak at once, so the overall peak is lower than adding all the separate peaks. This transformer loading formula has been confirmed with load research (see Seattle City Light, Demand Cost Allocation, September 1983, pp. 21-23).

Small General Service

In the absence of adequate load research, the transformer group load factor for the Small General Service class has been assumed to be 0.3805 – the same load factor used for the Residential class. Small General Service customers might be expected to have slightly better load factors than individual residential customers because of a smaller saturation of electric space heat. On the other hand, Small General Service customers are, on average, larger than Residential customers, so fewer of them will fit on a single transformer. Fewer customers mean less diversity and a lower load factor.

Several years ago, an average load factor of .2719 was computed for the approximately 4% of Small General Service customers with demand meters. However, since there is no evidence that this group is representative of the majority of Small General Service customers (i.e., those without demand meters), this load factor is of little value. Furthermore, it is not the load factor of individual customers which is relevant, but the load factor of the transformer group. Until further research is completed, the same load factor used for the Residential class has been assumed to be representative of the load factor for the Small General Service class.

Medium, Large, and High Demand General Service

All customers in the Medium General Service, the Large General Service, and High Demand classes have demand meters. Accordingly, load factors can be computed directly from billing data. Unlike Residential and Small General Service customers,

where the rule is a group of customers to one transformer, the rule for Medium, Large, and High Demand customers is at least one transformer to one customer. As a consequence, it is the load factor of each individual customer (or on each individual meter) which is relevant.

The load factors are derived directly from customer data for the Medium, Large, and High Demand classes. The load factor for each class is equal to average class demand for 2011 divided by the total class noncoincident maximum demand for 2011.

The first step in calculating average class demand is to calculate the average power in MW for each class. Each customer's energy consumption is divided by total number of hours billed. For example, consider a new customer who, having been first connected in March, is billed for only 285 days. The total billed consumption in kWh for this customer is divided by 6,840 (285 days times 24 hours per day) to derive an average power in kW (or kWh per hour). This produces an estimate of what the customer's power consumption would have been if billing had been for a full year. Total average power use in MW for each class is obtained by adding up the adjusted annual energy use for all the customers in the class and dividing that sum by 1,000.

Adjusted annual energy use in MWh for each class is the total average power multiplied by 8,760 hours (hours in a year). Dividing this by the total class noncoincident maximum demand produces the load factor.

Streetlights

Streetlights are served at distribution voltage (26 kV for this marginal cost of service analysis) by short service drops from nearby transformers. Streetlights have neither energy nor demand meters. Their energy use for billing purposes is estimated according to the types and numbers of individual lamps and the hours they are on during the billing period.

For costing purposes, streetlights are assumed to have transformer capacity assigned according to the same design rules as Small General Service, i.e., the typical transformer serving a streetlight is a 50 kVA transformer with a loading rate of 100%. Therefore, the unit cost of transformer capacity is the same as that for Small General Service (Table 8.16).

Because streetlights are either on or off, load is constant when the lights are on and zero when they are off. Thus, peak load in kW is simply annual consumption in kWh divided by 4,588 hours, the average number of hours the lights are on each year. Average annual kW equals annual kWh divided by 8,760 hours, the total number of hours in the year. To calculate load factor, the annual kWh figures cancel. Thus:

$$\text{Streetlight Load Factor} = \frac{\text{Average kW}}{\text{Peak kW}}$$

$$= \frac{\text{Annual kWh}/8760}{\text{Annual kWh}/4588} = \frac{4588}{8760} = 0.5237$$

Table 8.14 displays the load factors for all customer classes at the transformer level.

Computation of Transformer Costs by Class

In **Tables 8.15 through 8.19**, all of the factors discussed in the preceding sections are combined to calculate annual transformer costs per kW for each class. As mentioned above, the "typical transformer" method is used for the Residential and Small General Service classes (Tables 8.15 and 8.16). For these classes, Annual Capital Cost (or "ACC" in the formulas) is obtained by summing the materials cost (augmented by the inventory reserve factor) and the installation cost for a 50 kVA transformer and multiplying that sum by the annualization factor. This is then levelized, (i.e., put on a per kW basis,) by dividing by the transformer size times the loading rate. The Levelized Capital Cost (LCC) is then multiplied by the loss factor to obtain the total transformer cost per kW per year.

For the Medium, Large, and High Demand General Service classes (Tables 8.17, 8.18, and 8.19), estimates of the number of transformers in each size category are used. These estimates are found in the "Frequency" column. The frequencies for the Medium, Large and High Demand General Service classes are based on data from 2011. The computation of Annualized Capital Cost is similar to the process described for the smaller classes except that each material and installation cost is multiplied by the corresponding frequency and summed over all the transformer types and sizes. The result is the annualized capital cost for the entire class, not just the typical transformer. To obtain the Levelized Capital Cost, ACC must be divided by the noncoincident maximum demand for the whole class. The adjustment for losses is done in the same way as above.

Annual O&M cost (AOM) is calculated by multiplying the levelized capital cost adjusted for losses (AFL) by the O&M factor. For the Medium General Service class only, this product is multiplied by the percent of this class' capital cost that is actually subject to O&M. (100% of transformer capital costs are subject to O&M in the Large and High Demand classes.) Finally, AFL and AOM are added together to obtain the total annual transformer cost per kW for each class.

Tables 8.17 and 8.18 for Medium and Large General Service customers present estimates of transformer costs for each class as a whole though the costs for network and nonnetwork separately are used in this cost analysis. Network cost estimates also were needed for Residential and Small General Service customers. Discussions with engineering staff suggested that these smaller classes could be thought to use the same types of transformers as Medium network customers with the understanding that many of the smaller customers would be served by each of these large transformers. The average cost for network transformer service for these smaller customers, therefore, is set equal to the cost for network transformers for Medium network customers.

Table 8.15
Residential Class Transformer Cost, $2011

Total Residential Transformer Cost =			$4.41 /Kw/year			
Transformer Size (kVA)	Transformer Cost	Ancillary Equipment and Material Cost	Installation Cost	Frequency (#)	Total Capacity (kVA)	
	(A)	(B)	(C)	(D)	(E)	(F)
(1)	50	$3,505	$413	$2,432	n.a.	n.a.

Assumptions:		
(a) Inventory Reserve Factor	1.0175	
(b) Economic Life	30	
(c) Annualization Factor	0.051019259	
(d) Loading vs. Rating	150%	
(e) Losses	1.77%	
(f) O&M as % of Annual Capital Cost	0%	
(g) 50 kVA OH Transformer Cost	$ 3,038	
(h) 50 kVA UG Transformer Cost	$ 5,371	
(i) 50 kVA OH Ancillary Equipment Cost	$ 399	
(j) 50 kVA UG Ancillary Equipment Cost	$ 469	
(k) 50 kVA OH Labor & Installation Cost	$1,432	
(l) 50 kVA UG Labor & Installation Cost	$ 6,430	
(m) % Overhead transformers	80%	

Annual Capital Cost Calculations				
Transformer Cost (TC) = (B) =	(g) * (m) + (h) * [1-(m)]	=	$3,505	
Adjusted for Losses (TCAFL) =	TC * {1 / [1 - (e)]}	=	$3,567.85	
Annualized Capital Cost (ACC) =	{(a) *[(TCAFL)+ (C)] + (D)} * (c)	=	$330.71	/year
Levelized Capital Cost (LCC) =	ACC / [(A) * (d)]	=	$4.41	/kW/year

Table 8.16
Small General Service Class and Streetlight Transformer Cost, $2011

Small General Service & Streetlight Transformer Cost =					$5.87	/kW/year
	(A) Transformer Size (kVA)	(B) Transformer Cost	(C) Ancillary Equip. & Mat'l Cost	(D) Installation Cost	(E) Frequency (#)	(F) Total Capacity (kVA)
(1)	50	$3,271	$406	$1,932	n.a.	n.a.

	Assumptions:	
(a)	Inventory Reserve Factor	1.0175
(b)	Economic Life	30
(c)	Annualization Factor	0.05101926
(d)	Loading vs. Rating	100%
(e)	Losses	2.31%
(f)	O&M as % of Annual Capital Cost	0%
(g)	50 kVA OH Transformer Cost	$3,038
(h)	50 kVA UG Transformer Cost	$5,371
(i)	50 kVA OH Ancillary Equipment Cost	$399
(j)	50 kVA UG Ancillary Equipment Cost	$469
(k)	50 kVA OH Labor & Installation Cost	$1,432
(l)	50 kVA UG Labor & Installation Cost	$6,430
(m)	% Overhead transformers	90%

Annual Capital Cost Calculations				
Transformer Cost (TC) = (B) =	(g) * (m) + (h) * [1-(m)]	=	$3,271.47	
Adjusted for Losses (TCAFL) =	TC * {1 / [1 - (e)]}	=	$3,348.83	
Annualized Capital Cost (ACC) =	{(a) *[(TCAFL)+ (C)] + (D)} * (c)	=	$293.48	/year
Levelized Capital Cost (LCC) =	ACC / [(A) * (d)]	=	$5.87	/kW/year

Table 8.17
Medium General Service Class Transformer Cost, $2011

Medium General Service Transformer Cost, Combined =					**$11.63**	**/kW/year**
Medium General Service Transformer Cost, non-Network =					**$7.21**	**/kW/year**
Medium General Service Transformer Cost, Network =					**$26.03**	**/kW/year**

	(A) Transformer Size (kVA)	(B) Transformer Cost	(C) Ancillary Equip. & Mat'l Cost	(D) Installation Cost	(E) 2011 Frequency (#)	(F) Total Capacity (kVA)
Small (pole/sub)						
(1)	25	$2,568	$355	$2,356	1,689	42,225
(2)	50	$3,505	$413	$2,432	2,892	144,600
(3)	75	$4,435	$544	$2,530	1,161	87,075
(4)	100	$5,712	$544	$3,386	648	64,800
(5)	167	$7,818	$1,024	$3,850	846	141,282
% Ovr'hd xfmrs	80%				Total	479,982
Commercial Subway						
(6)	750	$40,188	$646	$11,314	153	114,750
(7)	1000	$44,063	$646	$11,314	46	46,000
(8)	1500	$69,406	$646	$11,314	21	31,500
(9)	2000	$84,197	$646	$11,314	0	0
(10)	2500	$91,276	$646	$11,314	0	0
Network					Total	192,250
(11)	500	$36,620	$44,049	$51,793	495	247,500
(12)	750	$43,627	$44,049	$51,793	30	22,500
(13)	1000	$42,601	$44,049	$51,793	0	0
(14)	1500	$58,917	$44,049	$51,793	0	0
(15)	2000	$66,850	$44,049	$51,793	0	0
					Total	270,000

	Assumptions:	**common**	**non-network**	**network**
(a)	Inventory Reserve Factor	1.0175		
(b)	Economic Life, years	30		
(c)	Annualization Factor	0.051019259		
(d)	Losses		0.98%	0.436%
(e)	Class Noncoincident Max Demand, kW	619,543	474,143	145,400
(f)	O&M as % of Annual Capital Cost	5.11%		
(g)	% of Capital Cost Subject to O&M	60.67%	18.87%	100.00%

Annual Capital Cost Calculations (all equations for "combined")		**combined**	**non-network**	**network**
Annualized Transformer Cost (ATC)	= {[(a) * SUM(1...15)(B * E)]} * (c)			
	$/ year =	$3,063,141	$2,054,193	1,008,949
Adj. for Losses (AFL) = ATC / (1-d) [$/kW/yr]	=	$3,087,885	$2,074,523	$1,013,362
Annualized Material & Installation Cost (AMIC)	= {(a)*SUM(1...15)(C*E)+SUM(1...15)(D*E)} =			
	$/ year =	$3,901,125	$1,313,339	$2,587,786
Ann. Cap. Cost (ACC) = AFL+AMIC [$/ year]	=	$6,989,011	$3,387,862	$3,601,148
Levelized Cap.Cost (LCC) = ACC/(e) [$/kW/yr]	=	$11.281	$7.145	$24.767
Annual O&M Calculations				
Ann.O&M (AOM) = LCC * (f) * (g) [$/kW/yr]	=	$0.350	$0.069	$1.267
Total Cost Calculations				
Total Cost = LCC + AOM [$/kW/yr]	=	$11.63	$7.21	$26.03

Table 8.18
Large General Service Class Transformer Cost, $2011

Large General Service Transformer Cost, Combined =					**$8.56**	**/kW/year**
Large General Service Transformer Cost, non-Network =					**$3.32**	**/kW/year**
Large General Service Transformer Cost, Network =					**$15.30**	**/kW/year**

	(A) Transformer Size (kVA)	(B) Transformer Cost	(C) Ancillary Equip. & Mat'l Cost	(D) Installation Cost	(E) 2011 Frequency (#)	(F) Total Capacity (kVA)
Commercial Subway:						
(1)	750	$40,188	$646	$11,314	0	0
(2)	1000	$44,063	$646	$11,314	0	0
(3)	1500	$69,406	$646	$11,314	33	49,500
(4)	2000	$84,197	$646	$11,314	36	72,000
(5)	2500	$91,276	$646	$11,314	10	25,000
(6)	5000	$172,825	$37,846	$46,922	12	60,000
(7)	7500	$207,959	$37,846	$46,922	4	30,000
Network					Total	236,500
(8)	500	$40,390	$56,490	$82,537	0	0
(9)	750	$48,635	$56,490	$82,537	27	20,250
(10)	1000	$57,057	$56,490	$82,537	39	39,000
(11)	1500	$77,347	$69,512	$82,537	99	148,500
(12)	2000	$93,960	$72,325	$82,537	24	48,000
					Total	255,750

	Assumptions:	**common**	**non-network**	**network**
(a)	Inventory Reserve Factor	1.0175		
(b)	Economic Life, years	30		
(c)	Annualization Factor	0.051019		
(d)	Losses		0.89%	0.396%
(e)	Class Noncoincident Max Demand, kW	335,905	188,999	146,906
(f)	O&M as % of Annual Capital Cost	5.11%		

Annual Capital Cost Calculations (all equations for "combined	**combined**	**non-network**	**network**
Annualized Transformer Cost (ATC) = {[(a) * SUM(1...12)(B * E)]} * (c)			
$/ year =	$1,172,731	474,474	698,257
Adj. for Losses (AFL) = ATC / (1-d) [$/kW/yr] =	$1,179,765	$478,735	$701,030
Annualized Material & Installation Cost (AMIC) = {(a)*SUM(1...12)(C*E)+SUM(1...10)(D*E)} * (c)			
$/ year =	$1,554,761	$117,988	1,436,772
Ann. Cap. Cost (ACC) = AFL+AMIC [$/ year] =	$2,734,526	$596,723	$2,137,803
Levelized Cap.Cost (LCC) = ACC/(e) [$/kW/yr]=	$8.141	$3.157	$14.552
Annual O&M Calculations			
Ann.O&M (AOM) = LCC * (f) [$/kW/yr] =	$0.416	$0.161	$0.744
Total Cost Calculations			
Total Cost = LCC + AOM [$/kW/yr] =	$8.557	$3.319	$15.296

Table 8.19
High Demand General Service Class Transformer Cost, $2011

Total High Demand Transformer Cost =						$2.040 /kW/year
	(A) Transformer Size (kVA)	(B) Transformer Cost	(C) Ancillary Equip. & Mat'l Cost	(D) Installation Cost	(E) 2011 Frequency (#)	(F) Total Capacity (kVA)
Commercial Subway						
(1)	5000	$172,825	$39,576	$45,192	1	5,000
(2)	7500	$207,959	$39,576	$45,192	1	7,500
(3)	15000	$479,477	$39,576	$45,192	16	240,000
(4)	25000 (no longer used)	$0	$0	$0	0	0
(5)	30000 (no longer used)	$0	$0	$0	0	0

	Assumptions:	
(a)	Inventory Reserve Factor	1.0175
(b)	Economic Life, years	30
(c)	Annualization Factor	0.051019
(d)	Losses	0.890%
(e)	Class Noncoincident Max Demand, kW	257,782
(f)	O&M as % of Annual Capital Cost	5.11%

Annual Capital Cost Calculations			
Annualized Transformer Cost (ATC)	=	{[(a) * SUM(1...5)(B * E)]} * (c)	
	$/ year =		$418,018
Adj. For Losses (AFL) = ATC / (1-d) [$/kW/yr]	=		$421,772
Annualized Material & Installation Cost (AMIC)	= {(a)*SUM(1...5)(C*E)+SUM(1...5)(D*E)} * (c)		
	$/ year =		$78,483
Ann. Cap Cost (ACC) = AFL+AMIC [$/kW/yr]	=		$500,254
Levelized Cap. Cost (LCC) = ACC/(e) [$/kW/yr]	=		$1.941
Annual O&M Calculations			
Ann.O&M (AOM) = LCC * (f) [$/kW/yr]	=		$0.099
Total Cost Calculations			
Total Cost = LCC + AOM [$/kW/yr]	=		$2.040

Derivation of Cost Shares: Transformers

Table 8.20 presents the derivation of cost shares used to allocate customer transformer revenue requirements. As for wires and related equipment, revenue requirements for this functional category can be separated between nonnetwork and network customers in the derivation of functionalized revenue requirements. Thus, separate shares are needed for nonetwork and network customer classes.

Load data come from Table 6.4 in Chapter 6. The Load Factor data come from Table 8.14. Peak MW equals load / load factor / 8,760. The $2011/MW comes from Tables 8.15 through 8.19. The conversion factors to $2013 and $2014 are derived from data in Table 5.1 in Chapter 5. As an example, total transformer cost in $2013 for Nonnetwork High Demand equals 273.99 (peak MW) x $2.130 ($2013/kW) x 1000 = $583,599 which is close to the $583,538 shown in the table. As noted before, the calculations in the tables use more precision (more decimal points) than what is shown in the table. The shares of cost for nonnetwork and network, separately, equal each class' share of the total cost over all classes in their separate groupings.

Table 8.20
Derivation of Cost Shares for Customer Transformers for 2013 and 2014

2013 Costs for Customer Transformers						$2013 Inflation Adjustment =	1.0440
Total Nonnetwork[(1)]	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
MWH	8,256,707	3,102,958	1,036,109	1,913,254	927,264	1,195,924	81,198
Load Factor		0.381	0.381	0.411	0.446	0.498	0.524
Peak MW	2,285	931	311	531	237	274	18
Transformer Cost $2011/kW		4.410	5.870	7.210	3.320	2.040	5.870
Transformer Cost $2013/kW		4.604	6.128	7.527	3.466	2.130	6.128
Total Transformer Cost	11,705,454	4,286,092	1,904,981	3,999,186	823,189	583,538	108,468
Share of Cost	**100.000%**	**36.616%**	**16.274%**	**34.165%**	**7.033%**	**4.985%**	**0.927%**
Downtown Network	**Total**	**Residential**	**Small**	**Medium**	**Large**		
MWH	1,398,127	90,009	141,339	566,556	600,224		
Load Factor		0.462	0.462	0.462	0.496		
Peak MW	335	22	35	140	138		
Transformer Cost $2011/kW		26.030	26.030	26.030	15.300		
Transformer Cost $2013/kW		27.176	27.176	27.176	15.973		
Total Transformer Cost	7,565,644	604,347	948,993	3,804,032	2,208,272		
Share of Cost	**100.000%**	**7.988%**	**12.543%**	**50.280%**	**29.188%**		
2014 Costs for Customer Transformers						$2014 Inflation Adjustment =	1.0685
Total Nonnetwork[(1)]	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
MWH	8,336,890	3,094,766	1,047,951	1,934,326	990,498	1,196,470	72,879
Load Factor		0.381	0.381	0.411	0.446	0.498	0.524
Peak MW	2,308	928	314	537	254	274	16
Transformer Cost $2011/kW		4.410	5.870	7.210	3.320	2.040	5.870
Transformer Cost $2013/kW		4.712	6.272	7.704	3.548	2.180	6.272
Total Transformer Cost	12,082,623	4,375,217	1,972,025	4,138,231	899,987	597,521	99,643
Share of Cost	**100.000%**	**36.211%**	**16.321%**	**34.249%**	**7.449%**	**4.945%**	**0.825%**
Downtown Network	**Total**	**Residential**	**Small**	**Medium**	**Large**		
MWH	1,409,507	89,741	142,601	571,594	605,571		
Load Factor		0.462	0.462	0.462	0.496		
Peak MW	338	22	35	141	139		
Transformer Cost $2011/kW		26.030	26.030	26.030	15.300		
Transformer Cost $2013/kW		27.814	27.814	27.814	16.349		
Total Transformer Cost	7,804,997	616,705	979,963	3,928,036	2,280,293		
Share of Cost	**100.000%**	**7.901%**	**12.556%**	**50.327%**	**29.216%**		

(1) Excludes Network Residential & Small that are billed at nonnetwork rates

8.6 Meters

Somewhat similar to service drops, there are many kinds of meters assigned to the different classes. **Table 8.21.a** summarizes the detailed results of determining the types, costs and numbers of individual meters for each class and presents the annualized capital cost and average capital and operations and maintenance cost per meter for each class in terms of $2011. **Table 8.21.b** then presents the development of the total marginal cost of meters by class for 2013 and 2014 and also develops the share of total meter marginal costs for those years. These shares are used to allocate the meter revenue requirements for 2013 and 2014.

Table 8.21.a
$2011 Capital and O&M Costs for Meters and Number of Meters in 2011

	Residential	Small	Medium	Large	High Demand
Nonnetwork					
Annualized Capital Cost	$1,750,069	$527,568	$152,144	$26,961	$7,718
Number of Meters	346,876	40,207	2,613	84	12
Capital Cost per Meter	$5.05	$13.12	$58.23	$320.96	$643.19
O&M Cost per Meter	$2.83	$2.83	$2.83	$3,859.62	$3,859.62
Total Cost per Nonnetwork Meter	**$7.88**	**$15.95**	**$61.06**	**$4,180.58**	**$4,502.81**
Network					
Annualized Capital Cost	$131,094	$82,044	$27,308	$18,779	
Number of Meters	15,908	3,257	469	54	
Capital Cost per Meter	$8.24	$25.19	$58.23	$347.76	
O&M Cost per Meter	$2.83	$2.83	$2.83	$3,859.62	
Total Cost per Network Meter	**$11.07**	**$28.02**	**$61.06**	**$4,207.38**	

Table 8.21.b
$2013 and $2014 Total Costs for Meters and Shares of Costs by Class

2013 Costs for Meters					$2013 inflation adjustment =	1.04401
Total Nonnetwork[(1)]	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**
Total $2011 Cost per Nonnetwork Meter		$7.88	$15.95	$61.06	$4,180.58	$4,502.81
2013 Number of Meters	395,777	352,981	40,082	2,619	84	12
Capital + O&M Cost ($2011)	$3,985,590	$2,780,988	$639,491	$159,909	$351,169	$54,034
Capital + O&M Cost ($2013)	$4,161,007	$2,903,387	$667,636	$166,947	$366,625	$56,412
Share of Service Territory	**88.260%**	**61.584%**	**14.161%**	**3.541%**	**7.777%**	**1.197%**
Downtown Network	**Total**	**Residential**	**Small**	**Medium**	**Large**	
Total $2011 Cost per Network Meter		$11.07	$28.02	$61.06	$4,207.38	
2013 Number of Meters	20,076	16,253	3,244	525	54	
Capital + O&M Cost ($2011)	530,147	179,985	90,907	32,056	227,199	
Capital + O&M Cost ($2013)	553,480	187,907	94,908	33,467	237,198	
Share of Service Territory	**11.740%**	**3.986%**	**2.013%**	**0.710%**	**5.031%**	

2014 Costs for Meters					$2014 inflation adjustment =	1.06854
Total Nonnetwork[(1)]	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**
Total $2011 Cost per Nonnetwork Meter		$7.88	$15.95	$61.06	$4,180.58	$4,502.81
2014 Number of Meters	399,766	356,895	40,157	2,619	84	12
Capital + O&M Cost ($2011)	$4,017,619	$2,811,823	$640,684	$159,909	$351,169	$54,034
Capital + O&M Cost ($2014)	$4,292,997	$3,004,553	$684,599	$170,869	$375,239	$57,737
Share of Service Territory	**88.300%**	**61.799%**	**14.081%**	**3.515%**	**7.718%**	**1.188%**
Downtown Network	**Total**	**Residential**	**Small**	**Medium**	**Large**	
Total $2011 Cost per Network Meter		$11.07	$28.02	$61.06	$4,207.38	
2014 Number of Meters	20,273	16,450	3,244	525	54	
Capital + O&M Cost ($2011)	532,336	182,174	90,907	32,056	227,199	
Capital + O&M Cost ($2014)	568,824	194,661	97,138	34,253	242,771	
Share of Service Territory	**11.700%**	**4.004%**	**1.998%**	**0.705%**	**4.993%**	

(1) Excludes Network Residential & Small that are billed at nonnetwork rates

Chapter 9: Customer Service Costs

9.1 Introduction

Customer Service Costs are expenditures associated with serving City Light customers by collecting meter readings, processing customer bills, answering customer phone calls, opening and closing accounts, writing-off uncollectable bills and performing other customer service related work.

For each customer class, total customer costs were calculated by first deriving marginal customer costs per meter and then multiplying them by the number of meters. Marginal costs for 2011 were derived using actual 2011 expenditure data. Then marginal costs were adjusted for inflation to get 2013-2014 values.

All marginal costs are expressed as a per-meter cost, for each of the five major City Light customer classes: Residential, Small General Service, Medium General Service, Large General Service, and High Demand General Service. Where relevant to customer-cost incurrence, customer classes are further differentiated by nonnetwork and network location within the City of Seattle. **Table 9.1** summarizes total marginal customer service costs by customer class. The basic inputs for this table are in subsequent tables.

Table 9.1
Total Customer Service Costs, 2013 and 2014

Customer $2011 Cost per Meter		**Residential**	**Small**	**Medium**	**Large**	**High Demand**
Nonnetwork		$98.72	$81.59	$196.18	$5,162.24	$9,534.60
Network		$104.20	$85.24	$190.21	$5,162.24	
2013 Customer Costs				$2013 inflation adjustment =		1.04401
Total Nonnetwork[(1)]	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**
2013 Meters	395,777	352,981	40,082	2,619	84	12
$2013 Total Cost	$40,901,738	$36,379,076	$3,414,094	$536,403	$452,713	$119,451
Share of Service Territory	94.344%	83.912%	7.875%	1.237%	1.044%	0.276%
Downtown Network	**Total**	**Residential**	**Small**	**Medium**	**Large**	
2013 Meters	20,076	16,253	3,244	525	54	
$2013 Total Cost	$2,452,083	$1,768,100	$288,699	$104,255	$291,030	
Share of Service Territory	5.656%	4.078%	0.666%	0.240%	0.671%	
Total Service Territory	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**
$2013 Total Cost	$43,353,821	$38,147,176	$3,702,793	$640,658	$743,743	$119,451
Share of Service Territory	100.000%	87.990%	8.541%	1.478%	1.716%	0.276%
2014 Customer Costs				$2014 inflation adjustment =		1.06854
Total Nonnetwork[(1)]	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**
2014 Meters	399,766	356,895	40,157	2,619	84	12
$2014 Total Cost	$42,282,121	$37,646,674	$3,500,834	$549,006	$463,350	$122,258
Share of Service Territory	94.351%	84.007%	7.812%	1.225%	1.034%	0.273%
Downtown Network	**Total**	**Residential**	**Small**	**Medium**	**Large**	
2014 Meters	20,273	16,450	3,244	525	54	
$2014 Total Cost	$2,531,708	$1,831,654	$295,482	$106,704	$297,868	
Share of Service Territory	5.840%	4.225%	0.682%	0.246%	0.687%	
Total Service Territory	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**
$2014 Total Cost	$44,813,829	$39,478,327	$3,796,316	$655,711	$761,218	$122,258
Share of Service Territory	100.000%	88.094%	8.471%	1.463%	1.699%	0.273%

(1) Excludes Network Residential & Small that are billed at nonnetwork rates

For each customer class, the marginal cost is a sum of marginal costs associated with specific FERC Program Codes. **Table 9.2** provides descriptions of each FERC Program Code associated with customer service. **Table 9.3** on the next page provides a summary of marginal costs associated with each FERC Program Code for each customer class.

Table 9.2
FERC Program Codes Associated with Customer Service

FERC Program Code	FERC Name	Description
45110	MISC SVC REV-MISC COML EQ RENT	Revenue from commercial equipment rental
45130	MISC SVC REV-ACCT CHANGE FEE(R	Revenue from residential account change fees
45131	MISC SVC REV-ACCT CHANGE FEE(C	Revenue from commercial account change fees
45150	MISC SVC REV-RECONCT & FIELD C	Revenue from reconnection and field charges
90101	METER READING SUPERVISION	Expenditures associated with meter reading supervision
90201	METER READING EXPENSES	Expenditures associated with performing meter readings
90301	DISCON SERV NON-PAYMENT	Expenditures associated with disconnecting customers who do not pay their bills
90311	CR INVESTIGATIONS & RECORDS	Expenditures associated with processing credit investigations and records
90321	COLLECTING-LIGHT DEPT	Expenditures associated with the overall activities of City Light to collect revenues
90341	COL-CITY TREAS BNKS,AM EXPR	Expenditures for the services associated with processing utility payments using credit
90351	CUST CONTR & ORDERS	Expenditures associated with the processing of new customer orders and the customer account control for Residential, Small General Service, and Medium General Service customers.
90361	BILL REV ACCTG & MAILING	Expenditures associated with the mailing and processing of bills
90401	UNCOLLECTIBLE ACCT-ELEC UTILTY	Expenditures associated with Uncollectible Accounts - Electric Utility
90403	UNCOLLECTIBLE ACCT-SUNDRY SALE	Expenditures associated with Uncollectible Accounts - Sundry Sales
90501	MISC CUST ACCT EXP	Miscellaneous Customer Accounting Expenditures
90701	SUPERVISION-RESIDENTIAL	Expenditures associated with supervision of Residential customers' expenses
90711	SUPV-CMML & IND	Expenditures associated with supervision of Commercial and Industrial customers' expenses
90801	CUST ASST EXP- RESDL	Residential customer assistance expenditures
90811	CUST ASST EXP-CMML& IND	Commercial and Industrial customers assistance expenditures
91001	MISC CUST SERV & INFO EXP	Miscellaneous Customer Service and Information Expenditures
93010	GENERAL ADVERTISING EXPENSES	General Advertising Expenditures

FERC Names are listed as they appear in the system; some line items may look abbreviated or truncated

The rest of the chapter is organized as follows. Section 9.2 is a discussion of the allocation factors used to distribute customer costs charged to FERC Program Codes among customer classes. Section 9.3 presents details on how individual marginal costs for each FERC Program Code shown are derived.

9.2 Allocation Factors

Allocation of customer service expenditures to the City Light customer classes requires an understanding of what City Light does that causes it to incur the costs. To begin, annual operations and maintenance costs for each FERC Program Code were examined in detail. All Org. Unit charges to each FERC Program Code were extracted from the accounting records. Labor activities of each Org. Unit were analyzed identifying what work efforts were executed and establishing approximate relationships of these work efforts to the respective customer classes. Non-labor expenditures were also similarly examined. These examinations established the necessary allocation factors for each FERC Program Code.

The allocation factors were computed using the following customer service data by customer class:

- Number of meters ("Meter Count")
- Number of customer accounts ("Customer Count")
- Number of bills issued ("Bills Issued Count")
- Annual energy consumption in kWh

- Method of payment (cash, credit card, check or other)
- Uncollectibles

Table 9.3 presents a summary of the marginal customer service costs for each pertinent FERC account. Results in this table are derived from Tables 9.6 through 9.21, respectively.

Table 9.3
Customer Service Operations and Maintenance Marginal Costs, in $2011 per Meter per Year

	Residential		Small General Service		Medium General Service		Large General Service[1]	High Demand General Service
	Nonnetwork	Network	Nonnetwork	Network	Nonnetwork	Network		
90101 & 90201	$7.03	$12.51	$8.30	$11.95	$20.95	$14.98	$1,048.26	$1,048.26
90301	1.52	1.52	0.93	0.93	3.93	3.93	0.00	0.00
90311	6.71	6.71	1.12	1.12	1.37	1.37	0.00	0.00
90321	12.54	12.54	9.46	9.46	11.59	11.59	132.16	115.14
90341	2.67	2.67	3.84	3.84	66.58	66.58	521.72	5,368.07
90351	19.07	19.07	14.39	14.39	17.63	17.63	0.19	0.16
90361	7.04	7.04	9.64	9.64	11.90	11.90	75.24	54.20
90501	1.66	1.66	1.25	1.25	1.53	1.53	1,616.45	1,408.27
90701	0.22	0.22	0.00	0.00	0.00	0.00	0.00	0.00
90711	0.00	0.00	0.13	0.13	0.16	0.16	0.17	0.15
90801	6.43	6.43	0.00	0.00	0.00	0.00	0.00	0.00
90811	0.00	0.00	27.87	27.87	34.16	34.16	1,770.92	1,542.85
91001	1.72	1.72	1.30	1.30	1.59	1.59	1.58	1.38
90401 & 90403	35.47	35.47	21.62	21.62	91.94	91.94	0.00	0.00
93010	0.10	0.10	0.08	0.08	0.09	0.09	0.10	0.09
Subtotal	**$102.18**	**$107.66**	**$99.93**	**$103.58**	**$263.45**	**$257.48**	**$5,166.78**	**$9,538.56**
451xxx	(3.46)	(3.46)	(18.34)	(18.34)	(67.27)	(67.27)	(4.54)	(3.96)
Marginal Cost/year	**$98.72**	**$104.20**	**$81.59**	**$85.24**	**$196.18**	**$190.21**	**$5,162.24**	**$9,534.60**
Marginal Cost/month	$8.23	$8.68	$6.80	$7.10	$16.35	$15.85	$430.19	$794.55

(1) Nonnetwork and Network Operations and Maintenance Marginal Costs for Large General Service are the same.

Table 9.4 summarizes customer data for 2011 extracted from the City Light Consolidated Customer Service System (CCSS) database.

Table 9.4
2011 Customer Information Data

	Total System	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
Meter Count	409,480	362,784	43,464	3,082	138	12
Nonnetwork		346,876	40,207	2,613	84	
Network		15,908	3,257	469	54	
Customer Count	393,624	358,286	32,382	2,814	132	10
Nonnetwork		342,545	30,035	2,364	79	
Network		15,741	2,347	450	53	
Bills Issued Count (Annual Average)	2,840,291	2,408,798	395,060	34,601	1,724	108
Annual Energy Consumption (MWh)	9,445,720	3,188,241	1,174,873	2,468,749	1,458,000	1,155,856
Payment Method ($)						
Cash or Check Payment	$ 509,647,611	$ 167,992,462	$ 66,495,186	$ 132,572,330	$ 83,947,164	$ 58,640,470
Credit Card Payment	$ 37,312,126	$ 30,216,043	$ 4,590,751	$ 2,457,230	$ 48,103	$ -
Web/Metavante Payment[(1)]	$ 80,308,389	$ 40,263,224	$ 8,286,393	$ 17,027,592	$ 7,726,000	$ 7,005,180
Interfund transfer	$ 11,806,964	$ 642,255	$ 1,738,637	$ 6,432,267	$ 2,993,806	$ -
Uncollectibles from Electric Utility Sales	$ 3,652,001	$ 3,334,965	$ 243,595	$ 73,441	$ -	$ -

(1) Metavante is a company that provides software that allows payment by web.

Assumptions used in the analysis about customer information data include:

i. Customer count data was consolidated by customer class and not by location (network versus nonnetwork) since none of the FERC accounts allocated on the basis of customer count required differentiation by location.
ii. The bills issued information is the total for each customer class, and reflects the fact that Residential customers are billed every two months, while all other customer classes are billed monthly.
iii. The number of accounts can be less than or equal to the number of meters since some customers, particularly multifamily dwellings and larger businesses, have more than one service and meter but are billed for all meters under one account.
iv. In a case when customers have multiple meters on one account (some of which are billed under one class' rate schedule and some under another class), the larger class (in terms of maximum demand definition) is assigned the account.

Table 9.5 presents, at the top, meter reading counts, meter reading weighting factors and weighted meter reading counts used to create shares to allocate meter reading FERC Program Code operations and maintenance expenditures. Other customer cost relevant factors, such as customer counts, bill counts, etc., by class are, for sake of brevity, not shown in Table 9.5 but are the foundation for shares shown in Table 9.5 for the related customer costs. Some of the shares allocate costs only over Residential, Small and Medium general service classes (factor names with suffixes such as _R_SGS_MGS). Other factors allocated costs only over Large and High Demand general service classes (factor names with suffixes such as _LGS_HDGS). Yet others allocate costs over all classes (factor names with suffixes such as _ALL). The shares used depend on the nature of the cost data available.

