

Exhibit No. \_\_\_ T (CTM-1T)  
Dockets UE-120436 et al.  
Witness: Christopher T. Mickelson

**BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,**

**Complainant,**

**v.**

**AVISTA CORPORATION, d/b/a  
AVISTA UTILITIES,**

**Respondent.**

**DOCKETS UE-120436/UG-120437  
(consolidated)**

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**WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,**

**Complainant,**

**v.**

**AVISTA CORPORATION d/b/a AVISTA  
UTILITIES,**

**Respondent.**

**DOCKETS UE-110876/UG-110877  
(consolidated)**

**TESTIMONY OF**

**CHRISTOPHER T. MICKELSON**

**STAFF OF  
WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION**

*Aldyl-A Pipe Replacement Program  
Electric Cost of Service, Revenue Allocation, and Rate Design  
Natural Gas Cost of Service, Revenue Allocation, and Rate Design*

**September 19, 2012**

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## LIST OF EXHIBITS

Exhibit No. ____ (CTM-2)	Electric Cost of Service
Exhibit No. ____ (CTM-3)	Electric Revenue Allocation and Rate Design
Exhibit No. ____ (CTM-4)	Electric Bill Frequency and Histogram Analysis
Exhibit No. ____ (CTM-5)	Natural Gas Cost of Service
Exhibit No. ____ (CTM-6)	Natural Gas Revenue Allocation and Rate Design
Exhibit No. ____ (CTM-7)	Natural Gas Bill Frequency and Histogram Analysis
Exhibit No. ____ (CTM-8)	Allocation of Natural Gas Distribution Mains

1 I. INTRODUCTION

2

3 Q. Please state your name and business address.

4 A. My name is Christopher Thomas Mickelson. My business address is the Richard  
5 Hemstad Building, 1300 S. Evergreen Park Drive S.W., P.O. Box 47250, Olympia,  
6 Washington 98504. My email address is cmickels@utc.wa.gov.

7

8 Q. By whom are you employed and in what capacity?

9 A. I am employed by the Washington Utilities and Transportation Commission  
10 (“Commission”) as a Senior Regulatory Analyst in the Energy Section of the  
11 Regulatory Services Division. Among other duties, I am responsible for analyzing  
12 financial, accounting and rate-related issues in general rate cases, accounting  
13 petitions, and other tariff filings as they pertain to the investor-owned utilities  
14 (“IOUs”) under the jurisdiction of this Commission.

15

16 Q. How long have you been employed by the Commission?

17 A. I have been employed by the Commission since June 2007.

18

19 Q. Would you please state your educational and professional background?

20 A. I graduated from the University of Washington in 2002, receiving a Bachelor of Arts  
21 degree in Business Administration. Since joining the Commission, I have attended  
22 several regulatory courses, including the 49th Annual National Association of

1 Regulatory Utility Commissioners Regulatory Studies Program held at Michigan  
2 State University in East Lansing, Michigan.

3 I have filed testimony on natural gas revenue requirement, revenue allocation  
4 and rate design in Puget Sound Energy's consolidated general rate case, Docket UE-  
5 111048 and UG-111049. I was the lead analyst in numerous tariff applications filed  
6 by regulated water, solid waste, and transportation companies. These filings  
7 included general rate cases of Murrey's Disposal Company, Inc., Docket TG-  
8 090097; American Disposal Company, Inc., Docket TG-090098; Washington Water  
9 Service Company, Docket UW-090733; and Waste Management of Washington,  
10 Inc., Dockets TG-091933 and TG-101080.

11 I have participated in the development of Commission rules, prepared  
12 detailed statistical studies for use by commissioners and other Commission  
13 employees, and examined utility and transportation company reports for compliance  
14 with Commission regulations. I have also presented Staff recommendations at  
15 numerous open public meetings.

## 17 II. SCOPE AND SUMMARY OF TESTIMONY

18  
19 **Q. What is the purpose of your testimony?**

20 A. The purpose of my testimony is to address Avista Corporation's ("Avista" or "the  
21 Company") proposed Aldyl-A polyethylene ("Aldyl-A") pipe replacement program  
22 as well as electric and natural gas cost of service studies, revenue allocations, and  
23 rate design. I respond to the Company proposals sponsored by Mr. Kopczyński

1 (Aldyl-A pipe replacement program), Ms. Knox (Cost of Service) and Mr. Ehrbar  
2 (Rate Design).

3

4 **Q. Please summarize your recommendations with respect to Aldyl-A pipe**  
5 **replacement program.**

6 A. The Company's Aldyl-A pipe replacement program is a twenty-year program  
7 designed to analytically determine the appropriate portions of the E.I. du Pont de  
8 Nemours and Company, Inc. ("DuPont") Aldyl-A medium density pipe to remove  
9 and replace in Avista's natural gas distribution system. Staff recommends that the  
10 Commission require the Company to track steel and polyethylene, particularly Aldyl-  
11 A pipe, distribution mains in separate subaccounts under Federal Energy Regulatory  
12 Commission's ("FERC") Uniform System of Accounts ("USoA") 376 for past and  
13 future plant.

14

15 **Q. Please summarize your recommendations with respect to the electric cost of**  
16 **service study, revenue allocation, and rate design.**

17 A. The Company's electric cost of service study<sup>1</sup> fairly presents the costs imposed on  
18 the system by the customers on each rate schedule. Staff takes no exception to the  
19 Company's electric cost of service study.

20 With respect to revenue allocation, Staff proposes a rate spread that is  
21 consistent with the cost of service study results and principles of cost causation. By

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<sup>1</sup> The updated information in Avista's response to Staff Data Request 334, corrects the allocation factors and a primary voltage value for Schedule 21.

1 contrast, the Company proposes a revenue allocation that perpetuates inequities  
2 between rate schedules.

3 As for electric rate design, Staff recommends increase the monthly customer  
4 charge to \$7.34 to include more fixed cost recovery, adjusting the volumetric blocks  
5 for Residential Schedule 1, and setting a uniform percentage increase for volumetric  
6 rates in Residential Schedule 1.

7

8 **Q. Please summarize Staff's recommendations for the natural gas cost of service**  
9 **study, revenue allocation, and rate design.**

10 A. The Company's natural gas cost of service study reasonably functionalizes, classifies  
11 and allocates capital investments and operating expenses to each rate schedule,  
12 except for the Company's classification of gas distribution mains. Staff classifies  
13 these mains differently to reflect the fact that large load customers (i.e., Schedules  
14 131, 132, and 146) benefit from the reliability and capacity of the system that the  
15 smaller pipes, less than four inches in diameter, deliver.

16 This change in the cost study leads Staff to recommend a revenue allocation  
17 different from the equal percentage method proposed by the Company. Staff  
18 recommends Interruptible Schedules 131 and 132 and Transportation Schedule 146  
19 getting a higher than average increase, while Large General Service Schedules 111  
20 and 112 and Extra Large General Service Schedules 121 and 122 get a lower than  
21 average increase, while General Service Schedule 101 gets an average increase.