Table 9.5
Allocation Factors

	Total System	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
METER READING ALLOCATION FACTORS						
Meters	409,480					12
Nonnetwork		346,876	40,207	2,613	84	
Network		15,908	3,257	469	54	
Meter Reading Weightings						
Nonnetwork		1.00	1.18	2.98	1.00	1.00
Network		1.78	1.70	2.13	1.00	
Weighted Meter Reading Counts						12
Nonnetwork		346,876	47,444	7,787	84	
Network		28,316	5,537	999	54	
ALLOCATION FACTOR NAME						
MR_R_SGS_MGS	100.00%					
Nonnetwork		79.38%	10.86%	1.78%		
Network		6.48%	1.27%	0.23%		
MR_LGS_HDGS	100.00%				56.00%	8.00%
Nonnetwork					36.00%	
Network						
MR_ALL	100.00%					0.01%
Nonnetwork		79.32%	10.85%	1.78%	0.05%	
Network		6.48%	1.27%	0.23%	0.02%	
METER COUNT ALLOCATION FACTORS						
MC_R_SGS_MGS	100.00%	88.63%	10.62%	0.75%		
MC_LGS_HDGS	100.00%				92.00%	8.00%
MC_ALL	100.00%	88.60%	10.61%	0.75%	0.03%	
Wgt. Avg. MC_ALL and MC_LGS_HDGS	100.00%	59.09%	7.08%	0.50%	30.67%	2.67%
2/3 to Resid, SGS,and MGS, and 1/3 to LGS and HDGS						
CUSTOMER COUNT RELATED ALLOCATION FACTORS						
C_R_SGS_MGS	100.00%	91.06%	8.23%	0.72%		
C_SGS_MGS	100.00%		92.00%	8.00%		
C_LGS/HDGS	100.00%				92.96%	7.04%
C_SGS_MGS_LGS_HDGS	100.00%		91.64%	7.96%	0.37%	0.03%
C_ALL	100.00%	91.02%	8.23%	0.71%	0.03%	
BILLS ISSUED RELATED ALLOCATION FACTORS						
BI_R_SGS_MGS	100.00%	84.86%	13.92%	1.22%		
BI_ALL	100.00%	84.81%	13.91%	1.22%	0.06%	
BI_LGS/HDGS	100.00%				94.10%	5.90%
kWh RELATED ALLOCATION FACTORS						
kWh	100.00%	33.75%	12.44%	26.14%	15.44%	12.24%
PAYMENT METHOD RELATED ALLOCATION FACTORS						
Cash or Check Payment	100.00%	32.96%	13.05%	26.01%	16.47%	11.51%
CREDITCARD	100.00%	80.98%	12.30%	6.59%	0.13%	
METAVANTE	100.00%	50.14%	10.32%	21.20%	9.62%	8.72%
avg CREDITCARD and METAVANTE	100.00%	65.56%	11.31%	13.89%	4.87%	4.36%
BAD DEBT/UNCOLLECTIBLES/DISCONNECT SERVICE RELATED ALLOCATION FACTORS						
EU_BAD_DEBT	100.00%	91.32%	6.67%	2.01%		
EUC_BAD_DEBT	100.00%		76.84%	23.16%		

Residential, Small General Service, and Medium General Service

The only allocation factor not based directly on a count is that for meter reading, where a weighted factor had to be developed for the Residential, Small General Service, and Medium General Service customer classes. The weighting was based on an estimate of the amount of meter reading resources used for each class. Weighting factors considered whether the route was walk or drive, and the number of meter reads per year. Weighting factors from the 2006 Cost of Service and Cost Allocation Study are used because little has changed in the logistics of the meter reading activities since that time.

Large General Service and High Demand General Service

The meters of the Large and High Demand General Service customers are read electronically and the billing information is prepared by separate staff. The costs of the meter reading activities of these two customer classes are isolated and treated separately. Therefore, the weights for these two classes are assigned the value of 1.0.

9.3 Customer Service Costs Computations

The Customer Service expenses incurred in 2011 were operations and maintenance expenses recorded in FERC 901 (Meter Reading Supervision), 902 (Meter Reading), 903 (Collections and Billing), 904 (Uncollectibles), 905 (Miscellaneous Customer Accounts), 907 (Supervision), 908 (Customer Assistance), 910 (Miscellaneous Customer Service and Information), and 930 (General Advertising). Total customer service expenditures in 2011 for these accounts were $43,147,269.

City Light also received miscellaneous service revenues collected for commercial equipment rental, residential and commercial account change fees, and reconnect and field fees. These service revenues were allocated to the classes from which they were collected, and the allocated amounts were subtracted from these total expenditures to present the final customer service costs. These miscellaneous service revenues totaled $2,260,181, which reduced the total allocated customer service costs to $40,887,088.

The results of 2011 customer service expenditure and revenue allocations by FERC Program Codes are presented in **Tables 9.6–9.21**. The last line in each table shows marginal costs associated with each FERC Program Code for each customer class, which were summarized previously in Table 9.3.

Meter Reading Supervision and Meter Reading Expenses

Over 98 percent of the labor expenditures for Program Code 90201 originated from two Organization Units, namely 472-Meter Reading and 473-Technical Metering. An allocation subtotal was computed for these expenditures. The remaining 1.7 percent of expenditures was allocated in proportion to this subtotal. **Table 9.6** on the next page summarizes these results.

Disconnect Service Non-Payment Expenses

These expenditures were directly related to the uncollectibles incurred by City Light, and therefore were allocated to customer classes in direct proportion to the uncollectible information. Results are on the next page in **Table 9.7**.

Table 9.6
Meter Reading Supervision and Expenses: FERC 90101 and 90201

					Residential		Small General Service		Medium General Service		Large General Service		High Demand General Service
	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Nonnetwork	Network	Nonnetwork	Network	Nonnetwork	Network	Nonnetwork	Network	
FERC 90101			$ 3,609	MR_ALL	$ 2,864	$ 234	$ 392	$ 46	$ 64	$ 8	$ 1	$ 0	$ 0
FERC 90201 Labor													
	472	Meter Reading	$ 2,921,642	MR_R_SGS_MGS	$ 2,319,319	$ 189,331	$ 317,227	$ 37,021	$ 52,065	$ 6,679	$ -	$ -	$ -
	473	Technical Metering	$ 154,677	MR_LGS_HDGS	$ -	$ -	$ -	$ -	$ -	$ -	$ 86,619	$ 55,684	$ 12,374
Non-Labor													
	472	Meter Reading	$ 97,543	MR_ALL	$ 77,407	$ 6,319	$ 10,587	$ 1,236	$ 1,738	$ 223	$ 19	$ 12	$ 3
Total Allocated Above - FERC 90201			$ 3,173,862		$ 2,396,726	$ 195,650	$ 327,814	$ 38,257	$ 53,802	$ 6,902	$ 86,638	$ 55,696	$ 12,377
Overall Allocation Ratios			100.00%		75.51%	6.16%	10.33%	1.21%	1.70%	0.22%	2.73%	1.75%	0.39%
Total FERC 90201			$ 3,225,701		$ 2,435,872	$ 198,845	$ 333,168	$ 38,882	$ 54,681	$ 7,015	$ 88,053	$ 56,605	$ 12,579
Total FERC 90101 and 90201			$ 3,229,310		$ 2,438,736	$ 199,079	$ 333,560	$ 38,928	$ 54,745	$ 7,023	$ 88,054	$ 56,606	$ 12,579
Dollars per Meter per Year					$ 7.03	$ 12.51	$ 8.30	$ 11.95	$ 20.95	$ 14.98	$ 1,048.26	$ 1,048.26	$ 1,048.26

Table 9.7
Disconnect Service Non-Payment: FERC 90301

	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
Total FERC 90301			$ 602,967	BAD_DEBT	$ 550,623	$ 40,219	$ 12,125	$ -	$ -
Dollars per Meter per Year					$ 1.52	$ 0.93	$ 3.93	$ -	$ -

Credit Investigations and Records Expenses

Org. Units 463 and 464 contributed over 99.9% of the charges to FERC Program Code 90311. Labor related expenditures were associated with serving Residential, Small and Medium General Service customers and were allocated accordingly. Non-labor expenditures were directly allocated to the Residential class because for both Org. Units at least 95% of non-labor costs (95% for Org. Unit 463 and over 99% for Org. Unit 464) were related to Residential customers.[11] **Table 9.8** has detailed results.

Collecting-Light Department

The total dollars allocated in **Table 9.9** represented over 96% of all charges to Program Code 90321. The customer class totals from these allocated expenditures were computed and an overall allocation factor was developed. This overall factor was applied to the Program Code 90321 total of $5,014,708 to compute the final class allocations.

Table 9.8
Credit Investigations and Records: FERC 90311

	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
Labor									
	463	Credit	$ 315,715	C_R_SGS_MGS	$ 287,475	$ 25,982	$ 2,258	$ -	$ -
	464	Customer Accounts	$ 274,297	C_R_SGS_MGS	$ 249,762	$ 22,574	$ 1,962	$ -	$ -
Non-Labor									
	463	Credit	$ 381,392	DIRECT:RESID	$ 381,392	$ -	$ -	$ -	$ -
	464	Customer Accounts	$ 1,512,251	DIRECT:RESID	$ 1,512,251	$ -	$ -	$ -	$ -
Total Allocated Above			$ 2,483,655		$ 2,430,880	$ 48,556	$ 4,219	$ -	$ -
Overall Allocation Ratios			100.00%		97.88%	1.96%	0.17%	0.00%	0.00%
Total FERC 90311			$ 2,485,408		$ 2,432,596	$ 48,590	$ 4,222	$ -	$ -
Dollars per Meter per Year					$ 6.71	$ 1.12	$ 1.37	$ -	$ -

[11] Org. Unit 463 had non-labor charges of $335,000 for Project Share and $30,000 for DoIT Activity Billing charges. The DoIT Activity Billing was related to billing the small customers, 90% of which were Residential class. Project Share charges represented 88% of the total non-labor charges and were Residential class low-income assistance program-related. Org. Unit 464 had $1.5 million of non-labor charges, of which $1.43 million (95%) was for interfund payment for the Dept of Neighborhoods Pay Center Bill Acceptance program and for the Human Services Department (HSD) for the Mayor's Office for Senior Citizens (MOSC). These charges were directly related to Residential customer count. The remaining 5% of non-labor charges were related to DoIT Activity Billing and postage and delivery. These expenditures were related to customer count, with the Residential class making up over 90%.

Table 9.9
Collecting-Light Department: FERC 90321

	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
Labor									
	341	North Customer Engineering	$ 103,304	C_R_SGS_MGS	$ 94,064	$ 8,502	$ 739	$ -	$ -
	352	South Customer Engineering	$ 122,826	C_R_SGS_MGS	$ 111,840	$ 10,108	$ 878	$ -	$ -
	430	Customer Care Director's Office	$ 22,142	C_R_SGS_MGS	$ 20,161	$ 1,822	$ 158	$ -	$ -
	431	Account Executives Office	$ 5,547	C_LGS_HDGS	$ -	$ -	$ -	$ 5,156	$ 391
	463	Credit	$ 1,475,427	C_R_SGS_MGS	$ 1,343,454	$ 121,422	$ 10,552	$ -	$ -
	464	Customer Accounts	$ 209,120	C_R_SGS_MGS	$ 190,415	$ 17,210	$ 1,496	$ -	$ -
	473	Technical Metering	$ 12,300	C_LGS_HDGS	$ -	$ -	$ -	$ 11,434	$ 866
	522	IT Operations	$ 186,109	C_ALL	$ 169,401	$ 15,311	$ 1,330	$ 62	$ 5
	523	IT Applic Dev Serv	$ 1,093,282	C_ALL	$ 995,131	$ 89,940	$ 7,816	$ 367	$ 28
	000	Financial Statement	$ (159,369)	C_ALL	$ (145,061)	$ (13,111)	$ (1,139)	$ (53)	$ (4)
Non-Labor									
	430	Customer Care Director's Office	$ 26,293	C_ALL	$ 23,933	$ 2,163	$ 188	$ 9	$ 1
	523	IT Applic Dev Serv	$ 1,700,139	C_ALL	$ 1,547,507	$ 139,864	$ 12,154	$ 570	$ 43
	831	General Expenses	$ 29,565	C_ALL	$ 26,911	$ 2,432	$ 211	$ 10	$ 1
Total Allocated Above			$ 4,826,685		$ 4,377,755	$ 395,663	$ 34,383	$ 17,555	$ 1,330
Overall Allocation Ratios			100.00%		90.70%	8.20%	0.71%	0.36%	0.03%
Total FERC 90321			$ 5,014,708		$ 4,548,289	$ 411,076	$ 35,723	$ 18,238	$ 1,382
Dollars per Meter per Year					$ 12.54	$ 9.46	$ 11.59	$ 132.16	$ 115.14

Collections-City Treasury Banks, American Express

These fees were allocated to the customer classes in proportion to the average amount of payments made by the customer classes using credit. **Table 9.10** reports results.

Customer Contracts and Orders

A single Org. Unit, 464-Customer Accounts, contributed 98% of the non-labor charges. This charge was for the payment to Seattle Public Utilities to support the joint Call Center which was the customer contact point for billing information services for the Residential, Small General Service, and Medium General Service customers. The sum of the expenditures allocated above represented 99.8% of the total expenditures for this Program Code. Ratios were developed from this overall factor and applied to the Program Code 90351 total of $7,599,215 to compute the final class allocations. See **Table 9.11**.

Table 9.10
Collection-City Treasury, Banks, Am Expr: FERC 90341

	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
Total FERC 90341			$ 1,476,967	avg of CREDITCARD and METAVANTE(1)	$ 968,282	$ 167,059	$ 205,212	$ 71,997	$ 64,417
Dollars per Meter per Year					$ 2.67	$ 3.84	$ 66.58	$ 521.72	$ 5,368.07

(1) Metavante is company the provides software for customers to pay via the web.

Table 9.11
Customer Contracts and Orders: FERC 90351

	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
Labor									
	341	North Customer Engineering	$ 449,263	C_R_SGS_MGS	$ 409,078	$ 36,973	$ 3,213	$ -	$ -
	352	South Customer Engineering	$ 684,517	C_R_SGS_MGS	$ 623,289	$ 56,333	$ 4,895	$ -	$ -
	430	Customer Care Director's Office	$ 53,389	C_ALL	$ 48,596	$ 4,392	$ 382	$ 18	$ 1
	463	Credit	$ 254,716	C_R_SGS_MGS	$ 231,932	$ 20,962	$ 1,822	$ -	$ -
	464	Customer Accounts	$ 1,752,244	C:R/SGS/MGS	$ 1,595,510	$ 144,203	$ 12,531	$ -	$ -
Non-Labor									
	341	North Customer Engineering	$ 25,127	C_R_SGS_MGS	$ 22,879	$ 2,068	$ 180	$ -	$ -
	352	South Customer Engineering	$ 27,570	C_R_SGS_MGS	$ 25,104	$ 2,269	$ 197	$ -	$ -
	430	Customer Care Director's Office	$ 23,170	C_ALL	$ 21,090	$ 1,906	$ 166	$ 8	$ 1
	464	Customer Accounts	$ 4,315,844	C_R_SGS_MGS	$ 3,929,802	$ 355,177	$ 30,865	$ -	$ -
Total Allocated Above			$ 7,585,840		$ 6,907,280	$ 624,282	$ 54,250	$ 26	$ 2
Overall Allocation Ratios			100.00%		91.05%	8.23%	0.72%	0.00%	0.00%
Total FERC 90351			$ 7,599,215		$ 6,919,459	$ 625,383	$ 54,346	$ 26	$ 2
Dollars per Meter per Year					$ 19.07	$ 14.39	$ 17.63	$ 0.19	$ 0.16

Bill Revenue Accounting and Mailing

Expenditures from five Org. Units contributed over 99.5% of the charges to this Program Code. The non-labor expenditures were postage costs and supplies for mailing utility bills. Ratios were developed from this overall factor and applied to the Program Code total of $3,020,932 to compute the final class allocations. Results are in **Table 9.12**.

Table 9.12
Bill Revenue Accounting and Mailings: FERC 90361

	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
Labor									
	341	North Customer Engineering	$ 22,069	BI_R_SGS_MGS	$ 18,728	$ 3,072	$ 269	$ -	$ -
	352	South Customer Engineering	$ 27,025	BI_R_SGS_MGS	$ 22,934	$ 3,761	$ 329	$ -	$ -
	431	Account Executives Office	$ 9,721	BI_LGS_HDGS	$ -	$ -	$ -	$ 9,148	$ 573
	464	Customer Accounts	$ 994,285	BI_R_SGS_MGS	$ 843,779	$ 138,386	$ 12,120	$ -	$ -
	543	General Accounting	$ 249,049	BI_ALL	$ 211,214	$ 34,641	$ 3,034	$ 151	$ 9
NonLabor									
	463	Credit	$ 160,981	BI_ALL	$ 136,525	$ 22,391	$ 1,961	$ 98	$ 6
	464	Customer Accounts	$ 1,037,901	BI_ALL	$ 880,224	$ 144,363	$ 12,644	$ 630	$ 39
	580	Office Supplies	$ 505,486	BI_ALL	$ 428,693	$ 70,309	$ 6,158	$ 307	$ 19
Total Allocated Above			$ 3,006,517		$ 2,542,098	$ 416,923	$ 36,516	$ 10,334	$ 647
Overall Allocation Ratios			100.00%		84.55%	13.87%	1.21%	0.34%	0.02%
Total FERC 90361			$ 3,020,932		$ 2,554,286	$ 418,921	$ 36,691	$ 10,383	$ 650
Dollars per Meter per Year					$ 7.04	$ 9.64	$ 11.90	$ 75.24	$ 54.20

Miscellaneous Customer Accounting Expenses

Expenditures from five Org. Units contributed 96.8% of the charges to this Program Code. Ratios were developed from this overall factor and applied to the Program Code total of $900,410 to compute the final class allocations. See **Table 9.13**.

Table 9.13
Miscellaneous Customer Account Expenses: FERC 90501

	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
Labor									
	430	Customer Care Director's Office	$ 432,110	C_ALL	$ 393,317	$ 35,548	$ 3,089	$ 145	$ 11
	431	Account Executives Office	$ 10,536	C_LGS_HDGS	$ -	$ -	$ -	$ 9,794	$ 742
	463	Credit	$ 3,204	C_R_SGS_MGS	$ 2,917	$ 264	$ 23	$ -	$ -
	464	Customer Accounts	$ 34,928	C_R_SGS_MGS	$ 31,804	$ 2,874	$ 250	$ -	$ -
	472	Meter Reading	$ 16,192	C_R_SGS_MGS	$ 14,744	$ 1,333	$ 116	$ -	$ -
	473	Technical Metering	$ 189,630	C_LGS_HDGS	$ -	$ -	$ -	$ 176,276	$ 13,354
NonLabor									
	430	Customer Care Director's Office	$ 153,116	C_ALL	$ 139,370	$ 12,596	$ 1,095	$ 51	$ 4
	473	Technical Metering	$ 31,924	C_LGS_HDGS	$ -	$ -	$ -	$ 29,676	$ 2,248
Total Allocated Above			$ 871,640		$ 582,152	$ 52,615	$ 4,572	$ 215,942	$ 16,359
Overall Allocation Ratios			100.00%		66.79%	6.04%	0.52%	24.77%	1.88%
Total FERC 90501			$ 900,410		$ 601,367	$ 54,352	$ 4,723	$ 223,069	$ 16,899
Dollars per Meter per Year					$ 1.66	$ 1.25	$ 1.53	$ 1,616.45	$ 1,408.27

Supervision Expenses

FERC Program Code 90701 costs were directly assigned to the Residential class and FERC Program Code 90711 costs were allocated among other customer classes in **Tables 9.14 and 9.15,** respectively.

Customer Assistance Expenses

FERC Program Code 90801 costs were directly assigned to the Residential class, shown in **Table 9.16**, and Program Code 90811 costs were allocated among other customer classes as indicated in **Table 9.17**.

Miscellaneous Customer Service and Information Expenses

Miscellaneous activities charging to FERC Program Code 91001 include support for phone notifications of schools, hospitals, and customers on life support of outages, suburban cities support, and general power quality metering issues. The allocated Org. Unit charges represent nearly 98% of the total charges to the Program Code. Ratios were developed from this overall factor and applied to the Program Code total of $686,959 to compute the final class allocations. See **Table 9.18**.

Table 9.14
Supervision-Residential: FERC 90701

	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
Total FERC 90701			$ 81,501	DIRECT:RESID	$ 81,501	$ -	$ -	$ -	$ -
Dollars per Meter per Year					$ 0.22	$ -	$ -	$ -	$ -

Table 9.15
Supervision-Commercial and Industrial: FERC 90711

	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
Total FERC 90711			$ 6,371	C_SGS_MGS_LGS_HDGS	$ -	$ 5,838	$ 507	$ 24	$ 2
Dollars per Meter per Year					$ -	$ 0.13	$ 0.16	$ 0.17	$ 0.15

Table 9.16
Customer Assistance Expenses-Residential: FERC 90801

	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
Total FERC 90801			$ 2,331,338	DIRECT:RESID	$ 2,331,338	$ -	$ -	$ -	$ -
Dollars per Meter per Year					$ 6.43	$ -	$ -	$ -	$ -

Table 9.17
Customer Assistance Expenses-Commercial and Industrial: FERC 90811

	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
Labor									
	341	North Customer Engineering	$ 355,103	C_SGS_MGS	$ -	$ 326,712	$ 28,391	$ -	$ -
	352	South Customer Engineering	$ 211,612	C_SGS_MGS	$ -	$ 194,693	$ 16,919	$ -	$ -
	431	Account Executives Office	$ 241,207	C_LGS_HDGS	$ -	$ -	$ -	$ 224,221	$ 16,986
	000	Financial Statement	$ 649,817	C_SGS_MGS_LGS_HDGS	$ -	$ 595,460	$ 51,746	$ 2,427	$ 184
Non-Labor									
	341	North Customer Engineering	$ 6,991	C_SGS_MGS	$ -	$ 6,432	$ 559	$ -	$ -
	352	South Customer Engineering	$ 253	C_SGS_MGS	$ -	$ 233	$ 20	$ -	$ -
Total Allocated Above			$ 1,464,983		$ -	$ 1,123,530	$ 97,635	$ 226,648	$ 17,170
Overall Allocation Ratios			100.00%		0.00%	76.69%	6.66%	15.47%	1.17%
Total FERC 90811			$ 1,579,641		$ -	$ 1,211,464	$ 105,276	$ 244,387	$ 18,514
Dollars per Meter per Year					$ -	$ 27.87	$ 34.16	$ 1,770.92	$ 1,542.85

Table 9.18
Miscellaneous Customer Service and Information Expenses: FERC 91001

	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
Labor									
	341	North Customer Engineering	$ 4,635	C_R_SGS_MGS	$ 4,220	$ 381	$ 33	$ -	$ -
	352	South Customer Engineering	$ 4,997	C_R_SGS_MGS	$ 4,550	$ 411	$ 36	$ -	$ -
	431	Account Executives Office	$ 505,787	C_ALL	$ 460,379	$ 41,609	$ 3,616	$ 170	$ 13
	473	Technical Metering	$ 112,711	C_ALL	$ 102,592	$ 9,272	$ 806	$ 38	$ 3
NonLabor									
	430	Customer Care Director's Office	$ 26,368	C_R_SGS_MGS	$ 24,009	$ 2,170	$ 189	$ -	$ -
	431	Account Executives Office	$ 12,719	C_ALL	$ 11,577	$ 1,046	$ 91	$ 4	$ 0
	473	Technical Metering	$ 4,233	C_ALL	$ 3,853	$ 348	$ 30	$ 1	$ 0
Total Allocated Above			$ 671,450		$ 611,182	$ 55,239	$ 4,800	$ 213	$ 16
Overall Allocation Ratios			100.00%		91.02%	8.23%	0.71%	0.03%	0.00%
Total FERC 91001			$ 686,959		$ 625,299	$ 56,515	$ 4,911	$ 218	$ 17
Dollars per Meter per Year					$ 1.72	$ 1.30	$ 1.59	$ 1.58	$ 1.38

Uncollectible Accounts

Data on uncollectible accounts from FERC accounts 90401 and 90403 are in **Table 9.19.** Costs associated with uncollectible accounts are allocated by BAD_DEBT shares that were shown in Table 9.5.

General Advertising Expenses

General advertising expense is allocated as indicated in **Table 9.20**. These costs are allocated based on a customer count allocation factor shown in Table 9.5.

Miscellaneous Service Revenues

These revenues were allocated to the customer classes from which the revenues were received, with the reconnection and field charges allocated on the basis of Bad Debt. Results are in **Table 9.21**.

Table 9.19
Uncollectible Accounts: FERC 90401 and 90403

	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
FERC 90401			$ 9,994,203	EU_BAD_DEBT	$ 9,126,592	$ 666,630	$ 200,980	$ -	$ -
FERC 90403			$ 4,096,727	EU_BAD_DEBT	$ 3,741,085	$ 273,259	$ 82,384	$ -	$ -
Total FERC 904			$ 14,090,930		$ 12,867,676	$ 939,889	$ 283,364	$ -	$ -
Dollars per Meter per Year					$ 35.47	$ 21.62	$ 91.94	$ -	$ -

Table 9.20
General Advertising: FERC 93010

	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
FERC 93010			$ 40,612	C_ALL	$ 36,966	$ 3,341	$ 290	$ 14	$ 1
Dollars per Meter per Year					$ 0.10	$ 0.08	$ 0.09	$ 0.10	$ 0.09

Table 9.21
Miscellaneous Service Revenues: FERC 45110, 45130, 45131, and 45150

	Org. Unit	Org. Unit Name	Amount Allocated	Allocation Basis	Residential	Small General Service	Medium General Service	Large General Service	High Demand General Service
FERC 45110			$ (160,774)	C_SGS_MGS_LGS_HDGS	$ -	$ (147,325)	$ (12,803)	$ (601)	$ (45)
FERC 45130			$ (1,255,073)	DIRECT: RESID	$ (1,255,073)	$ -	$ -	$ -	$ -
FERC 45131			$ (7,032)	C_SGS_MGS_LGS_HDGS	$ -	$ (6,444)	$ (560)	$ (26)	$ (2)
FERC 45150			$ (837,302)	EUC_BAD_DEBT	$ -	$ (643,343)	$ (193,959)	$ -	$ -
Total			$ (2,260,181)		$ (1,255,073)	$ (797,112)	$ (207,322)	$ (627)	$ (47)
Dollars per Meter per Year					$ (3.46)	$ (18.34)	$ (67.27)	$ (4.54)	$ (3.96)

Chapter 10: Initial Allocation of Revenue Requirements

10.1 Functional Revenue Requirements

Tables10.1.a and **10.1.b** present the sum of the functionalized revenue requirements for 2013 and 2014 used to set rates. These tables illustrate how the total revenue requirements by functional category were derived. These tables are identical to Tables 2.1.a and 2.1.b with additional detail about how the total for Power costs is divided between Production and Purchased Power Costs. The explanation behind the derivation of the total revenue requirement is in the *2013-2014 RRA* and the explanation of the functionalization or unbundling of the revenue requirements is in chapter 2 of this document. The information needed for purposes of this chapter is just the first column of numbers, i.e., the total revenue requirements by function. The next chapter will provide adjustments to this initial allocation and allocate the total net wholesale revenue (credit) shown on the right side of these two tables.

Note that two of the revenue requirements, Wires and Related Equipment and Transformers, have allocations separated between nonnetwork and network customers. For future reference, recall that the downtown network comprised about 85 percent of the total network load recently. Hence, when the network revenue requirements for these two categories are allocated to downtown network customers, the network totals in Table 10.1 are multiplied by 84.288 percent and the result is allocated by network shares developed here. The 84.288 percent network result is then subtracted from the total for both nonnetwork and network revenue requirements and this result is assigned to nonnetwork customers for purposes of allocating nonnetwork revenue requirements.

Another important note is that net wholesale revenues to be received by City Light are allocated to customer classes after all other cost of service allocations have been made by marginal cost shares. This is the same procedure used in the 2006 rate case.

10.2 Marginal Cost Shares

Tables 10.2.a and **10.2.b,** present a summary from the previous chapters of the total marginal costs by class for nonnetwork and network customers for the functional categories of the revenue requirements for 2013 and 2014, respectively. These tables are formatted to be compatible with the functionalized revenue requirements presented in Tables 10.1.a and b. One set of marginal costs is used to allocate each of the four components of Energy revenue requirements. The other itemized revenue requirements have their own set of marginal cost shares used for allocation purposes. The table indicates the sources from the previous chapters of all the marginal cost data.

Table 10.1.a
Functionalized Revenue Requirements, 2013

	Total	Direct Expenses	Revenue Offsets & Additions	Direct Expenses (Net)	Depreciation and Amortization	Capital Contributions and Grants	Interest	Admin. and General	Rev. Taxes & County Payments	Net Income	Net Wholesale Revenue	Total Less Net Wholesale Revenue
Total Energy	**$471,863,799**	**$329,804,142**	**($41,862,730)**	**$287,941,412**	**$46,120,663**	**($4,692,238)**	**$38,864,288**	**$17,819,498**	**$50,600,370**	**$ 35,209,806**	**$ (54,673,659)**	
Power(*)	383,517,947	281,587,045	(32,693,295)	248,893,750	25,085,264	(107,683)	27,196,473	14,942,528	41,904,959	25,602,654	(44,843,426)	
Conservation	38,952,547	4,813,845	(3,101,449)	1,712,396	17,783,798	0	8,301,693	874,015	3,445,120	6,835,524	(4,023,961)	
Transmission-Long Distance	49,393,306	43,403,252	(6,067,986)	37,335,266	3,251,600	(4,584,556)	3,366,122	2,002,954	5,250,291	2,771,628	(5,806,272)	
Total Retail Services	**$329,170,401**	**$126,157,134**	**($23,205,305)**	**$102,951,828**	**$73,750,158**	**($31,690,673)**	**$57,342,499**	**$49,356,705**	**$30,244,692**	**$ 47,215,193**	**(35,326,341)**	
Total Distribution	255,473,689	74,218,312	(15,178,777)	59,039,534	70,081,183	(31,690,673)	56,887,226	31,936,469	22,379,625	46,840,325	(26,139,802)	
Transmission-In Service Area	15,918,360	4,707,039	(1,164,850)	3,542,189	5,113,017	(426,242)	2,548,246	1,560,496	1,482,457	2,098,198	(1,731,537)	
Stations	43,126,317	18,884,029	(1,100,983)	17,783,046	4,753,671	(6,054)	3,548,913	9,811,994	4,312,611	2,922,136	(5,037,206)	
Wires and Related Equipment	140,316,555	38,187,744	(13,266,115)	24,921,629	46,316,956	(27,995,410)	38,996,276	14,360,827	11,607,165	32,109,111	(13,557,377)	
non-network	98,358,349	31,780,251	(11,432,254)	20,347,997	29,667,062	(17,931,696)	24,978,000	12,385,829	8,344,542	20,566,615	(9,746,574)	
network	41,958,206	6,407,493	(1,833,861)	4,573,632	16,649,894	(10,063,714)	14,018,276	1,974,998	3,262,624	11,542,496	(3,810,803)	
Transformers	30,413,925	4,536,394	353,171	4,889,565	8,976,179	(2,475,480)	7,922,529	2,015,116	2,562,690	6,523,325	(2,993,268)	
non-network	14,449,988	395,196	353,171	748,367	5,309,377	(1,464,237)	4,686,147	175,688	1,136,122	3,858,523	(1,327,011)	
network	15,963,937	4,141,198	0	4,141,198	3,666,802	(1,011,242)	3,236,382	1,839,428	1,426,568	2,664,802	(1,666,257)	
Streetlights/Floodlights	11,393,357	4,036,760	0	4,036,760	2,489,028	(787,487)	1,707,681	1,469,977	1,071,312	1,406,086	(1,251,311)	
Meters	14,305,175	3,866,345	0	3,866,345	2,432,332	0	2,163,581	2,718,058	1,343,389	1,781,469	(1,569,103)	
Customer Accounts & Services	61,212,298	41,125,978	(7,885,504)	33,240,474	3,589,585	0	445,422	17,043,297	6,526,762	366,756	(7,623,375)	
Low-Income Assistance	12,484,415	10,812,843	(141,024)	10,671,819	79,389	0	9,851	376,939	1,338,305	8,111	(1,563,164)	
Total	**$801,034,200**	**$455,961,276**	**($65,068,035)**	**$390,893,240**	**$119,870,821**	**($36,382,911)**	**$96,206,787**	**$67,176,202**	**$80,845,062**	**$ 82,424,999**	**$ (90,000,000)**	**$ 711,034,200**
Load (MWh)	9,654,834											
Average Cost per MWh	$ 82.97	$ 47.23	$ (6.74)	$ 40.49	$ 12.42	$ (3.77)	$ 9.96	$ 6.96	$ 8.37	$ 8.54	$ (9.32)	$ 73.65
Percent of Total Cost	100.00%	56.92%	-8.12%	48.80%	14.96%	-4.54%	12.01%	8.39%	10.09%	10.29%	-11.24%	88.76%
(*) Components of Power Production	$ 124,764,790	$ 45,782,402	$ (10,638,583)	$ 35,143,818	$ 23,880,341	$ (107,683)	$ 21,830,178	$ 11,076,074	$ 14,967,329	$ 17,974,732	$ (13,379,792)	
Purchased Power	258,753,156	235,804,643	(22,054,712)	213,749,932	1,204,923	0	5,366,295	3,866,454	26,937,631	7,627,922	(31,463,634)	

Table 10.1.b
Functionalized Revenue Requirements, 2014

	Total	Direct Expenses	Revenue Offsets & Additions	Direct Expenses (Net)	Depreciation and Amortization	Capital Contributions and Grants	Interest	Admin. and General	Rev. Taxes & County Payments	Net Income	Net Wholesale Revenue	Total Less Net Wholesale Revenue
Total Energy	**$504,529,004**	**$337,789,558**	**($42,623,922)**	**$295,165,637**	**$48,919,805**	**($1,247,235)**	**$37,962,588**	**$17,726,896**	**$54,142,310**	**$ 51,859,004**	**$ (52,216,612)**	
Power(*)	410,516,394	289,271,620	(33,345,277)	255,926,343	26,300,927	(109,888)	26,985,524	14,864,877	44,539,831	42,008,781	(42,534,600)	
Conservation	40,059,714	4,868,701	(3,163,034)	1,705,667	19,403,691	0	7,581,602	869,473	3,695,961	6,803,320	(3,838,584)	
Transmission-Long Distance	53,952,895	43,649,237	(6,115,611)	37,533,626	3,215,187	(1,137,347)	3,395,462	1,992,545	5,906,518	3,046,904	(5,843,428)	
Total Retail Services	**$336,392,837**	**$128,043,859**	**($23,747,310)**	**$104,296,550**	**$77,298,510**	**($36,592,275)**	**$58,357,584**	**$49,100,214**	**$31,565,317**	**$ 52,366,938**	**(32,783,388)**	
Total Distribution	259,490,416	74,736,844	(15,524,460)	59,212,384	73,493,579	(36,592,275)	57,168,767	31,770,505	23,137,297	51,300,159	(24,030,139)	
Transmission-In Service Area	15,791,657	4,433,459	(1,194,237)	3,239,221	5,053,956	(434,974)	2,573,435	1,552,386	1,498,371	2,309,261	(1,556,191)	
Stations	44,466,195	19,380,976	(1,127,593)	18,253,382	5,007,674	(6,178)	3,565,655	9,859,861	4,586,174	3,199,626	(4,763,150)	
Wires and Related Equipment	144,713,842	39,035,997	(13,563,564)	25,472,433	48,791,819	(30,494,731)	39,180,247	14,430,339	12,175,501	35,158,234	(12,645,340)	
non-network	101,331,093	32,477,840	(11,687,203)	20,790,637	31,252,268	(19,532,568)	25,095,838	12,446,533	8,758,737	22,519,647	(9,096,727)	
network	43,382,749	6,558,157	(1,876,361)	4,681,796	17,539,551	(10,962,163)	14,084,409	1,983,806	3,416,763	12,638,587	(3,548,612)	
Transformers	29,194,092	4,652,665	360,935	5,013,600	9,455,805	(4,852,775)	7,959,905	2,024,090	2,450,679	7,142,788	(2,545,248)	
non-network	13,643,832	403,780	360,935	764,715	5,593,074	(2,870,399)	4,708,255	176,480	1,046,773	4,224,933	(1,087,166)	
network	15,550,260	4,248,884	0	4,248,884	3,862,731	(1,982,376)	3,251,650	1,847,610	1,403,907	2,917,855	(1,458,082)	
Streetlights/Floodlights	10,494,297	3,254,849	0	3,254,849	2,622,025	(803,617)	1,715,737	1,170,512	995,182	1,539,609	(1,033,585)	
Meters	14,830,333	3,978,899	0	3,978,899	2,562,299	0	2,173,788	2,733,317	1,431,389	1,950,640	(1,486,625)	
Customer Accounts & Services	63,671,577	41,908,671	(8,081,383)	33,827,288	3,722,600	0	1,163,093	16,954,728	6,960,171	1,043,697	(7,228,757)	
Low-Income Assistance	13,230,844	11,398,344	(141,467)	11,256,877	82,331	0	25,724	374,980	1,467,849	23,083	(1,524,492)	
Total	**$840,921,841**	**$465,833,418**	**($66,371,231)**	**$399,462,186**	**$126,218,315**	**($37,839,510)**	**$96,320,172**	**$66,827,109**	**$85,707,627**	**$104,225,942**	**$ (85,000,000)**	**$ 755,921,841**
Load (MWh)	9,746,397											
Average Cost per MWh	$ 86.28	$ 47.80	$ (6.81)	$ 40.99	$ 12.95	$ (3.88)	$ 9.88	$ 6.86	$ 8.79	$ 10.69	$ (8.72)	$ 77.56
Percent of Total Cost	100.00%	55.40%	-7.89%	47.50%	15.01%	-4.50%	11.45%	7.95%	10.19%	12.39%	-10.11%	89.89%
(*) Components of Power Production	$ 128,334,105	$ 45,974,033	$ (10,803,039)	$ 35,170,994	$ 25,064,228	$ (109,888)	$ 21,885,723	$ 11,018,515	$ 15,665,470	$ 19,639,063	$ (12,546,010)	
Purchased Power	282,182,289	243,297,587	(22,542,237)	220,755,350	1,236,699	0	5,099,801	3,846,362	28,874,360	22,369,717	(29,988,590)	

Table 10.2.a
Summary of Marginal Costs by Functional Category, 2013
And Development of Cost Shares for Service Area Total Marginal Cost

	Service Territory	Total Nonnetwork (EXcludes Network Residential & Small)							Source
		Total	Residential	Small	Medium	Large	High Demand	Lights	
Energy	**$ 385,101,348**	$ 329,347,008	$ 124,627,175	$ 41,691,726	$ 76,423,205	$ 36,983,950	$ 46,554,631	$ 3,066,321	Table 7.7
Production									
Purchased Power									
Transmission - Long Distance									
Conservation									
Retail Service	$ 380,797,582	305,778,492	165,605,169	35,499,376	54,793,169	24,713,682	23,497,265	1,669,831	Dist+Cust Cost
Total Distribution	$ 337,443,760	264,876,754	129,226,093	32,085,282	54,256,766	24,260,969	23,377,814	1,669,831	Sum of Dist
- Transmission - In Service Area	$ 47,391,600	40,795,765	17,900,633	4,958,473	9,200,997	4,242,974	4,202,241	290,449	Table 8.3
- Stations	$ 32,878,615	27,663,187	12,138,234	3,362,289	6,239,101	2,877,117	2,849,496	196,951	Table 8.5
- Wires & Related Equipment	$ 233,247,526	180,551,341	91,997,747	21,191,903	34,650,536	15,951,065	15,686,128	1,073,963	Table 8.11
- Transformers	$ 19,211,532	11,705,454	4,286,092	1,904,981	3,999,186	823,189	583,538	108,468	Table 8.20
- Meters, (except Meter Reading)	$ 4,714,487	4,161,007	2,903,387	667,636	166,947	366,625	56,412		Table 8.21.d
- Streetlights/Floodlights									
Customer Costs	**$ 43,353,821**	40,901,738	36,379,076	3,414,094	536,403	452,713	119,451	0	Table 9.1
Low-Income Assistance									
Total	**$ 765,898,929**	$ 635,125,500	$ 290,232,344	$ 77,191,102	$ 131,216,374	$ 61,697,631	$ 70,051,896	$ 4,736,152	
Percent of Svc. Territory Marg Costs	100.000%	82.925%	37.894%	10.078%	17.132%	8.056%	9.146%	0.618%	

	Downtown Network					Source
	Total	Residential	Small	Medium	Large	
Energy	$ 55,754,340	$ 3,615,581	$ 5,685,926	$ 22,557,335	$ 23,895,498	Table 7.7
Production						
Purchased Power						
Transmission - Long Distance						
Conservation						
Retail Service	$ 75,019,089	8,904,359	8,040,374	28,728,321	29,346,035	Dist+Cust Cost
Total Distribution	$ 72,567,006	7,136,260	7,751,675	28,624,066	29,055,006	Sum of Dist
- Transmission - In Service Area	$ 6,595,834	518,334	684,327	2,637,928	2,755,245	Table 8.3
- Stations	$ 5,215,428	409,855	541,108	2,085,850	2,178,615	Table 8.5
- Wires & Related Equipment	$ 52,696,185	5,438,992	5,518,729	20,062,789	21,675,675	Table 8.11
- Transformers	$ 7,506,079	581,172	912,602	3,804,032	2,208,272	Table 8.20
- Meters, (except Meter Reading)	$ 553,480	187,907	94,908	33,467	237,198	Table 8.21.d
- Streetlights/Floodlights						
Customer Costs	$ 2,452,083	1,768,100	288,699	104,255	291,030	Table 9.1
Low-Income Assistance						
Total	$ 130,773,430	$ 12,519,941	$ 13,726,300	$ 51,285,656	$ 53,241,533	
Percent of Svc. Territory Marg Costs	17.075%	1.635%	1.792%	6.696%	6.952%	

Table 10.2.b
Summary of Marginal Costs by Functional Category, 2014
And Development of Cost Shares for Service Area Total Marginal Cost

	Service Territory	Total Nonnetwork (EXcludes Network Residential & Small)							Source
		Total	Residential	Small	Medium	Large	High Demand	Lights	
Energy	**$ 400,215,402**	$ 342,563,884	$ 129,085,894	$ 43,365,131	$ 79,210,413	$ 40,218,406	$ 47,823,590	$ 2,860,450	Table 7.7
Production									
Purchased Power									
Transmission - Long Distance									
Conservation									
Retail Service	$ 390,705,305	313,789,391	170,102,250	36,526,169	56,296,864	25,322,618	24,069,373	1,472,117	Dist+Cust Cost
Total Distribution	$ 345,891,475	271,507,269	132,455,576	33,025,335	55,747,857	24,859,268	23,947,116	1,472,117	Sum of Dist
- Transmission - In Service Area	$ 48,505,108	41,737,788	18,293,729	5,102,824	9,446,459	4,336,056	4,303,478	255,242	Table 8.3
- Stations	$ 33,652,987	28,301,963	12,404,789	3,460,172	6,405,546	2,940,235	2,918,144	173,077	Table 8.5
- Wires & Related Equipment	$ 239,045,166	185,091,898	94,377,289	21,805,716	35,586,751	16,307,751	16,070,235	944,155	Table 8.11
- Transformers	$ 19,826,393	12,082,623	4,375,217	1,972,025	4,138,231	899,987	597,521	99,643	Table 8.20
- Meters, (except Meter Reading)	$ 4,861,821	4,292,997	3,004,553	684,599	170,869	375,239	57,737	0	Table 8.21.d
- Streetlights/Floodlights									
Customer Costs	**$ 44,813,829**	42,282,121	37,646,674	3,500,834	549,006	463,350	122,258	0	Table 9.1
Low-Income Assistance									
Total	**$ 790,920,707**	$ 656,353,275	$ 299,188,143	$ 79,891,300	$135,507,277	$ 65,541,024	$ 71,892,963	$ 4,332,567	
Percent of Svc. Territory Marg Costs	100.000%	82.986%	37.828%	10.101%	17.133%	8.287%	9.090%	0.548%	

	Downtown Network					Source
	Total	Residential	Small	Medium	Large	
Energy	$ 57,651,518	$ 3,740,630	$ 5,898,029	$ 23,325,968	$ 24,686,890	Table 7.7
Production						
Purchased Power						
Transmission - Long Distance						
Conservation						
Retail Service	$ 76,915,914	9,133,783	8,243,960	29,492,425	30,045,745	Dist+Cust Cost
Total Distribution	$ 74,384,206	7,302,129	7,948,478	29,385,721	29,747,878	Sum of Dist
- Transmission - In Service Area	$ 6,767,320	529,277	702,469	2,711,083	2,824,491	Table 8.3
- Stations	$ 5,351,024	418,508	555,453	2,143,695	2,233,368	Table 8.5
- Wires & Related Equipment	$ 53,953,268	5,566,626	5,651,034	20,568,653	22,166,954	Table 8.11
- Transformers	$ 7,743,770	593,057	942,384	3,928,036	2,280,293	Table 8.20
- Meters, (except Meter Reading)	$ 568,824	194,661	97,138	34,253	242,771	Table 8.21.d
- Streetlights/Floodlights						
Customer Costs	$ 2,531,708	1,831,654	295,482	106,704	297,868	Table 9.1
Low-Income Assistance						
Total	$ 134,567,432	$ 12,874,413	$ 14,141,990	$ 52,818,393	$ 54,732,636	
Percent of Svc. Territory Marg Costs	17.014%	1.628%	1.788%	6.678%	6.920%	

Treatment of Low-Income Residential Customers

As mentioned previously, the revenue requirement associated with the general subsidy provided for low-income residential customers is allocated by the shares derived from the sum of all other measured marginal costs.

Summary of Marginal Cost Shares

Tables 10.3.a and **10.3.b**, in the same general format as the previous two tables, present a summary of the marginal cost shares used to allocate revenue requirements.[12] The table indicates the sources for all the data but, of course, the results can be derived from the cost data in Tables 10.2. As mentioned, two of the revenue requirements, Wires and Related Equipment and Transformers, are separated initially between nonnetwork and network customers. Hence, shares for these two categories of revenue requirements are based on shares *conditional upon* nonnetwork or network status.

[12] The table shows results rounded to the nearest one-thousandth of one percent. Actual calculations use results that have greater precision.

Table 10.3.a
Summary of Marginal Cost Shares by Functional Category, 2013

	Total Nonnetwork (Excludes Network Residential & Small)							Source
	Total	Residential	Small	Medium	Large	High Demand	Lights	
Energy								
Production	85.522%	32.362%	10.826%	19.845%	9.604%	12.089%	0.796%	Table 7.7
Purchased Power	85.522%	32.362%	10.826%	19.845%	9.604%	12.089%	0.796%	Table 7.7
Transmission - Long Distance	85.522%	32.362%	10.826%	19.845%	9.604%	12.089%	0.796%	Table 7.7
Conservation	85.522%	32.362%	10.826%	19.845%	9.604%	12.089%	0.796%	Table 7.7
Retail Service								
Total Distribution								
- Transmission - In Service Area	86.082%	37.772%	10.463%	19.415%	8.953%	8.867%	0.613%	Table 8.3
- Stations	84.137%	36.918%	10.226%	18.976%	8.751%	8.667%	0.599%	Table 8.5
- Wires & Related Equipment	100.000%	50.954%	11.737%	19.192%	8.835%	8.688%	0.595%	Table 8.11
- Transformers	100.000%	36.616%	16.274%	34.165%	7.033%	4.985%	0.927%	Table 8.20
- Meters (except Meter Reading)	88.260%	61.584%	14.161%	3.541%	7.777%	1.197%	0.000%	Table 8.21.d
- Streetlights/Floodlights							100.000%	Sect. 8.1
Customer Costs	94.344%	83.912%	7.875%	1.237%	1.044%	0.276%	0.000%	Table 9.1
Low-Income Assistance	82.925%	37.894%	10.078%	17.132%	8.056%	9.146%	0.618%	Table 10.2.a
Total								

	Downtown Network					Source
	Total	Residential	Small	Medium	Large	
Energy						
Production	14.478%	0.939%	1.476%	5.858%	6.205%	Table 7.7
Purchased Power	14.478%	0.939%	1.476%	5.858%	6.205%	Table 7.7
Transmission - Long Distance	14.478%	0.939%	1.476%	5.858%	6.205%	Table 7.7
Conservation	14.478%	0.939%	1.476%	5.858%	6.205%	Table 7.7
Retail Service						
Total Distribution						
- Transmission - In Service Area	13.918%	1.094%	1.444%	5.566%	5.814%	Table 8.3
- Stations	15.863%	1.247%	1.646%	6.344%	6.626%	Table 8.5
- Wires & Related Equipment	100.000%	10.321%	10.473%	38.073%	41.133%	Table 8.11
- Transformers	100.000%	7.743%	12.158%	50.679%	29.420%	Table 8.20
- Meters (except Meter Reading)	11.740%	3.986%	2.013%	0.710%	5.031%	Table 8.21.d
- Streetlights/Floodlights						Sect. 8.1
Customer Costs	5.656%	4.078%	0.666%	0.240%	0.671%	Table 9.1
Low-Income Assistance	17.075%	1.635%	1.792%	6.696%	6.952%	Table 10.2.a
Total						

Table 10.3.b
Summary of Marginal Cost Shares by Functional Category, 2014

	Total Nonnetwork (Excludes Network Residential & Small)							Source
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**	
Energy								
Production	85.595%	32.254%	10.835%	19.792%	10.049%	11.949%	0.715%	Table 7.7
Purchased Power	85.595%	32.254%	10.835%	19.792%	10.049%	11.949%	0.715%	Table 7.7
Transmission - Long Distance	85.595%	32.254%	10.835%	19.792%	10.049%	11.949%	0.715%	Table 7.7
Conservation	85.595%	32.254%	10.835%	19.792%	10.049%	11.949%	0.715%	Table 7.7
Retail Service								
Total Distribution								
- Transmission - In Service Area	86.048%	37.715%	10.520%	19.475%	8.939%	8.872%	0.526%	Table 8.3
- Stations	84.099%	36.861%	10.282%	19.034%	8.737%	8.671%	0.514%	Table 8.5
- Wires & Related Equipment	100.000%	50.989%	11.781%	19.227%	8.811%	8.682%	0.510%	Table 8.11
- Transformers	100.000%	36.211%	16.321%	34.249%	7.449%	4.945%	0.825%	Table 8.20
- Meters (except Meter Reading)	88.300%	61.799%	14.081%	3.515%	7.718%	1.188%	0.000%	Table 8.21.d
- Streetlights/Floodlights							100.000%	Sect. 8.1
Customer Costs	94.351%	84.007%	7.812%	1.225%	1.034%	0.273%	0.000%	Table 9.1
Low-Income Assistance	82.986%	37.828%	10.101%	17.133%	8.287%	9.090%	0.548%	Table 10.2.b
Total								

	Downtown Network					Source
	Total	**Residential**	**Small**	**Medium**	**Large**	
Energy						
Production	14.405%	0.935%	1.474%	5.828%	6.168%	Table 7.7
Purchased Power	14.405%	0.935%	1.474%	5.828%	6.168%	Table 7.7
Transmission - Long Distance	14.405%	0.935%	1.474%	5.828%	6.168%	Table 7.7
Conservation	14.405%	0.935%	1.474%	5.828%	6.168%	Table 7.7
Retail Service						
Total Distribution						
- Transmission - In Service Area	13.952%	1.091%	1.448%	5.589%	5.823%	Table 8.3
- Stations	15.901%	1.244%	1.651%	6.370%	6.636%	Table 8.5
- Wires & Related Equipment	100.000%	10.317%	10.474%	38.123%	41.085%	Table 8.11
- Transformers	100.000%	7.659%	12.170%	50.725%	29.447%	Table 8.20
- Meters (except Meter Reading)	11.700%	4.004%	1.998%	0.705%	4.993%	Table 8.21.d
- Streetlights/Floodlights						Sect. 8.1
Customer Costs	5.649%	4.087%	0.659%	0.238%	0.665%	Table 9.1
Low-Income Assistance	17.014%	1.628%	1.788%	6.678%	6.920%	Table 10.2.b
Total						

10.3 Initial Allocation of Functional Revenue Requirements

Tables 10.4.a and **10.4.b** present the initial allocation of the functionalized revenue requirements for 2013 and 2014, respectively. The marginal cost shares for nonnetwork and network classes are multiplied by the total revenue requirements for each of the functionalized revenue requirement components except for the two categories mentioned above, Wires and Related Equipment and Transformers. The total network revenue requirements for those two categories are multiplied by 84.288 percent (discussed in Section 10.1 as the percent of total network load that is in the downtown network), and those results are then allocated to downtown network customer classes by using the network shares. The remainders of the total revenue requirements for those two categories are then allocated to the nonnetwork customers by the nonnetwork shares by class. Specifically, the total revenue requirements (or total by nonnetwork and network adjusted as just mentioned) from Table 10.1 are multiplied by appropriate shares from Table 10.3. The bottom row in each section shows for each class the share of the total service territory's revenue requirements allocated by marginal cost shares. These shares eventually are used to allocate net wholesale revenues among the classes.

Tables 10.5.a and **10.5.b** present the allocation of the functionalized revenue requirements among the classes in Seattle, Tukwila and the Other Suburbs derived from the total nonnetwork revenue requirements by class presented in Tables 10.4.a and b. Those nonnetwork revenue requirements by class from Tables 10.4.a or .b are multiplied by each class's share of total nonnetwork load for that class for 2013 or 2014. These shares are from Table 6.5 in Chapter 6. For example, for 2013, the total Nonnetwork revenue requirement for energy that year is $152,705,392 (from Table 10.4.a) and Seattle Residential share of total nonnetwork load is 77.147% (from Table 6.5); thus, using the numbers available here (whereas actual calculations use more decimal points) equals 77.147% x $152,705,392 = $117,807,629 which is quite close to the results shown in Table 10.5.a for Seattle's Energy revenue requirement of $117,807,813.

Note, at this stage, Seattle residential and small general service customers exclude the network residential and small general service customers. Also note that the total revenue requirement for each area equals the sum over all classes in the area rather than the product of share of load for the area and total nonnetwork revenue requirements.[13] The bottom row in each section shows each class's share of the total service territory's revenue requirements that are allocated by marginal cost shares.

Tables 10.6.a and **10.6.b** present the allocated revenue requirements by function by area and class on a dollar per MWh basis. Note that the dollars per MWh for any given functionalized revenue requirement are the same for all nonnetwork customers in the same class, but differ from the corresponding results for the same class in the network area. Also note that the dollars per MWh for Energy are very similar among all classes,

[13] Total revenue requirement for an area, such as Tukwila, is a weighted sum over all the classes in the area. Each area has a different composition of load among the classes. The total load for an area does not reflect the different class composition of that load; hence, multiplying the share of total nonnetwork load by area by the total revenue requirement for a functionalized revenue requirement will not provide an accurate assessment of the total revenue requirement for any given functional category.

reflecting the fact that though there are some differences in load profiles and losses among the classes, these differences are, ultimately, rather small in the overall scheme of things. Though there are only small differences in Energy results, note that the Energy results are slightly lower for network customers than their nonnetwork counterparts. This reflects, primarily, that network losses are smaller than losses through the nonnetwork distribution system. The most striking results from Table 10.6 are the significantly higher distribution-related revenue requirements for network customers. These results reflect the oft-stated proposition that distribution costs for network customers are significantly higher than for their nonnetwork counterparts.

Table 10.4.a
Initial Allocation of Functionalized Revenue Requirements, 2013

Total Service Territory							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$471,863,799**	**$157,135,556**	**$58,051,729**	**$121,280,629**	**$74,595,447**	**$57,043,283**	**$3,757,156**
Production	**124,764,790**	41,547,974	15,349,369	32,067,627	19,723,669	15,082,728	993,424
Purchased Power	**258,753,156**	86,167,494	31,833,482	66,505,940	40,905,463	31,280,487	2,060,289
Transmission - Long Distance	**38,952,547**	12,971,603	4,792,194	10,011,765	6,157,884	4,708,946	310,155
Conservation	**49,393,306**	16,448,485	6,076,683	12,695,297	7,808,431	5,971,122	393,288
Retail Service	**$329,170,401**	**$155,199,633**	**$36,457,199**	**$65,603,136**	**$42,708,312**	**$16,594,252**	**$12,607,869**
Distribution	**255,473,689**	96,403,756	29,747,151	61,723,730	39,784,656	15,283,726	12,530,669
Transmission - In Service Area	**15,918,360**	6,186,745	1,895,360	3,976,575	2,350,631	1,411,490	97,559
Stations	**43,126,317**	16,459,113	5,120,019	10,919,696	6,631,517	3,737,635	258,337
Wires & Related Equipment	**140,316,555**	57,126,680	16,022,180	33,606,285	23,819,105	9,118,031	624,273
Transformers	**30,413,925**	7,251,300	4,395,802	12,613,058	5,151,222	845,399	157,143
Meters (excludes meter reading)	**14,305,175**	9,379,918	2,313,790	608,116	1,832,181	171,171	0
Streetlights/Floodlights	**11,393,357**	0	0	0	0	0	11,393,357
Customer Costs	**61,212,298**	53,860,911	5,228,062	904,560	1,050,108	168,656	0
Low-Income Assistance	**12,484,415**	4,934,966	1,481,985	2,974,846	1,873,548	1,141,870	77,201
Total	**$801,034,200**	**$312,335,189**	**$94,508,927**	**$186,883,765**	**$117,303,759**	**$73,637,534**	**$16,365,025**
Percent of Service Territory	100.0%	39.0%	11.8%	23.3%	14.6%	9.2%	2.0%
Total Nonnetwork (Excludes Network Residential & Small)							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	
Energy	**$403,548,134**	**$152,705,392**	**$51,084,776**	**$93,641,178**	**$45,316,349**	**$57,043,283**	**$3,757,156**
Production	**$106,701,549**	$40,376,601	$13,507,248	$24,759,522	$11,982,027	$15,082,728	$993,424
Purchased Power	**$221,291,300**	$83,738,151	$28,013,056	$51,349,458	$24,849,858	$31,280,487	$2,060,289
Transmission - Long Distance	**$33,313,061**	$12,605,892	$4,217,069	$7,730,117	$3,740,883	$4,708,946	$310,155
Conservation	**$42,242,224**	$15,984,749	$5,347,403	$9,802,081	$4,743,581	$5,971,122	$393,288
Retail Service	**$264,019,350**	**$146,525,193**	**$29,258,517**	**$40,612,517**	**$18,421,003**	**$16,594,252**	**$12,607,869**
Distribution	**$195,916,444**	$90,429,818	$23,179,834	$37,716,284	$16,776,114	$15,283,726	$12,530,669
Transmission - In Service Area	**$13,702,886**	$6,012,642	$1,665,501	$3,090,522	$1,425,172	$1,411,490	$97,559
Stations	**$36,285,329**	$15,921,514	$4,410,257	$8,183,722	$3,773,865	$3,737,635	$258,337
Wires & Related Equipment	**$104,950,865**	$53,476,441	$12,318,427	$20,141,660	$9,272,033	$9,118,031	$624,273
Transformers	**$16,958,258**	$6,209,469	$2,759,839	$5,793,814	$1,192,594	$845,399	$157,143
Meters (excludes meter reading)	**$12,625,749**	$8,809,752	$2,025,810	$506,567	$1,112,450	$171,171	$0
Streetlights/Floodlights	**$11,393,357**						$11,393,357
Customer Costs	**$57,750,142**	$51,364,488	$4,820,442	$757,360	$639,196	$168,656	$0
Low-Income Assistance	**$10,352,763**	$4,730,887	$1,258,241	$2,138,872	$1,005,693	$1,141,870	$77,201
Total	**$667,567,484**	**$299,230,585**	**$80,343,293**	**$134,253,695**	**$63,737,351**	**$73,637,534**	**$16,365,025**
Percent of Service Territory	83.3%	37.4%	10.0%	16.8%	8.0%	9.2%	2.0%
Downtown Network							
	Total	**Residential**	**Small**	**Medium**	**Large**		
Energy	**$68,315,665**	**$4,430,163**	**$6,966,952**	**$27,639,451**	**$29,279,098**		
Production	**$18,063,241**	$1,171,373	$1,842,121	$7,308,105	$7,741,642		
Purchased Power	**$37,461,857**	$2,429,343	$3,820,426	$15,156,482	$16,055,606		
Transmission - Long Distance	**$5,639,486**	$365,712	$575,125	$2,281,648	$2,417,001		
Conservation	**$7,151,082**	$463,736	$729,280	$2,893,216	$3,064,849		
Retail Service	**$65,151,051**	**$8,674,440**	**$7,198,682**	**$24,990,620**	**$24,287,310**		
Distribution	**$59,557,244**	$5,973,938	$6,567,318	$24,007,446	$23,008,542		
Transmission - In Service Area	**$2,215,474**	$174,103	$229,859	$886,053	$925,459		
Stations	**$6,840,987**	$537,599	$709,762	$2,735,974	$2,857,652		
Wires & Related Equipment	**$35,365,690**	$3,650,240	$3,703,753	$13,464,625	$14,547,072		
Transformers	**$13,455,667**	$1,041,831	$1,635,964	$6,819,244	$3,958,629		
Meters (excludes meter reading)	**$1,679,426**	$570,166	$287,980	$101,549	$719,731		
Streetlights/Floodlights							
Customer Costs	**$3,462,155**	$2,496,423	$407,621	$147,200	$410,912		
Low-Income Assistance	**$2,131,652**	$204,079	$223,743	$835,974	$867,855		
Total	**$133,466,717**	**$13,104,604**	**$14,165,634**	**$52,630,070**	**$53,566,408**		
Percent of Service Territory	16.7%	1.6%	1.8%	6.6%	6.7%		

Table 10.4.b
Initial Allocation of Functionalized Revenue Requirements, 2014

Total Service Territory							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$504,529,004**	**$167,446,913**	**$62,103,289**	**$129,261,838**	**$81,822,450**	**$60,288,505**	**$3,606,009**
Production	**128,334,105**	42,592,496	15,796,852	32,879,581	20,812,700	15,335,236	917,239
Purchased Power	**282,182,289**	93,652,799	34,734,273	72,295,945	45,763,169	33,719,267	2,016,835
Transmission - Long Distance	**40,059,714**	13,295,322	4,931,015	10,263,418	6,496,721	4,786,921	286,318
Conservation	**53,952,895**	17,906,296	6,641,149	13,822,893	8,749,860	6,447,081	385,616
Retail Service	**$336,392,837**	**$159,529,437**	**$37,327,628**	**$67,019,540**	**$44,039,711**	**$16,918,077**	**$11,558,445**
Distribution	**259,490,416**	98,218,242	30,360,787	62,937,517	40,946,185	15,541,718	11,485,968
Transmission - In Service Area	**15,791,657**	6,128,148	1,890,011	3,958,093	2,331,237	1,401,070	83,098
Stations	**44,466,195**	16,943,613	5,305,905	11,296,241	6,835,959	3,855,787	228,689
Wires & Related Equipment	**144,713,842**	58,555,962	16,559,230	34,900,749	24,838,038	9,312,723	547,139
Transformers	**29,194,092**	6,831,745	4,221,057	12,156,734	5,055,793	796,018	132,744
Meters (excludes meter reading)	**14,830,333**	9,758,773	2,384,583	625,699	1,885,157	176,120	0
Streetlights/Floodlights	**10,494,297**	0	0	0	0	0	10,494,297
Customer Costs	**63,671,577**	56,090,886	5,393,813	931,635	1,081,540	173,704	0
Low-Income Assistance	**13,230,844**	5,220,310	1,573,027	3,150,389	2,011,987	1,202,655	72,477
Total	**$840,921,841**	**$326,976,350**	**$99,430,917**	**$196,281,378**	**$125,862,161**	**$77,206,582**	**$15,164,454**
Percent of Service Territory	100.0%	38.9%	11.8%	23.3%	15.0%	9.2%	1.8%

Total Nonnetwork (Excludes Network Residential & Small)							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$431,850,984**	**$162,731,312**	**$54,667,976**	**$99,856,104**	**$50,701,078**	**$60,288,505**	**$3,606,009**
Production	**$109,847,420**	$41,393,016	$13,905,575	$25,399,816	$12,896,538	$15,335,236	$917,239
Purchased Power	**$241,533,586**	$91,015,370	$30,575,714	$55,849,364	$28,357,035	$33,719,267	$2,016,835
Transmission - Long Distance	**$34,289,063**	$12,920,902	$4,340,649	$7,928,597	$4,025,677	$4,786,921	$286,318
Conservation	**$46,180,915**	$17,402,023	$5,846,038	$10,678,328	$5,421,829	$6,447,081	$385,616
Retail Service	**$268,985,503**	**$150,525,292**	**$29,895,584**	**$41,242,785**	**$18,845,320**	**$16,918,077**	**$11,558,445**
Distribution	**$197,931,236**	$92,031,882	$23,585,137	$38,195,935	$17,090,595	$15,541,718	$11,485,968
Transmission - In Service Area	**$13,588,442**	$5,955,832	$1,661,310	$3,075,454	$1,411,676	$1,401,070	$83,098
Stations	**$37,395,807**	$16,390,633	$4,571,977	$8,463,744	$3,884,976	$3,855,787	$228,689
Wires & Related Equipment	**$107,261,007**	$54,691,768	$12,636,442	$20,622,571	$9,450,364	$9,312,723	$547,139
Transformers	**$16,096,472**	$5,828,664	$2,627,132	$5,512,952	$1,198,962	$796,018	$132,744
Meters (excludes meter reading)	**$13,095,212**	$9,164,986	$2,088,276	$521,214	$1,144,616	$176,120	$0
Streetlights/Floodlights	**$10,494,297**	$0	$0	$0	$0	$0	$10,494,297
Customer Costs	**$60,074,522**	$53,488,468	$4,973,992	$780,029	$658,329	$173,704	$0
Low-Income Assistance	**$10,979,745**	$5,004,941	$1,336,454	$2,266,821	$1,096,397	$1,202,655	$72,477
Total	**$700,836,487**	**$313,256,603**	**$84,563,560**	**$141,098,890**	**$69,546,399**	**$77,206,582**	**$15,164,454**
Percent of Service Territory	83.3%	37.3%	10.1%	16.8%	8.3%	9.2%	1.8%

Downtown Network					
	Total	**Residential**	**Small**	**Medium**	**Large**
Energy	**$72,678,020**	**$4,715,602**	**$7,435,313**	**$29,405,733**	**$31,121,371**
Production	**$18,486,685**	$1,199,480	$1,891,277	$7,479,765	$7,916,162
Purchased Power	**$40,648,704**	$2,637,429	$4,158,559	$16,446,581	$17,406,135
Transmission - Long Distance	**$5,770,651**	$374,420	$590,365	$2,334,822	$2,471,044
Conservation	**$7,771,981**	$504,273	$795,111	$3,144,565	$3,328,031
Retail Service	**$67,407,335**	**$9,004,145**	**$7,432,044**	**$25,776,755**	**$25,194,391**
Distribution	**$61,559,180**	$6,186,359	$6,775,650	$24,741,581	$23,855,590
Transmission - In Service Area	**$2,203,215**	$172,315	$228,701	$882,639	$919,561
Stations	**$7,070,388**	$552,981	$733,928	$2,832,497	$2,950,983
Wires & Related Equipment	**$37,452,835**	$3,864,195	$3,922,788	$14,278,178	$15,387,674
Transformers	**$13,097,620**	$1,003,081	$1,593,926	$6,643,782	$3,856,831
Meters (excludes meter reading)	**$1,735,121**	$593,787	$296,307	$104,485	$740,542
Streetlights/Floodlights	**$0**	$0	$0	$0	$0
Customer Costs	**$3,597,056**	$2,602,417	$419,822	$151,606	$423,211
Low-Income Assistance	**$2,251,099**	$215,368	$236,573	$883,568	$915,590
Total	**$140,085,354**	**$13,719,747**	**$14,867,357**	**$55,182,488**	**$56,315,762**
Percent of Service Territory	16.7%	1.6%	1.8%	6.6%	6.7%

Table 10.5.a
Initial Allocation of 2013 Nonnetwork Revenue Requirements among Seattle, Tukwila and Other Suburbs

Seattle Nonnetwork							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$327,269,274**	**$117,807,813**	**$43,030,393**	**$78,925,221**	**$38,548,878**	**$45,199,813**	**$3,757,156**
Production	**86,532,772**	31,149,385	11,377,601	20,868,498	10,192,650	11,951,214	993,424
Purchased Power	**179,462,713**	64,601,572	23,596,322	43,279,756	21,138,820	24,785,954	2,060,289
Conservation	**27,016,210**	9,725,082	3,552,176	6,515,309	3,182,225	3,731,263	310,155
Transmission - Long Distance	**34,257,579**	12,331,773	4,504,294	8,261,659	4,035,183	4,731,383	393,288
Retail Service	**$213,342,355**	**$113,039,967**	**$24,645,414**	**$34,230,153**	**$15,670,040**	**$13,148,911**	**$12,607,869**
Distribution	**159,990,156**	69,764,000	19,525,139	31,789,071	14,270,796	12,110,481	12,530,669
Transmission - In Service Area	**11,074,656**	4,638,580	1,402,906	2,604,838	1,212,339	1,118,433	97,559
Stations	**29,325,760**	12,282,990	3,714,905	6,897,629	3,210,282	2,961,618	258,337
Wires & Related Equipment	**84,344,656**	41,255,534	10,376,218	16,976,345	7,887,363	7,224,922	624,273
Transformers	**13,839,943**	4,790,427	2,324,703	4,883,301	1,014,494	669,875	157,143
Meters (excludes meter reading)	**10,011,785**	6,796,470	1,706,407	426,958	946,318	135,632	0
Streetlights/Floodlights	**11,393,357**	0	0	0	0	0	11,393,357
Customer Costs	**45,002,359**	39,626,224	4,060,417	638,339	543,740	133,639	0
Low-Income Assistance	**8,349,840**	3,649,743	1,059,858	1,802,742	855,504	904,792	77,201
Total	**$540,611,629**	**$230,847,779**	**$67,675,808**	**$113,155,374**	**$54,218,918**	**$58,348,725**	**$16,365,025**
Percent of Service Territory	67.5%	28.8%	8.4%	14.1%	6.8%	7.3%	2.0%
Tukwila + Shoreline							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	
Energy	**$45,804,723**	**$14,604,156**	**$3,625,171**	**$9,736,964**	**$5,994,963**	**$11,843,469**	
Production	**$12,111,157**	$3,861,463	$958,526	$2,574,536	$1,585,119	$3,131,514	
Purchased Power	**$25,117,665**	$8,008,395	$1,987,913	$5,339,401	$3,287,423	$6,494,533	
Conservation	**$3,781,198**	$1,205,579	$299,259	$803,790	$494,887	$977,683	
Transmission - Long Distance	**$4,794,703**	$1,528,720	$379,472	$1,019,237	$627,535	$1,239,739	
Retail Service	**$26,194,638**	**$14,013,106**	**$2,076,296**	**$4,222,956**	**$2,436,940**	**$3,445,340**	
Distribution	**$19,607,672**	$8,648,360	$1,644,929	$3,921,801	$2,219,336	$3,173,246	
Transmission - In Service Area	**$1,496,169**	$575,026	$118,190	$321,358	$188,538	$293,057	
Stations	**$3,961,865**	$1,522,672	$312,969	$850,957	$499,250	$776,017	
Wires & Related Equipment	**$11,202,525**	$5,114,281	$874,163	$2,094,363	$1,226,610	$1,893,108	
Transformers	**$1,725,443**	$593,850	$195,849	$602,450	$157,770	$175,524	
Meters (excludes meter reading)	**$1,221,670**	$842,531	$143,759	$52,674	$147,168	$35,539	
Streetlights/Floodlights	**$0**	$0	$0	$0	$0	$0	
Customer Costs	**$5,452,707**	$4,912,302	$342,077	$78,752	$84,560	$35,017	
Low-Income Assistance	**$1,134,259**	$452,444	$89,290	$222,403	$133,044	$237,078	
Total	**$71,999,362**	**$28,617,262**	**$5,701,467**	**$13,959,920**	**$8,431,904**	**$15,288,810**	
Percent of Service Territory	9.0%	3.6%	0.7%	1.7%	1.1%	1.9%	
Other Suburbs							
	Total	**Residential**	**Small**	**Medium**	**Large**		
Energy	**$30,474,136**	**$20,293,423**	**$4,429,212**	**$4,978,994**	**$772,507**		
Production	**$8,057,620**	$5,365,753	$1,171,121	$1,316,488	$204,257		
Purchased Power	**$16,710,922**	$11,128,184	$2,428,821	$2,730,301	$423,615		
Conservation	**$2,515,652**	$1,675,230	$365,633	$411,018	$63,771		
Transmission - Long Distance	**$3,189,942**	$2,124,256	$463,637	$521,186	$80,864		
Retail Service	**$24,482,357**	**$19,472,120**	**$2,536,806**	**$2,159,407**	**$314,022**		
Distribution	**$16,318,617**	$12,017,458	$2,009,765	$2,005,412	$285,982		
Transmission - In Service Area	**$1,132,061**	$799,036	$144,404	$164,326	$24,295		
Stations	**$2,997,705**	$2,115,852	$382,383	$435,137	$64,333		
Wires & Related Equipment	**$9,403,684**	$7,106,626	$1,068,047	$1,070,952	$158,060		
Transformers	**$1,392,872**	$825,193	$239,287	$308,063	$20,330		
Meters (excludes meter reading)	**$1,392,294**	$1,170,751	$175,644	$26,935	$18,964		
Streetlights/Floodlights	**$0**	$0	$0	$0	$0		
Customer Costs	**$7,295,076**	$6,825,963	$417,948	$40,270	$10,896		
Low-Income Assistance	**$868,663**	$628,700	$109,094	$113,726	$17,144		
Total	**$54,956,493**	**$39,765,544**	**$6,966,019**	**$7,138,401**	**$1,086,529**		
Percent of Service Territory	6.9%	5.0%	0.9%	0.9%	0.1%		