22 As for natural gas rate design, Staff recommends the Commission increase  
23 the monthly customer charge to \$10.98 to recover more fixed costs through the basic

1 charge, and create a new volumetric block and rate that starts at 70 therms for  
2 General Service Schedule 101.

3

4 **Q. Do you sponsor any exhibits in support of Staff's recommendations?**

5 A. Yes, I sponsor the following exhibits in support of my testimony:

- 6 • Exhibit No. \_\_\_\_ (CTM-2), Electric Cost of Service
- 7 • Exhibit No. \_\_\_\_ (CTM-3), Electric Revenue Allocation and Rate Design
- 8 • Exhibit No. \_\_\_\_ (CTM-4), Electric Bill Frequency and Histogram Analysis
- 9 • Exhibit No. \_\_\_\_ (CTM-5), Natural Gas Cost of Service
- 10 • Exhibit No. \_\_\_\_ (CTM-6), Natural Gas Revenue Allocation and Rate Design
- 11 • Exhibit No. \_\_\_\_ (CTM-7), Natural Gas Bill Frequency and Histogram Analysis
- 12 • Exhibit No. \_\_\_\_ (CTM-8), Allocation of Natural Gas Distribution Mains

13

14 **III. ALDYL-A PIPE REPLACEMENT PROGRAM**

15

16 **Q. What is Aldyl-A pipe?**

17 A. Aldyl-A pipe is the brand name of a certain type of polyethylene pipe manufactured  
18 by DuPont. Avista purchased this pipe from 1968 to 1991.

19

20 **Q. Please describe the Company's Aldyl-A pipe replacement program.**

21 A. The Company's proposed Aldyl-A pipe replacement program is a twenty-year  
22 program to remove and replace portions of the DuPont Aldyl-A medium density pipe



1 and service tees in Avista's natural gas distribution system in all three states in which  
2 Avista offers natural gas service: Washington, Oregon and Idaho.

3 The pipe subject to removal consists of distribution mains and services  
4 operating at a maximum operating pressure of 60 psi, with pipe diameters ranging  
5 from 1 ¼ to 4 inches. Approximately 46 percent of this Aldyl-A pipe is located in  
6 Washington State.<sup>2</sup>

7 Avista does not propose to replace all Aldyl-A pipe in its system, but rather  
8 only service mains from 1 ¼ inches in diameter to mains under six inches. Avista  
9 does not plan to replace Aldyl-A pipe with a diameter smaller than 1 ¼ inches  
10 because, according to Avista, this smaller diameter Aldyl-A pipe does not exhibit the  
11 problems of the larger diameter pipe.<sup>3</sup>

12  
13 **Q. How much Aldyl-A pipe does the Company have in Washington State?**

14 A. In Washington, 7.68 percent of plastic gas pipe is pre-1973 Aldyl-A pipe, 36.23  
15 percent is pre-1984 Aldyl-A pipe, and 56.10 percent is 1984 and later Aldyl-A pipe.  
16 Within the pre-1973 Aldyl-A pipe, 3.12 percent is pipe of unknown manufacture.

17  
18 **Q. What is Staff's position on the Company's replacement program?**

19 A. As Staff witness Mr. Lykken testifies, Staff accepts the Company's Aldyl-A pipe  
20 replacement program. Staff also recommends the Commission require the Company  
21 to track steel and polyethylene, particularly Aldyl-A pipe, distribution mains in  
22 separate subaccounts under FERC Account 376 for past and future plant.

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<sup>2</sup> Direct Testimony of Don F. Kopczynski, Exhibit No. \_\_\_\_ (DFK-3), at 33.

<sup>3</sup> Exhibit No. \_\_\_\_ (DFK-3), at 20.

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**Q. What is the basis for Staff's accounting recommendation?**

A. For accounting purposes, the Company uses a composite convention of accounting called the "group" method which is considered acceptable by both FERC's USoA and Generally Accepted Accounting Principles ("GAAP"). However, composite convention of accounting groups assets together, which ultimately loses any detail about the vintage of the assets that could be particularly useful for a specialized replacement program.

My recommendation that the Company keep track of this plant in separate subaccounts will maintain this detail for future use by the Commission.

**Q. Please explain further the "group" and "composite" conventions of accounting.**

A. There are two methods of depreciating multiple-asset accounts are employed: the group method and the composite method. The term "group" refers to a collection of assets that are similar in nature. "Composite" refers to a collection of assets that are dissimilar in nature. The group method is frequently used when the assets are fairly homogeneous and have approximately the same useful lives. The composite approach is used when the assets are heterogeneous and have different lives. The group method more closely approximates a single-unit cost procedure because the dispersion from the average is not as great. The method of computation for group or composite is essentially the same: find an average and depreciate on that basis.

The differences between the group or composite method and the single-unit depreciation method become accentuated when we look at asset retirements. If an

1 asset is retired before, or after the average service life of the group is reached, the  
2 resulting gain or loss is buried in the Accumulated Depreciation account. This  
3 practice is justified because some assets will be retired before the average service life  
4 and others after the average life.

5 The group or composite method simplifies the bookkeeping process and  
6 tends to average out errors caused by over-or under depreciation. As a result,  
7 periodic income is not distorted by gains or losses on disposals of assets.

8  
9 **IV. ELECTRIC COST OF SERVICE, REVENUE**  
10 **ALLOCATION, AND RATE DESIGN**  
11

12 **A. Cost of Service Study**

13  
14 **Q. What does a cost of service study measure?**

15 A. A cost of service study measures whether the revenue provided by the customers  
16 recovers the cost to serve those customers, by apportioning the revenue, expenses,  
17 and rate base associated with providing service to defined groups of customers.

18  
19 **Q. Did Staff review the Company's proposed electric cost of service study?**

20 A. Yes. The Company's proposed electric cost of service is contained in Ms. Knox's  
21 Exhibit No. \_\_\_ (TLK-3). Ms. Knox's study reasonably functionalizes, classifies  
22 and allocates capital investments and operating expenses to each rate schedule.  
23 Therefore, Staff uses the same method of allocation, adjusted proportionally to  
24 reflect Staff's lower revenue requirement recommendation.

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**Q. Does the Company’s electric cost of service study follow the same methodology that the Commission has accepted in the past?**

A. Yes, with one exception. The Company’s current cost of service study revises the peak credit classification of production and transmission costs. According to Ms. Knox, the Company’s prior method was “complicated to compute and apply, unrelated to the actual usage of the system, and has a tendency to shift costs back and forth between energy and demand.”<sup>4</sup>

Under the prior method, the Company would classify energy and demand using a comparison of the replacement cost for thermal and hydro plants separately, which created separate peak credit ratios. For transmission costs, Avista assigned a 50/50 weighting of the separate peak credit ratios to energy and demand while classifying fuel and load dispatching expenses to energy and peaking plant related costs to demand.