Table 10.5.b
Initial Allocation of 2014 Nonnetwork Revenue Requirements among Seattle, Tukwila and Other Suburbs

Seattle Nonnetwork							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$350,744,954**	**$125,540,422**	**$46,041,099**	**$84,141,528**	**$43,606,286**	**$47,809,610**	**$3,606,009**
Production	**89,216,952**	31,932,986	11,711,206	21,402,591	11,091,877	12,161,052	917,239
Purchased Power	**196,171,109**	70,214,563	25,750,715	47,060,226	24,388,928	26,739,841	2,016,835
Conservation	**27,849,227**	9,967,937	3,655,673	6,680,856	3,462,349	3,796,094	286,318
Transmission - Long Distance	**37,507,667**	13,424,935	4,923,504	8,997,855	4,663,132	5,112,624	385,616
Retail Service	**$217,237,152**	**$116,123,987**	**$25,177,913**	**$34,752,317**	**$16,208,224**	**$13,416,266**	**$11,558,445**
Total Distribution	**161,556,809**	70,998,760	19,863,286	32,184,956	14,699,044	12,324,795	11,485,968
Transmission - In Service Area	**10,993,588**	4,594,676	1,399,147	2,591,463	1,214,135	1,111,068	83,098
Stations	**30,254,690**	12,644,690	3,850,496	7,131,786	3,341,337	3,057,692	228,689
Wires & Related Equipment	**86,272,114**	42,192,418	10,642,349	17,377,151	8,127,939	7,385,117	547,139
Transformers	**13,149,679**	4,496,571	2,212,557	4,645,367	1,031,187	631,253	132,744
Meters (excludes meter reading)	**10,392,440**	7,070,404	1,758,736	439,189	984,445	139,666	0
Streetlights/Floodlights	**10,494,297**	0	0	0	0	0	10,494,297
Customer Costs	**46,814,424**	41,264,123	4,189,071	657,274	566,206	137,749	0
Low-Income Assistance	**8,865,918**	3,861,104	1,125,555	1,910,086	942,974	953,722	72,477
Total	**$567,982,105**	**$241,664,409**	**$71,219,012**	**$118,893,845**	**$59,814,509**	**$61,225,877**	**$15,164,454**
Percent of Service Territory	67.5%	28.7%	8.5%	14.1%	7.1%	7.3%	1.8%

Tukwila + Shoreline							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$48,630,378**	**$15,555,121**	**$3,887,071**	**$10,417,705**	**$6,291,586**	**$12,478,895**	
Production	**$12,369,826**	$3,956,666	$988,732	$2,649,891	$1,600,354	$3,174,184	
Purchased Power	**$27,198,895**	$8,699,955	$2,174,033	$5,826,606	$3,518,874	$6,979,427	
Conservation	**$3,861,263**	$1,235,080	$308,634	$827,168	$499,553	$990,827	
Transmission - Long Distance	**$5,200,394**	$1,663,420	$415,672	$1,114,040	$672,804	$1,334,457	
Retail Service	**$26,657,150**	**$14,388,375**	**$2,125,673**	**$4,302,743**	**$2,338,549**	**$3,501,810**	
Total Distribution	**$19,796,700**	$8,797,121	$1,676,980	$3,984,874	$2,120,802	$3,216,923	
Transmission - In Service Area	**$1,473,462**	$569,305	$118,125	$320,853	$175,177	$290,002	
Stations	**$4,055,013**	$1,566,744	$325,082	$882,998	$482,094	$798,095	
Wires & Related Equipment	**$11,378,168**	$5,227,863	$898,492	$2,151,494	$1,172,712	$1,927,606	
Transformers	**$1,632,643**	$557,149	$186,798	$575,151	$148,781	$164,765	
Meters (excludes meter reading)	**$1,257,412**	$876,060	$148,483	$54,377	$142,037	$36,454	
Streetlights/Floodlights	**$0**	$0	$0	$0	$0	$0	
Customer Costs	**$5,665,535**	$5,112,843	$353,667	$81,378	$81,693	$35,954	
Low-Income Assistance	**$1,194,915**	$478,411	$95,026	$236,491	$136,054	$248,933	
Total	**$75,287,528**	**$29,943,496**	**$6,012,744**	**$14,720,448**	**$8,630,135**	**$15,980,705**	
Percent of Service Territory	9.0%	3.6%	0.7%	1.8%	1.0%	1.9%	

Other Sjuburbs							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$32,475,653**	**$21,635,768**	**$4,739,806**	**$5,296,872**	**$803,207**		
Production	**$8,260,643**	$5,503,364	$1,205,637	$1,347,334	$204,307		
Purchased Power	**$18,163,582**	$12,100,852	$2,650,966	$2,962,532	$449,232		
Conservation	**$2,578,574**	$1,717,885	$376,342	$420,573	$63,775		
Transmission - Long Distance	**$3,472,854**	$2,313,667	$506,861	$566,432	$85,893		
Retail Service	**$25,091,201**	**$20,012,930**	**$2,591,998**	**$2,187,726**	**$298,548**		
Total Distribution	**$16,577,727**	$12,236,001	$2,044,871	$2,026,105	$270,749		
Transmission - In Service Area	**$1,121,391**	$791,851	$144,038	$163,138	$22,364		
Stations	**$3,086,103**	$2,179,199	$396,398	$448,960	$61,546		
Wires & Related Equipment	**$9,610,725**	$7,271,486	$1,095,601	$1,093,925	$149,713		
Transformers	**$1,314,149**	$774,944	$227,777	$292,435	$18,994		
Meters (excludes meter reading)	**$1,445,359**	$1,218,521	$181,057	$27,648	$18,133		
Streetlights/Floodlights	**$0**	$0	$0	$0	$0		
Customer Costs	**$7,594,562**	$7,111,502	$431,254	$41,377	$10,429		
Low-Income Assistance	**$918,912**	$665,427	$115,873	$120,244	$17,369		
Total	**$57,566,854**	**$41,648,698**	**$7,331,804**	**$7,484,597**	**$1,101,754**		
Percent of Service Territory	6.8%	5.0%	0.9%	0.9%	0.1%		

Table 10.6.a
Initial Allocation of 2013 Revenue Requirements, $/MWH

Seattle Nonnetwork (Excluding Network Residential & Small)							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$ 48.870**	**$ 49.213**	**$ 49.304**	**$ 48.943**	**$ 48.871**	**$ 47.698**	**$ 46.272**
Production	$ 12.922	13.012	13.037	12.941	12.922	12.612	12.235
Purchased Power	$ 26.798	26.987	27.037	26.839	26.799	26.156	25.374
Conservation	$ 4.034	4.063	4.070	4.040	4.034	3.937	3.820
Transmission - Long Distance	$ 5.116	5.151	5.161	5.123	5.116	4.993	4.844
Retail Service	**$ 31.857**	**$ 47.221**	**$ 28.239**	**$ 21.227**	**$ 19.866**	**$ 13.876**	**$ 155.273**
Total Distribution	**$ 23.891**	**29.143**	**22.372**	**19.713**	**18.092**	**12.780**	**154.322**
- Transmission - In Service Area	$ 1.654	1.938	1.607	1.615	1.537	1.180	1.201
- Stations	$ 4.379	5.131	4.257	4.277	4.070	3.125	3.182
- Wires & Related Equipment	$ 12.595	17.234	11.889	10.527	9.999	7.624	7.688
- Transformers	$ 2.067	2.001	2.664	3.028	1.286	0.707	1.935
- Meters, (except Meter Reading)	$ 1.495	2.839	1.955	0.265	1.200	0.143	0.000
- Streetlights/Floodlights	$ 1.701						140.316
Customer Costs	**$ 6.720**	16.553	4.652	0.396	0.689	0.141	0.000
Low-Income Assistance	**$ 1.247**	1.525	1.214	1.118	1.085	0.955	0.951
Total	**$ 80.727**	**$ 96.434**	**$ 77.543**	**$ 70.170**	**$ 68.737**	**$ 61.574**	**$ 201.545**
Tukwila + Shoreline							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$ 48.718**	**$ 49.213**	**$ 49.304**	**$ 48.943**	**$ 48.871**	**$ 47.698**	
Production	$ 12.882	13.012	13.037	12.941	12.922	12.612	
Purchased Power	$ 26.715	26.987	27.037	26.839	26.799	26.156	
Conservation	$ 4.022	4.063	4.070	4.040	4.034	3.937	
Transmission - Long Distance	$ 5.100	5.151	5.161	5.123	5.116	4.993	
Retail Service	**$ 27.861**	**$ 47.221**	**$ 28.239**	**$ 21.227**	**$ 19.866**	**$ 13.876**	
Total Distribution	**$ 20.855**	**29.143**	**22.372**	**19.713**	**18.092**	**12.780**	
- Transmission - In Service Area	$ 1.591	1.938	1.607	1.615	1.537	1.180	
- Stations	$ 4.214	5.131	4.257	4.277	4.070	3.125	
- Wires & Related Equipment	$ 11.915	17.234	11.889	10.527	9.999	7.624	
- Transformers	$ 1.835	2.001	2.664	3.028	1.286	0.707	
- Meters, (except Meter Reading)	$ 1.299	2.839	1.955	0.265	1.200	0.143	
- Streetlights/Floodlights							
Customer Costs	**$ 5.800**	16.553	4.652	0.396	0.689	0.141	
Low-Income Assistance	**$ 1.206**	1.525	1.214	1.118	1.085	0.955	
Total	**$ 76.579**	**$ 96.434**	**$ 77.543**	**$ 70.170**	**$ 68.737**	**$ 61.574**	
Other Suburbs							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$ 49.173**	**$ 49.213**	**$ 49.304**	**$ 48.943**	**$ 48.871**		
Production	$ 13.002	13.012	13.037	12.941	12.922		
Purchased Power	$ 26.965	26.987	27.037	26.839	26.799		
Conservation	$ 4.059	4.063	4.070	4.040	4.034		
Transmission - Long Distance	$ 5.147	5.151	5.161	5.123	5.116		
Retail Service	**$ 39.505**	**$ 47.221**	**$ 28.239**	**$ 21.227**	**$ 19.866**		
Total Distribution	**$ 26.332**	**29.143**	**22.372**	**19.713**	**18.092**		
- Transmission - In Service Area	$ 1.827	1.938	1.607	1.615	1.537		
- Stations	$ 4.837	5.131	4.257	4.277	4.070		
- Wires & Related Equipment	$ 15.174	17.234	11.889	10.527	9.999		
- Transformers	$ 2.248	2.001	2.664	3.028	1.286		
- Meters, (except Meter Reading)	$ 2.247	2.839	1.955	0.265	1.200		
- Streetlights/Floodlights							
Customer Costs	**$ 11.771**	16.553	4.652	0.396	0.689		
Low-Income Assistance	**$ 1.402**	1.525	1.214	1.118	1.085		
Total	**$ 88.678**	**$ 96.434**	**$ 77.543**	**$ 70.170**	**$ 68.737**		
Downtown Network							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$ 48.862**	**$ 49.219**	**$ 49.293**	**$ 48.785**	**$ 48.780**		
Production	$ 12.920	13.014	13.033	12.899	12.898		
Purchased Power	$ 26.794	26.990	27.030	26.752	26.749		
Transmission - Long Distance	$ 4.034	4.063	4.069	4.027	4.027		
Conservation	$ 5.115	5.152	5.160	5.107	5.106		
Retail Service	**$ 46.599**	**$ 96.373**	**$ 50.932**	**$ 44.110**	**$ 40.464**		
Total Distribution	**$ 42.598**	**66.371**	**46.465**	**42.374**	**38.333**		
- Transmission - In Service Area	$ 1.585	1.934	1.626	1.564	1.542		
- Stations	$ 4.893	5.973	5.022	4.829	4.761		
- Wires & Related Equipment	$ 25.295	40.554	26.205	23.766	24.236		
- Transformers	$ 9.624	11.575	11.575	12.036	6.595		
- Meters, (except Meter Reading)	$ 1.201	6.335	2.038	0.179	1.199		
- Streetlights/Floodlights							
Customer Costs	**$ 2.476**	27.735	2.884	0.260	0.685		
Low-Income Assistance	**$ 1.525**	2.267	1.583	1.476	1.446		
Total	**$ 95.461**	**$ 145.593**	**$ 100.225**	**$ 92.895**	**$ 89.244**		

Table 10.6.b
Initial Allocation of 2014 Revenue Requirements, $/MWH

Seattle Nonnetwork (Excluding Network Residential & Small)							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$ 51.781**	**$ 52.583**	**$ 52.167**	**$ 51.623**	**$ 51.187**	**$ 50.389**	**$ 49.480**
Production	$ 13.171	13.375	13.269	13.131	13.020	12.817	12.586
Purchased Power	$ 28.961	29.409	29.177	28.873	28.629	28.182	27.674
Conservation	$ 4.111	4.175	4.142	4.099	4.064	4.001	3.929
Transmission - Long Distance	$ 5.537	5.623	5.579	5.520	5.474	5.388	5.291
Retail Service	**$ 32.071**	**$ 48.639**	**$ 28.528**	**$ 21.322**	**$ 19.026**	**$ 14.140**	**$ 158.598**
Total Distribution	**$ 23.851**	**29.738**	**22.506**	**19.746**	**17.255**	**12.990**	**157.604**
- Transmission - In Service Area	$ 1.623	1.924	1.585	1.590	1.425	1.171	1.140
- Stations	$ 4.467	5.296	4.363	4.376	3.922	3.223	3.138
- Wires & Related Equipment	$ 12.737	17.672	12.058	10.661	9.541	7.784	7.508
- Transformers	$ 1.941	1.883	2.507	2.850	1.210	0.665	1.821
- Meters, (except Meter Reading)	$ 1.534	2.961	1.993	0.269	1.156	0.147	0.000
- Streetlights/Floodlights	$ 1.549						143.997
Customer Costs	**$ 6.911**	17.284	4.746	0.403	0.665	0.145	0.000
Low-Income Assistance	**$ 1.309**	1.617	1.275	1.172	1.107	1.005	0.994
Total	**$ 83.853**	**$ 101.221**	**$ 80.694**	**$ 72.945**	**$ 70.214**	**$ 64.529**	**$ 208.078**

Tukwila + Shoreline							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$ 51.586**	**$ 52.583**	**$ 52.167**	**$ 51.623**	**$ 51.187**	**$ 50.389**	
Production	$ 13.122	13.375	13.269	13.131	13.020	12.817	
Purchased Power	$ 28.852	29.409	29.177	28.873	28.629	28.182	
Conservation	$ 4.096	4.175	4.142	4.099	4.064	4.001	
Transmission - Long Distance	$ 5.516	5.623	5.579	5.520	5.474	5.388	
Retail Service	**$ 28.277**	**$ 48.639**	**$ 28.528**	**$ 21.322**	**$ 19.026**	**$ 14.140**	
Total Distribution	**$ 21.000**	**29.738**	**22.506**	**19.746**	**17.255**	**12.990**	
- Transmission - In Service Area	$ 1.563	1.924	1.585	1.590	1.425	1.171	
- Stations	$ 4.301	5.296	4.363	4.376	3.922	3.223	
- Wires & Related Equipment	$ 12.070	17.672	12.058	10.661	9.541	7.784	
- Transformers	$ 1.732	1.883	2.507	2.850	1.210	0.665	
- Meters, (except Meter Reading)	$ 1.334	2.961	1.993	0.269	1.156	0.147	
- Streetlights/Floodlights							
Customer Costs	**$ 6.010**	17.284	4.746	0.403	0.665	0.145	
Low-Income Assistance	**$ 1.268**	1.617	1.275	1.172	1.107	1.005	
Total	**$ 79.863**	**$ 101.221**	**$ 80.694**	**$ 72.945**	**$ 70.214**	**$ 64.529**	

Other Suburbs							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$ 52.328**	**$ 52.583**	**$ 52.167**	**$ 51.623**	**$ 51.187**		
Production	$ 13.310	13.375	13.269	13.131	13.020		
Purchased Power	$ 29.267	29.409	29.177	28.873	28.629		
Conservation	$ 4.155	4.175	4.142	4.099	4.064		
Transmission - Long Distance	$ 5.596	5.623	5.579	5.520	5.474		
Retail Service	**$ 40.429**	**$ 48.639**	**$ 28.528**	**$ 21.322**	**$ 19.026**		
Total Distribution	**$ 26.712**	**29.738**	**22.506**	**19.746**	**17.255**		
- Transmission - In Service Area	$ 1.807	1.924	1.585	1.590	1.425		
- Stations	$ 4.973	5.296	4.363	4.376	3.922		
- Wires & Related Equipment	$ 15.486	17.672	12.058	10.661	9.541		
- Transformers	$ 2.117	1.883	2.507	2.850	1.210		
- Meters, (except Meter Reading)	$ 2.329	2.961	1.993	0.269	1.156		
- Streetlights/Floodlights							
Customer Costs	**$ 12.237**	17.284	4.746	0.403	0.665		
Low-Income Assistance	**$ 1.481**	1.617	1.275	1.172	1.107		
Total	**$ 92.757**	**$ 101.221**	**$ 80.694**	**$ 72.945**	**$ 70.214**		

Downtown Network							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	**$ 51.563**	**$ 52.547**	**$ 52.141**	**$ 51.445**	**$ 51.392**		
Production	$ 13.116	13.366	13.263	13.086	13.072		
Purchased Power	$ 28.839	29.389	29.162	28.773	28.743		
Transmission - Long Distance	$ 4.094	4.172	4.140	4.085	4.081		
Conservation	$ 5.514	5.619	5.576	5.501	5.496		
Retail Service	**$ 47.823**	**$ 100.335**	**$ 52.118**	**$ 45.096**	**$ 41.604**		
Total Distribution	**$ 43.674**	**68.936**	**47.515**	**43.285**	**39.394**		
- Transmission - In Service Area	$ 1.563	1.920	1.604	1.544	1.519		
- Stations	$ 5.016	6.162	5.147	4.955	4.873		
- Wires & Related Equipment	$ 26.572	43.060	27.509	24.980	25.410		
- Transformers	$ 9.292	11.178	11.178	11.623	6.369		
- Meters, (except Meter Reading)	$ 1.231	6.617	2.078	0.183	1.223		
- Streetlights/Floodlights							
Customer Costs	**$ 2.552**	28.999	2.944	0.265	0.699		
Low-Income Assistance	**$ 1.597**	2.400	1.659	1.546	1.512		
Total	**$ 99.386**	**$ 152.882**	**$ 104.259**	**$ 96.541**	**$ 92.996**		

Chapter 11: Final Revenue Requirements

11.1 Base Rates–Rates without a Rate Change

It is useful to compare the 2013 annual average rates by customer class ultimately to be developed for each class with current (2012) annual average rates. Such a comparison indicates for each class as a group whether, assuming their consumption and its characteristics do not change, their total bills as a group will increase or decrease. **Table 11.1** presents the annual average rate for the customer classes based on current rates (effective January 2012) but consumption and its characteristics as projected for 2013. Average rates for all the Totals and for the groups at the Service Territory and Total Nonnetwork level are weighted averages of rates of their various rate categories.

Table 11.1
2013 Rates without a Rate Change, $/KWH and Load

Service Territory							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Avg. 2013 Rates w/o Change, $/kWh	$0.070542	$0.080540	$0.069538	$0.065426	$0.065156	$0.057540	$0.141000
Load (MWH)	9,654,834	3,192,967	1,177,448	2,479,809	1,527,488	1,195,924	81,198
Load * Rates * 1000 = Total $	$681,070,943	$257,162,670	$81,876,961	$162,244,783	$99,524,548	$68,813,063	$11,448,918
Total Nonnetwork*							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Avg. 2013 Rates w/o Change, $/kWh	$0.070343	$0.080540	$0.069538	$0.062990	$0.061753	$0.057540	$0.141000
Load (MWH)	8,488,054	3,192,967	1,177,448	1,913,254	927,264	1,195,924	81,198
Load * Rates * 1000 = Total $	$597,079,333	$257,162,670	$81,876,961	$120,516,136	$57,261,585	$68,813,063	$11,448,918
Seattle Nonnetwork*							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Avg. 2013 Rates w/o Change, $/kWh	$0.069170	$0.078709	$0.069000	$0.062175	$0.060906	$0.056973	$0.141000
Load (MWH)	6,928,129	2,483,852	1,014,088	1,612,581	788,788	947,623	81,198
Load * Rates * 1000 = Total $	$479,215,775	$195,501,766	$69,972,063	$100,262,882	$48,041,594	$53,988,553	$11,448,918
Tukwila + Shoreline							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	
Avg. 2013 Rates w/o Change, $/kWh	$0.072374	$0.088121	$0.073700	$0.067636	$0.066813	$0.059704	
Load (MWH)	940,194	296,755	73,526	198,943	122,669	248,301	
Load * Rates * 1000 = Total $	$68,045,440	$26,150,466	$5,418,886	$13,455,743	$8,195,835	$14,824,510	
Other Suburbs							
	Total	**Residential**	**Small**	**Medium**	**Large**		
Avg. 2013 Rates w/o Change, $/kWh	$0.080387	$0.086115	$0.072200	$0.066819	$0.064791		
Load (MWH)	619,731	412,360	89,834	101,730	15,807		
Load * Rates * 1000 = Total $	$49,818,118	$35,510,438	$6,486,012	$6,797,511	$1,024,156		
Other SuburbsNetwork (Excludes Network Residential & Small)							
	Total	**Residential**	**Small**	**Medium**	**Large**		
Avg. 2013 Rates w/o Change, $/kWh	$0.071986			$0.073653	$0.070412		
Load (MWH)	1,166,780			566,556	600,224		
Load * Rates * 1000 = Total $	$83,991,610			$41,728,647	$42,262,963		

* Includes Network Residential & Small

Derivation of Rates Without a Change

Rates without a change for 2013 for each customer class are computed as the product of current (2012) rates and billing determinants estimated for the class for 2013. Billing determinants are all the components that are billed with base rates. For example, the billing determinants for residential class customers in, say, Other Suburbs, equals the projected consumption in 2013 of energy billed at first block rate, energy billed at second block rate and the number of meter-days subject to the daily base service charge. The amount of energy billed at the first and second blocks is derived from current information of the share of annual load for this class of customers that is in those two blocks of energy consumption. The number of meter-days subject to the daily base service charge

equals the projected number of residential meters for this class multiplied by the number of days in the year.

Billing determinants for Small General Service customers equals the amount of consumption for Small customers in each area. Billing determinants for Medium General Service customers have an energy and a demand component. Recent information that relates the annual demand for Medium customers to annual energy consumption is used with the forecast of load for these customers to create estimates of the energy and demand for the future. Billing determinants for Large and High Demand customers are similar to those for Medium customers except that the energy and demand factors are further subdivided between peak and off-peak periods. Again, relationships between these four components to total energy consumption in a recent period is used in conjunction with the forecast for the future to produce billing determinants for the future year.

Billing determinants for Lights follow the same basic logic but there are many kinds of lights and many of these can be purchased with varying amounts of capital equipment. (See Rate Design Report 2013-2014, Chapter 8). Since lights are more complicated than the other classes, more detail is given here about constructing the rates without a change for 2013.

An example of typical billing determinants for a light would be a 52-watt LED streetlight, which uses 19 kWh/month. The components of the 2013 monthly charge for this type of light are shown below:

Component	**Consumption**	**Rate**	**Total**
Energy-monthly average use	19 kWh	$0.0573	$1.09
Annualized capital cost-monthly rate			$4.61
Annual O&M cost-monthly rate			$0.98
Total monthly charge			**$6.68**

In 2013, it is estimated that City Light will have 21,739 such lights in the system and the annual revenue from them will amount to $6.68 x 21,739 x 12 or about $1.7 million.

Rates without a rate change for lights in 2013 equals the number of all types of lights forecasted for 2013 multiplied by the 2012 rates. The table below shows how the 2013 average rate without a rate change for lights was derived. The total annual bill at 2012 rates shown below is slightly different (about $4,000) from the dollar amount used in the cost allocation study because of minor adjustments made after the cost of service analysis had been completed.

Table 11.2
2013 Rate without a Rate Change for Streetlights and Floodlights

Light Type	Watt Type	Service Description	No. 2013	2012 Rate	Mo. Bill 2012	Annual Bill 2012
Floodlight	70W	Option E HPS	12	$ 2.07	$ 24.84	$ 298.08
Floodlight	100W	Option E HPS	15	3.57	53.55	642.60
Floodlight	250W	Option E HPS	9	7.91	71.19	854.28
Floodlight	400W	Option E HPS	4	11.63	46.52	558.24
Floodlight	100W	Option M HPS	3	9.77	29.31	351.72
Floodlight	150W	Option M HPS	20	11.78	235.60	2,827.20
Floodlight	200W	Option M HPS	163	12.73	2,074.99	24,899.88
Floodlight	250W	Option M HPS	342	14.51	4,962.42	59,549.04
Floodlight	400W	Option M HPS	2,451	17.65	43,260.15	519,121.80
LED	48W	Option C	16	$ 4.50	$ 72.00	$ 864.00
LED	49W	Option C	69	5.27	363.63	4,363.56
LED	52W	Option C	21,739	3.77	81,956.03	983,472.36
LED	58W	Option C	11	4.11	45.21	542.52
LED	60W	Option C	18	4.78	86.04	1,032.48
LED	70W	Option C	15,699	4.81	75,512.19	906,146.28
LED	70W	Option C PE cell only	3	1.95	5.85	70.20
LED	72W	Option C	136	5.42	737.12	8,845.44
LED	109W	Option C	4	7.08	28.32	339.84
LED	140W	Option C	3	10.37	31.11	373.32
LED	142W	Option C	4	9.70	38.80	465.60
LED	221W	Option C	62	15.08	934.96	11,219.52
LED	230W	Option C	5	14.82	74.10	889.20
Pedestrian	70W	Option M	184	7.63	1,403.92	16,847.04
Pedestrian	70W	Option C	339	14.29	4,844.31	58,131.72
Pedestrian	70W	Option P	73	42.30	3,087.90	37,054.80
Streetlight	70W	Option M HPS	20	8.83	176.60	2,119.20
Streetlight	100W	Option M HPS	267	7.20	1,922.40	23,068.80
Streetlight	150W	Option M HPS	3	8.73	26.19	314.28
Streetlight	200W	Option M HPS	78	9.81	765.18	9,182.16
Streetlight	250W	Option M HPS	253	11.61	2,937.33	35,247.96
Streetlight	400W	Option M HPS	109	15.33	1,670.97	20,051.64
Streetlight	35W	Option C HPS	65	8.59	558.35	6,700.20
Streetlight	50W	Option C HPS	238	8.67	2,063.46	24,761.52
Streetlight	70W	Option C HPS	130	8.83	1,147.90	13,774.80
Streetlight	100W	Option C HPS	9,777	10.28	100,507.56	1,206,090.72
Streetlight	150W	Option C HPS	1,932	11.86	22,913.52	274,962.24
Streetlight	200W	Option C HPS	8,011	13.13	105,184.43	1,262,213.16
Streetlight	200W/CB	Option C HPS	251	19.75	4,957.25	59,487.00
Streetlight	250W	Option C HPS	11,996	14.90	178,740.40	2,144,884.80
Streetlight	250W/CB	Option C HPS	36	23.54	847.44	10,169.28
Streetlight	400W	Option C HPS	16,408	18.77	307,978.16	3,695,737.92
Streetlight	400W/CB	Option C HPS	35	31.39	1,098.65	13,183.80
Streetlight	360W	Option C Unilux	32	17.91	573.12	6,877.44
Streetlight	72W	Option C Fluorescent	40	9.29	371.60	4,459.20
Total			**91,065**		**$ 954,420.57**	**$ 11,453,046.84**
2013 MWh						81,198
Avg Rate/MWh without a Rate Change						**$141**

11.2 Franchise Agreements

As explained above in Section 4.2, City Light has franchise agreements with five suburban jurisdictions (Shoreline, Lake Forest Park, SeaTac, Burien and Tukwila) that

lead to rate differentials compared to Seattle rates. Other suburban areas are treated similarly and the revenue from these rate differentials is credited to Seattle residential customers.

Tables 11.3.a and **11.3.b**, present the calculations for these franchise-related adjustments to rates. The top two rows present the $/MW by class from Table 10.6. The next set of rows [labeled as 1S(eattle), 1TS(for Tukwila/Shoreline) and 1O(ther)] present the load for 2013 from Table 6.4. The "2" rows indicate the revenues associated with Energy and Non-Energy[14] for the three areas. The "3" rows indicate the amount of incremental revenue associated with the maximum permitted by the franchise agreements. The "4" rows indicate the total amount of revenue by energy, and also non-energy for Tukwila/Shoreline, that has been augmented by the increase stipulated in "3". The "5" rows repeat the $/MWh from the top two rows to indicate energy and non-energy costs per MWh for Seattle nonnetwork customers, then presents the new $/MWh for the two suburban areas. The "6" rows show the ratios of the suburban rates to their counterpart Seattle rates. This last set of rows is a double-check to confirm that the ratios conform to the permitted terms of the agreements.[15] As indicated, the "3" rows indicate how much more the suburban areas will pay over and beyond what the cost of service analysis suggests because of the franchise agreement terms. The sum of those amounts is credited to Seattle nonnetwork residential customers in a subsequent step.

11.3 Allocation of Net Wholesale Revenue

The revenue requirements allocated based on marginal cost shares are offset by net wholesale revenue. **Tables 11.4.a 11.4.b**, in the top two rows, show those revenue requirements allocated by marginal cost shares and the share of each class relative to the total revenue requirements allocated by marginal cost shares. Data in these top two rows come from Tables 10.4 and 10.5. The third row of each section indicates the share of net wholesale revenue allocated to each class, which equals the class share multiplied by the total net wholesale revenue. The last row in each section presents the net, to this stage in the rate-making process, of all revenue requirement allocations.

[14] The franchise agreements do not define the 'distribution' portion of rates. This term has been interpreted for operational purposes since the inception of the agreements to mean the difference between the total rate and the energy rate, i.e., as the non-energy rate.

[15] The ratios for the total column for each area do not equal the ratios for the indicated classes as the average rate for the total for each area represents a weighted average of all the classes and the weights for the classes differ among all the areas.

Table 11.3.a
Suburban Franchise Adjustments, 2013

	adj %	Total	Residential	Small	Medium	Large	High Demand	Lights
Base Case Nonnetwork Energy, $/MWH		$48.870	$49.213	$49.304	$48.943	$48.871	$47.698	$46.272
Base Case Nonnetwork Non-Energy, $/MWH		$31.857	$47.221	$28.239	$21.227	$19.866	$13.876	$155.273
1S. Seattle Nonnetwork, MWH		6,696,782	2,393,843	872,749	1,612,581	788,788	947,623	81,198
1TS. Tukwila+Shoreline, MWH		940,194	296,755	73,526	198,943	122,669	248,301	
1O. Other Suburbs, MWH		619,731	412,360	89,834	101,730	15,807		
2TSE. Base Energy Revenue, Tukwila+Shoreline		$45,804,723	$14,604,156	$3,625,171	$9,736,964	$5,994,963	$11,843,469	
2TSN. Base Non-Energy Revenue, Tukwila+Shoreline		$26,194,638	$14,013,106	$2,076,296	$4,222,956	$2,436,940	$3,445,340	
2OE. Base Energy Revenue, Other Suburbs		$30,474,136	$20,293,423	$4,429,212	$4,978,994	$772,507	$0	
3TSE. Adjustment 1, D Energy Rev. from Tukwila+Shoreline	8%	$3,664,378	$1,168,332	$290,014	$778,957	$479,597	$947,478	
3TSN. Adjustment 1, D Non-Energy Rev. from Tukwila+Shoreline	6%	$1,571,678	$840,786	$124,578	$253,377	$146,216	$206,720	
3OE. Adjustment 1, D Energy Rev. from Oth.Subs	8%	$2,437,931	$1,623,474	$354,337	$398,319	$61,801	$0	
4TSE. Adjustment 1, Total Energy Rev. from Tukwila+Shoreline		$49,469,101	$15,772,489	$3,915,184	$10,515,921	$6,474,560	$12,790,947	
4TSN. Adjustment 1, Total Non-Energy Rev. from Tukwila+Shoreline		$27,766,317	$14,853,892	$2,200,874	$4,476,334	$2,583,157	$3,652,061	
4OE. Adjustment 1, Total Energy Rev. from Oth.Subs		$32,912,067	$21,916,897	$4,783,549	$5,377,313	$834,307	$0	
5SE. Base Energy, $/MWH, Seattle		$48.870	$49.213	$49.304	$48.943	$48.871	$47.698	
5SN. Base Non-Energy, $/MWH, Seattle		$31.857	$47.221	$28.239	$21.227	$19.866	$13.876	
5TSE. Adjusted Energy, $/MWH, Tukwila+Shoreline	8%	$52.616	$53.150	$53.249	$52.859	$52.781	$51.514	
5TSN. Adjusted Non-Energy, $/MWH, Tukwila+Shoreline	6%	$29.533	$50.054	$29.933	$22.501	$21.058	$14.708	
5OE. Adjusted Energy, $/MWH, Oth. Subs	8%	$53.107	$53.150	$53.249	$52.859	$52.781		
6TSE. Check, Ratio, Energy, (Tukwila+Shoreline)/City	8%	1.077	1.080	1.080	1.080	1.080	1.080	
6TSN. Check, Ratio, Non-Energy, (Tukwila+Shoreline)/City	6%	0.927	1.060	1.060	1.060	1.060	1.060	
6ON. Check, Ratio, Energy, Oth.Subs/City	8%	1.087	1.080	1.080	1.080	1.080		

Table 11.3.b
Suburban Franchise Adjustments, 2014

	adj %	Total	Residential	Small	Medium	Large	High Demand	Lights
Base Case Nonnetwork Energy, $/MWH		$51.781	$52.583	$52.167	$51.623	$51.187	$50.389	$49.480
Base Case Nonnetwork Non-Energy, $/MWH		$32.071	$48.639	$28.528	$21.322	$19.026	$14.140	$158.598
1S. Seattle Nonnetwork, MWH		6,773,569	2,387,483	882,579	1,629,917	851,894	948,817	72,879
1TS. Tukwila+Shoreline, MWH		942,703	295,822	74,513	201,803	122,913	247,653	
1O. Other Suburbs, MWH		620,618	411,461	90,859	102,606	15,691		
2TSE. Base Energy Revenue, Tukwila+Shoreline		$48,630,378	$15,555,121	$3,887,071	$10,417,705	$6,291,586	$12,478,895	
2TSN. Base Non-Energy Revenue, Tukwila+Shoreline		$26,657,150	$14,388,375	$2,125,673	$4,302,743	$2,338,549	$3,501,810	
2OE. Base Energy Revenue, Other Suburbs		$32,475,653	$21,635,768	$4,739,806	$5,296,872	$803,207	$0	
3TSE. Adjustment 1, D Energy Rev. from Tukwila+Shoreline	8%	$3,890,430	$1,244,410	$310,966	$833,416	$503,327	$998,312	
3TSN. Adjustment 1, D Non-Energy Rev. from Tukwila+Shoreline	6%	$1,599,429	$863,302	$127,540	$258,165	$140,313	$210,109	
3OE. Adjustment 1, D Energy Rev. from Oth.Subs	8%	$2,598,052	$1,730,861	$379,184	$423,750	$64,257	$0	
4TSE. Adjustment 1, Total Energy Rev. from Tukwila+Shoreline		$52,520,808	$16,799,531	$4,198,037	$11,251,121	$6,794,913	$13,477,206	
4TSN. Adjustment 1, Total Non-Energy Rev. from Tukwila+Shoreline		$28,256,579	$15,251,677	$2,253,214	$4,560,908	$2,478,862	$3,711,919	
4OE. Adjustment 1, Total Energy Rev. from Oth.Subs		$35,073,705	$23,366,630	$5,118,991	$5,720,622	$867,463	$0	
5SE. Base Energy, $/MWH, Seattle		$51.781	$52.583	$52.167	$51.623	$51.187	$50.389	
5SN. Base Non-Energy, $/MWH, Seattle		$32.071	$48.639	$28.528	$21.322	$19.026	$14.140	
5TSE. Adjusted Energy, $/MWH, Tukwila+Shoreline	8%	$55.713	$56.789	$56.340	$55.753	$55.282	$54.420	
5TSN. Adjusted Non-Energy, $/MWH, Tukwila+Shoreline	6%	$29.974	$51.557	$30.239	$22.601	$20.168	$14.988	
5OE. Adjusted Energy, $/MWH, Oth. Subs	8%	$56.514	$56.789	$56.340	$55.753	$55.282		
6TSE. Check, Ratio, Energy, (Tukwila+Shoreline)/City	8%	1.076	1.080	1.080	1.080	1.080	1.080	
6TSN. Check, Ratio, Non-Energy, (Tukwila+Shoreline)/City	6%	0.935	1.060	1.060	1.060	1.060	1.060	
6ON. Check, Ratio, Energy, Oth.Subs/City	8%	1.091	1.080	1.080	1.080	1.080		

Table 11.4.a
Allocation of Net Wholesale Revenue, 2013

Service Territory							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Initial Allocated Rev Requirements	$801,034,200	$312,335,189	$94,508,927	$186,883,765	$117,303,759	$73,637,534	$16,365,025
Share of Allocated Rev Requirements	100.000%	38.991%	11.798%	23.330%	14.644%	9.193%	2.043%
Net Wholesale Power Credits	($90,000,000)	($35,092,343)	($10,618,527)	($20,997,279)	($13,179,635)	($8,273,527)	($1,838,688)
Net Revenue Requirements*	$711,034,200	$277,242,846	$83,890,400	$165,886,486	$104,124,124	$65,364,007	$14,526,337
Total Nonnetwork (Excluding Network Residential and Small)							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Initial Allocated Rev Requirements	$667,567,484	$299,230,585	$80,343,293	$134,253,695	$63,737,351	$73,637,534	$16,365,025
Share of Allocated Rev Requirements	83.338%	37.356%	10.030%	16.760%	7.957%	9.193%	2.043%
Net Wholesale Power Credits	(75,004,380)	(33,619,979)	(9,026,951)	(15,084,041)	(7,161,194)	(8,273,527)	(1,838,688)
Net Revenue Requirements*	592,563,104	265,610,607	71,316,342	119,169,654	56,576,157	65,364,007	14,526,337
Seattle Nonnetwork (Excluding Network Residential and Small)							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Initial Allocated Rev Requirements	$540,611,629	$230,847,779	$67,675,808	$113,155,374	$54,218,918	$58,348,725	$16,365,025
Share of Allocated Rev Requirements	67.489%	28.819%	8.449%	14.126%	6.769%	7.284%	2.043%
Net Wholesale Power Credits	(60,740,286)	(25,936,845)	(7,603,699)	(12,713,544)	(6,091,753)	(6,555,757)	(1,838,688)
Net Revenue Requirements*	479,871,343	204,910,934	60,072,109	100,441,830	48,127,165	51,792,968	14,526,337
Tukwila & Shoreline							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Initial Allocated Rev Requirements	$71,999,362	$28,617,262	$5,701,467	$13,959,920	$8,431,904	$15,288,810	
Share of Allocated Rev Requirements	8.988%	3.573%	0.712%	1.743%	1.053%	1.909%	
Net Wholesale Power Credits	(8,089,471)	(3,215,285)	(640,587)	(1,568,463)	(947,364)	(1,717,770)	
Net Revenue Requirements*	63,909,891	25,401,977	5,060,880	12,391,456	7,484,539	13,571,039	
Other Suburbs							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Initial Allocated Rev Requirements	$54,956,493	$39,765,544	$6,966,019	$7,138,401	$1,086,529		
Share of Allocated Rev Requirements	6.861%	4.964%	0.870%	0.891%	0.136%		
Net Wholesale Power Credits	(6,174,623)	(4,467,848)	(782,665)	(802,033)	(122,077)		
Net Revenue Requirements*	48,781,870	35,297,696	6,183,353	6,336,368	964,453		
Network							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Initial Allocated Rev Requirements	$133,466,717	$13,104,604	$14,165,634	$52,630,070	$53,566,408		
Share of Allocated Rev Requirements	16.662%	1.636%	1.768%	6.570%	6.687%		
Net Wholesale Power Credits	(14,995,620)	(1,472,365)	(1,591,576)	(5,913,239)	(6,018,441)		
Net Revenue Requirements*	118,471,097	11,632,239	12,574,058	46,716,832	47,547,967		

(*) Excluding Franchise Adjustments

Table 11.4.b
Allocation of Net Wholesale Revenue, 2014

Service Territory							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Initial Allocated Rev Requirements	$840,921,841	$326,976,350	$99,430,917	$196,281,378	$125,862,161	$77,206,582	$15,164,454
Share of Allocated Rev Requirements	100.000%	38.883%	11.824%	23.341%	14.967%	9.181%	1.803%
Net Wholesale Power Credits	($85,000,000)	($33,050,622)	($10,050,432)	($19,840,033)	($12,722,090)	($7,804,006)	($1,532,816)
Net Revenue Requirements*	$755,921,841	$293,925,728	$89,380,485	$176,441,345	$113,140,071	$69,402,575	$13,631,638
Total Nonnetwork (Excluding Network Residential and Small)							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Initial Allocated Rev Requirements	$700,836,487	$313,256,603	$84,563,560	$141,098,890	$69,546,399	$77,206,582	$15,164,454
Share of Allocated Rev Requirements	83.341%	37.252%	10.056%	16.779%	8.270%	9.181%	1.803%
Net Wholesale Power Credits	($70,840,236)	($31,663,836)	($8,547,646)	($14,262,212)	($7,029,719)	($7,804,006)	($1,532,816)
Net Revenue Requirements*	$629,996,251	$281,592,767	$76,015,913	$126,836,678	$62,516,680	$69,402,575	$13,631,638
Seattle Nonnetwork (Excluding Network Residential and Small)							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Initial Allocated Rev Requirements	$567,982,105	$241,664,409	$71,219,012	$118,893,845	$59,814,509	$61,225,877	$15,164,454
Share of Allocated Rev Requirements	67.543%	28.738%	8.469%	14.139%	7.113%	7.281%	1.803%
Net Wholesale Power Credits	($57,411,375)	($24,427,329)	($7,198,786)	($12,017,736)	($6,046,024)	($6,188,684)	($1,532,816)
Net Revenue Requirements*	$510,570,731	$217,237,080	$64,020,226	$106,876,109	$53,768,486	$55,037,193	$13,631,638
Tukwila & Shoreline							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	
Initial Allocated Rev Requirements	$75,287,528	$29,943,496	$6,012,744	$14,720,448	$8,630,135	$15,980,705	
Share of Allocated Rev Requirements	8.953%	3.561%	0.715%	1.751%	1.026%	1.900%	
Net Wholesale Power Credits	($7,610,029)	($3,026,675)	($607,765)	($1,487,936)	($872,330)	($1,615,322)	
Net Revenue Requirements*	$67,677,499	$26,916,821	$5,404,979	$13,232,511	$7,757,805	$14,365,383	
Other Suburbs							
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Initial Allocated Rev Requirements	$57,566,854	$41,648,698	$7,331,804	$7,484,597	$1,101,754		
Share of Allocated Rev Requirements	6.846%	4.953%	0.872%	0.890%	0.131%		
Net Wholesale Power Credits	(5,818,832)	(4,209,832)	(741,095)	(756,540)	(111,365)		
Net Revenue Requirements*	51,748,022	37,438,867	6,590,708	6,728,058	990,389		
Network							
	Total	**Residential**	**Small**	**Medium**	**Large**		
Initial Allocated Rev Requirements	$140,085,354	$13,719,747	$14,867,357	$55,182,488	$56,315,762		
Share of Allocated Rev Requirements	16.659%	1.632%	1.768%	6.562%	6.697%		
Net Wholesale Power Credits	($14,159,764)	($1,386,786)	($1,502,786)	($5,577,821)	($5,692,372)		
Net Revenue Requirements*	$125,925,590	$12,332,961	$13,364,571	$49,604,667	$50,623,390		
(*) Excluding Franchise Adjusts							

11.4 Consolidation of Seattle Network/Nonnetwork Residential and Small General Service Classes

The main beneficiaries of network service are the medium and large customers within the network area. The cost of service and an allocation of revenue requirements was estimated for all classes within the network area (Table 10.4) and adjusted by a proportionate share of net wholesale revenue credits (Table 11.4). But as one of the final steps in the allocation of revenue requirements, the revenue requirements and loads for the network residential and small general service customers are consolidated with the revenue requirements and loads for Seattle non-network residential and small general service customers. Next, the sum of the franchise adjustments from the "3" rows in Table 11.2 are credited to Seattle residential customers. Thus, one set of rates is established for all residential and one set of rates for all small general service customers within Seattle. **Table 11.5.a** and **11.5.b** present these consolidations.

Table 11.5.a
Consolidation of Seattle Residential and Small General Service Classes
And Crediting Seattle Residential with Revenue from Franchise Adjustments, 2013

	Seattle		
	Residential	**Small**	source
Net Rev Reqmnt	$ 204,910,934	$ 60,072,109	Table 11.4.a

	Network		
	Residential	**Small**	source
	$ 11,632,239	$ 12,574,058	Table 11.4.a

	Seattle + Network		
	Residential	**Small**	source
Net Rev Reqmnt	$ 216,543,173	$ 72,646,167	sum, sect.3 of
Franchise Adjustment	$ (7,673,987)		Table 11.3.a
Adjusted Rev. Reqmnt	$ 208,869,186	$ 72,646,167	

Table 11.5.b
Consolidation of Seattle Residential and Small General Service Classes
And Crediting Seattle Residential with Revenue from Franchise Adjustments, 2014

	Seattle		
	Residential	**Small**	source
Net Rev Reqmnt	$ 217,237,080	$ 64,020,226	Table 11.4.b

	Network		
	Residential	**Small**	source
	$ 12,332,961	$ 13,364,571	Table 11.4.b

	Seattle + Network		
	Residential	**Small**	source
Net Rev Reqmnt	$ 229,570,041	$ 77,384,797	sum, sect.3 of
Franchise Adjustment	$ (8,087,911)		Table 11.3.b
Adjusted Rev. Reqmnt	$ 221,482,129	$ 77,384,797	

11.5 Summary of Final Allocation of Revenue Requirements

Tables 11.6 – 11.11 (parts a and b) present a detailed summary of all pertinent data from the tables in Chapters 10 and 11. Note that tables representing consolidations of more detailed classes, such as the Total Nonnetwork and the Total Service Territory, show the sums of details from the tables of the detailed classes. Tables **11.12.a** and **11.12.b** present a one-page summary of the major data items for 2013 and 2014. The results in these tables represent the final outcome of the cost of service model including the franchise agreement adjustments and the consolidation of all residential and small general service customers within the City of Seattle.

Appendix 3 presents an example of how all the revenue requirements pieces add up for one customer class, indicating the table where each dollar amount is found in this document. The

example is for the Seattle High Demand class in 2013. This appendix shows the derivation of results for this class from **Table 11.8.a**.

Appendix 4 presents a summary chart of the costs on a dollar per MWH basis for the Nonnetwork and Network retail customer classes by functional cost component for 2013. This chart illustrates how the $/MWH for energy is very similar among all the classes and that the main differences among the classes is the $/MWH for distribution services. This latter point explains the major reason how/why the network customers have a higher rate than the other classes in 2013.

Table 11.6.a
Detailed Summary of Final Allocation of Revenue Requirements for 2013
Total Service Territory

	Total Service Territory						
Total $	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	$ 471,863,799	$ 157,135,556	$ 58,051,729	$ 121,280,629	$ 74,595,447	$ 57,043,283	$ 3,757,156
Production	$ 124,764,790	41,547,974	15,349,369	32,067,627	19,723,669	15,082,728	993,424
Purchased Power	$ 258,753,156	86,167,494	31,833,482	66,505,940	40,905,463	31,280,487	2,060,289
Conservation	$ 38,952,547	12,971,603	4,792,194	10,011,765	6,157,884	4,708,946	310,155
Transmission - Long Distance	$ 49,393,306	16,448,485	6,076,683	12,695,297	7,808,431	5,971,122	393,288
Retail Service	$ 329,170,401	155,199,633	36,457,199	65,603,136	42,708,312	16,594,252	12,607,869
Total Distribution	$ 255,473,689	96,403,756	29,747,151	61,723,730	39,784,656	15,283,726	12,530,669
- Transmission - In Service Area	$ 15,918,360	6,186,745	1,895,360	3,976,575	2,350,631	1,411,490	97,559
- Stations	$ 43,126,317	16,459,113	5,120,019	10,919,696	6,631,517	3,737,635	258,337
- Wires & Related Equipment	$ 140,316,555	57,126,680	16,022,180	33,606,285	23,819,105	9,118,031	624,273
- Transformers	$ 30,413,925	7,251,300	4,395,802	12,613,058	5,151,222	845,399	157,143
- Meters, (except Meter Reading)	$ 14,305,175	9,379,918	2,313,790	608,116	1,832,181	171,171	0
- Streetlights/Floodlights	$ 11,393,357	0	0	0	0	0	11,393,357
Customer Costs	$ 61,212,298	53,860,911	5,228,062	904,560	1,050,108	168,656	0
Low-Income Assistance	$ 12,484,415	4,934,966	1,481,985	2,974,846	1,873,548	1,141,870	77,201
Total	$ 801,034,200	312,335,189	94,508,927	186,883,765	117,303,759	73,637,534	16,365,025
Share of Total $	100.000%	38.991%	11.798%	23.330%	14.644%	9.193%	2.043%
Franchise Engy Adjustment	$ 6,102,309	2,791,806	644,351	1,177,277	541,398	947,478	0
Franchise Non-Engy Adjustment	$ 1,571,678	840,786	124,578	253,377	146,216	206,720	0
Seattle Res Adjust for Franch. Adjust.	$ (7,673,987)	-7,673,987	0	0	0	0	0
Sum of Franchise Adjustments	$ -	-4,041,394	768,928	1,430,654	687,614	1,154,198	0
Revised Total	$ 801,034,200	308,293,795	95,277,855	188,314,419	117,991,373	74,791,732	16,365,025
Net Wholesale Revenue Credit	$ (90,000,000)	-35,092,343	-10,618,527	-20,997,279	-13,179,635	-8,273,527	-1,838,688
Final Revenue Requirement	**$ 711,034,200**	**$ 273,201,452**	**$ 84,659,328**	**$ 167,317,140**	**$ 104,811,738**	**$ 66,518,205**	**$ 14,526,337**
Load	9,654,834	3,192,967	1,177,448	2,479,809	1,527,488	1,195,924	81,198
New Average Annual Rate, $/MWH	**$ 73.645**	**$ 85.56**	**$ 71.90**	**$ 67.47**	**$ 68.62**	**$ 55.62**	**$ 178.90**
Current Rate, $/MWH	$ 70.542	$ 80.54	$ 69.54	$ 65.43	$ 65.16	$ 57.54	$ 141.00
Percent Change in Rate	**4.40%**	**6.24%**	**3.40%**	**3.13%**	**5.31%**	**-3.33%**	**26.88%**
$/MWH							
Energy	$ 48.873	$ 49.213	$ 49.303	$ 48.907	$ 48.835	$ 47.698	$ 46.272
Production	$ 12.923	13.012	13.036	12.931	12.912	12.612	12.235
Purchased Power	$ 26.800	26.987	27.036	26.819	26.780	26.156	25.374
Conservation	$ 4.035	4.063	4.070	4.037	4.031	3.937	3.820
Transmission - Long Distance	$ 5.116	5.151	5.161	5.119	5.112	4.993	4.844
Retail Service	$ 34.094	$ 48.607	$ 30.963	$ 26.455	$ 27.960	$ 13.876	$ 155.273
Total Distribution	$ 26.461	30.193	25.264	24.891	26.046	12.780	154.322
- Transmission - In Service Area	$ 1.649	1.938	1.610	1.604	1.539	1.180	1.201
- Stations	$ 4.467	5.155	4.348	4.403	4.341	3.125	3.182
- Wires & Related Equipment	$ 14.533	17.891	13.608	13.552	15.594	7.624	7.688
- Transformers	$ 3.150	2.271	3.733	5.086	3.372	0.707	1.935
- Meters, (except Meter Reading)	$ 1.482	2.938	1.965	0.245	1.199	0.143	0.000
- Streetlights/Floodlights	$ 1.180	0.000	0.000	0.000	0.000	0.000	140.316
Customer Costs	$ 6.340	16.869	4.440	0.365	0.687	0.141	0.000
Low-Income Assistance	$ 1.293	1.546	1.259	1.200	1.227	0.955	0.951
Total	$ 82.967	$ 97.820	$ 80.266	$ 75.362	$ 76.795	$ 61.574	$ 201.545
Franchise Engy Adjustment	$ 0.632	0.874	0.547	0.475	0.354	0.792	0.000
Franchise Non-Engy Adjustment	$ 0.163	0.263	0.106	0.102	0.096	0.173	0.000
Seattle Res Adjust for Franch. Adjust.	$ (0.795)	-2.403	0.000	0.000	0.000	0.000	0.000
Sum of Franchise Adjustments	$ -	-1.266	0.653	0.577	0.450	0.965	0.000
Revised Total	$ 82.967	96.554	80.919	75.939	77.245	62.539	201.545
Net Wholesale Revenue Credit	$ (9.322)	-10.991	-9.018	-8.467	-8.628	-6.918	-22.645
Final Revenue Requirement	**$ 73.645**	**$ 85.564**	**$ 71.901**	**$ 67.472**	**$ 68.617**	**$ 55.621**	**$ 178.900**

Table 11.6.b
Detailed Summary of Final Allocation of Revenue Requirements for 2014
Total Service Territory

	Total Service Territory						
Total $	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	$ 504,529,004	$ 167,446,913	$ 62,103,289	$ 129,261,838	$ 81,822,450	$ 60,288,505	$ 3,606,009
Production	$ 128,334,105	42,592,496	15,796,852	32,879,581	20,812,700	15,335,236	917,239
Purchased Power	$ 282,182,289	93,652,799	34,734,273	72,295,945	45,763,169	33,719,267	2,016,835
Conservation	$ 40,059,714	13,295,322	4,931,015	10,263,418	6,496,721	4,786,921	286,318
Transmission - Long Distance	$ 53,952,895	17,906,296	6,641,149	13,822,893	8,749,860	6,447,081	385,616
Retail Service	$ 336,392,837	159,529,437	37,327,628	67,019,540	44,039,711	16,918,077	11,558,445
Total Distribution	$ 259,490,416	98,218,242	30,360,787	62,937,517	40,946,185	15,541,718	11,485,968
- Transmission - In Service Area	$ 15,791,657	6,128,148	1,890,011	3,958,093	2,331,237	1,401,070	83,098
- Stations	$ 44,466,195	16,943,613	5,305,905	11,296,241	6,835,959	3,855,787	228,689
- Wires & Related Equipment	$ 144,713,842	58,555,962	16,559,230	34,900,749	24,838,038	9,312,723	547,139
- Transformers	$ 29,194,092	6,831,745	4,221,057	12,156,734	5,055,793	796,018	132,744
- Meters, (except Meter Reading)	$ 14,830,333	9,758,773	2,384,583	625,699	1,885,157	176,120	0
- Streetlights/Floodlights	$ 10,494,297	0	0	0	0	0	10,494,297
Customer Costs	$ 63,671,577	56,090,886	5,393,813	931,635	1,081,540	173,704	0
Low-Income Assistance	$ 13,230,844	5,220,310	1,573,027	3,150,389	2,011,987	1,202,655	72,477
Total	$ 840,921,841	326,976,350	99,430,917	196,281,378	125,862,161	77,206,582	15,164,454
Share of Total $	100.000%	38.883%	11.824%	23.341%	14.967%	9.181%	1.803%
Franchise Engy Adjustment	$ 6,488,482	2,975,271	690,150	1,257,166	567,583	998,312	0
Franchise Non-Engy Adjustment	$ 1,599,429	863,302	127,540	258,165	140,313	210,109	0
Seattle Res Adjust for Franch. Adjust.	$ (8,087,911)	-8,087,911	0	0	0	0	0
Sum of Franchise Adjustments	$ -	-4,249,338	817,691	1,515,331	707,896	1,208,420	0
Revised Total	$ 840,921,841	322,727,013	100,248,607	197,796,708	126,570,057	78,415,002	15,164,454
Net Wholesale Revenue Credit	$ (85,000,000)	-33,050,622	-10,050,432	-19,840,033	-12,722,090	-7,804,006	-1,532,816
Final Revenue Requirement	**$ 755,921,841**	**$ 289,676,391**	**$ 90,198,175**	**$ 177,956,675**	**$ 113,847,967**	**$ 70,610,995**	**$ 13,631,638**
Load	9,746,397	3,184,507	1,190,552	2,505,920	1,596,070	1,196,470	72,879
New Average Annual Rate, $/MWH	**$ 77.559**	**$ 90.96**	**$ 75.76**	**$ 71.01**	**$ 71.33**	**$ 59.02**	**$ 187.05**
Current Rate, $/MWH	$ 73.445	$ 85.56	$ 71.90	$ 67.47	$ 68.35	$ 55.62	$ 178.90
Percent Change in Rate	**5.60%**	**6.31%**	**5.37%**	**5.26%**	**4.36%**	**6.11%**	**4.55%**

$/MWH							
Energy	$ 51.766	$ 52.582	$ 52.163	$ 51.583	$ 51.265	$ 50.389	$ 49.480
Production	$ 13.167	13.375	13.269	13.121	13.040	12.817	12.586
Purchased Power	$ 28.952	29.409	29.175	28.850	28.672	28.182	27.674
Conservation	$ 4.110	4.175	4.142	4.096	4.070	4.001	3.929
Transmission - Long Distance	$ 5.536	5.623	5.578	5.516	5.482	5.388	5.291
Retail Service	$ 34.515	$ 50.095	$ 31.353	$ 26.744	$ 27.593	$ 14.140	$ 158.598
Total Distribution	$ 26.624	30.843	25.501	25.116	25.654	12.990	157.604
- Transmission - In Service Area	$ 1.620	1.924	1.588	1.579	1.461	1.171	1.140
- Stations	$ 4.562	5.321	4.457	4.508	4.283	3.223	3.138
- Wires & Related Equipment	$ 14.848	18.388	13.909	13.927	15.562	7.784	7.508
- Transformers	$ 2.995	2.145	3.545	4.851	3.168	0.665	1.821
- Meters, (except Meter Reading)	$ 1.522	3.064	2.003	0.250	1.181	0.147	0.000
- Streetlights/Floodlights	$ 1.077	0.000	0.000	0.000	0.000	0.000	143.997
Customer Costs	$ 6.533	17.614	4.531	0.372	0.678	0.145	0.000
Low-Income Assistance	$ 1.358	1.639	1.321	1.257	1.261	1.005	0.994
Total	$ 86.280	$ 102.677	$ 83.517	$ 78.327	$ 78.858	$ 64.529	$ 208.078
Franchise Engy Adjustment	$ 0.666	0.934	0.580	0.502	0.356	0.834	0.000
Franchise Non-Engy Adjustment	$ 0.164	0.271	0.107	0.103	0.088	0.176	0.000
Seattle Res Adjust for Franch. Adjust.	$ (0.830)	-2.540	0.000	0.000	0.000	0.000	0.000
Sum of Franchise Adjustments	$ -	-1.334	0.687	0.605	0.444	1.010	0.000
Revised Total	$ 86.280	101.343	84.203	78.932	79.301	65.539	208.078
Net Wholesale Revenue Credit	$ (8.721)	-10.379	-8.442	-7.917	-7.971	-6.523	-21.032
Final Revenue Requirement	**$ 77.559**	**$ 90.964**	**$ 75.762**	**$ 71.015**	**$ 71.330**	**$ 59.016**	**$ 187.045**

Table 11.7.a
Detailed Summary of Final Allocation of Revenue Requirements for 2013
Total Nonnetwork

	Total Nonnetwork (Excluding Network Residential and Small)						
Total $	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	$ 403,548,134	$ 152,705,392	$ 51,084,776	$ 93,641,178	$ 45,316,349	$ 57,043,283	$ 3,757,156
Production	$ 106,701,549	40,376,601	13,507,248	24,759,522	11,982,027	15,082,728	993,424
Purchased Power	$ 221,291,300	83,738,151	28,013,056	51,349,458	24,849,858	31,280,487	2,060,289
Conservation	$ 33,313,061	12,605,892	4,217,069	7,730,117	3,740,883	4,708,946	310,155
Transmission - Long Distance	$ 42,242,224	15,984,749	5,347,403	9,802,081	4,743,581	5,971,122	393,288
Retail Service	$ 264,019,350	146,525,193	29,258,517	40,612,517	18,421,003	16,594,252	12,607,869
Total Distribution	$ 195,916,444	90,429,818	23,179,834	37,716,284	16,776,114	15,283,726	12,530,669
- Transmission - In Service Area	$ 13,702,886	6,012,642	1,665,501	3,090,522	1,425,172	1,411,490	97,559
- Stations	$ 36,285,329	15,921,514	4,410,257	8,183,722	3,773,865	3,737,635	258,337
- Wires & Related Equipment	$ 104,950,865	53,476,441	12,318,427	20,141,660	9,272,033	9,118,031	624,273
- Transformers	$ 16,958,258	6,209,469	2,759,839	5,793,814	1,192,594	845,399	157,143
- Meters, (except Meter Reading)	$ 12,625,749	8,809,752	2,025,810	506,567	1,112,450	171,171	0
- Streetlights/Floodlights	$ 11,393,357	0	0	0	0	0	11,393,357
Customer Costs	$ 57,750,142	51,364,488	4,820,442	757,360	639,196	168,656	0
Low-Income Assistance	$ 10,352,763	4,730,887	1,258,241	2,138,872	1,005,693	1,141,870	77,201
Total	$ 667,567,484	299,230,585	80,343,293	134,253,695	63,737,351	73,637,534	16,365,025
Share of Total Service Territory $	83.338%	37.356%	10.030%	16.760%	7.957%	9.193%	2.043%
Franchise Engy Adjustment	$ 6,102,309	2,791,806	644,351	1,177,277	541,398	947,478	0
Franchise Non-Engy Adjustment	$ 1,571,678	840,786	124,578	253,377	146,216	206,720	0
Seattle Res Adjust for Franch. Adjust.	$ (7,673,987)	-7,673,987	0	0	0	0	0
Sum of Franchise Adjustments	$ -	-4,041,394	768,928	1,430,654	687,614	1,154,198	0
Revised Total	$ 667,567,484	295,189,191	81,112,221	135,684,349	64,424,965	74,791,732	16,365,025
Net Wholesale Revenue Credit	$ (75,004,380)	-33,619,979	-9,026,951	-15,084,041	-7,161,194	-8,273,527	-1,838,688
Final Revenue Requirement	**$ 592,563,104**	**$ 261,569,212**	**$ 72,085,270**	**$ 120,600,308**	**$ 57,263,771**	**$ 66,518,205**	**$ 14,526,337**
Load	8,256,707	3,102,958	1,036,109	1,913,254	927,264	1,195,924	81,198
New Average Annual Rate, $/MWH	**$ 71.767**	**$ 84.30**	**$ 69.57**	**$ 63.03**	**$ 61.76**	**$ 55.62**	**$ 178.90**
Current Rate, $/MWH	$ 70.343	$ 80.54	$ 69.54	$ 62.99	$ 61.75	$ 57.54	$ 141.00
Percent Change in Rate	**2.02%**	**4.66%**	**0.05%**	**0.07%**	**0.00%**	**-3.33%**	**26.88%**

$/MWH							
Energy	$ 48.875	$ 49.213	$ 49.304	$ 48.943	$ 48.871	$ 47.698	$ 46.272
Production	$ 12.923	13.012	13.037	12.941	12.922	12.612	12.235
Purchased Power	$ 26.801	26.987	27.037	26.839	26.799	26.156	25.374
Conservation	$ 4.035	4.063	4.070	4.040	4.034	3.937	3.820
Transmission - Long Distance	$ 5.116	5.151	5.161	5.123	5.116	4.993	4.844
Retail Service	$ 31.976	$ 47.221	$ 28.239	$ 21.227	$ 19.866	$ 13.876	$ 155.273
Total Distribution	$ 23.728	29.143	22.372	19.713	18.092	12.780	154.322
- Transmission - In Service Area	$ 1.660	1.938	1.607	1.615	1.537	1.180	1.201
- Stations	$ 4.395	5.131	4.257	4.277	4.070	3.125	3.182
- Wires & Related Equipment	$ 12.711	17.234	11.889	10.527	9.999	7.624	7.688
- Transformers	$ 2.054	2.001	2.664	3.028	1.286	0.707	1.935
- Meters, (except Meter Reading)	$ 1.529	2.839	1.955	0.265	1.200	0.143	0.000
- Streetlights/Floodlights	$ 1.380	0.000	0.000	0.000	0.000	0.000	140.316
Customer Costs	$ 6.994	16.553	4.652	0.396	0.689	0.141	0.000
Low-Income Assistance	$ 1.254	1.525	1.214	1.118	1.085	0.955	0.951
Total	$ 80.852	$ 96.434	$ 77.543	$ 70.170	$ 68.737	$ 61.574	$ 201.545
Franchise Engy Adjustment	$ 0.739	0.900	0.622	0.615	0.584	0.792	0.000
Franchise Non-Engy Adjustment	$ 0.190	0.271	0.120	0.132	0.158	0.173	0.000
Seattle Res Adjust for Franch. Adjust.	$ (0.929)	-2.473	0.000	0.000	0.000	0.000	0.000
Sum of Franchise Adjustments	$ -	-1.302	0.742	0.748	0.742	0.965	0.000
Revised Total	$ 80.852	95.132	78.285	70.918	69.479	62.539	201.545
Net Wholesale Revenue Credit	$ (9.084)	-10.835	-8.712	-7.884	-7.723	-6.918	-22.645
Final Revenue Requirement	**$ 71.767**	**$ 84.297**	**$ 69.573**	**$ 63.034**	**$ 61.756**	**$ 55.621**	**$ 178.900**

	Total Nonnetwork (* Including Network Residential and Small)						
Total $	**Total ***	**Residential ***	**Small ***	**Medium**	**Large**	**High Demand**	**Lights**
Final Revenue Requirement	**$ 616,769,401**	**$ 273,201,452**	**$ 84,659,328**	**$ 120,600,308**	**$ 57,263,771**	**$ 66,518,205**	**$ 14,526,337**
Load	8,488,054	3,192,967	1,177,448	1,913,254	927,264	1,195,924	81,198
New Average Annual Rate, $/MWH	**$ 72.663**	**$ 85.564**	**$ 71.901**	**$ 63.034**	**$ 61.756**	**$ 55.621**	**$ 178.900**
Current Rate, $/MWH	$ 70.343	$ 80.540	$ 69.538	$ 62.990	$ 61.753	$ 57.540	$ 141.000
Percent Change in Rate	**3.30%**	**6.24%**	**3.40%**	**0.07%**	**0.00%**	**-3.33%**	**26.88%**

Table 11.7.b
Detailed Summary of Final Allocation of Revenue Requirements for 2014
Total Nonnetwork

	Total Nonnetwork (Excluding Network Residential and Small)						
Total $	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	$ 431,850,984	$ 162,731,312	$ 54,667,976	$ 99,856,104	$ 50,701,078	$ 60,288,505	$ 3,606,009
Production	$ 109,847,420	41,393,016	13,905,575	25,399,816	12,896,538	15,335,236	917,239
Purchased Power	$ 241,533,586	91,015,370	30,575,714	55,849,364	28,357,035	33,719,267	2,016,835
Conservation	$ 34,289,063	12,920,902	4,340,649	7,928,597	4,025,677	4,786,921	286,318
Transmission - Long Distance	$ 46,180,915	17,402,023	5,846,038	10,678,328	5,421,829	6,447,081	385,616
Retail Service	$ 268,985,503	150,525,292	29,895,584	41,242,785	18,845,320	16,918,077	11,558,445
Total Distribution	$ 197,931,236	92,031,882	23,585,137	38,195,935	17,090,595	15,541,718	11,485,968
- Transmission - In Service Area	$ 13,588,442	5,955,832	1,661,310	3,075,454	1,411,676	1,401,070	83,098
- Stations	$ 37,395,807	16,390,633	4,571,977	8,463,744	3,884,976	3,855,787	228,689
- Wires & Related Equipment	$ 107,261,007	54,691,768	12,636,442	20,622,571	9,450,364	9,312,723	547,139
- Transformers	$ 16,096,472	5,828,664	2,627,132	5,512,952	1,198,962	796,018	132,744
- Meters, (except Meter Reading)	$ 13,095,212	9,164,986	2,088,276	521,214	1,144,616	176,120	0
- Streetlights/Floodlights	$ 10,494,297	0	0	0	0	0	10,494,297
Customer Costs	$ 60,074,522	53,488,468	4,973,992	780,029	658,329	173,704	0
Low-Income Assistance	$ 10,979,745	5,004,941	1,336,454	2,266,821	1,096,397	1,202,655	72,477
Total	$ 700,836,487	313,256,603	84,563,560	141,098,890	69,546,399	77,206,582	15,164,454
Share of Total Service Territory $	83.341%	37.252%	10.056%	16.779%	8.270%	9.181%	1.803%
Franchise Engy Adjustment	$ 6,488,482	2,975,271	690,150	1,257,166	567,583	998,312	0
Franchise Non-Engy Adjustment	$ 1,599,429	863,302	127,540	258,165	140,313	210,109	0
Seattle Res Adjust for Franch. Adjust.	$ (8,087,911)	-8,087,911	0	0	0	0	0
Sum of Franchise Adjustments	$ -	-4,249,338	817,691	1,515,331	707,896	1,208,420	0
Revised Total	$ 700,836,487	309,007,266	85,381,250	142,614,220	70,254,295	78,415,002	15,164,454
Net Wholesale Revenue Credit	$ (70,840,236)	-31,663,836	-8,547,646	-14,262,212	-7,029,719	-7,804,006	-1,532,816
Final Revenue Requirement	**$ 629,996,251**	**$ 277,343,430**	**$ 76,833,604**	**$ 128,352,008**	**$ 63,224,577**	**$ 70,610,995**	**$ 13,631,638**
Load	8,336,890	3,094,766	1,047,951	1,934,326	990,498	1,196,470	72,879
New Average Annual Rate, $/MWH	**$ 75.567**	**$ 89.62**	**$ 73.32**	**$ 66.35**	**$ 63.83**	**$ 59.02**	**$ 187.05**
Current Rate, $/MWH	$ 72.435	$ 85.56	$ 71.90	$ 63.04	$ 61.71	$ 55.62	$ 178.90
Percent Change in Rate	**4.32%**	**4.74%**	**1.97%**	**5.27%**	**3.44%**	**6.11%**	**4.55%**

$/MWH							
Energy	$ 51.800	$ 52.583	$ 52.167	$ 51.623	$ 51.187	$ 50.389	$ 49.480
Production	$ 13.176	13.375	13.269	13.131	13.020	12.817	12.586
Purchased Power	$ 28.972	29.409	29.177	28.873	28.629	28.182	27.674
Conservation	$ 4.113	4.175	4.142	4.099	4.064	4.001	3.929
Transmission - Long Distance	$ 5.539	5.623	5.579	5.520	5.474	5.388	5.291
Retail Service	$ 32.264	$ 48.639	$ 28.528	$ 21.322	$ 19.026	$ 14.140	$ 158.598
Total Distribution	$ 23.742	29.738	22.506	19.746	17.255	12.990	157.604
- Transmission - In Service Area	$ 1.630	1.924	1.585	1.590	1.425	1.171	1.140
- Stations	$ 4.486	5.296	4.363	4.376	3.922	3.223	3.138
- Wires & Related Equipment	$ 12.866	17.672	12.058	10.661	9.541	7.784	7.508
- Transformers	$ 1.931	1.883	2.507	2.850	1.210	0.665	1.821
- Meters, (except Meter Reading)	$ 1.571	2.961	1.993	0.269	1.156	0.147	0.000
- Streetlights/Floodlights	$ 1.259	0.000	0.000	0.000	0.000	0.000	143.997
Customer Costs	$ 7.206	17.284	4.746	0.403	0.665	0.145	0.000
Low-Income Assistance	$ 1.317	1.617	1.275	1.172	1.107	1.005	0.994
Total	$ 84.064	$ 101.221	$ 80.694	$ 72.945	$ 70.214	$ 64.529	$ 208.078
Franchise Engy Adjustment	$ 0.778	0.961	0.659	0.650	0.573	0.834	0.000
Franchise Non-Engy Adjustment	$ 0.192	0.279	0.122	0.133	0.142	0.176	0.000
Seattle Res Adjust for Franch. Adjust.	$ (0.970)	-2.613	0.000	0.000	0.000	0.000	0.000
Sum of Franchise Adjustments	$ -	-1.373	0.780	0.783	0.715	1.010	0.000
Revised Total	$ 84.064	99.848	81.474	73.728	70.928	65.539	208.078
Net Wholesale Revenue Credit	$ (8.497)	-10.231	-8.157	-7.373	-7.097	-6.523	-21.032
Final Revenue Requirement	**$ 75.567**	**$ 89.617**	**$ 73.318**	**$ 66.355**	**$ 63.831**	**$ 59.016**	**$ 187.045**

	Total Nonnetwork (* Including Network Residential and Small)						
Total $	**Total ***	**Residential ***	**Small ***	**Medium**	**Large**	**High Demand**	**Lights**
Final Revenue Requirement	**$ 655,693,784**	**$ 289,676,391**	**$ 90,198,175**	**$ 128,352,008**	**$ 63,224,577**	**$ 70,610,995**	**$ 13,631,638**
Load	8,569,232	3,184,507	1,190,552	1,934,326	990,498	1,196,470	72,879
New Average Annual Rate, $/MWH	**$ 76.517**	**$ 90.964**	**$ 75.762**	**$ 66.355**	**$ 63.831**	**$ 59.016**	**$ 187.045**
Current Rate, $/MWH	$ 72.435	$ 85.563	$ 71.901	$ 63.035	$ 61.709	$ 55.618	$ 178.900
Percent Change in Rate	**5.64%**	**6.31%**	**5.37%**	**5.27%**	**3.44%**	**6.11%**	**4.55%**