In contrast, the Company’s current method is a less complex way to determine a fair and reasonable allocation of costs, by applying a single peak credit ratio uniformly to all production and transmission costs based off a system load factor to determine the proportion of the functions that are demand-related.

**Q. Has the Company proposed this methodology change in any prior general rate case?**

A. Yes. In Avista’s two prior electric rate cases, Dockets UE-100467 and UE-110876, the Company proposed this changed methodology. However, each of those dockets

<sup>4</sup> Direct Testimony of Tara L. Knox, Exhibit No. \_\_\_ (TLK-1T), at 15.

1 was resolved by settlement, and the cost of service study issue was not resolved in  
2 either settlement.

3

4 **Q. Do the results from the cost of service study using the new methodology differ**  
5 **from using the former methodology?**

6 A. Very slightly. The change in method slightly increases the overall production and  
7 transmission costs that are classified as demand. This shifts the parity ratio by  
8 approximately one one-thousandth (0.001). This difference is immaterial because  
9 Staff typically uses parity ratios out to the hundredth (0.01) decimal place for rate  
10 design.

11

12 **Q. Should the Commission accept the Company's proposed method to allocate**  
13 **plant and expenses?**

14 A. Yes. The refinement to the Company's prior method is reasonable. Overall, the  
15 Company's cost of service study reasonably functionalizes, classifies and allocates  
16 capital investments and operating expenses to each rate schedule. The Company's  
17 electric cost of service study fairly and equitably identifies the costs required to serve  
18 each particular customer class.

19 In addition, this method should be more stable compared to the prior method,  
20 due to the reduction of shifting costs back and forth between energy and demand, as  
21 the cost of natural gas to fuel combustion turbines changes.

22

1 **Q. What is the typical output of a cost of service study?**

2 A. Typically, the outputs of a cost of service study are parity ratios for each customer  
3 class.

4

5 **Q. What is a parity ratio?**

6 A. A parity ratio indicates how close a particular rate schedule is to covering its cost of  
7 service. For example, if a rate schedule is producing revenues that are 100 percent of  
8 its cost of service, that rate schedule has a parity ratio of 1.00. If a rate schedule  
9 covers only 70 percent of its cost of service, it has a parity ratio of 0.70. If a rate  
10 schedule covers 130 percent of its cost of service, its parity ratio is 1.30.

11

12 **Q. What parity ratios result from the Company's cost of service study in this case?**

13 A. Table 1 below sets forth the parity ratios using the Company's cost of service study,  
14 under the current rate structure and the Company's proposal. Avista shows the  
15 results of the cost of service study in Ms. Knox's Exhibit No. \_\_\_ (TLK-4).

16

Table 1: Summary of Parity Ratios

17

Customer Class	Current	Company Proposal
Total System	1.00	1.00
Residential (Schedule 1)	0.89	0.89
General Service (Schedules 11, 12)	1.31	1.30
Large General Service (Schedules 21, 22)	1.14	1.14
Extra Large General Service (Schedule 25)	0.93	0.94
Pumping Service (Schedules 31, 32)	0.97	0.97
Street & Area Lights (Schedules 41-49)	1.01	0.98

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**Q. Does that table provide a fair representation of each customer class' contributions to the overall rate of return?**

A. Yes. While Staff's different revenue requirement adjustments change the resulting parity ratios somewhat, the relative proportion of each schedule's contribution to the total remains approximately the same. However, the Company does not allocate the revenue increase among the schedules per its cost of service study. Therefore, the inequities between the rate schedules remain. I address that issue next.

**B. Revenue Allocation**

**Q. Please explain the general concept of revenue allocation.**

A. Revenue allocation, also known as "rate spread," is the process of determining the portion of total revenues to be collected from each rate schedule.

**Q. How should the Commission use the parity ratios from the cost of service study to allocate revenues in this case?**

A. The Commission should consider parity ratios as an important part of the process. Overall, the Commission should move rate schedules closer to parity if they are significantly out of parity.

However, parity is not the only factor. The Commission should also consider the appearance of fairness, perceptions of equity, economic conditions in the service

1 territory, and rate stability.<sup>5</sup> I discuss each of these considerations later in my  
2 testimony.

3

4 **Q. Is it practical to achieve a parity ratio of 1.00 for every rate schedule?**

5 A. No. For one thing, the assumptions and results of the cost of service study are often  
6 disputed among the parties. It is a matter of informed judgment to determine how  
7 much of the average rate increase is fairly apportioned to each schedule.  
8 Consequently, if a rate schedule is at 95 percent parity or 105 percent parity, that  
9 likely justifies an equal percentage increase.

10

11 **Q. Where are the imbalances shown in the results of the cost of service study?**

12 A. As the above Table 1 shows, the parity imbalances are reflected in Residential  
13 Schedule 1, which is covering 89 percent of its cost of service; while General Service  
14 Schedules 11 and 12 covers 131 percent of its cost of service, and Large General  
15 Service Schedules 21 and 22 covers 114 percent of its cost of service. The other rate  
16 schedules are within an acceptable range of covering their particular cost of service.

17

18 **Q. Why are the parity ratios for the Residential and General Service Schedules so  
19 out of balance?**

20 A. This is likely due to the equal percentage increases that were applied in the past  
21 several general rate cases, most of which involved settlements.

22

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<sup>5</sup> *Utilities & Transp. Comm'n v. Puget Sound Energy, Inc.*, Dockets UE-111048 and UG-111049, Order 08 (May 7, 2012), at 125.



1 **Q. What is Staff's recommendation on revenue allocation?**

2 A. Based on Staff's recommended overall revenue decrease of 0.29 percent, and in  
3 order to move Schedules 1, 11, 12, 21 and 22 closer to parity, Staff recommends the  
4 following increases/decreases:

- 5 • Schedule 1, Residential, gets an increase of 0.88 percent.
- 6 • Schedules 11 and 12, General Service, get a decrease of 1.91 percent.
- 7 • Schedules 21 and 22, Large General Service, get a decrease of 2.20 percent.
- 8 • Schedule 25, Extra Large General Service, get an increase of 1.18 percent.
- 9 • Schedule 30-32, Pumping, get an increase of 1.49 percent.
- 10 • Schedule 41-48, Street & Area Lighting, get a decrease of 0.69 percent.

11

12 **Q. Please explain why Schedule 1, 25, 30, 31 and 32 gets an increase, while**  
13 **Schedules 11, 12, 21, and 22 get a higher than average decrease.**

14 A. Staff proposes a gradual move toward parity for those schedules that are not close to  
15 parity. In the context of all schedules gradually moving to reduce parity ratio  
16 imbalances, Staff applied a much more than average decrease to those schedules that  
17 are over-earning their cost of service, and an increase for schedules that are under-  
18 earning their cost of service.