Table 11.8.a
Detailed Summary of Final Allocation of Revenue Requirements for 2013
Seattle Nonnetwork

	Seattle Nonnetwork (Excluding Network Residential and Small)						
Total $	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	$ 327,269,274	$ 117,807,813	$ 43,030,393	$ 78,925,221	$ 38,548,878	$ 45,199,813	$ 3,757,156
Production	$ 86,532,772	31,149,385	11,377,601	20,868,498	10,192,650	11,951,214	993,424
Purchased Power	$ 179,462,713	64,601,572	23,596,322	43,279,756	21,138,820	24,785,954	2,060,289
Conservation	$ 27,016,210	9,725,082	3,552,176	6,515,309	3,182,225	3,731,263	310,155
Transmission - Long Distance	$ 34,257,579	12,331,773	4,504,294	8,261,659	4,035,183	4,731,383	393,288
Retail Service	$ 213,342,355	113,039,967	24,645,414	34,230,153	15,670,040	13,148,911	12,607,869
Total Distribution	$ 159,990,156	69,764,000	19,525,139	31,789,071	14,270,796	12,110,481	12,530,669
- Transmission - In Service Area	$ 11,074,656	4,638,580	1,402,906	2,604,838	1,212,339	1,118,433	97,559
- Stations	$ 29,325,760	12,282,990	3,714,905	6,897,629	3,210,282	2,961,618	258,337
- Wires & Related Equipment	$ 84,344,656	41,255,534	10,376,218	16,976,345	7,887,363	7,224,922	624,273
- Transformers	$ 13,839,943	4,790,427	2,324,703	4,883,301	1,014,494	669,875	157,143
- Meters, (except Meter Reading)	$ 10,011,785	6,796,470	1,706,407	426,958	946,318	135,632	0
- Streetlights/Floodlights	$ 11,393,357	0	0	0	0	0	11,393,357
Customer Costs	$ 45,002,359	39,626,224	4,060,417	638,339	543,740	133,639	0
Low-Income Assistance	$ 8,349,840	3,649,743	1,059,858	1,802,742	855,504	904,792	77,201
Total	$ 540,611,629	230,847,779	67,675,808	113,155,374	54,218,918	58,348,725	16,365,025
Share of Total Service Territory $	67.489%	28.819%	8.449%	14.126%	6.769%	7.284%	2.043%
Franchise Engy Adjustment	$ -	0	0	0	0	0	0
Franchise Non-Engy Adjustment	$ -	0	0	0	0	0	0
Seattle Res Adjust for Franch. Adjust.	$ (7,673,987)	-7,673,987	0	0	0	0	0
Sum of Franchise Adjustments	$ (7,673,987)	-7,673,987	0	0	0	0	0
Revised Total	$ 532,937,642	223,173,792	67,675,808	113,155,374	54,218,918	58,348,725	16,365,025
Net Wholesale Revenue Credit	$ (60,740,286)	-25,936,845	-7,603,699	-12,713,544	-6,091,753	-6,555,757	-1,838,688
Final Revenue Requirement	**$ 472,197,356**	**$ 197,236,947**	**$ 60,072,109**	**$ 100,441,830**	**$ 48,127,165**	**$ 51,792,968**	**$ 14,526,337**
Load	6,696,782	2,393,843	872,749	1,612,581	788,788	947,623	81,198
New Average Annual Rate, $/MWH	**$ 70.511**	**$ 82.39**	**$ 68.83**	**$ 62.29**	**$ 61.01**	**$ 54.66**	**$ 178.90**
Current Rate, $/MWH	$ 69.170	$ 78.71	$ 69.00	$ 62.18	$ 60.91	$ 56.97	$ 141.00
Percent Change in Rate	**1.94%**	**4.68%**	**-0.25%**	**0.18%**	**0.18%**	**-4.07%**	**26.88%**

$/MWH							
Energy	$ 48.870	$ 49.213	$ 49.304	$ 48.943	$ 48.871	$ 47.698	$ 46.272
Production	$ 12.922	13.012	13.037	12.941	12.922	12.612	12.235
Purchased Power	$ 26.798	26.987	27.037	26.839	26.799	26.156	25.374
Conservation	$ 4.034	4.063	4.070	4.040	4.034	3.937	3.820
Transmission - Long Distance	$ 5.116	5.151	5.161	5.123	5.116	4.993	4.844
Retail Service	$ 31.857	$ 47.221	$ 28.239	$ 21.227	$ 19.866	$ 13.876	$ 155.273
Total Distribution	$ 23.891	29.143	22.372	19.713	18.092	12.780	154.322
- Transmission - In Service Area	$ 1.654	1.938	1.607	1.615	1.537	1.180	1.201
- Stations	$ 4.379	5.131	4.257	4.277	4.070	3.125	3.182
- Wires & Related Equipment	$ 12.595	17.234	11.889	10.527	9.999	7.624	7.688
- Transformers	$ 2.067	2.001	2.664	3.028	1.286	0.707	1.935
- Meters, (except Meter Reading)	$ 1.495	2.839	1.955	0.265	1.200	0.143	0.000
- Streetlights/Floodlights	$ 1.701	0.000	0.000	0.000	0.000	0.000	140.316
Customer Costs	$ 6.720	16.553	4.652	0.396	0.689	0.141	0.000
Low-Income Assistance	$ 1.247	1.525	1.214	1.118	1.085	0.955	0.951
Total	$ 80.727	$ 96.434	$ 77.543	$ 70.170	$ 68.737	$ 61.574	$ 201.545
Franchise Engy Adjustment	$ -	0.000	0.000	0.000	0.000	0.000	0.000
Franchise Non-Engy Adjustment	$ -	0.000	0.000	0.000	0.000	0.000	0.000
Seattle Res Adjust for Franch. Adjust.	$ (1.146)	-3.206	0.000	0.000	0.000	0.000	0.000
Sum of Franchise Adjustments	$ (1.146)	-3.206	0.000	0.000	0.000	0.000	0.000
Revised Total	$ 79.581	93.228	77.543	70.170	68.737	61.574	201.545
Net Wholesale Revenue Credit	$ (9.070)	-10.835	-8.712	-7.884	-7.723	-6.918	-22.645
Final Revenue Requirement	**$ 70.511**	**$ 82.393**	**$ 68.831**	**$ 62.286**	**$ 61.014**	**$ 54.656**	**$ 178.900**

	Seattle Nonnetwork (* Including Network Residential and Small)						
Total $	**Total ***	**Residential ***	**Small ***	**Medium**	**Large**	**High Demand**	**Lights**
Final Revenue Requirement	**$ 496,403,653**	**$ 208,869,186**	**$ 72,646,167**	**$ 100,441,830**	**$ 48,127,165**	**$ 51,792,968**	**$ 14,526,337**
Load	6,928,129	2,483,852	1,014,088	1,612,581	788,788	947,623	81,198
New Average Annual Rate, $/MWH	**$ 71.650**	**$ 84.091**	**$ 71.637**	**$ 62.286**	**$ 61.014**	**$ 54.656**	**$ 178.900**
Current Rate, $/MWH	$ 69.170	$ 78.709	$ 69.000	$ 62.175	$ 60.906	$ 56.973	$ 141.000
Percent Change in Rate	**3.59%**	**6.84%**	**3.82%**	**0.18%**	**0.18%**	**-4.07%**	**26.88%**

Table 11.8.b
Detailed Summary of Final Allocation of Revenue Requirements for 2014
Seattle Nonnetwork

	Seattle Nonnetwork (Excluding Network Residential and Small)						
Total $	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Energy	$ 350,744,954	$ 125,540,422	$ 46,041,099	$ 84,141,528	$ 43,606,286	$ 47,809,610	$ 3,606,009
Production	$ 89,216,952	31,932,986	11,711,206	21,402,591	11,091,877	12,161,052	917,239
Purchased Power	$ 196,171,109	70,214,563	25,750,715	47,060,226	24,388,928	26,739,841	2,016,835
Conservation	$ 27,849,227	9,967,937	3,655,673	6,680,856	3,462,349	3,796,094	286,318
Transmission - Long Distance	$ 37,507,667	13,424,935	4,923,504	8,997,855	4,663,132	5,112,624	385,616
Retail Service	$ 217,237,152	116,123,987	25,177,913	34,752,317	16,208,224	13,416,266	11,558,445
Total Distribution	$ 161,556,809	70,998,760	19,863,286	32,184,956	14,699,044	12,324,795	11,485,968
- Transmission - In Service Area	$ 10,993,588	4,594,676	1,399,147	2,591,463	1,214,135	1,111,068	83,098
- Stations	$ 30,254,690	12,644,690	3,850,496	7,131,786	3,341,337	3,057,692	228,689
- Wires & Related Equipment	$ 86,272,114	42,192,418	10,642,349	17,377,151	8,127,939	7,385,117	547,139
- Transformers	$ 13,149,679	4,496,571	2,212,557	4,645,367	1,031,187	631,253	132,744
- Meters, (except Meter Reading)	$ 10,392,440	7,070,404	1,758,736	439,189	984,445	139,666	0
- Streetlights/Floodlights	$ 10,494,297	0	0	0	0	0	10,494,297
Customer Costs	$ 46,814,424	41,264,123	4,189,071	657,274	566,206	137,749	0
Low-Income Assistance	$ 8,865,918	3,861,104	1,125,555	1,910,086	942,974	953,722	72,477
Total	$ 567,982,105	241,664,409	71,219,012	118,893,845	59,814,509	61,225,877	15,164,454
Share of Total Service Territory $	67.543%	28.738%	8.469%	14.139%	7.113%	7.281%	1.803%
Franchise Engy Adjustment	$ -	0	0	0	0	0	0
Franchise Non-Engy Adjustment	$ -	0	0	0	0	0	0
Seattle Res Adjust for Franch. Adjust.	$ (8,087,911)	-8,087,911	0	0	0	0	0
Sum of Franchise Adjustments	$ (8,087,911)	-8,087,911	0	0	0	0	0
Revised Total	$ 559,894,194	233,576,498	71,219,012	118,893,845	59,814,509	61,225,877	15,164,454
Net Wholesale Revenue Credit	$ (57,411,375)	-24,427,329	-7,198,786	-12,017,736	-6,046,024	-6,188,684	-1,532,816
Final Revenue Requirement	**$ 502,482,819**	**$ 209,149,168**	**$ 64,020,226**	**$ 106,876,109**	**$ 53,768,486**	**$ 55,037,193**	**$ 13,631,638**
Load	6,773,569	2,387,483	882,579	1,629,917	851,894	948,817	72,879
New Average Annual Rate, $/MWH	**$ 74.183**	**$ 87.60**	**$ 72.54**	**$ 65.57**	**$ 63.12**	**$ 58.01**	**$ 187.05**
Current Rate, $/MWH	$ 71.389	$ 84.09	$ 71.64	$ 62.29	$ 61.01	$ 54.66	$ 178.90
Percent Change in Rate	**3.91%**	**4.18%**	**1.26%**	**5.27%**	**3.45%**	**6.13%**	**4.55%**

$/MWH							
Energy	$ 51.781	$ 52.583	$ 52.167	$ 51.623	$ 51.187	$ 50.389	$ 49.480
Production	$ 13.171	13.375	13.269	13.131	13.020	12.817	12.586
Purchased Power	$ 28.961	29.409	29.177	28.873	28.629	28.182	27.674
Conservation	$ 4.111	4.175	4.142	4.099	4.064	4.001	3.929
Transmission - Long Distance	$ 5.537	5.623	5.579	5.520	5.474	5.388	5.291
Retail Service	$ 32.071	$ 48.639	$ 28.528	$ 21.322	$ 19.026	$ 14.140	$ 158.598
Total Distribution	$ 23.851	29.738	22.506	19.746	17.255	12.990	157.604
- Transmission - In Service Area	$ 1.623	1.924	1.585	1.590	1.425	1.171	1.140
- Stations	$ 4.467	5.296	4.363	4.376	3.922	3.223	3.138
- Wires & Related Equipment	$ 12.737	17.672	12.058	10.661	9.541	7.784	7.508
- Transformers	$ 1.941	1.883	2.507	2.850	1.210	0.665	1.821
- Meters, (except Meter Reading)	$ 1.534	2.961	1.993	0.269	1.156	0.147	0.000
- Streetlights/Floodlights	$ 1.549	0.000	0.000	0.000	0.000	0.000	143.997
Customer Costs	$ 6.911	17.284	4.746	0.403	0.665	0.145	0.000
Low-Income Assistance	$ 1.309	1.617	1.275	1.172	1.107	1.005	0.994
Total	$ 83.853	$ 101.221	$ 80.694	$ 72.945	$ 70.214	$ 64.529	$ 208.078
Franchise Engy Adjustment	$ -	0.000	0.000	0.000	0.000	0.000	0.000
Franchise Non-Engy Adjustment	$ -	0.000	0.000	0.000	0.000	0.000	0.000
Seattle Res Adjust for Franch. Adjust.	$ (1.194)	-3.388	0.000	0.000	0.000	0.000	0.000
Sum of Franchise Adjustments	$ (1.194)	-3.388	0.000	0.000	0.000	0.000	0.000
Revised Total	$ 82.659	97.834	80.694	72.945	70.214	64.529	208.078
Net Wholesale Revenue Credit	$ (8.476)	-10.231	-8.157	-7.373	-7.097	-6.523	-21.032
Final Revenue Requirement	**$ 74.183**	**$ 87.602**	**$ 72.538**	**$ 65.572**	**$ 63.116**	**$ 58.006**	**$ 187.045**

	Seattle Nonnetwork (* Including Network Residential and Small)						
Total $	**Total ***	**Residential ***	**Small ***	**Medium**	**Large**	**High Demand**	**Lights**
Final Revenue Requirement	**$ 528,180,352**	**$ 221,482,129**	**$ 77,384,797**	**$ 106,876,109**	**$ 53,768,486**	**$ 55,037,193**	**$ 13,631,638**
Load	7,005,911	2,477,224	1,025,180	1,629,917	851,894	948,817	72,879
New Average Annual Rate, $/MWH	**$ 75.391**	**$ 89.407**	**$ 75.484**	**$ 65.572**	**$ 63.116**	**$ 58.006**	**$ 187.045**
Current Rate, $/MWH	$ 71.389	$ 84.091	$ 71.637	$ 62.286	$ 61.014	$ 54.656	$ 178.900
Percent Change in Rate	**5.60%**	**6.32%**	**5.37%**	**5.27%**	**3.45%**	**6.13%**	**4.55%**

Table 11.9.a
Detailed Summary of Final Allocation of Revenue Requirements for 2013
Tukwila and Shoreline

	Tukwila & Shoreline					
Total $	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**
Energy	$ 45,804,723	$ 14,604,156	$ 3,625,171	$ 9,736,964	$ 5,994,963	$ 11,843,469
Production	$ 12,111,157	3,861,463	958,526	2,574,536	1,585,119	3,131,514
Purchased Power	$ 25,117,665	8,008,395	1,987,913	5,339,401	3,287,423	6,494,533
Conservation	$ 3,781,198	1,205,579	299,259	803,790	494,887	977,683
Transmission - Long Distance	$ 4,794,703	1,528,720	379,472	1,019,237	627,535	1,239,739
Retail Service	$ 26,194,638	14,013,106	2,076,296	4,222,956	2,436,940	3,445,340
Total Distribution	$ 19,607,672	8,648,360	1,644,929	3,921,801	2,219,336	3,173,246
- Transmission - In Service Area	$ 1,496,169	575,026	118,190	321,358	188,538	293,057
- Stations	$ 3,961,865	1,522,672	312,969	850,957	499,250	776,017
- Wires & Related Equipment	$ 11,202,525	5,114,281	874,163	2,094,363	1,226,610	1,893,108
- Transformers	$ 1,725,443	593,850	195,849	602,450	157,770	175,524
- Meters, (except Meter Reading)	$ 1,221,670	842,531	143,759	52,674	147,168	35,539
- Streetlights/Floodlights	$ -	0	0	0	0	0
Customer Costs	$ 5,452,707	4,912,302	342,077	78,752	84,560	35,017
Low-Income Assistance	$ 1,134,259	452,444	89,290	222,403	133,044	237,078
Total	$ 71,999,362	28,617,262	5,701,467	13,959,920	8,431,904	15,288,810
Share of Total Service Territory $	8.988%	3.573%	0.712%	1.743%	1.053%	1.909%
Franchise Engy Adjustment	$ 3,664,378	1,168,332	290,014	778,957	479,597	947,478
Franchise Non-Engy Adjustment	$ 1,571,678	840,786	124,578	253,377	146,216	206,720
Seattle Res Adjust for Franch. Adjust.	$ -	0	0	0	0	0
Sum of Franchise Adjustments	$ 5,236,056	2,009,119	414,591	1,032,334	625,813	1,154,198
Revised Total	$ 77,235,418	30,626,381	6,116,058	14,992,254	9,057,717	16,443,008
Net Wholesale Revenue Credit	$ (8,089,471)	-3,215,285	-640,587	-1,568,463	-947,364	-1,717,770
Final Revenue Requirement	**$ 69,145,947**	**$ 27,411,095**	**$ 5,475,471**	**$ 13,423,791**	**$ 8,110,353**	**$ 14,725,237**
Load	940,194	296,755	73,526	198,943	122,669	248,301
New Average Annual Rate, $/MWH	**$ 73.544**	**$ 92.37**	**$ 74.47**	**$ 67.48**	**$ 66.12**	**$ 59.30**
Current Rate, $/MWH	$ 72.374	$ 88.12	$ 73.70	$ 67.64	$ 66.81	$ 59.70
Percent Change in Rate	**1.62%**	**4.82%**	**1.04%**	**-0.24%**	**-1.04%**	**-0.67%**
$/MWH						
Energy	$ 48.718	$ 49.213	$ 49.304	$ 48.943	$ 48.871	$ 47.698
Production	$ 12.882	13.012	13.037	12.941	12.922	12.612
Purchased Power	$ 26.715	26.987	27.037	26.839	26.799	26.156
Conservation	$ 4.022	4.063	4.070	4.040	4.034	3.937
Transmission - Long Distance	$ 5.100	5.151	5.161	5.123	5.116	4.993
Retail Service	$ 27.861	$ 47.221	$ 28.239	$ 21.227	$ 19.866	$ 13.876
Total Distribution	$ 20.855	29.143	22.372	19.713	18.092	12.780
- Transmission - In Service Area	$ 1.591	1.938	1.607	1.615	1.537	1.180
- Stations	$ 4.214	5.131	4.257	4.277	4.070	3.125
- Wires & Related Equipment	$ 11.915	17.234	11.889	10.527	9.999	7.624
- Transformers	$ 1.835	2.001	2.664	3.028	1.286	0.707
- Meters, (except Meter Reading)	$ 1.299	2.839	1.955	0.265	1.200	0.143
- Streetlights/Floodlights	$ -	0.000	0.000	0.000	0.000	0.000
Customer Costs	$ 5.800	16.553	4.652	0.396	0.689	0.141
Low-Income Assistance	$ 1.206	1.525	1.214	1.118	1.085	0.955
Total	$ 76.579	$ 96.434	$ 77.543	$ 70.170	$ 68.737	$ 61.574
Franchise Engy Adjustment	$ 3.897	3.937	3.944	3.915	3.910	3.816
Franchise Non-Engy Adjustment	$ 1.672	2.833	1.694	1.274	1.192	0.833
Seattle Res Adjust for Franch. Adjust.	$ -	0.000	0.000	0.000	0.000	0.000
Sum of Franchise Adjustments	$ 5.569	6.770	5.639	5.189	5.102	4.648
Revised Total	$ 82.148	103.204	83.182	75.359	73.839	66.222
Net Wholesale Revenue Credit	$ (8.604)	-10.835	-8.712	-7.884	-7.723	-6.918
Final Revenue Requirement	**$ 73.544**	**$ 92.369**	**$ 74.470**	**$ 67.475**	**$ 66.116**	**$ 59.304**

Table 11.9.b
Detailed Summary of Final Allocation of Revenue Requirements for 2014
Tukwila and Shoreline

	Tukwila & Shoreline					
Total $	**Total**	**Residential**	**Small**	**Medium**	**Large**	**High Demand**
Energy	$ 48,630,378	$ 15,555,121	$ 3,887,071	$ 10,417,705	$ 6,291,586	$ 12,478,895
Production	$ 12,369,826	3,956,666	988,732	2,649,891	1,600,354	3,174,184
Purchased Power	$ 27,198,895	8,699,955	2,174,033	5,826,606	3,518,874	6,979,427
Conservation	$ 3,861,263	1,235,080	308,634	827,168	499,553	990,827
Transmission - Long Distance	$ 5,200,394	1,663,420	415,672	1,114,040	672,804	1,334,457
Retail Service	$ 26,657,150	14,388,375	2,125,673	4,302,743	2,338,549	3,501,810
Total Distribution	$ 19,796,700	8,797,121	1,676,980	3,984,874	2,120,802	3,216,923
- Transmission - In Service Area	$ 1,473,462	569,305	118,125	320,853	175,177	290,002
- Stations	$ 4,055,013	1,566,744	325,082	882,998	482,094	798,095
- Wires & Related Equipment	$ 11,378,168	5,227,863	898,492	2,151,494	1,172,712	1,927,606
- Transformers	$ 1,632,643	557,149	186,798	575,151	148,781	164,765
- Meters, (except Meter Reading)	$ 1,257,412	876,060	148,483	54,377	142,037	36,454
- Streetlights/Floodlights	$ -	0	0	0	0	0
Customer Costs	$ 5,665,535	5,112,843	353,667	81,378	81,693	35,954
Low-Income Assistance	$ 1,194,915	478,411	95,026	236,491	136,054	248,933
Total	$ 75,287,528	29,943,496	6,012,744	14,720,448	8,630,135	15,980,705
Share of Total Service Territory $	8.953%	3.561%	0.715%	1.751%	1.026%	1.900%
Franchise Engy Adjustment	$ 3,890,430	1,244,410	310,966	833,416	503,327	998,312
Franchise Non-Engy Adjustment	$ 1,599,429	863,302	127,540	258,165	140,313	210,109
Seattle Res Adjust for Franch. Adjust.	$ -	0	0	0	0	0
Sum of Franchise Adjustments	$ 5,489,859	2,107,712	438,506	1,091,581	643,640	1,208,420
Revised Total	$ 80,777,387	32,051,208	6,451,251	15,812,029	9,273,775	17,189,125
Net Wholesale Revenue Credit	$ (7,610,029)	-3,026,675	-607,765	-1,487,936	-872,330	-1,615,322
Final Revenue Requirement	**$ 73,167,358**	**$ 29,024,533**	**$ 5,843,485**	**$ 14,324,092**	**$ 8,401,445**	**$ 15,573,803**
Load	942,703	295,822	74,513	201,803	122,913	247,653
New Average Annual Rate, $/MWH	**$ 77.614**	**$ 98.11**	**$ 78.42**	**$ 70.98**	**$ 68.35**	**$ 62.89**
Current Rate, $/MWH	$ 73.516	$ 92.37	$ 74.47	$ 67.48	$ 66.12	$ 59.30
Percent Change in Rate	**5.57%**	**6.22%**	**5.31%**	**5.19%**	**3.38%**	**6.04%**
$/MWH						
Energy	$ 51.586	$ 52.583	$ 52.167	$ 51.623	$ 51.187	$ 50.389
Production	$ 13.122	13.375	13.269	13.131	13.020	12.817
Purchased Power	$ 28.852	29.409	29.177	28.873	28.629	28.182
Conservation	$ 4.096	4.175	4.142	4.099	4.064	4.001
Transmission - Long Distance	$ 5.516	5.623	5.579	5.520	5.474	5.388
Retail Service	$ 28.277	$ 48.639	$ 28.528	$ 21.322	$ 19.026	$ 14.140
Total Distribution	$ 21.000	29.738	22.506	19.746	17.255	12.990
- Transmission - In Service Area	$ 1.563	1.924	1.585	1.590	1.425	1.171
- Stations	$ 4.301	5.296	4.363	4.376	3.922	3.223
- Wires & Related Equipment	$ 12.070	17.672	12.058	10.661	9.541	7.784
- Transformers	$ 1.732	1.883	2.507	2.850	1.210	0.665
- Meters, (except Meter Reading)	$ 1.334	2.961	1.993	0.269	1.156	0.147
- Streetlights/Floodlights	$ -	0.000	0.000	0.000	0.000	0.000
Customer Costs	$ 6.010	17.284	4.746	0.403	0.665	0.145
Low-Income Assistance	$ 1.268	1.617	1.275	1.172	1.107	1.005
Total	$ 79.863	$ 101.221	$ 80.694	$ 72.945	$ 70.214	$ 64.529
Franchise Engy Adjustment	$ 4.127	4.207	4.173	4.130	4.095	4.031
Franchise Non-Engy Adjustment	$ 1.697	2.918	1.712	1.279	1.142	0.848
Seattle Res Adjust for Franch. Adjust.	$ -	0.000	0.000	0.000	0.000	0.000
Sum of Franchise Adjustments	$ 5.824	7.125	5.885	5.409	5.237	4.879
Revised Total	$ 85.687	108.346	86.579	78.354	75.450	69.408
Net Wholesale Revenue Credit	$ (8.073)	-10.231	-8.157	-7.373	-7.097	-6.523
Final Revenue Requirement	**$ 77.614**	**$ 98.115**	**$ 78.423**	**$ 70.981**	**$ 68.353**	**$ 62.886**

Table 11.10.a
Detailed Summary of Final Allocation of Revenue Requirements for 2013
Other Suburbs

	Other Suburbs				
Total $	**Total**	**Residential**	**Small**	**Medium**	**Large**
Energy	$ 30,474,136	$ 20,293,423	$ 4,429,212	$ 4,978,994	$ 772,507
Production	$ 8,057,620	5,365,753	1,171,121	1,316,488	204,257
Purchased Power	$ 16,710,922	11,128,184	2,428,821	2,730,301	423,615
Conservation	$ 2,515,652	1,675,230	365,633	411,018	63,771
Transmission - Long Distance	$ 3,189,942	2,124,256	463,637	521,186	80,864
Retail Service	$ 24,482,357	19,472,120	2,536,806	2,159,407	314,022
Total Distribution	$ 16,318,617	12,017,458	2,009,765	2,005,412	285,982
- Transmission - In Service Area	$ 1,132,061	799,036	144,404	164,326	24,295
- Stations	$ 2,997,705	2,115,852	382,383	435,137	64,333
- Wires & Related Equipment	$ 9,403,684	7,106,626	1,068,047	1,070,952	158,060
- Transformers	$ 1,392,872	825,193	239,287	308,063	20,330
- Meters, (except Meter Reading)	$ 1,392,294	1,170,751	175,644	26,935	18,964
- Streetlights/Floodlights	$ -	0	0	0	0
Customer Costs	$ 7,295,076	6,825,963	417,948	40,270	10,896
Low-Income Assistance	$ 868,663	628,700	109,094	113,726	17,144
Total	$ 54,956,493	39,765,544	6,966,019	7,138,401	1,086,529
Share of Total Service Territory $	6.861%	4.964%	0.870%	0.891%	0.136%
Franchise Engy Adjustment	$ 2,437,931	1,623,474	354,337	398,319	61,801
Franchise Non-Engy Adjustment	$ -	0	0	0	0
Seattle Res Adjust for Franch. Adjust.	$ -	0	0	0	0
Sum of Franchise Adjustments	$ 2,437,931	1,623,474	354,337	398,319	61,801
Revised Total	$ 57,394,424	41,389,018	7,320,356	7,536,720	1,148,330
Net Wholesale Revenue Credit	$ (6,174,623)	-4,467,848	-782,665	-802,033	-122,077
Final Revenue Requirement	**$ 51,219,801**	**$ 36,921,170**	**$ 6,537,690**	**$ 6,734,687**	**$ 1,026,253**
Load	619,731	412,360	89,834	101,730	15,807
New Average Annual Rate, $/MWH	**$ 82.648**	**$ 89.54**	**$ 72.78**	**$ 66.20**	**$ 64.92**
Current Rate, $/MWH	$ 80.387	$ 86.12	$ 72.20	$ 66.82	$ 64.79
Percent Change in Rate	**2.81%**	**3.97%**	**0.80%**	**-0.92%**	**0.20%**
$/MWH					
Energy	$ 49.173	$ 49.213	$ 49.304	$ 48.943	$ 48.871
Production	$ 13.002	13.012	13.037	12.941	12.922
Purchased Power	$ 26.965	26.987	27.037	26.839	26.799
Conservation	$ 4.059	4.063	4.070	4.040	4.034
Transmission - Long Distance	$ 5.147	5.151	5.161	5.123	5.116
Retail Service	$ 39.505	$ 47.221	$ 28.239	$ 21.227	$ 19.866
Total Distribution	$ 26.332	29.143	22.372	19.713	18.092
- Transmission - In Service Area	$ 1.827	1.938	1.607	1.615	1.537
- Stations	$ 4.837	5.131	4.257	4.277	4.070
- Wires & Related Equipment	$ 15.174	17.234	11.889	10.527	9.999
- Transformers	$ 2.248	2.001	2.664	3.028	1.286
- Meters, (except Meter Reading)	$ 2.247	2.839	1.955	0.265	1.200
- Streetlights/Floodlights	$ -	0.000	0.000	0.000	0.000
Customer Costs	$ 11.771	16.553	4.652	0.396	0.689
Low-Income Assistance	$ 1.402	1.525	1.214	1.118	1.085
Total	$ 88.678	$ 96.434	$ 77.543	$ 70.170	$ 68.737
Franchise Engy Adjustment	$ 3.934	3.937	3.944	3.915	3.910
Franchise Non-Engy Adjustment	$ -	0.000	0.000	0.000	0.000
Seattle Res Adjust for Franch. Adjust.	$ -	0.000	0.000	0.000	0.000
Sum of Franchise Adjustments	$ 3.934	3.937	3.944	3.915	3.910
Revised Total	$ 92.612	100.371	81.488	74.086	72.647
Net Wholesale Revenue Credit	$ (9.963)	-10.835	-8.712	-7.884	-7.723
Final Revenue Requirement	**$ 82.648**	**$ 89.536**	**$ 72.775**	**$ 66.202**	**$ 64.924**

Table 11.10.b
Detailed Summary of Final Allocation of Revenue Requirements for 2014
Other Suburbs

	Other Suburbs				
Total $	**Total**	**Residential**	**Small**	**Medium**	**Large**
Energy	$ 32,475,653	$ 21,635,768	$ 4,739,806	$ 5,296,872	$ 803,207
Production	$ 8,260,643	5,503,364	1,205,637	1,347,334	204,307
Purchased Power	$ 18,163,582	12,100,852	2,650,966	2,962,532	449,232
Conservation	$ 2,578,574	1,717,885	376,342	420,573	63,775
Transmission - Long Distance	$ 3,472,854	2,313,667	506,861	566,432	85,893
Retail Service	$ 25,091,201	20,012,930	2,591,998	2,187,726	298,548
Total Distribution	$ 16,577,727	12,236,001	2,044,871	2,026,105	270,749
- Transmission - In Service Area	$ 1,121,391	791,851	144,038	163,138	22,364
- Stations	$ 3,086,103	2,179,199	396,398	448,960	61,546
- Wires & Related Equipment	$ 9,610,725	7,271,486	1,095,601	1,093,925	149,713
- Transformers	$ 1,314,149	774,944	227,777	292,435	18,994
- Meters, (except Meter Reading)	$ 1,445,359	1,218,521	181,057	27,648	18,133
- Streetlights/Floodlights	$ -	0	0	0	0
Customer Costs	$ 7,594,562	7,111,502	431,254	41,377	10,429
Low-Income Assistance	$ 918,912	665,427	115,873	120,244	17,369
Total	$ 57,566,854	41,648,698	7,331,804	7,484,597	1,101,754
Share of Total Service Territory $	6.846%	4.953%	0.872%	0.890%	0.131%
Franchise Engy Adjustment	$ 2,598,052	1,730,861	379,184	423,750	64,257
Franchise Non-Engy Adjustment	$ -	0	0	0	0
Seattle Res Adjust for Franch. Adjust.	$ -	0	0	0	0
Sum of Franchise Adjustments	$ 2,598,052	1,730,861	379,184	423,750	64,257
Revised Total	$ 60,164,906	43,379,560	7,710,988	7,908,347	1,166,011
Net Wholesale Revenue Credit	$ (5,818,832)	-4,209,832	-741,095	-756,540	-111,365
Final Revenue Requirement	**$ 54,346,074**	**$ 39,169,728**	**$ 6,969,893**	**$ 7,151,807**	**$ 1,054,646**
Load	620,618	411,461	90,859	102,606	15,691
New Average Annual Rate, $/MWH	**$ 87.568**	**$ 95.20**	**$ 76.71**	**$ 69.70**	**$ 67.21**
Current Rate, $/MWH	$ 82.602	$ 89.54	$ 72.78	$ 66.20	$ 64.92
Percent Change in Rate	**6.01%**	**6.32%**	**5.41%**	**5.29%**	**3.52%**
$/MWH					
Energy	$ 52.328	$ 52.583	$ 52.167	$ 51.623	$ 51.187
Production	$ 13.310	13.375	13.269	13.131	13.020
Purchased Power	$ 29.267	29.409	29.177	28.873	28.629
Conservation	$ 4.155	4.175	4.142	4.099	4.064
Transmission - Long Distance	$ 5.596	5.623	5.579	5.520	5.474
Retail Service	$ 40.429	$ 48.639	$ 28.528	$ 21.322	$ 19.026
Total Distribution	$ 26.712	29.738	22.506	19.746	17.255
- Transmission - In Service Area	$ 1.807	1.924	1.585	1.590	1.425
- Stations	$ 4.973	5.296	4.363	4.376	3.922
- Wires & Related Equipment	$ 15.486	17.672	12.058	10.661	9.541
- Transformers	$ 2.117	1.883	2.507	2.850	1.210
- Meters, (except Meter Reading)	$ 2.329	2.961	1.993	0.269	1.156
- Streetlights/Floodlights	$ -	0.000	0.000	0.000	0.000
Customer Costs	$ 12.237	17.284	4.746	0.403	0.665
Low-Income Assistance	$ 1.481	1.617	1.275	1.172	1.107
Total	$ 92.757	$ 101.221	$ 80.694	$ 72.945	$ 70.214
Franchise Engy Adjustment	$ 4.186	4.207	4.173	4.130	4.095
Franchise Non-Engy Adjustment	$ -	0.000	0.000	0.000	0.000
Seattle Res Adjust for Franch. Adjust.	$ -	0.000	0.000	0.000	0.000
Sum of Franchise Adjustments	$ 4.186	4.207	4.173	4.130	4.095
Revised Total	$ 96.943	105.428	84.867	77.075	74.309
Net Wholesale Revenue Credit	$ (9.376)	-10.231	-8.157	-7.373	-7.097
Final Revenue Requirement	**$ 87.568**	**$ 95.197**	**$ 76.711**	**$ 69.701**	**$ 67.211**

Table 11.11.a
Detailed Summary of Final Allocation of Revenue Requirements for 2013
Network