19 To reach parity at existing rates, Residential Schedule 1 requires  
20 approximately an 11 percent increase; customers on General Service Schedules 11  
21 and 12 would require a rate decrease of approximately 31 percent, while Schedules  
22 21 and 22 would merit a rate decrease of approximately 14 percent, and Schedule 25

1 would merit a rate increase of approximately 8 percent, and Schedules 30 through 32  
2 would require a rate increase of approximately 3 percent.

3 Table 2 below, shows the results that Schedules with increases improve, but  
4 remain below parity at 91 percent; while Schedules with more than average  
5 decreases improve, but remain above parity at 111 percent to 126 percent. These  
6 results are provided in the summary of results from the cost of service study on page  
7 one, line 113 of my Exhibit No. \_\_\_\_ (CTM-2).

8 Table 2: Summary of Parity Ratios

9

10 Customer Class	Current	Company Proposal	Staff Proposal
11 Total System	1.00	1.00	1.00
12 Residential (Schedule 1)	0.89	0.89	0.91
13 General Service (Schedules 11, 12)	1.31	1.30	1.26
14 Large General Service (Schedules 21, 22)	1.14	1.14	1.11
15 Extra Large General Service (Schedule 25)	0.93	0.94	0.95
16 Pumping Service (Schedules 31, 32)	0.97	0.97	0.99
17 Street & Area Lights (Schedules 41-49)	1.01	0.98	1.00

18 **Q. How does this proposal reflect consideration of fairness, equity, economic  
19 conditions and rate stability?**

20 A. Staff's recommendation emphasizes the customer class relationship to parity and  
21 customer bill impacts. The parity percentages discussed earlier in my testimony  
22 indicate that some classes currently pay less than it costs to serve them, and other  
23 classes pay more than it costs to serve them. Because this relationship between costs  
and revenues varies by customer class, the Company's earned return also varies by

1 customer class. By adjusting rate spread, classes can be brought closer to paying the  
2 costs incurred to serve the class and class level rates of return can be brought closer  
3 to the system average rate of return.

4 Staff's long-term goal is to set rates at parity for each class, and the  
5 recommended rate spread is designed to move classes toward those levels without  
6 producing unacceptably large customer impacts.

7 Staff also recognizes the current economic conditions for the Company's  
8 service area could not warrant a complete shift to the cost of service, let alone the  
9 rate instability this would cause. Therefore, Staff is applying the concept of  
10 gradualism in small and discrete increments to reduce these imbalances, instead of  
11 abrupt strokes.

12  
13 **Q. How does Staff's proposed revenue allocation compare to the Company's?**

14 A. Staff's proposed revenue allocation reduces the inequities demonstrated by the  
15 disparate parity ratios shown in the table above. Avista's proposed rate design does  
16 not address the current problems related to parity; instead, it maintains the  
17 imbalances, or makes them worse, as shown in Table 2 above.

18  
19 **Q. Please explain the primary problem with the Company's proposed rate spread.**

20 A. As shown on the tables above, Avista's revenue allocation proposal results in a  
21 parity ratio for Residential Schedule 1 of 0.89 and a parity ratio of 1.30 for General  
22 Service Schedules 11 and 12. This means that under Avista's proposal, the  
23 Residential Schedule continues to significantly underpay its cost of service and the

1 General Service Schedules continue to significantly overpay their cost of service,  
2 with no meaningful movement toward parity.

3

4 **Q. Using Staff's revenue requirement, how would the parity ratios translate into**  
5 **revenue increases/decreases under Staff's rate spread?**

6 A. Table 3 below demonstrates how the parity ratios translate into revenue increases  
7 between schedules under the cost of service, the Company's proposal, and Staff's  
8 proposal:

9 Table 3: Summary of Revenue Increases (in 000s of Dollars)

10

Customer Class	Cost of Service	Company Spread	Staff Spread
Total System	(\$1,312)	(\$1,312)	(\$1,312)
Residential Service (Schedule 1)	\$23,124	(\$1,584)	\$1,753
General Service (Schedules 11, 12)	(\$13,184)	(\$858)	(\$1,060)
Large General Service (Schedules 21, 22)	(\$15,934)	\$436	(\$2,790)
Extra Large General Service (Schedule 25)	\$4,455	\$970	\$689
Pumping Service (Schedules 31, 32)	\$273	(\$75)	\$141
Street & Area Lights (Schedules 41-49)	(\$45)	(\$201)	(\$45)

17

18 **C. Rate Design**

19

20 **Q. Please explain the general concept of electric rate design.**

21 A. Electric rate design takes total allocated revenue for each electric rate schedule and  
22 determines the specific charges within the schedule, such as the basic charge per  
23 month, the demand charge per kilowatt, and the cents per kilowatt-hour (kWh).

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**Q. What are Staff's electric rate design structure proposals?**

A. Staff proposes three changes to the rate design in Avista's current electric rate schedules: (1) Increase the monthly customer charge to include more fixed costs; (2) Adjust volumetric blocks for Residential Schedule 1; and (3) Set a uniform percentage increase for volumetric rates in Residential Schedule 1.

**1. Monthly Customer Charge**

**Q. What rate design does Staff propose for the monthly customer charge given Staff's lower recommend revenue requirement?**

A. Staff proposes to increase the monthly customer charge for Residential Schedule 1 from \$6.00 to \$7.34.

**Q. Are Staff's proposed monthly customer charges cost based?**

A. Yes. I show the cost basis for these price levels in my Exhibit No. \_\_\_\_ (CTM-2), at 4, line 207.

**Q. Please explain your exhibit.**

A. As my exhibit shows, the monthly customer charge, also known as the "basic charge," covers customer-related costs such as the cost of meters, service drops, meter reading, meter maintenance, and billing.<sup>6</sup> These are costs that vary with the

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<sup>6</sup> In essence, customer-related costs reflect the minimum amount of equipment and service needed for customers to access the electric grid.

1 addition or subtraction of customers. These costs do not vary with usage; therefore,  
2 these costs are properly considered customer-related costs rather than demand-  
3 related costs.

4 Because these costs vary by the number of customers rather than usage, it is  
5 appropriate for Avista to recover these costs in the basic charge, rather than usage  
6 charges.

7  
8 **Q. Why is Staff proposing to increase the basic charge?**

9 A. Staff is proposing to increase the basic charge so that customers will pay an amount  
10 that reflects the fixed costs incurred by the Company to serve customers regardless  
11 of the level of energy usage. When customer-related costs are not entirely collected  
12 through the basic charge, the Company collects the remaining portion of the  
13 customer-related fixed costs through per kWh charges, which ultimately results in  
14 cross-subsidization. In other words, if customer-related costs are collected through  
15 volumetric rates, those customers with above-average consumption are paying more  
16 than their fair share of customer-related fixed costs, thus subsidizing customers with  
17 below-average usage who are paying less than their fair share.

18 In addition to the problem of cross-subsidization, the collection of customer-  
19 related costs through volumetric charges can lead to over- or under-collection of the  
20 fixed costs, because electricity sales fluctuate with weather, the economy, energy  
21 efficiencies, conservation, and self-generation.<sup>7</sup>

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<sup>7</sup> Marry Blake, *Creating the Right Retail Rate Environment for Energy Conservation and Energy Efficiency*, *Management Quarterly*, December 22, 2009, at 6.