	Network				
Total $	**Total**	**Residential**	**Small**	**Medium**	**Large**
Energy	$ 68,315,665	$ 4,430,163	$ 6,966,952	$ 27,639,451	$ 29,279,098
Production	$ 18,063,241	1,171,373	1,842,121	7,308,105	7,741,642
Purchased Power	$ 37,461,857	2,429,343	3,820,426	15,156,482	16,055,606
Conservation	$ 5,639,486	365,712	575,125	2,281,648	2,417,001
Transmission - Long Distance	$ 7,151,082	463,736	729,280	2,893,216	3,064,849
Retail Service	$ 65,151,051	8,674,440	7,198,682	24,990,620	24,287,310
Total Distribution	$ 59,557,244	5,973,938	6,567,318	24,007,446	23,008,542
- Transmission - In Service Area	$ 2,215,474	174,103	229,859	886,053	925,459
- Stations	$ 6,840,987	537,599	709,762	2,735,974	2,857,652
- Wires & Related Equipment	$ 35,365,690	3,650,240	3,703,753	13,464,625	14,547,072
- Transformers	$ 13,455,667	1,041,831	1,635,964	6,819,244	3,958,629
- Meters, (except Meter Reading)	$ 1,679,426	570,166	287,980	101,549	719,731
- Streetlights/Floodlights	$ -	0	0	0	0
Customer Costs	$ 3,462,155	2,496,423	407,621	147,200	410,912
Low-Income Assistance	$ 2,131,652	204,079	223,743	835,974	867,855
Total	$ 133,466,717	13,104,604	14,165,634	52,630,070	53,566,408
Share of Total Service Territory $	16.662%	1.636%	1.768%	6.570%	6.687%
Franchise Engy Adjustment	$ -	0	0	0	0
Franchise Non-Engy Adjustment	$ -	0	0	0	0
Seattle Res Adjust for Franch. Adjust.	$ -	0	0	0	0
Sum of Franchise Adjustments	$ -	0	0	0	0
Revised Total	$ 133,466,717	13,104,604	14,165,634	52,630,070	53,566,408
Net Wholesale Revenue Credit	$ (14,995,620)	-1,472,365	-1,591,576	-5,913,239	-6,018,441
Final Revenue Requirement	**$ 118,471,097**	**$ 11,632,239**	**$ 12,574,058**	**$ 46,716,832**	**$ 47,547,967**
Load	1,398,127	90,009	141,339	566,556	600,224
New Average Annual Rate, $/MWH	**$ 84.736**	**$ 129.23**	**$ 88.96**	**$ 82.46**	**$ 79.22**
Current Rate, $/MWH	$ 71.986			$ 73.65	$ 70.41
Percent Change in Rate	**17.71%**			**11.95%**	**12.51%**
$/MWH					
Energy	$ 48.862	$ 49.219	$ 49.293	$ 48.785	$ 48.780
Production	$ 12.920	13.014	13.033	12.899	12.898
Purchased Power	$ 26.794	26.990	27.030	26.752	26.749
Conservation	$ 4.034	4.063	4.069	4.027	4.027
Transmission - Long Distance	$ 5.115	5.152	5.160	5.107	5.106
Retail Service	$ 46.599	$ 96.373	$ 50.932	$ 44.110	$ 40.464
Total Distribution	$ 42.598	66.371	46.465	42.374	38.333
- Transmission - In Service Area	$ 1.585	1.934	1.626	1.564	1.542
- Stations	$ 4.893	5.973	5.022	4.829	4.761
- Wires & Related Equipment	$ 25.295	40.554	26.205	23.766	24.236
- Transformers	$ 9.624	11.575	11.575	12.036	6.595
- Meters, (except Meter Reading)	$ 1.201	6.335	2.038	0.179	1.199
- Streetlights/Floodlights	$ -	0.000	0.000	0.000	0.000
Customer Costs	$ 2.476	27.735	2.884	0.260	0.685
Low-Income Assistance	$ 1.525	2.267	1.583	1.476	1.446
Total	$ 95.461	$ 145.593	$ 100.225	$ 92.895	$ 89.244
Franchise Engy Adjustment	$ -	0.000	0.000	0.000	0.000
Franchise Non-Engy Adjustment	$ -	0.000	0.000	0.000	0.000
Seattle Res Adjust for Franch. Adjust.	$ -	0.000	0.000	0.000	0.000
Sum of Franchise Adjustments	$ -	0.000	0.000	0.000	0.000
Revised Total	$ 95.461	145.593	100.225	92.895	89.244
Net Wholesale Revenue Credit	$ (10.726)	-16.358	-11.261	-10.437	-10.027
Final Revenue Requirement	**$ 84.736**	**$ 129.235**	**$ 88.964**	**$ 82.458**	**$ 79.217**
	Network (* Residential and Small consolidated with Seattle Nonnet)				
Total $	**Total**	*** Residential**	*** Small**	**Medium**	**Large**
Final Revenue Requirement	**$ 94,264,799**			**$ 46,716,832**	**$ 47,547,967**
Load	1,166,780			566,556	600,224
New Average Annual Rate, $/MWH	**$ 80.791**			**$ 82.458**	**$ 79.217**
Current Rate, $/MWH	$ 71.986			$ 73.653	$ 70.412
Percent Change in Rate	**12.23%**			**11.95%**	**12.51%**

Table 11.11.b
Detailed Summary of Final Allocation of Revenue Requirements for 2014
Network

	Network				
Total $	**Total**	**Residential**	**Small**	**Medium**	**Large**
Energy	$ 72,678,020	$ 4,715,602	$ 7,435,313	$ 29,405,733	$ 31,121,371
Production	$ 18,486,685	1,199,480	1,891,277	7,479,765	7,916,162
Purchased Power	$ 40,648,704	2,637,429	4,158,559	16,446,581	17,406,135
Conservation	$ 5,770,651	374,420	590,365	2,334,822	2,471,044
Transmission - Long Distance	$ 7,771,981	504,273	795,111	3,144,565	3,328,031
Retail Service	$ 67,407,335	9,004,145	7,432,044	25,776,755	25,194,391
Total Distribution	$ 61,559,180	6,186,359	6,775,650	24,741,581	23,855,590
- Transmission - In Service Area	$ 2,203,215	172,315	228,701	882,639	919,561
- Stations	$ 7,070,388	552,981	733,928	2,832,497	2,950,983
- Wires & Related Equipment	$ 37,452,835	3,864,195	3,922,788	14,278,178	15,387,674
- Transformers	$ 13,097,620	1,003,081	1,593,926	6,643,782	3,856,831
- Meters, (except Meter Reading)	$ 1,735,121	593,787	296,307	104,485	740,542
- Streetlights/Floodlights	$ -	0	0	0	0
Customer Costs	$ 3,597,056	2,602,417	419,822	151,606	423,211
Low-Income Assistance	$ 2,251,099	215,368	236,573	883,568	915,590
Total	$ 140,085,354	13,719,747	14,867,357	55,182,488	56,315,762
Share of Total Service Territory $	16.659%	1.632%	1.768%	6.562%	6.697%
Franchise Engy Adjustment	$ -	0	0	0	0
Franchise Non-Engy Adjustment	$ -	0	0	0	0
Seattle Res Adjust for Franch. Adjust.	$ -	0	0	0	0
Sum of Franchise Adjustments	$ -	0	0	0	0
Revised Total	$ 140,085,354	13,719,747	14,867,357	55,182,488	56,315,762
Net Wholesale Revenue Credit	$ (14,159,764)	-1,386,786	-1,502,786	-5,577,821	-5,692,372
Final Revenue Requirement	**$ 125,925,590**	**$ 12,332,961**	**$ 13,364,571**	**$ 49,604,667**	**$ 50,623,390**
Load	1,409,507	89,741	142,601	571,594	605,571
New Average Annual Rate, $/MWH	**$ 89.340**	**$ 137.43**	**$ 93.72**	**$ 86.78**	**$ 83.60**
Current Rate, $/MWH	$ 80.791			$ 82.46	$ 79.22
Percent Change in Rate	**10.58%**			**5.25%**	**5.53%**
$/MWH					
Energy	$ 51.563	$ 52.547	$ 52.141	$ 51.445	$ 51.392
Production	$ 13.116	13.366	13.263	13.086	13.072
Purchased Power	$ 28.839	29.389	29.162	28.773	28.743
Conservation	$ 4.094	4.172	4.140	4.085	4.081
Transmission - Long Distance	$ 5.514	5.619	5.576	5.501	5.496
Retail Service	$ 47.823	$ 100.335	$ 52.118	$ 45.096	$ 41.604
Total Distribution	$ 43.674	68.936	47.515	43.285	39.394
- Transmission - In Service Area	$ 1.563	1.920	1.604	1.544	1.519
- Stations	$ 5.016	6.162	5.147	4.955	4.873
- Wires & Related Equipment	$ 26.572	43.060	27.509	24.980	25.410
- Transformers	$ 9.292	11.178	11.178	11.623	6.369
- Meters, (except Meter Reading)	$ 1.231	6.617	2.078	0.183	1.223
- Streetlights/Floodlights	$ -	0.000	0.000	0.000	0.000
Customer Costs	$ 2.552	28.999	2.944	0.265	0.699
Low-Income Assistance	$ 1.597	2.400	1.659	1.546	1.512
Total	$ 99.386	$ 152.882	$ 104.259	$ 96.541	$ 92.996
Franchise Engy Adjustment	$ -	0.000	0.000	0.000	0.000
Franchise Non-Engy Adjustment	$ -	0.000	0.000	0.000	0.000
Seattle Res Adjust for Franch. Adjust.	$ -	0.000	0.000	0.000	0.000
Sum of Franchise Adjustments	$ -	0.000	0.000	0.000	0.000
Revised Total	$ 99.386	152.882	104.259	96.541	92.996
Net Wholesale Revenue Credit	$ (10.046)	-15.453	-10.538	-9.758	-9.400
Final Revenue Requirement	**$ 89.340**	**$ 137.429**	**$ 93.720**	**$ 86.783**	**$ 83.596**
	Network (* Residential and Small consolidated with Seattle Nonnet)				
Total $	**Total**	*** Residential**	*** Small**	**Medium**	**Large**
Final Revenue Requirement	**$ 100,228,057**			**$ 49,604,667**	**$ 50,623,390**
Load	1,177,165			571,594	605,571
New Average Annual Rate, $/MWH	**$ 85.144**			**$ 86.783**	**$ 83.596**
Current Rate, $/MWH	$ 80.791			$ 82.458	$ 79.217
Percent Change in Rate	**5.39%**			**5.25%**	**5.53%**

Table 11.12.a
Condensed Summary of Final Allocation of Revenue Requirements for 2013

	Service Territory						
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Cost Share Rev. Reqmnts	$ 801,034,200	$ 312,335,189	$ 94,508,927	$ 186,883,765	$ 117,303,759	$ 73,637,534	$ 16,365,025
Share of Cost Shr Rev Req	100.000%	38.991%	11.798%	23.330%	14.644%	9.193%	2.043%
Wholesale Net Revenue	$ (90,000,000)	(35,092,343)	(10,618,527)	(20,997,279)	(13,179,635)	(8,273,527)	(1,838,688)
Other Adjustments	-	(4,041,394)	768,928	1,430,654	687,614	1,154,198	-
Total Revenue Reqmnt	**$ 711,034,200**	**$ 273,201,452**	**$ 84,659,328**	**$ 167,317,140**	**$ 104,811,738**	**$ 66,518,205**	**$ 14,526,337**
Load, MWH	9,654,834	3,192,967	1,177,448	2,479,809	1,527,488	1,195,924	81,198
Average Rate	**$ 73.645**	**$ 85.564**	**$ 71.901**	**$ 67.472**	**$ 68.617**	**$ 55.621**	**$ 178.900**
Rate without Change	$ 70.542	$ 80.540	$ 69.538	$ 65.426	$ 65.156	$ 57.540	$ 141.000
Pct Chg in Rate	4.40%	6.24%	3.40%	3.13%	5.31%	-3.33%	26.88%

	Total Nonnetwork (Includes Network Residential & Small)						
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Cost Share Rev. Reqmnts	$ 694,837,722	$ 312,335,189	$ 94,508,927	$ 134,253,695	$ 63,737,351	$ 73,637,534	$ 16,365,025
Share of Cost Shr Rev Req	83.338%	37.356%	10.030%	16.760%	7.957%	9.193%	2.043%
Wholesale Net Revenue	$ (78,068,321)	(35,092,343)	(10,618,527)	(15,084,041)	(7,161,194)	(8,273,527)	(1,838,688)
Other Adjustments	-	(4,041,394)	768,928	1,430,654	687,614	1,154,198	-
Total Revenue Reqmnt	**$ 616,769,401**	**$ 273,201,452**	**$ 84,659,328**	**$ 120,600,308**	**$ 57,263,771**	**$ 66,518,205**	**$ 14,526,337**
Load, MWH	8,488,054	3,192,967	1,177,448	1,913,254	927,264	1,195,924	81,198
Average Rate	**$ 72.663**	**$ 85.564**	**$ 71.901**	**$ 63.034**	**$ 61.756**	**$ 55.621**	**$ 178.900**
Rate without Change	$ 70.343	$ 80.540	$ 69.538	$ 62.990	$ 61.753	$ 57.540	$ 141.000
Pct Chg in Rate	3.30%	6.24%	3.40%	0.07%	0.00%	-3.33%	26.88%

	Seattle Nonnetwork (Includes Network Residential & Small)						
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Cost Share Rev. Reqmnts	$ 567,881,867	$ 243,952,383	$ 81,841,442	$ 113,155,374	$ 54,218,918	$ 58,348,725	$ 16,365,025
Share of Cost Shr Rev Req	67.489%	28.819%	8.449%	14.126%	6.769%	7.284%	2.043%
Wholesale Net Revenue	$ (63,804,227)	(27,409,210)	(9,195,275)	(12,713,544)	(6,091,753)	(6,555,757)	(1,838,688)
Other Adjustments	**(7,673,987)**	(7,673,987)	-	-	-	-	-
Total Revenue Reqmnt	**$ 496,403,653**	**$ 208,869,186**	**$ 72,646,167**	**$ 100,441,830**	**$ 48,127,165**	**$ 51,792,968**	**$ 14,526,337**
Load, MWH	6,696,782	2,393,843	872,749	1,612,581	788,788	947,623	81,198
Average Rate	**$ 71.650**	**$ 84.091**	**$ 71.637**	**$ 62.286**	**$ 61.014**	**$ 54.656**	**$ 178.900**
Rate without Change	$ 69.170	$ 78.709	$ 69.000	$ 62.175	$ 60.906	$ 56.973	$ 141.000
Pct Chg in Rate	3.59%	6.84%	3.82%	0.18%	0.18%	-4.07%	26.88%

	Tukwila + Shoreline					
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**
Cost Share Rev. Reqmnts	$ 71,999,362	$ 28,617,262	$ 5,701,467	$ 13,959,920	$ 8,431,904	$ 15,288,810
Share of Cost Shr Rev Req	8.988%	3.573%	0.712%	1.743%	1.053%	1.909%
Wholesale Net Revenue	$ (8,089,471)	(3,215,285)	(640,587)	(1,568,463)	(947,364)	(1,717,770)
Other Adjustments	**5,236,056**	2,009,119	414,591	1,032,334	625,813	1,154,198
Total Revenue Reqmnt	**$ 69,145,947**	**$ 27,411,095**	**$ 5,475,471**	**$ 13,423,791**	**$ 8,110,353**	**$ 14,725,237**
Load, MWH	940,194	296,755	73,526	198,943	122,669	248,301
Average Rate	**$ 73.544**	**$ 92.369**	**$ 74.470**	**$ 67.475**	**$ 66.116**	**$ 59.304**
Rate without Change	$ 72.374	$ 88.121	$ 73.700	$ 67.636	$ 66.813	$ 59.704
Pct Chg in Rate	1.62%	4.82%	1.04%	-0.24%	-1.04%	-0.67%

	Other Suburbs				
	Total	**Residential**	**Small**	**Medium**	**Large**
Cost Share Rev. Reqmnts	$ 54,956,493	$ 39,765,544	$ 6,966,019	$ 7,138,401	$ 1,086,529
Share of Cost Shr Rev Req	6.861%	4.964%	0.870%	0.891%	0.136%
Wholesale Net Revenue	$ (6,174,623)	(4,467,848)	(782,665)	(802,033)	(122,077)
Other Adjustments	**2,437,931**	1,623,474	354,337	398,319	61,801
Total Revenue Reqmnt	**$ 51,219,801**	**$ 36,921,170**	**$ 6,537,690**	**$ 6,734,687**	**$ 1,026,253**
Load, MWH	619,731	412,360	89,834	101,730	15,807
Average Rate	**$ 82.648**	**$ 89.536**	**$ 72.775**	**$ 66.202**	**$ 64.924**
Rate without Change	$ 80.387	$ 86.115	$ 72.200	$ 66.819	$ 64.791
Pct Chg in Rate	2.81%	3.97%	0.80%	-0.92%	0.20%

	Network (Excludes Residential & Small)				
	Total	**Residential**	**Small**	**Medium**	**Large**
Cost Share Rev. Reqmnts	$ 106,196,478			$ 52,630,070	$ 53,566,408
Share of Cost Shr Rev Req	13.257%			6.570%	6.687%
Wholesale Net Revenue	$ (11,931,679)			(5,913,239)	(6,018,441)
Other Adjustments	-			-	-
Total Revenue Reqmnt	**$ 94,264,799**			**$ 46,716,832**	**$ 47,547,967**
Load, MWH	1,398,127			566,556	600,224
Average Rate	**$ 80.791**			**$ 82.458**	**$ 79.217**
Rate without Change	$ 71.986			$ 73.653	$ 70.412
Pct Chg in Rate	12.23%			11.95%	12.51%

Table 11.12.b
Condensed Summary of Final Allocation of Revenue Requirements for 2014

	Service Territory						
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Cost Share Rev. Reqmnts	$ 840,921,841	$ 326,976,350	$ 99,430,917	$ 196,281,378	$ 125,862,161	$ 77,206,582	$ 15,164,454
Share of Cost Shr Rev Req	100.000%	38.883%	11.824%	23.341%	14.967%	9.181%	1.803%
Wholesale Net Revenue	$ (85,000,000)	(33,050,622)	(10,050,432)	(19,840,033)	(12,722,090)	(7,804,006)	(1,532,816)
Other Adjustments	**-**	(4,249,338)	817,691	1,515,331	707,896	1,208,420	**-**
Total Revenue Reqmnt	**$ 755,921,841**	**$ 289,676,391**	**$ 90,198,175**	**$ 177,956,675**	**$ 113,847,967**	**$ 70,610,995**	**$ 13,631,638**
Load, MWH	9,746,397	3,184,507	1,190,552	2,505,920	1,596,070	1,196,470	72,879
Average Rate	**$ 77.559**	**$ 90.964**	**$ 75.762**	**$ 71.015**	**$ 71.330**	**$ 59.016**	**$ 187.045**
Rate without Change	$ 73.445	$ 85.563	$ 71.901	$ 67.466	$ 68.352	$ 55.618	$ 178.900
Pct Chg in Rate	5.60%	6.31%	5.37%	5.26%	4.36%	6.11%	4.55%

	Total Nonnetwork (Includes Network Residential & Small)						
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Cost Share Rev. Reqmnts	$ 729,423,591	$ 326,976,350	$ 99,430,917	$ 141,098,890	$ 69,546,399	$ 77,206,582	$ 15,164,454
Share of Cost Shr Rev Req	83.341%	37.252%	10.056%	16.779%	8.270%	9.181%	1.803%
Wholesale Net Revenue	$ (73,729,807)	(33,050,622)	(10,050,432)	(14,262,212)	(7,029,719)	(7,804,006)	(1,532,816)
Other Adjustments	**-**	(4,249,338)	817,691	1,515,331	707,896	1,208,420	**-**
Total Revenue Reqmnt	**$ 655,693,784**	**$ 289,676,391**	**$ 90,198,175**	**$ 128,352,008**	**$ 63,224,577**	**$ 70,610,995**	**$ 13,631,638**
Load, MWH	8,569,232	3,184,507	1,190,552	1,934,326	990,498	1,196,470	72,879
Average Rate	**$ 76.517**	**$ 90.964**	**$ 75.762**	**$ 66.355**	**$ 63.831**	**$ 59.016**	**$ 187.045**
Rate without Change	$ 72.435	$ 85.563	$ 71.901	$ 63.035	$ 61.709	$ 55.618	$ 178.900
Pct Chg in Rate	5.64%	6.31%	5.37%	5.27%	3.44%	6.11%	4.55%

	Seattle Nonnetwork (Includes Network Residential & Small)						
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**	**Lights**
Cost Share Rev. Reqmnts	$ 567,982,105	$ 255,384,156	$ 86,086,369	$ 118,893,845	$ 59,814,509	$ 61,225,877	$ 15,164,454
Share of Cost Shr Rev Req	67.543%	28.738%	8.469%	14.139%	7.113%	7.281%	1.803%
Wholesale Net Revenue	$ (60,300,946)	(25,814,115)	(8,701,571)	(12,017,736)	(6,046,024)	(6,188,684)	(1,532,816)
Other Adjustments	**(8,087,911)**	(8,087,911)	-	-	-	-	**-**
Total Revenue Reqmnt	**$ 499,593,248**	**$ 221,482,129**	**$ 77,384,797**	**$ 106,876,109**	**$ 53,768,486**	**$ 55,037,193**	**$ 13,631,638**
Load, MWH	6,773,569	2,387,483	882,579	1,629,917	851,894	948,817	72,879
Average Rate	**$ 75.391**	**$ 89.407**	**$ 75.484**	**$ 65.572**	**$ 63.116**	**$ 58.006**	**$ 187.045**
Rate without Change	$ 71.389	$ 84.091	$ 71.637	$ 62.286	$ 61.014	$ 54.656	$ 178.900
Pct Chg in Rate	5.60%	6.32%	5.37%	5.27%	3.45%	6.13%	4.55%

	Tukwila + Shoreline					
	Total	**Residential**	**Small**	**Medium**	**Large**	**High Demand**
Cost Share Rev. Reqmnts	$ 75,287,528	$ 29,943,496	$ 6,012,744	$ 14,720,448	$ 8,630,135	$ 15,980,705
Share of Cost Shr Rev Req	8.953%	3.561%	0.715%	1.751%	1.026%	1.900%
Wholesale Net Revenue	$ (7,610,029)	(3,026,675)	(607,765)	(1,487,936)	(872,330)	(1,615,322)
Other Adjustments	**5,489,859**	2,107,712	438,506	1,091,581	643,640	1,208,420
Total Revenue Reqmnt	**$ 73,167,358**	**$ 29,024,533**	**$ 5,843,485**	**$ 14,324,092**	**$ 8,401,445**	**$ 15,573,803**
Load, MWH	942,703	295,822	74,513	201,803	122,913	247,653
Average Rate	**$ 77.614**	**$ 98.115**	**$ 78.423**	**$ 70.981**	**$ 68.353**	**$ 62.886**
Rate without Change	$ 73.516	$ 92.369	$ 74.470	$ 67.475	$ 66.116	$ 59.304
Pct Chg in Rate	5.57%	6.22%	5.31%	5.19%	3.38%	6.04%

	Other Suburbs				
	Total	**Residential**	**Small**	**Medium**	**Large**
Cost Share Rev. Reqmnts	$ 57,566,854	$ 41,648,698	$ 7,331,804	$ 7,484,597	$ 1,101,754
Share of Cost Shr Rev Req	6.846%	4.953%	0.872%	0.890%	0.131%
Wholesale Net Revenue	$ (5,818,832)	(4,209,832)	(741,095)	(756,540)	(111,365)
Other Adjustments	**2,598,052**	1,730,861	379,184	423,750	64,257
Total Revenue Reqmnt	**$ 54,346,074**	**$ 39,169,728**	**$ 6,969,893**	**$ 7,151,807**	**$ 1,054,646**
Load, MWH	620,618	411,461	90,859	102,606	15,691
Average Rate	**$ 87.568**	**$ 95.197**	**$ 76.711**	**$ 69.701**	**$ 67.211**
Rate without Change	$ 82.602	$ 89.536	$ 72.775	$ 66.202	$ 64.924
Pct Chg in Rate	6.01%	6.32%	5.41%	5.29%	3.52%

	Network (Excludes Residential & Small)				
	Total	**Residential**	**Small**	**Medium**	**Large**
Cost Share Rev. Reqmnts	$ 111,498,250			$ 55,182,488	$ 56,315,762
Share of Cost Shr Rev Req	13.259%			6.562%	6.697%
Wholesale Net Revenue	$ (11,270,193)			(5,577,821)	(5,692,372)
Other Adjustments	**-**			-	-
Total Revenue Reqmnt	**$ 100,228,057**			**$ 49,604,667**	**$ 50,623,390**
Load, MWH	1,409,507			571,594	605,571
Average Rate	**$ 85.144**			**$ 86.783**	**$ 83.596**
Rate without Change	$ 80.791			$ 82.458	$ 79.217
Pct Chg in Rate	5.39%			5.25%	5.53%

Appendix 1: Unbundled Revenue Requirements, 2013-2014

Unbundled Revenue Requirements - 2013				
Functions	**Dollars**	**Subtotals**	**Totals**	**$/MWh**
ENERGY				
Power				
Direct Expenses:				
Generation O&M	$35,155,634			
Long-Term Purchased Power	227,993,759			
Power-Related Wholesale Purchases	7,810,885			
Other Power Costs	10,626,767			
Article 49 Sales to Pend Oreille County	-1,799,799			
Sales from Priest Rapids	-4,400,000			
Seasonal Exchange Delivered	-3,450,873			
SMUD Exchange Revenue	-6,504,810			
Power-Related Wholesale Sales	-16,537,814			
Subtotal		$248,893,750		
Depreciation and Amortization:				
Amortization of Hydro Project Mitigation	$4,454,941			
Amortization of High Ross Contract	347,404			
Plant Depreciation	20,282,919			
Subtotal		25,085,264		
Capital Contributions and Grant Revenues		-107,683		
Interest		27,196,473		
Administration and General		14,942,528		
Revenue Taxes and Payments in Lieu of Taxes:				
Revenue Taxes	38,392,756			
Whatcom County Contract Payments	981,638			
Pend Oreille County Contract Payments	2,404,054			
Payments to Concrete School District	126,511			
Subtotal		41,904,959		
Net Income (Contribution to Equity)		22,393,281		
Net Income (Risk Management)		3,209,373		
TOTAL POWER EXPENSE			$383,517,947	$39.723
Conservation				
Direct Expenses:				
Conservation	$4,813,845			
Operating Fees (Lighting Lab)	-300,000			
GreenUp and Community Solar Retail Revenue	-2,801,449			
Subtotal		$1,712,396		
Depreciation and Amortization:				
Amortization of Programmatic Conservation	$17,925,292			
BPA Payments for Conservation	-325,575			
Plant Depreciation	184,081			
Subtotal		17,783,798		
Interest		8,301,693		
Administration and General		874,015		
Revenue Taxes		3,445,120		
Net Income (Contribution to Equity)		6,835,524		
TOTAL CONSERVATION EXPENSE			$38,952,547	$4.035

Unbundled Revenue Requirements - 2013				
Functions	**Dollars**	**Subtotals**	**Totals**	**$/MWh**
Transmission-Long Distance				
Direct Expenses:				
Transmission O&M	$6,571,262.62			
Wheeling	36,831,989			
Transmission Services	-4,417,226			
Transmission Attachments & Cell Sites	-1,650,760			
Subtotal		$37,335,266		
Depreciation and Amortization:				
Amortization of Puget Stillwater Substation	$99,286			
Plant Depreciation	3,152,314			
Subtotal		3,251,600		
Capital Contributions and Grant Revenues		-4,584,556		
Interest		3,366,122		
Administration and General		2,002,954		
Taxes				
Oregon Tax on 3rd AC Intertie	$245,000			
Revenue Taxes	5,005,291			
Subtotal		5,250,291		
Net Income (Contribution to Equity)		2,771,628		
TOTAL TRANSMISSION-LONG DISTANCE EXPENSE			$49,393,306	$5.116
TOTAL ENERGY EXPENSE			**$471,863,799**	**$48.873**
RETAIL SERVICES				
Transmission-In Service Area				
Direct Expenses:				
Transmission O&M	$4,707,039			
Transmission Attachments & Cell Sites	-1,164,850			
Subtotal		$3,542,189		
Plant Depreciation		5,113,017		
Capital Contributions and Grant Revenues		-426,242		
Interest		2,548,246		
Administration and General		1,560,496		
Revenue Taxes		1,482,457		
Net Income (Contribution to Equity)		2,098,198		
TOTAL TRANSMISSION-IN SERVICE AREA EXPENSE			$15,918,360	$1.649
Distribution-Stations				
Direct Expenses:				
Distribution O&M-Stations	$18,884,029			
Gain on Sale of Distribution Assets	-1,100,983			
Subtotal		$17,783,046		
Plant Depreciation		4,753,671		
Capital Contributions and Grant Revenues		-6,054		
Interest		3,548,913		
Administration and General		9,811,994		
Revenue Taxes		4,312,611		
Net Income (Contribution to Equity)		2,922,136		
TOTAL DISTRIBUTION-STATIONS EXPENSE			$43,126,317	$4.467

Appendix 1: Unbundled Revenue Requirements, 2013-2014 (continued, page 3)

Unbundled Revenue Requirements - 2013				
Functions	**Dollars**	**Subtotals**	**Totals**	**$/MWh**
Distribution-Wires and Related Equipment				
Direct Expenses:				
Distribution O&M-Wires and Related Equipment	$38,187,744			
Property Rental Income	-1,351,676			
Revenue from Damage	-1,635,031			
Other O&M Revenue	-5,331,984			
Construction (Installation) Charge Revenue	-11,264			
Pole Attachment Revenue	-2,122,979			
Distribution Capacity Charge Revenue	-213,586			
Power Factor Revenue	-2,599,595			
Subtotal		$24,921,629		
Plant Depreciation		46,316,956		
Capital Contributions and Grant Revenues		-27,995,410		
Interest		38,996,276		
Administration and General		14,360,827		
Revenue Taxes		11,607,165		
Net Income (Contribution to Equity)		32,109,111		
TOTAL DISTRIBUTION-WIRES & RELATED EQUIP. EXPENSE			$140,316,555	$14.533
Distribution-Transformers				
Direct Expenses:				
Distribution O&M-Transformers	$4,536,394			
Credits for Customer-Owned Transformers	353,171			
Subtotal		$4,889,565		
Plant Depreciation		8,976,179		
Capital Contributions and Grant Revenues		-2,475,480		
Interest		7,922,529		
Administration and General		2,015,116		
Revenue Taxes		2,562,690		
Net Income (Contribution to Equity)		6,523,325		
TOTAL DISTRIBUTION-TRANSFORMER EXPENSE			$30,413,925	$3.150
Distribution-Meters				
Distribution O&M-Meters		$3,866,345		
Plant Depreciation		$2,432,332		
Interest		$2,163,581		
Administration and General		$2,718,058		
Revenue Taxes		$1,343,389		
Net Income (Contribution to Equity)		$1,781,469		
TOTAL DISTRIBUTION-METERS EXPENSE			$14,305,175	$1.482
Distribution-Streetlights/Floodlights				
Distribution O&M-Lights		$4,036,760		
Plant Depreciation		2,489,028		
Capital Contributions and Grant Revenues		-787,487		
Interest		1,707,681		
Administration and General		1,469,977		
Revenue Taxes		1,071,312		
Net Income (Contribution to Equity)		1,406,086		
TOTAL DISTRIBUTION-STREETLIGHT/FLOODLIGHT EXPENSE			$11,393,357	$1.180
TOTAL DISTRIBUTION EXPENSE			$239,555,329	$24.812
TOTAL DISTRIBUTION + IN SERVICE AREA TRANSMISSION			$255,473,689	$26.461

Appendix 1: Unbundled Revenue Requirements, 2013-2014 (continued, page 4)

Unbundled Revenue Requirements - 2013				
Functions	**Dollars**	**Subtotals**	**Totals**	**$/MWh**
Customer Accounts and Services				
Direct Expenses:				
Customer Accounting and Advisory O&M	$41,125,978			
Late Payment Fees	-3,742,849			
Account Change Fee Revenue	-1,529,349			
Revenue from Current Diversion, Un-Permitted House Rewires and No Longer Allowing Flat-Rate Billings	-2,156,369			
Revenue from Miscellaneous Rentals	-196,659			
Revenue from Reconnect Charges	-260,278			
Subtotal		$33,240,474		
Plant Depreciation		3,589,585		
Interest		445,422		
Administration and General		17,043,297		
Revenue Taxes		6,526,762		
Net Income (Contribution to Equity)		366,756		
TOTAL CUSTOMER ACCOUNTS AND SERVICES EXPENSE			$61,212,298	$6.340
Low-Income Assistance				
Direct Expenses:				
Low-Income Assistance O&M	$921,682			
Rate Discount	9,057,430			
Bill Payment Assist. from Low-Income Acct.	285,863			
DHS Administration Payments	508,651			
Account Change Fee Waiver	39,217			
Late Payment Fees	-141,024			
Subtotal		$10,671,819		
Plant Depreciation		79,389		
Interest		9,851		
Administration and General		376,939		
Revenue Taxes		1,338,305		
Net Income (Contribution to Equity)		8,111		
TOTAL LOW-INCOME ASSISTANCE EXPENSE			$12,484,415	$1.293
TOTAL RETAIL SERVICES EXPENSE			**$329,170,401**	**$34.094**
RETAIL CUSTOMER REVENUE REQUIREMENT BEFORE CREDIT			**$801,034,200**	**$82.967**
CREDIT FOR NET WHOLESALE POWER SALES				
Wholesale Power Purchases		$84,951,102		
Wholesale Power Sales		-174,951,102		
NET WHOLESALE POWER SALES REVENUE			-$90,000,000	
TOTAL RETAIL CUSTOMER REVENUE REQUIREMENT			**$711,034,200**	**$73.645**

Appendix 1: Unbundled Revenue Requirements, 2013-2014 (continued, page 5)

Unbundled Revenue Requirements - 2014				
Functions	**Dollars**	**Subtotals**	**Totals**	**$/MWh**
ENERGY				
Power				
Direct Expenses:				
Generation O&M	$35,620,494			
Long-Term Purchased Power	235,389,834			
Power-Related Wholesale Purchases	7,907,753			
Other Power Costs	10,353,539			
Article 49 Sales to Pend Oreille County	-1,842,094			
Sales from Priest Rapids	-4,800,000			
Seasonal Exchange Delivered	-3,612,868			
SMUD Exchange Revenue	-6,781,497			
Power-Related Wholesale Sales	-16,308,818			
Subtotal		$255,926,343		
Depreciation and Amortization:				
Amortization of Hydro Project Mitigation	$5,054,906			
Amortization of High Ross Contract	347,404			
Plant Depreciation	20,898,617			
Subtotal		26,300,927		
Capital Contributions and Grant Revenues		-109,888		
Interest		26,985,524		
Administration and General		14,864,877		
Revenue Taxes and Payments in Lieu of Taxes:				
Revenue Taxes	40,954,222			
Whatcom County Contract Payments	1,004,384			
Pend Oreille County Contract Payments	2,451,454			
Payments to Concrete School District	129,771			
Subtotal		44,539,831		
Net Income (Contribution to Equity)		24,215,349		
Net Income (Risk Management)		17,793,431		
TOTAL POWER EXPENSE			$410,516,394	$42.120
Conservation				
Direct Expenses:				
Conservation	$4,868,701			
Operating Fees (Lighting Lab)	-300,000			
GreenUp and Community Solar Retail Revenue	-2,863,034			
Subtotal		$1,705,667		
Depreciation and Amortization:				
Amortization of Programmatic Conservation	$19,739,197			
BPA Payments for Conservation	-526,409			
Plant Depreciation	190,903			
Subtotal		19,403,691		
Interest		7,581,602		
Administration and General		869,473		
Revenue Taxes		3,695,961		
Net Income (Contribution to Equity)		6,803,320		
TOTAL CONSERVATION EXPENSE			$40,059,714	$4.110

Appendix 1: Unbundled Revenue Requirements, 2013-2014 (continued, page 6)

Unbundled Revenue Requirements - 2014				
Functions	**Dollars**	**Subtotals**	**Totals**	**$/MWh**
Transmission-Long Distance				
Direct Expenses:				
Transmission O&M	$6,183,559.85			
Wheeling	37,465,677			
Transmission Services	-4,423,206			
Transmission Attachments & Cell Sites	-1,692,405			
Subtotal		$37,533,626		
Depreciation and Amortization:				
Amortization of Puget Stillwater Substation	$99,286			
Plant Depreciation	3,115,901			
Subtotal		3,215,187		
Capital Contributions and Grant Revenues		-1,137,347		
Interest		3,395,462		
Administration and General		1,992,545		
Taxes				
Oregon Tax on 3rd AC Intertie	$245,000			
Revenue Taxes	5,661,518			
Subtotal		5,906,518		
Net Income (Contribution to Equity)		3,046,904		
TOTAL TRANSMISSION-LONG DISTANCE EXPENSE			$53,952,895	$5.536
TOTAL ENERGY EXPENSE			**$504,529,004**	**$51.766**
RETAIL SERVICES				
Transmission-In Service Area				
Direct Expenses:				
Transmission O&M	$4,433,459			
Transmission Attachments & Cell Sites	-1,194,237			
Subtotal		$3,239,221		
Plant Depreciation		5,053,956		
Capital Contributions and Grant Revenues		-434,974		
Interest		2,573,435		
Administration and General		1,552,386		
Revenue Taxes		1,498,371		
Net Income (Contribution to Equity)		2,309,261		
TOTAL TRANSMISSION-IN SERVICE AREA EXPENSE			$15,791,657	$1.620
Distribution-Stations				
Direct Expenses:				
Distribution O&M-Stations	$19,380,976			
Gain on Sale of Distribution Assets	-1,127,593			
Subtotal		$18,253,382		
Plant Depreciation		5,007,674		
Capital Contributions and Grant Revenues		-6,178		
Interest		3,565,655		
Administration and General		9,859,861		
Revenue Taxes		4,586,174		
Net Income (Contribution to Equity)		3,199,626		
TOTAL DISTRIBUTION-STATIONS EXPENSE			$44,466,195	$4.562

Appendix 1: Unbundled Revenue Requirements, 2013-2014 (continued, page 7)

Unbundled Revenue Requirements - 2014				
Functions	**Dollars**	**Subtotals**	**Totals**	**$/MWh**
Distribution-Wires and Related Equipment				
Direct Expenses:				
Distribution O&M-Wires and Related Equipment	$39,035,997			
Property Rental Income	-1,383,964			
Revenue from Damage	-1,676,279			
Other O&M Revenue	-5,466,516			
Construction (Installation) Charge Revenue	-11,533			
Pole Attachment Revenue	-2,176,537			
Distribution Capacity Charge Revenue	-218,398			
Power Factor Revenue	-2,630,337			
Subtotal		$25,472,433		
Plant Depreciation		48,791,819		
Capital Contributions and Grant Revenues		-30,494,731		
Interest		39,180,247		
Administration and General		14,430,339		
Revenue Taxes		12,175,501		
Net Income (Contribution to Equity)		35,158,234		
TOTAL DISTRIBUTION-WIRES & RELATED EQUIP. EXPENSE			$144,713,842	$14.848
Distribution-Transformers				
Direct Expenses:				
Distribution O&M-Transformers	$4,652,665			
Credits for Customer-Owned Transformers	360,935			
Subtotal		$5,013,600		
Plant Depreciation		9,455,805		
Capital Contributions and Grant Revenues		-4,852,775		
Interest		7,959,905		
Administration and General		2,024,090		
Revenue Taxes		2,450,679		
Net Income (Contribution to Equity)		7,142,788		
TOTAL DISTRIBUTION-TRANSFORMER EXPENSE			$29,194,092	$2.995
Distribution-Meters				
Distribution O&M-Meters		$3,978,899		
Plant Depreciation		$2,562,299		
Interest		$2,173,788		
Administration and General		$2,733,317		
Revenue Taxes		$1,431,389		
Net Income (Contribution to Equity)		$1,950,640		
TOTAL DISTRIBUTION-METERS EXPENSE			$14,830,333	$1.522
Distribution-Streetlights/Floodlights				
Distribution O&M-Lights		$3,254,849		
Plant Depreciation		2,622,025		
Capital Contributions and Grant Revenues		-803,617		
Interest		1,715,737		
Administration and General		1,170,512		
Revenue Taxes		995,182		
Net Income (Contribution to Equity)		1,539,609		
TOTAL DISTRIBUTION-STREETLIGHT/FLOODLIGHT EXPENSE			$10,494,297	$1.077
TOTAL DISTRIBUTION EXPENSE			$243,698,759	$25.004
TOTAL DISTRIBUTION + IN SERVICE AREA TRANSMISSION			$259,490,416	$26.624

Appendix 1: Unbundled Revenue Requirements, 2013-2014 (continued, page 8)

Unbundled Revenue Requirements - 2014				
Functions	**Dollars**	**Subtotals**	**Totals**	**$/MWh**
Customer Accounts and Services				
Direct Expenses:				
Customer Accounting and Advisory O&M	$41,908,671			
Late Payment Fees	-3,835,180			
Account Change Fee Revenue	-1,567,582			
Revenue from Current Diversion, Un-Permitted House Rewires and No Longer Allowing Flat-Rate Billings	-2,210,769			
Revenue from Miscellaneous Rentals	-201,356			
Revenue from Reconnect Charges	-266,496			
Subtotal		$33,827,288		
Plant Depreciation		3,722,600		
Interest		1,163,093		
Administration and General		16,954,728		
Revenue Taxes		6,960,171		
Net Income (Contribution to Equity)		1,043,697		
TOTAL CUSTOMER ACCOUNTS AND SERVICES EXPENSE			$63,671,577	$6.533
Low-Income Assistance				
Direct Expenses:				
Low-Income Assistance O&M	$939,267			
Rate Discount	9,606,146			
Bill Payment Assist. from Low-Income Acct.	292,625			
DHS Administration Payments	520,109			
Account Change Fee Waiver	40,197			
Late Payment Fees	-141,467			
Subtotal		$11,256,877		
Plant Depreciation		82,331		
Interest		25,724		
Administration and General		374,980		
Revenue Taxes		1,467,849		
Net Income (Contribution to Equity)		23,083		
TOTAL LOW-INCOME ASSISTANCE EXPENSE			$13,230,844	$1.358
TOTAL RETAIL SERVICES EXPENSE			**$336,392,837**	**$34.515**
RETAIL CUSTOMER REVENUE REQUIREMENT BEFORE CREDIT			**$840,921,841**	**$86.280**
CREDIT FOR NET WHOLESALE POWER SALES				
Wholesale Power Purchases		$100,049,536		
Wholesale Power Sales		-185,049,536		
NET WHOLESALE POWER SALES REVENUE			-$85,000,000	
TOTAL RETAIL CUSTOMER REVENUE REQUIREMENT			**$755,921,841**	**$77.559**

Appendix 2: Total Cost of Load + Losses, 2013 & 2014

Table A2.1 – Total Service Territory
Costs = (Market Price+Externality) x (Load+Losses)

			Total Service Territory						
			Total	Residential	Small	Medium	Large	High Demand	Lights
Jan		Mon-Sa HLH	22,377,619	9,014,204	2,756,406	5,357,251	3,037,532	2,067,386	144,840
Jan		Other hrs	12,639,521	5,248,190	1,428,168	2,740,321	1,665,391	1,373,763	183,689
	2013	**Jan Total**	**35,017,140**	**14,262,394**	**4,184,575**	**8,097,572**	**4,702,923**	**3,441,149**	**328,529**
Feb		Mon-Sa HLH	19,193,340	7,510,521	2,373,936	4,636,994	2,643,877	1,916,633	111,379
Feb		Other hrs	10,339,678	4,058,979	1,179,522	2,304,020	1,395,595	1,247,758	153,805
	2013	**Feb Total**	**29,533,019**	**11,569,500**	**3,553,458**	**6,941,014**	**4,039,472**	**3,164,391**	**265,184**
Mar		Mon-Sa HLH	18,573,603	6,742,276	2,359,327	4,796,853	2,640,952	1,952,112	82,083
Mar		Other hrs	9,291,770	3,457,424	1,064,392	2,157,154	1,266,872	1,208,701	137,228
	2013	**Mar Total**	**27,865,374**	**10,199,700**	**3,423,719**	**6,954,008**	**3,907,824**	**3,160,813**	**219,311**
Apr		Mon-Sa HLH	14,037,930	4,594,196	1,773,800	3,741,617	2,199,007	1,690,210	39,099
Apr		Other hrs	5,762,409	1,934,973	658,145	1,366,737	857,844	854,694	90,015
	2013	**Apr Total**	**19,800,339**	**6,529,169**	**2,431,946**	**5,108,355**	**3,056,852**	**2,544,904**	**129,114**
May		Mon-Sa HLH	12,595,011	3,666,231	1,654,540	3,573,554	2,077,809	1,597,829	25,047
May		Other hrs	4,180,651	1,256,714	495,847	1,046,776	659,674	654,306	67,335
	2013	**May Total**	**16,775,662**	**4,922,945**	**2,150,387**	**4,620,330**	**2,737,483**	**2,252,135**	**92,382**
Jun		Mon-Sa HLH	11,527,705	3,078,778	1,528,601	3,320,834	2,048,315	1,539,538	11,639
Jun		Other hrs	3,174,033	877,726	379,414	813,936	538,261	514,303	50,391
	2013	**Jun Total**	**14,701,738**	**3,956,504**	**1,908,016**	**4,134,770**	**2,586,577**	**2,053,841**	**62,031**
Jul		Mon-Sa HLH	19,997,039	5,120,380	2,692,937	5,888,609	3,647,346	2,627,800	19,967
Jul		Other hrs	8,083,918	2,101,668	976,592	2,125,509	1,414,856	1,334,438	130,855
	2013	**Jul Total**	**28,080,957**	**7,222,048**	**3,669,529**	**8,014,118**	**5,062,202**	**3,962,238**	**150,821**
Aug		Mon-Sa HLH	22,615,879	5,616,483	3,027,746	6,644,352	4,284,475	2,997,822	45,000
Aug		Other hrs	9,167,015	2,290,319	1,096,584	2,404,921	1,681,827	1,536,636	156,728
	2013	**Aug Total**	**31,782,895**	**7,906,802**	**4,124,330**	**9,049,273**	**5,966,302**	**4,534,458**	**201,728**
Sep		Mon-Sa HLH	19,337,329	5,180,624	2,566,227	5,615,662	3,465,398	2,433,373	76,044
Sep		Other hrs	10,274,851	2,837,195	1,231,750	2,660,875	1,779,984	1,598,747	166,300
	2013	**Sep Total**	**29,612,180**	**8,017,819**	**3,797,977**	**8,276,537**	**5,245,383**	**4,032,120**	**242,343**
Oct		Mon-Sa HLH	21,946,067	6,726,088	2,765,037	5,913,348	3,769,445	2,650,561	121,589
Oct		Other hrs	10,790,938	3,293,999	1,237,650	2,604,813	1,807,829	1,665,264	181,384
	2013	**Oct Total**	**32,737,005**	**10,020,087**	**4,002,686**	**8,518,161**	**5,577,274**	**4,315,825**	**302,972**
Nov		Mon-Sa HLH	23,475,642	8,453,030	2,861,328	5,948,819	3,618,309	2,436,492	157,664
Nov		Other hrs	13,119,664	4,841,261	1,479,246	3,012,101	1,970,126	1,621,532	195,398
	2013	**Nov Total**	**36,595,307**	**13,294,291**	**4,340,575**	**8,960,920**	**5,588,435**	**4,058,024**	**353,062**
Dec		Mon-Sa HLH	26,970,259	10,760,722	3,193,439	6,552,111	3,877,832	2,419,046	167,109
Dec		Other hrs	15,931,028	6,452,034	1,755,622	3,556,969	2,250,210	1,698,325	217,868
	2013	**Dec Total**	**42,901,287**	**17,212,755**	**4,949,060**	**10,109,080**	**6,128,043**	**4,117,371**	**384,977**
Jan		Mon-Sa HLH	28,164,099	11,165,229	3,456,528	6,713,344	4,099,916	2,560,518	168,564
Jan		Other hrs	15,240,029	6,234,154	1,717,528	3,293,014	2,158,612	1,631,713	205,008
	2014	**Jan Total**	**43,404,128**	**17,399,382**	**5,174,056**	**10,006,358**	**6,258,529**	**4,192,231**	**373,572**
Feb		Mon-Sa HLH	23,846,334	9,178,737	2,938,420	5,735,783	3,522,583	2,343,877	126,935
Feb		Other hrs	12,005,838	4,640,108	1,365,682	2,665,714	1,743,040	1,427,377	163,917
	2014	**Feb Total**	**35,852,173**	**13,818,845**	**4,304,102**	**8,401,497**	**5,265,623**	**3,771,254**	**290,852**
Mar		Mon-Sa HLH	22,817,830	8,135,928	2,884,859	5,861,630	3,484,651	2,359,083	91,678
Mar		Other hrs	11,559,470	4,230,921	1,319,834	2,672,963	1,699,109	1,481,304	155,338
	2014	**Mar Total**	**34,377,300**	**12,366,849**	**4,204,694**	**8,534,593**	**5,183,760**	**3,840,387**	**247,017**
Apr		Mon-Sa HLH	17,819,885	5,721,002	2,239,096	4,720,283	2,985,376	2,109,405	44,724
Apr		Other hrs	6,999,360	2,309,675	796,355	1,652,607	1,119,643	1,022,481	98,600
	2014	**Apr Total**	**24,819,246**	**8,030,676**	**3,035,451**	**6,372,890**	**4,105,019**	**3,131,885**	**143,324**
May		Mon-Sa HLH	15,693,163	4,484,160	2,044,977	4,410,279	2,766,046	1,959,788	27,914
May		Other hrs	6,201,628	1,821,855	733,595	1,550,495	1,054,961	951,796	88,926
	2014	**May Total**	**21,894,791**	**6,306,015**	**2,778,572**	**5,960,774**	**3,821,006**	**2,911,584**	**116,840**
Jun		Mon-Sa HLH	12,048,008	3,161,156	1,599,047	3,475,373	2,214,146	1,587,466	10,820
Jun		Other hrs	5,359,691	1,469,614	640,150	1,369,948	940,008	863,873	76,097
	2014	**Jun Total**	**17,407,698**	**4,630,770**	**2,239,197**	**4,845,321**	**3,154,154**	**2,451,339**	**86,917**
Jul		Mon-Sa HLH	17,754,958	4,477,542	2,389,774	5,223,093	3,341,069	2,307,811	15,669
Jul		Other hrs	7,896,705	2,026,360	955,564	2,078,575	1,431,013	1,292,194	112,999
	2014	**Jul Total**	**25,651,663**	**6,503,902**	**3,345,338**	**7,301,668**	**4,772,082**	**3,600,006**	**128,668**
Aug		Mon-Sa HLH	19,173,366	4,702,178	2,589,125	5,685,327	3,641,048	2,522,092	33,596
Aug		Other hrs	9,351,122	2,338,313	1,131,557	2,475,669	1,717,579	1,554,009	133,993
	2014	**Aug Total**	**28,524,488**	**7,040,491**	**3,720,682**	**8,160,996**	**5,358,627**	**4,076,102**	**167,589**
Sep		Mon-Sa HLH	17,412,336	4,651,383	2,320,682	5,071,949	3,116,834	2,191,336	60,154
Sep		Other hrs	8,786,606	2,399,424	1,060,626	2,291,662	1,528,976	1,375,798	130,119
	2014	**Sep Total**	**26,198,942**	**7,050,807**	**3,381,308**	**7,363,611**	**4,645,809**	**3,567,134**	**190,273**
Oct		Mon-Sa HLH	20,341,785	6,191,981	2,581,680	5,519,145	3,499,968	2,451,060	97,950
Oct		Other hrs	10,100,244	3,068,090	1,169,170	2,459,463	1,698,007	1,558,018	147,497
	2014	**Oct Total**	**30,442,029**	**9,260,071**	**3,750,849**	**7,978,608**	**5,197,975**	**4,009,079**	**245,447**
Nov		Mon-Sa HLH	20,311,420	7,233,749	2,502,064	5,206,958	3,148,296	2,102,950	117,403
Nov		Other hrs	12,412,536	4,584,143	1,413,115	2,873,725	1,865,228	1,521,811	154,515
	2014	**Nov Total**	**32,723,956**	**11,817,892**	**3,915,179**	**8,080,683**	**5,013,524**	**3,624,761**	**271,918**
Dec		Mon-Sa HLH	25,140,190	10,006,907	2,993,599	6,134,745	3,616,422	2,254,962	133,554
Dec		Other hrs	13,684,087	5,493,496	1,522,442	3,085,787	1,946,858	1,470,832	164,672
	2014	**Dec Total**	**38,824,277**	**15,500,403**	**4,516,041**	**9,220,533**	**5,563,280**	**3,725,794**	**298,226**

Table A2.2 – Total Nonnetwork Costs = (Market Price+Externality) x (Load+Losses)

			Total Nonnetwork (EXcludes Network Residential & Small that are billed at nonnetwork rates)						
			Total	Residential	Small	Medium	Large	High Demand	Lights
Jan		Mon-Sa HLH	19,330,616	8,760,847	2,425,719	4,164,374	1,767,450	2,067,386	144,840
Jan		Other hrs	11,023,264	5,101,394	1,258,057	2,092,001	1,014,360	1,373,763	183,689
	2013	**Jan Total**	**30,353,879**	**13,862,242**	**3,683,776**	**6,256,375**	**2,781,810**	**3,441,149**	**328,529**
Feb		Mon-Sa HLH	16,552,358	7,303,328	2,088,453	3,596,558	1,536,008	1,916,633	111,379
Feb		Other hrs	9,003,262	3,943,615	1,039,552	1,765,294	853,239	1,247,758	153,805
	2013	**Feb Total**	**25,555,620**	**11,246,943**	**3,128,004**	**5,361,852**	**2,389,247**	**3,164,391**	**265,184**
Mar		Mon-Sa HLH	15,907,956	6,550,562	2,075,741	3,716,570	1,530,887	1,952,112	82,083
Mar		Other hrs	8,074,600	3,362,707	937,615	1,654,390	773,959	1,208,701	137,228
	2013	**Mar Total**	**23,982,555**	**9,913,269**	**3,013,356**	**5,370,961**	**2,304,845**	**3,160,813**	**219,311**
Apr		Mon-Sa HLH	11,917,315	4,462,478	1,559,039	2,895,973	1,270,516	1,690,210	39,099
Apr		Other hrs	4,985,539	1,883,495	580,664	1,048,755	527,917	854,694	90,015
	2013	**Apr Total**	**16,902,854**	**6,345,973**	**2,139,702**	**3,944,728**	**1,798,433**	**2,544,904**	**129,114**
May		Mon-Sa HLH	10,606,325	3,561,432	1,454,463	2,768,318	1,199,236	1,597,829	25,047
May		Other hrs	3,588,172	1,222,681	437,155	801,780	404,915	654,306	67,335
	2013	**May Total**	**14,194,497**	**4,784,114**	**1,891,619**	**3,570,098**	**1,604,151**	**2,252,135**	**92,382**
Jun		Mon-Sa HLH	9,666,788	2,991,042	1,342,363	2,566,233	1,215,973	1,539,538	11,639
Jun		Other hrs	2,718,008	853,297	335,060	626,142	338,816	514,303	50,391
	2013	**Jun Total**	**12,384,796**	**3,844,339**	**1,677,422**	**3,192,375**	**1,554,788**	**2,053,841**	**62,031**
Jul		Mon-Sa HLH	16,699,840	4,977,027	2,365,579	4,548,293	2,161,173	2,627,800	19,967
Jul		Other hrs	6,896,694	2,041,220	861,999	1,636,163	892,018	1,334,438	130,855
	2013	**Jul Total**	**23,596,534**	**7,018,248**	**3,227,578**	**6,184,456**	**3,053,192**	**3,962,238**	**150,821**
Aug		Mon-Sa HLH	18,885,442	5,458,362	2,661,931	5,122,951	2,599,376	2,997,822	45,000
Aug		Other hrs	7,830,175	2,224,838	966,698	1,857,455	1,087,820	1,536,636	156,728
	2013	**Aug Total**	**26,715,617**	**7,683,200**	**3,628,629**	**6,980,406**	**3,687,196**	**4,534,458**	**201,728**
Sep		Mon-Sa HLH	16,257,225	5,036,920	2,255,999	4,345,032	2,109,857	2,433,373	76,044
Sep		Other hrs	8,794,786	2,754,292	1,085,869	2,043,785	1,145,794	1,598,747	166,300
	2013	**Sep Total**	**25,052,011**	**7,791,212**	**3,341,868**	**6,388,817**	**3,255,650**	**4,032,120**	**242,343**
Oct		Mon-Sa HLH	18,604,108	6,534,054	2,429,817	4,574,718	2,293,369	2,650,561	121,589
Oct		Other hrs	9,311,621	3,203,347	1,092,667	2,000,983	1,167,976	1,665,264	181,384
	2013	**Oct Total**	**27,915,729**	**9,737,401**	**3,522,484**	**6,575,701**	**3,461,345**	**4,315,825**	**302,972**
Nov		Mon-Sa HLH	20,146,020	8,213,040	2,513,064	4,609,230	2,216,529	2,436,492	157,664
Nov		Other hrs	11,398,161	4,705,801	1,307,325	2,311,547	1,256,558	1,621,532	195,398
	2013	**Nov Total**	**31,544,181**	**12,918,841**	**3,820,389**	**6,920,777**	**3,473,087**	**4,058,024**	**353,062**
Dec		Mon-Sa HLH	23,297,980	10,460,404	2,805,200	5,080,061	2,366,159	2,419,046	167,109
Dec		Other hrs	13,901,082	6,262,341	1,551,456	2,729,740	1,441,352	1,698,325	217,868
	2013	**Dec Total**	**37,199,062**	**16,722,745**	**4,356,656**	**7,809,801**	**3,807,511**	**4,117,371**	**384,977**
Jan		Mon-Sa HLH	24,354,486	10,851,613	3,042,611	5,220,484	2,510,697	2,560,518	168,564
Jan		Other hrs	13,302,020	6,059,870	1,513,325	2,514,849	1,377,254	1,631,713	205,008
	2014	**Jan Total**	**37,656,506**	**16,911,483**	**4,555,936**	**7,735,333**	**3,887,951**	**4,192,231**	**373,572**
Feb		Mon-Sa HLH	20,587,432	8,925,693	2,585,755	4,450,718	2,154,454	2,343,877	126,935
Feb		Other hrs	10,463,245	4,508,302	1,203,942	2,043,262	1,116,445	1,427,377	163,917
	2014	**Feb Total**	**31,050,678**	**13,433,995**	**3,789,697**	**6,493,980**	**3,270,900**	**3,771,254**	**290,852**
Mar		Mon-Sa HLH	19,568,709	7,904,734	2,538,845	4,543,728	2,130,639	2,359,083	91,678
Mar		Other hrs	10,054,928	4,115,077	1,162,967	2,050,930	1,089,313	1,481,304	155,338
	2014	**Mar Total**	**29,623,637**	**12,019,811**	**3,701,812**	**6,594,658**	**3,219,952**	**3,840,387**	**247,017**
Apr		Mon-Sa HLH	15,151,572	5,557,088	1,968,615	3,655,385	1,816,355	2,109,405	44,724
Apr		Other hrs	6,062,329	2,248,263	702,817	1,268,760	721,409	1,022,481	98,600
	2014	**Apr Total**	**21,213,901**	**7,805,351**	**2,671,432**	**4,924,145**	**2,537,764**	**3,131,885**	**143,324**
May		Mon-Sa HLH	13,243,075	4,356,202	1,798,018	3,417,157	1,683,997	1,959,788	27,914
May		Other hrs	5,327,903	1,772,460	647,133	1,189,217	678,371	951,796	88,926
	2014	**May Total**	**18,570,978**	**6,128,662**	**2,445,150**	**4,606,374**	**2,362,368**	**2,911,584**	**116,840**
Jun		Mon-Sa HLH	10,107,774	3,071,074	1,404,928	2,688,305	1,345,180	1,587,466	10,820
Jun		Other hrs	4,592,718	1,428,753	565,353	1,053,706	604,935	863,873	76,097
	2014	**Jun Total**	**14,700,492**	**4,499,828**	**1,970,282**	**3,742,011**	**1,950,115**	**2,451,339**	**86,917**
Jul		Mon-Sa HLH	14,838,305	4,352,242	2,099,980	4,036,733	2,025,871	2,307,811	15,669
Jul		Other hrs	6,738,826	1,968,101	843,720	1,601,005	920,806	1,292,194	112,999
	2014	**Jul Total**	**21,577,131**	**6,320,343**	**2,943,700**	**5,637,738**	**2,946,677**	**3,600,006**	**128,668**
Aug		Mon-Sa HLH	15,992,979	4,569,717	2,276,903	4,388,140	2,202,531	2,522,092	33,596
Aug		Other hrs	7,974,786	2,271,640	997,755	1,911,285	1,106,102	1,554,009	133,993
	2014	**Aug Total**	**23,967,764**	**6,841,357**	**3,274,658**	**6,299,425**	**3,308,633**	**4,076,102**	**167,589**
Sep		Mon-Sa HLH	14,633,106	4,522,321	2,040,764	3,923,927	1,894,605	2,191,336	60,154
Sep		Other hrs	7,517,521	2,329,157	935,433	1,762,419	984,594	1,375,798	130,119
	2014	**Sep Total**	**22,150,627**	**6,851,477**	**2,976,198**	**5,686,347**	**2,879,199**	**3,567,134**	**190,273**
Oct		Mon-Sa HLH	17,230,587	6,015,253	2,269,326	4,271,976	2,125,021	2,451,060	97,950
Oct		Other hrs	8,706,954	2,983,683	1,032,501	1,890,303	1,094,952	1,558,018	147,497
	2014	**Oct Total**	**25,937,541**	**8,998,936**	**3,301,828**	**6,162,279**	**3,219,973**	**4,009,079**	**245,447**
Nov		Mon-Sa HLH	17,409,458	7,028,206	2,197,837	4,038,973	1,924,089	2,102,950	117,403
Nov		Other hrs	10,772,270	4,456,004	1,249,005	2,205,448	1,185,487	1,521,811	154,515
	2014	**Nov Total**	**28,181,728**	**11,484,210**	**3,446,841**	**6,244,421**	**3,109,576**	**3,624,761**	**271,918**
Dec		Mon-Sa HLH	21,706,445	9,727,790	2,630,484	4,756,026	2,203,629	2,254,962	133,554
Dec		Other hrs	11,930,173	5,331,406	1,346,052	2,370,250	1,246,960	1,470,832	164,672
	2014	**Dec Total**	**33,636,617**	**15,059,196**	**3,976,536**	**7,126,277**	**3,450,589**	**3,725,794**	**298,226**

Table A2.3 _ Total Downtown Network
Costs = (Market Price+Externality) x (Load+Losses)

			Downtown Network				
			Total	Residential	Small	Medium	Large
Jan		Mon-Sa HLH	3,047,003	253,357	330,688	1,192,876	1,270,083
Jan		Other hrs	1,616,257	146,795	170,111	648,320	651,031
	2013	**Jan Total**	**4,663,260**	**400,152**	**500,799**	**1,841,196**	**1,921,113**
Feb		Mon-Sa HLH	2,640,982	207,193	285,484	1,040,436	1,107,869
Feb		Other hrs	1,336,416	115,364	139,970	538,727	542,356
	2013	**Feb Total**	**3,977,398**	**322,557**	**425,454**	**1,579,162**	**1,650,225**
Mar		Mon-Sa HLH	2,665,648	191,714	283,586	1,080,283	1,110,065
Mar		Other hrs	1,217,171	94,717	126,777	502,764	492,913
	2013	**Mar Total**	**3,882,819**	**286,431**	**410,363**	**1,583,047**	**1,602,978**
Apr		Mon-Sa HLH	2,120,615	131,718	214,762	845,644	928,491
Apr		Other hrs	776,870	51,478	77,482	317,982	329,928
	2013	**Apr Total**	**2,897,485**	**183,196**	**292,243**	**1,163,627**	**1,258,419**
May		Mon-Sa HLH	1,988,685	104,799	200,077	805,236	878,573
May		Other hrs	592,479	34,032	58,691	244,996	254,760
	2013	**May Total**	**2,581,164**	**138,831**	**258,768**	**1,050,232**	**1,133,333**
Jun		Mon-Sa HLH	1,860,918	87,736	186,239	754,601	832,342
Jun		Other hrs	456,024	24,429	44,355	187,794	199,446
	2013	**Jun Total**	**2,316,942**	**112,165**	**230,593**	**942,395**	**1,031,788**
Jul		Mon-Sa HLH	3,297,199	143,352	327,358	1,340,316	1,486,173
Jul		Other hrs	1,187,224	60,448	114,592	489,346	522,837
	2013	**Jul Total**	**4,484,423**	**203,800**	**441,951**	**1,829,662**	**2,009,010**
Aug		Mon-Sa HLH	3,730,438	158,121	365,816	1,521,402	1,685,100
Aug		Other hrs	1,336,840	65,482	129,886	547,465	594,007
	2013	**Aug Total**	**5,067,278**	**223,602**	**495,702**	**2,068,867**	**2,279,107**
Sep		Mon-Sa HLH	3,080,104	143,704	310,228	1,270,630	1,355,542
Sep		Other hrs	1,480,066	82,904	145,881	617,090	634,191
	2013	**Sep Total**	**4,560,169**	**226,607**	**456,109**	**1,887,720**	**1,989,732**
Oct		Mon-Sa HLH	3,341,959	192,034	335,219	1,338,630	1,476,076
Oct		Other hrs	1,479,317	90,651	144,983	603,830	639,853
	2013	**Oct Total**	**4,821,276**	**282,685**	**480,202**	**1,942,460**	**2,115,929**
Nov		Mon-Sa HLH	3,329,622	239,989	348,265	1,339,588	1,401,780
Nov		Other hrs	1,721,503	135,460	171,921	700,554	713,568
	2013	**Nov Total**	**5,051,126**	**375,450**	**520,186**	**2,040,142**	**2,115,348**
Dec		Mon-Sa HLH	3,672,278	300,318	388,238	1,472,049	1,511,673
Dec		Other hrs	2,029,946	189,692	204,166	827,229	808,859
	2013	**Dec Total**	**5,702,224**	**490,010**	**592,404**	**2,299,279**	**2,320,532**
Jan		Mon-Sa HLH	3,809,613	313,616	413,918	1,492,860	1,589,220
Jan		Other hrs	1,938,009	174,283	204,203	778,165	781,358
	2014	**Jan Total**	**5,747,622**	**487,899**	**618,120**	**2,271,025**	**2,370,578**
Feb		Mon-Sa HLH	3,258,902	253,044	352,665	1,285,065	1,368,128
Feb		Other hrs	1,542,593	131,807	161,740	622,452	626,595
	2014	**Feb Total**	**4,801,495**	**384,850**	**514,404**	**1,907,517**	**1,994,723**
Mar		Mon-Sa HLH	3,249,121	231,194	346,015	1,317,901	1,354,012
Mar		Other hrs	1,504,541	115,844	156,867	622,033	609,797
	2014	**Mar Total**	**4,753,663**	**347,038**	**502,882**	**1,939,935**	**1,963,808**
Apr		Mon-Sa HLH	2,668,314	163,914	270,480	1,064,899	1,169,021
Apr		Other hrs	937,031	61,411	93,539	383,847	398,234
	2014	**Apr Total**	**3,605,345**	**225,325**	**364,019**	**1,448,745**	**1,567,255**
May		Mon-Sa HLH	2,450,088	127,958	246,959	993,122	1,082,049
May		Other hrs	873,725	49,395	86,462	361,278	376,589
	2014	**May Total**	**3,323,813**	**177,353**	**333,421**	**1,354,400**	**1,458,638**
Jun		Mon-Sa HLH	1,940,234	90,082	194,118	787,067	868,966
Jun		Other hrs	766,972	40,860	74,797	316,243	335,073
	2014	**Jun Total**	**2,707,206**	**130,942**	**268,915**	**1,103,310**	**1,204,039**
Jul		Mon-Sa HLH	2,916,652	125,300	289,794	1,186,360	1,315,198
Jul		Other hrs	1,157,880	58,259	111,844	477,570	510,207
	2014	**Jul Total**	**4,074,532**	**183,559**	**401,638**	**1,663,930**	**1,825,405**
Aug		Mon-Sa HLH	3,180,387	132,461	312,222	1,297,187	1,438,517
Aug		Other hrs	1,376,336	66,673	133,802	564,384	611,477
	2014	**Aug Total**	**4,556,724**	**199,134**	**446,024**	**1,861,571**	**2,049,994**
Sep		Mon-Sa HLH	2,779,230	129,062	279,918	1,148,022	1,222,229
Sep		Other hrs	1,269,085	70,267	125,193	529,243	544,382
	2014	**Sep Total**	**4,048,315**	**199,329**	**405,110**	**1,677,265**	**1,766,610**
Oct		Mon-Sa HLH	3,111,198	176,728	312,353	1,247,170	1,374,947
Oct		Other hrs	1,393,290	84,407	136,668	569,160	603,054
	2014	**Oct Total**	**4,504,488**	**261,135**	**449,022**	**1,816,329**	**1,978,001**
Nov		Mon-Sa HLH	2,901,963	205,543	304,228	1,167,985	1,224,207
Nov		Other hrs	1,640,266	128,139	164,110	668,277	679,741
	2014	**Nov Total**	**4,542,229**	**333,682**	**468,338**	**1,836,262**	**1,903,948**
Dec		Mon-Sa HLH	3,433,745	279,117	363,115	1,378,719	1,412,793
Dec		Other hrs	1,753,914	162,090	176,390	715,537	699,898
	2014	**Dec Total**	**5,187,660**	**441,207**	**539,505**	**2,094,256**	**2,112,691**

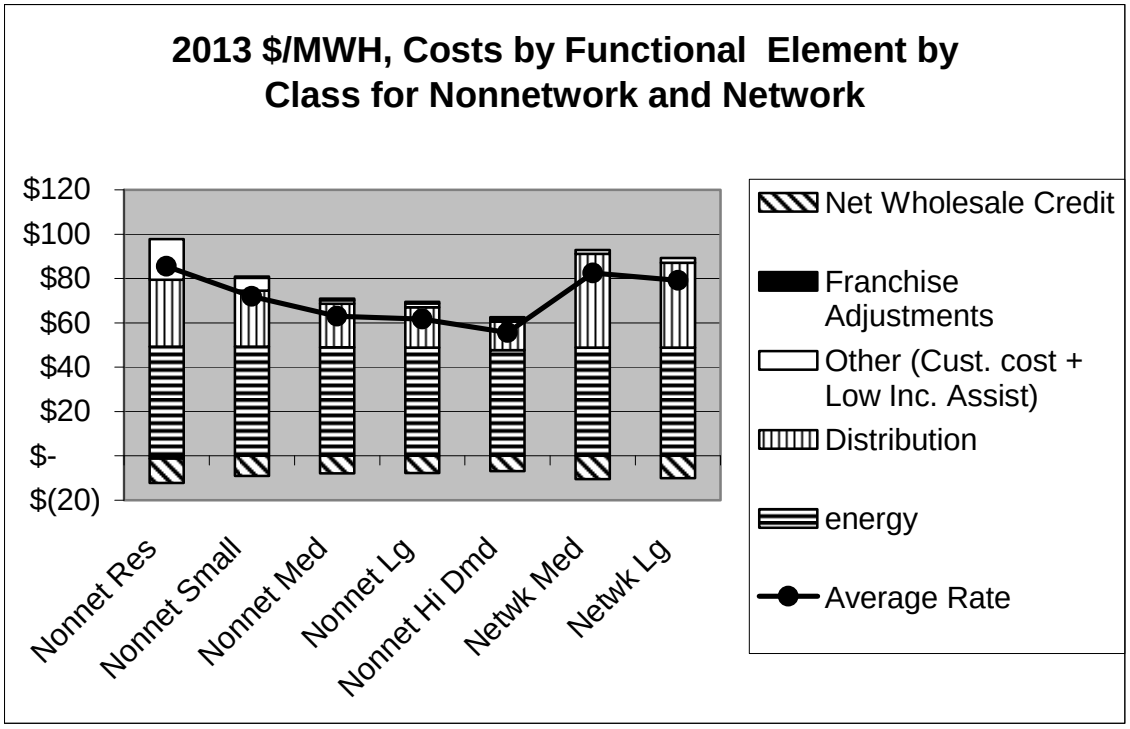
Appendix 3: Example Average Rate for High Demand-City Customer Class for 2013

Compare last column with High Demand on Table 11.8.a.

		A	B	C	D	E	F	G
	MC Table	HD MC	Total MC[2][3]	MC Share (A/B)	Total Op. Cost Rev Req (Table 3.1)	HD Share of RR (C x D)	HD-City Load Share (Table 6.5)	HD-City Share of RR (E x F)
Energy	Table 7.7	$ 46,554,631	$ 385,101,348	12.089%	$ 471,863,799	$ 57,043,283	79.238%	$ 45,199,813
In Service Area Transmission	Table 8.3	$ 4,202,241	$ 47,391,600	8.867%	$ 15,918,360	$ 1,411,490	79.238%	$ 1,118,433
Stations	Table 8.5	$ 2,849,496	$ 32,878,615	8.667%	$ 43,126,317	$ 3,737,635	79.238%	$ 2,961,618
Wires and Related Equipment[1]	Table 8.11	$ 15,686,128	$ 180,551,341	8.688%	$ 104,950,865	$ 9,118,031	79.238%	$ 7,224,922
Transformers[1]	Table 8.20	$ 583,538	$ 11,705,454	4.985%	$ 16,958,258	$ 845,400	79.238%	$ 669,876
Meters	Table 8.21.d	$ 56,412	$ 4,714,487	1.197%	$ 14,305,175	$ 171,171	79.238%	$ 135,632
Customer Costs	Table 9.22	$ 119,451	$ 43,353,821	0.276%	$ 61,212,298	$ 168,656	79.238%	$ 133,639
Low Income Assistance[3]	Table 10.2.a	$ 70,051,896	$ 765,898,929	9.146%	$ 12,484,415	$ 1,141,870	79.238%	$ 904,792
Total Revenue Requirement before NWR credit								$ 58,348,726
Less NWR credit (Table 11.8.a)[4]								(6,555,757)
Total Class 2013 Revenue Requirement								51,792,969
2013 Class Load in MWh (Table11.8.a)								947,623
Average rate in $/MWh (class rev req / class load)								$54.656
Average rate in $/kWh								$0.054656

(1) The Operating Cost Revenue Requirement from Table 3.1 for these items equal the grand total less the Downtown network portion of 'Network' revenue requirements which, for 20113 was 84.28790% of the total network operating cost revenue requirements.
(2) Total MC for just Nonnetwork for Wires and Related Equipment and Transformers
(3) Marginal cost shares for Low Income Assistance is based on share of total over all Marginal costs
(4) Net Wholesale Revenue Credits ($90,000,00 for 2013) are allocated based on share of Revenue Requirements allocated by Marginal cost shares. The Hi Dmd Share for Seattle is from Table 10.5.a (7.284%)

Appendix 4: Summary of Costs by Functional Component for Nonnnetwork and Network Retail Customer Classes for 2013, $/MWH



Nonnet Res and Nonnet Small include the data for Network Residential and Network Small