1           Removing customer-related costs from volumetric sales is therefore  
2           beneficial on two fronts: it removes some of the disincentive utilities currently  
3           experience regarding the promotion of energy efficiency and conservation, and it  
4           improves the certainty of recovery of customer-related fixed costs.

5  
6     **Q. Will Staff's proposal to increase the basic charge harm limited income**  
7     **customers?**

8     A. No. In fact, the increase in the basic charge will actually help the average limited  
9     income customer. Studies have shown that the housing stock for most limited  
10    income customers is relatively inefficient, resulting in above-average usage for most  
11    limited income customers;<sup>8</sup> specifically, limited income customers have an average  
12    monthly usage of 1,218 kWh compared to other customers, who have an average  
13    monthly usage of 1,143 kWh.<sup>9</sup>

14           As I just explained, customers with above-average usage subsidize customers  
15    with below-average usage if customer-related costs are included in volumetric  
16    charges. Therefore, moving more of the customer-related fixed costs to the basic  
17    charge will help limited income customers by reducing the amount they subsidize  
18    other customers with lower usage, including customers with non-electric heating (i.e.  
19    natural gas, wood, propane, etc.).

20

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<sup>8</sup> Ibid.

<sup>9</sup> Avista's response to Staff Data Request 323.

1 **Q. Is the increase to the basic charge in addition to changes in volumetric rates?**  
 2 A. Yes. However, the volumetric charge increase is less than it would be if there was  
 3 not an increase in the basic charge. The revenue requirement for the Company  
 4 drives the total increase in rates. Without an increase to the basic charge, a greater  
 5 amount of the revenue requirement would need to be achieved through larger  
 6 increases to the volumetric charges.

7 For customers with usage levels consistent with limited income customers,  
 8 Staff's revised rates are between 0.2% and 0.4% lower with the basic charge increase  
 9 than they would have been if that amount of revenue were collected strictly through  
 10 increases to volumetric charges, as seen in the following Table 4:

11 Table 4: Crossover Chart

12

Usage in kWh	Total Bill per Rate Design Option		
	Basic Rate = \$6.00	Basic Rate = \$7.34	% Difference
1,000	\$80.12	\$80.17	0.1%
1,100	\$88.47	\$88.37	-0.1%
1,200	\$96.82	\$96.58	-0.2%
1,300	\$105.16	\$104.78	-0.4%
1,400	\$113.51	\$112.98	-0.5%
1,500	\$121.86	\$121.19	-0.6%

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 20 **Q. Will increasing the basic charge send the wrong price signal to customers?**

21 A. No. The increase to the basic charge sends the correct price signal because it  
 22 recovers the fixed costs the Company incurs directly to serve that customer, e.g., the  
 23 service drop and the meter.



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**Q. Is Staff's level of customer charge appropriate?**

**A.** Yes. In a January 2007, rate order for Puget Sound Energy, Inc. ("PSE"), the Commission identified the appropriate level of customer charge as follows:

an increase in the customer charge...will result in the Company recovering about one-fourth of its fixed costs allocated to residential customers via a fixed charge on each customer's bill. This is about eight to ten percent of an average customer's total bill, considering both fixed and variable costs. This seems to us the right balance point for the recovery of fixed costs via the customer charge.<sup>10</sup>

Staff's proposed \$7.34 customer charge for electric customers meets this "balance point" because it represents 23.61 percent of the fixed costs allocated to residential customers<sup>11</sup> and equals 9.16 percent of an average customer's total bill. These percentages are within the limits the Commission approved in the PSE order I quoted.

**2. Volumetric Blocks**

**Q. Please summarize Staff's proposed change to the volumetric block design for Residential Schedule 1.**

**A.** Staff recommends changing the first block from 0 – 600 kWh to 0 – 800 kWh and the second block from 600 – 1,300 kWh to 800 – 1,500 kWh.

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<sup>10</sup> *Utilities & Transp. Comm'n v. Puget Sound Energy, Inc.*, Dockets UE-060266 and UG-060267, Order 08 (January 5, 2007), at 48.  
<sup>11</sup> Percentage is based on total customer and distribution demand costs.

1 **Q. Please explain why Staff is proposing to increase the first block to 800 kWh.**

2 A. This 800 kWh first block is appropriate because consumption in this range is likely  
3 inelastic.<sup>12</sup> This supports a more appropriate price signal for conservation because it  
4 moves the elastic usage to the rate blocks with more elastic usage.

5 Staff recommends that the first block should represent the amount of energy  
6 an average customer needs for essential uses, which includes cooking, domestic hot  
7 water, lighting, and home appliances (i.e. refrigeration). According to the U.S.  
8 Department of Housing and Urban Development (HUD), the average end-use  
9 consumption for these categories of usage is between 765 and 850 kWh (based on 2  
10 bedroom dwelling unit and 2.5 bedroom dwelling unit, respectively)<sup>13</sup>. Staff's  
11 proposed first rate block of 800 kWh reflects this average.

12 In addition, the Company's previous 10-year increment "base load" studies  
13 show that the inelastic usage is at least above 600 kWh, with an average base load of  
14 661.25 kWh. The time period ranged from 1998 to 2010.<sup>14</sup>

15  
16 **Q. Does Staff's proposed change to the first block reflect inelastic usage for  
17 customers who have dual fuel sources or non-electric heating?**

18 A. Yes. In fact, the average monthly usage for Dual Fuel Non-Limited Income  
19 customers is 918 kWh and 833 kWh for Dual Fuel Limited Income customers.

20 Therefore, it is fair to assume the majority of the electricity usage for these

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<sup>12</sup> John M. Levy, *Essential Microeconomics for Public Policy Analysis*, Greenwood Publishing Group, 1995, at 38.

<sup>13</sup> Exhibit No. \_\_ (CTM-4), at 6, line 6.

<sup>14</sup> Avista's response to Staff Data Request 324.

1 customers is inelastic, because they would rely on some other fuel source for heating  
2 and possibly cooking and domestic hot water.

3

4 **Q. Please explain why Staff is proposing to increase the second block to 1,500 kWh.**

5 A. 1,500 kWh represents essential needs usage plus space heating, also according to  
6 HUD<sup>15</sup>. Therefore, any usage over 1,500 kWh should be considered discretionary,  
7 or excessive, energy use and that should be the demarcation between the second  
8 block and the tail block.

9

10 **Q. Will increasing the volumetric blocks reduce price signals to conserve?**

11 A. Yes and no. Staff understands moving to a higher first block (i.e. more kWhs in the  
12 first block) places a larger proportion of a customer's usage in the first block. This  
13 slightly reduces the effect of conservation-oriented price signals for customers,  
14 because a larger amount of energy consumption can occur at a slightly lower cost.

15 However, the Commission's focus should be on residential customers that  
16 use four or five, or up to 20 times, the average monthly system usage.<sup>16</sup> For  
17 conservation reasons, the Company and ratepayers would see a bigger reduction in  
18 system loads because customers using over four times the average monthly system  
19 usage likely have more opportunity to reduce their usage.

20 For example, a 20 percent reduction in usage from 600 kWh would be 120  
21 kWh less per month, which is the equivalent of not cooking for an entire month,  
22 leaving a net of 480 kWh. A 20 percent reduction from 4,000 kWh would be 800

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<sup>15</sup> Exhibit No. \_\_ (CTM-4), at 6, line 11.

<sup>16</sup> Avista's response to Staff Data Request 391.

1 kWh less each month, which is greater than what HUD indicates is needed to heat  
2 the average 2 to 2.5 bedroom dwelling unit for a month, leaving a net of 3,200 kWh,  
3 which is still over three times the average monthly usage of 1,019 kWh for  
4 Residential Schedule 1 customers.

5  
6 **Q. Does Avista propose any changes to the existing rate blocks in the Residential  
7 Schedule 1?**

8 A. No.

9

10 **3. Volumetric Rates**

11

12 **Q. Please describe and explain Staff's third proposal in the electric rate design,  
13 setting a uniform percentage increase for volumetric rates in Schedule 1.**

14 A. Staff recommends the Commission apply a uniform percentage increase for all  
15 volumetric rates in Residential Schedule 1. This will maintain consistency between  
16 the rates.

17

18 **Q. How does Staff's uniform percentage increase to each block compare to Avista's  
19 proposal?**

20 A. Avista proposes a flat cent increase of 0.343 cents per kWh to each block<sup>17</sup>.

21

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<sup>17</sup> Exhibit No. \_\_ (PDE-1T), at 10.

1 **Q. Is Avista's proposal fair?**

2 A. No. On the surface, a flat cent increase may seem fair and equitable. However, a  
3 one cent (\$0.01) increase on six cents (\$0.06) is a greater percentage increase  
4 compared to a one cent (\$0.01) increase on nine cents (\$0.09). This means that, in  
5 effect, the Company is proposing to place a greater burden on low-usage customers,  
6 with the increases getting progressively smaller the more electricity a customer uses.

7  
8 **Q. Can you quantify this disparate effect created by Avista's proposal?**

9 A. Yes. Table 5 below illustrates the effects of a flat cent increase.<sup>18</sup>

10 Table 5: Showing the Effect of Flat Cent vs. Uniform Percentage

11

Usage in kWh	Total Residential Bill					
	Current	Company Proposal	% Difference	Current	Staff Proposal	% Difference
50	\$9.47	\$13.64	44.1%	\$9.47	\$10.87	14.8%
300	\$26.80	\$31.83	18.8%	\$26.80	\$28.50	6.3%
1,000	\$79.85	\$87.28	9.3%	\$79.85	\$80.17	0.4%
3,000	\$264.66	\$278.95	5.4%	\$264.66	\$265.38	0.3%
4,000	\$359.14	\$376.86	4.9%	\$359.14	\$361.51	0.7%

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19 The table shows what a customer bill would be on Residential Schedule 1  
20 under the current rate structure, the Company's proposed rate structure, and Staff's  
21 revised rate structure at a variety of usages using the Company's revenue  
22 requirement.

<sup>18</sup> Exhibit No. \_\_\_ (CTM-3), at 4-6.

1 Comparing the Company's proposed rate design against the current rate  
2 design, a customer using 50 kWh will have a 44.1% increase, a customer using 300  
3 kWh will have a 18.8% increase, a customer using 1,000 kWh will have a 9.3%  
4 increase, a customer using 3,000 kWh will have a 5.4% increase, and a customer  
5 using 4,000 kWh will have a 4.9% increase. These percentages show that the  
6 increases continue to get smaller the greater the usage.

7 In short, Avista's proposed flat cent increase is unfair, unjust and  
8 unreasonable in this situation because it goes against the sound rate structure  
9 principle of discouraging wasteful use while promoting conservation.<sup>19</sup>  
10

11 **Q. What are the overarching benefits of Staff's recommended rate design changes?**

12 A. There are three broad benefits to Staff's recommended rate design changes: (1)  
13 revenue stability; (2) realigning the blocks to match the inelastic consumption of  
14 service for essential needs, as I have explained; and (3) providing proper price  
15 signals for conservation and discouraging wasteful use of service.  
16

17 **Q. How do Staff's proposed rate design changes promote revenue stability?**

18 A. From year to year, rates should be stable and predictable to help the Company  
19 manage cash flow effectively to meet the financial needs of the Company. These  
20 needs include the costs of operations, maintenance, and administration as well as  
21 current debt service obligations. Inverted block rate structures tend to result in more  
22 revenue volatility than other rate structures (i.e. declining and uniform block rates);

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<sup>19</sup> James C. Bonbright, *Principles of Public Utility Rates*, Columbia University Press, New York (1988), at 383.

1 this revenue volatility is because an inverted block rate anticipates recovering a  
2 proportionately greater percentage of the customer class's revenue requirement at  
3 higher levels of consumption. These higher levels of consumption tend to be  
4 susceptible to variations in seasonal weather, the economy, energy efficiencies, and  
5 conservation and, when coupled with a higher unit pricing, customers tend to curtail  
6 consumption in these higher consumption blocks.

7 When there is a larger share of total revenue from elastic usage, this results in  
8 the total revenue being more susceptible to the short-run business cycles, which  
9 causes fluctuations in the revenue stream. Therefore, by implementing Staff's rate  
10 design proposals of setting the rate design structure to appropriately reflect customer-  
11 related costs in the base charge, adjusting the blocks to consider inelastic demand  
12 and discretionary energy usage in the tail block, and applying a uniform percent  
13 increase to include low elasticity usage; the revenue risk that tends to be more  
14 susceptible would be reduced, which will lead to greater revenue stability and  
15 predictability which is one of the attributes of a sound rate structure.<sup>20</sup>

16 Staff's analysis<sup>21</sup> for Residential Schedule 1, reflected in Table 6 below,  
17 demonstrates that the current rate design and the Company's proposed rate designs  
18 produce revenue instability, due to the percentage of revenue being less in the first  
19 block and greater within the third block compared to Staff's proposal.

20 Ibid.

21 Exhibit No. \_\_\_\_ (CTM-3), at 3.

Table 6: Summary of Percentage of Revenues by Rate Design Structure

Rate Design Structure	Percentage of Revenues		
	Current	Company Proposal	Staff Proposal
Base Charge	7.2%	11.0%	8.7%
First Block	43.2%	41.7%	53.6%
Second Block	28.9%	27.7%	21.6%
Third Block	20.6%	19.6%	16.1%

**Q. Please explain how Staff's proposed rate design provides proper price signals.**

A. When appropriately applied, a potential rate adjustment of substantial magnitude is beneficial to promote proper price signals. This delivers a clear message about the benefit of taking an action, and the cost of not taking an action. "Price" is one of the classic "Four P's" of marketing – Product, Price, Place, and Promotion. Therefore, price signals offer the avenue for utilities to communicate to their customers the true cost of power and also to provide them with an appropriate incentive to change their energy consumption in a manner that can both lower their power bill and lower the utility's costs of providing service.

The primary reason Staff is promoting these price signals is to discourage wasteful use while promoting justified use, which is an attribute of a sound rate structure.<sup>22</sup>

<sup>22</sup> See supra note 19.



1 Recognizing that the upper-block usage is characterized by high  
2 seasonality<sup>23</sup>, with usage highly concentrated during the peak hours<sup>24</sup>, and low load-  
3 factor end-uses, it is important to make high-use prices reflect the higher expenses  
4 related to serving high-use customers. Therefore, a steeply inverted third block rate  
5 properly collects the appropriate costs from these expensive end uses. The high tail-  
6 block rates also serve to encourage energy efficiency and energy management  
7 practices by consumers, while allowing the Company to focus its conservation  
8 programs on discretionary, or excessive, energy use.

9

10 **Q. Does Staff have any other recommendations regarding electric rate design?**

11 A. Yes. Staff recommends the Commission direct the Company to examine in its next  
12 general rate case filing its volumetric blocks in Schedule's 11, 12, 21, 22 and 25, and  
13 demonstrate whether or not those rate blocks are valid and convey the appropriate  
14 price signals.

15

16 **Q. What is the basis for this recommendation?**

17 A. The Company's data shows the following statistics: (1) For Schedule's 11 and 12, at  
18 least 86.7 percent of all billing determinates with volumetric of 3,500 kWh or less  
19 are below the first block of 3,650 kWh<sup>25</sup>; (2) For Schedule's 21 and 22, at least 67.0  
20 percent of all billing determinates with volumes of 35,000 kWh or less are below the

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<sup>23</sup> Exhibit No. \_\_\_ (CTM-4), at 1.  
<sup>24</sup> Peak day was January 11, 2011, at 1,669 MW; see Avista's response to Staff Data Request 2.  
<sup>25</sup> Avista's response to Staff Data Request 004, Supplemental Attachment A, and my Exhibit No. \_\_\_ (CTM-4), at 2-5.

1 first block of 250,000 kWh<sup>26</sup>; and (3) For Schedule 25, all billing determinates are  
2 above the first block of 500,000 kWh.

3 When the majority of the customers in a rate schedule fall either above or  
4 below the first block, it is conceivable the appropriate proper price signals are not  
5 being reflected.

6

7 **V. NATURAL GAS COST OF SERVICE, REVENUE ALLOCATION, AND**  
8 **RATE DESIGN**  
9

10 **A. Cost of Service Study**  
11

12 **Q. Did Staff review the Company's proposed natural gas cost of service study?**

13 A. Yes. Except for the allocation of natural gas distribution mains, which I discuss in  
14 detail below, the Company's proposed natural gas cost of service study reasonably  
15 functionalizes, classifies and allocates capital investments and operating expenses to  
16 each rate schedule, adjusted proportionally to reflect Staff's lower revenue  
17 requirement recommendation.

18

19 **Q. Are distribution mains a significant driver in the cost of service study?**

20 A. Yes. In fact, gas distribution mains are the biggest driver, representing over 35  
21 percent of total rate base. This means that small movements in the allocation of  
22 these costs can make big differences in the cost to serve certain customer classes.

23

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<sup>26</sup> Id.

1 **Q. On what basis does Staff classify and allocate gas distribution mains?**

2 A. Staff classifies gas distribution mains as a demand-related cost. Staff allocates the  
3 cost of gas distribution mains on a combination of peak demand and average  
4 demand. Specifically, Staff allocates the cost of mains 36.3 percent on average  
5 demand and 63.7 percent on peak demand.

6  
7 **Q. Please define “peak demand” and “average demand”.**

8 A. “Peak demand” is the demand for gas on the average five consecutive peak days of  
9 the heating season for the last three years.

10 “Average demand” is the total consumption for the year divided by the days  
11 in the year.

12  
13 **Q. Why does Staff propose to allocate gas distribution mains using a combination  
14 of peak and average demand?**

15 A. The primary reason is large customers (i.e., on Schedules 131, 132, and 146)<sup>27</sup>  
16 benefit from smaller, pipe less than four inches in diameter, gas distribution mains.

17  
18 **Q. Please explain how large customers benefit from gas distribution mains.**

19 A. While it is true that Avista may not directly serve large load customers (i.e.,  
20 Schedules 131, 132, and 146) with pipe less than four inches in diameter, large  
21 customers benefit from the reliability and capacity of the system that the smaller  
22 pipes deliver.

---

<sup>27</sup> And most likely Special Contracts as well.

1           The Company's distribution system is a network of parallel and  
2 interconnected pipes that are used to move gas from one point to another. Whether  
3 the Company chooses to use medium diameter pipes to directly serve smaller  
4 customers and larger diameter pipes to directly serve larger customers, both types of  
5 pipes create capacity on the system.

6           For example, if Avista had less medium sized pipe, either it would have more  
7 larger diameter pipe or it would have less capacity available to serve all large and  
8 small customers. In other words, from a cost of service perspective, capacity must  
9 be looked at as a whole, and total capacity allows the Company to service large  
10 interruptible customers, even though some of the capacity is in the form of medium  
11 size mains. Otherwise, more interruptible customers would be curtailed more often  
12 due to capacity constraints.

13  
14 **Q. Can you provide an analogy to help illustrate this point?**

15 **A.** Yes. The gas distribution system can be analogized to a network of roads that  
16 includes freeways<sup>28</sup>, arterials and side streets<sup>29</sup>. During times of normal or low  
17 traffic volumes, everything is moving freely in the direction of their destination.  
18 Passenger vehicles and large semi-tractor-trailer rigs use the side streets to get to the  
19 arterials and the arterials to get to the freeways. The system works well, until traffic  
20 gets heavy and the freeways get congested and traffic slows down. At that point,  
21 drivers of some of the cars and trucks then use more of the arterials and side streets,  
22 rather than continuing to add to the freeway congestion.

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<sup>28</sup> Symbolizes large mains.

<sup>29</sup> Symbolizes medium and small mains.

1           If the arterials and side streets that parallel the freeways are not available, all  
2 of that traffic would still try to crowd the freeways, resulting in gridlock. During  
3 these times of high traffic volume, the large semis may not use the arterials and side  
4 streets themselves, but they gain by having other vehicles select those alternative  
5 routes. This benefit is very clear during times of high volume, but even during times  
6 of average use, the existence of smaller roads allows the freeways to be less  
7 congested than they would otherwise be.

8           In short, having arterials and side streets benefits all vehicles, even those who  
9 are traveling long distances at high speeds on the freeway. Similarly, the gas  
10 distribution system as a whole provides capacity for all customers, including those  
11 who are directly connected to large mains.

12           Moreover, the Company and another investor-owned utilities (“IOUs”)<sup>30</sup>  
13 both have a planning model by GL Noble Denton called “SynerGEE” that  
14 demonstrates that gas takes multiple routes to a given customer, depending on  
15 temperature, load and outage conditions. This redundancy built into the system  
16 provides additional system capacity and allows service to a given customer, even if  
17 parts of the system are temporarily out of service.

18  
19 **Q. How does Staff’s approach respond to this shared use of capacity on the**  
20 **system?**

21 A. Staff’s approach reflects a balance between the way the system is designed (to meet  
22 peak demand) and the way it is utilized on an annual basis (throughput based on gas  
23 usage that occurs during all conditions, not only peak conditions).

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<sup>30</sup> Namely, Puget Sound Energy, Inc.

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**Q. Please describe how Staff classified and allocated gas distribution mains.**

A. As I noted earlier, Staff classifies the cost of distribution mains as a demand-related cost. However, Staff does not allocate these costs based solely on peak demand. Instead, Staff used the peak and average method for allocating this portion of demand-related costs. This method allocates demand costs based on a combination of peak demand and average demand. Average demand is essentially another term for average throughput.

Staff used the system load factor<sup>31</sup> to determine how much of the demand-related costs would be allocated based on average demand and how much would be allocated based on peak demand. Staff calculated a system load factor based on weather-normalized throughput and peak demand. The load factor is the ratio of average load to peak load, and when multiplied by the plant investment, provides an estimate of costs that can be attributed to average use rather than peak use.

Staff used the resulting 36.3 percent load factor to divide these demand-related costs into peak demand and average demand for purposes of allocating the costs to customer classes, with the demand-related costs being allocated 36.3 percent on average demand and 63.7 percent on peak demand. The load factor provides a reasonable basis for determining what portion of these costs should be allocated based on average demand.

**Q. Please explain the specific steps in Staff's use of the peak and average method to allocate the cost of distribution mains to the rate schedules.**

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<sup>31</sup> Direct Testimony of Tara L. Knox, Exhibit No. \_\_\_ (TLK-5), at 4, lines 6 and 7.

TESTIMONY OF CHRISTOPHER T. MICKELSON  
Dockets UE-120436 et al.

Exhibit No. \_\_\_T (CTM-1T)  
Page 35

1 A. First, I divided total distribution mains plant into the portion to be allocated based on  
2 peak demand and the portion to be allocated based on average demand using the  
3 system load factor described above. This resulted in \$50.6 million (36.3 percent) of  
4 plant to be allocated based on average demand and \$88.8 million (63.7 percent) to be  
5 allocated based on peak demand.

6 Second, I allocated the 63.7 percent based on peak demand to all customer  
7 classes based on their estimated contributions to the peak demand.

8 Third, I split the 36.3 percent based on average demand into three groups: (1)  
9 large main (greater than or equal to four inches in diameter); (2) medium main (two  
10 to three inches in diameter); and (3) small main (less than two inches in diameter). I  
11 allocated large main to all customer classes based on annual weather normalized  
12 throughput. I allocated small main to all classes except Schedules 131, 132, and 146  
13 based on annual weather normalized throughput. I allocated medium main 33.3  
14 percent to all classes and 66.7 percent to all classes except 146 based on annual  
15 weather normalized throughput.

16 My Exhibit No. \_\_\_ (CTM-8) is a chart showing these steps.

17

18 **Q. Why did you not allocate mains less than two inches in diameter to all classes?**

19 A. These smallest mains are located in isolated locations on the Company's system and  
20 thus are unlikely to provide the benefits I have described to the large commercial and  
21 industrial customers served on Schedules 131, 132, and 146, whereas medium mains  
22 are located throughout the Company's distribution system.

1 I also grouped three inch mains with the two inch mains because Avista has  
2 few three inch mains in its system. By contract, large mains (four inch diameter and  
3 greater) are the backbone of Avista's system, and Avista uses medium to small main  
4 (two inch diameter and smaller) to deliver gas to most of the customers.

5 Therefore, Staff's approach acknowledges the fact that the smallest mains are  
6 in isolated locations on the system and they are unlikely to benefit large commercial  
7 and industrial customers.

8

9 **Q. Why did you split medium mains (those two to three inches in diameter) into**  
10 **two groups?**

11 A. Staff did this to reasonably allocate the cost of this plant. Giving the largest  
12 interruptible customers a full allocation of the costs of medium-sized mains arguably  
13 places too much emphasis on system benefits, yet providing a zero allocation of  
14 these costs places too much emphasis on customers' physical connections and the  
15 flow of gas. Staff's approach is a balance between both extremes.

16

17 **Q. Why did Staff choose the one-third, two-thirds split, with one third of medium**  
18 **main being allocated to all customers and two thirds to all classes except**  
19 **Schedule 146 (interruptible)?**

20 A. Staff considered the historical treatment of these customers and the benefits  
21 associated with being part of the gas distribution system for other IOUs.  
22 Historically, Schedule 146 customers and contract customers had some assignment  
23 of costs related to medium main, but that assignment was small. Prior to this general



1 rate case, the only medium-sized mains the Company would only assign to those  
2 largest customers were based on a direct assignment.

3 Staff's two-thirds weighting is an acknowledgement that, in the past, these  
4 large customers were assigned very little of the costs of distribution mains. The one-  
5 third weighting acknowledges the benefits to all customers of being part of a  
6 distribution system. Consequently, while the cost assignment of medium main to  
7 Schedule 146 customers should be small, it should not be zero, even though for the  
8 last decade<sup>32</sup>, Avista has not curtailed a single Schedule 146 or contract customers.  
9

10 **Q. Please summarize the benefits of the Staff's peak and average method for**  
11 **allocating gas distribution mains.**

12 A. There are three primary benefits to Staff's peak and average method. First, this  
13 method recognizes that all customers benefit from the entire gas system of medium  
14 and large mains as a whole, not only from the stretch of main through which gas  
15 flows to reach the individual customer. The system is a network of pipes that  
16 provides benefits to customers in addition to providing the stretch of pipe through  
17 which molecules flow to reach the individual customer.

18 Second, by exempting large customers from any allocation of the cost of the  
19 smallest diameter main (less than two inches), Staff's method acknowledges the fact  
20 that these smallest mains are located in isolated locations on the system and are  
21 unlikely to benefit large commercial and industrial customers.

22 Third, Staff recognizes that the benefits of medium diameter mains to large  
23 interruptible customers are less than the benefits to other customers, by allocating

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<sup>32</sup> Avista's response to Staff Data Request 3.

1 only a portion of the cost of two and three inch diameter mains to large interruptible  
2 customers.

3

4 **Q. Has Staff's approach to allocation of distribution mains been applied by other**  
5 **investor-owned utilities?**

6 A. Yes. A similar approach for allocating distribution mains has been applied by Puget  
7 Sound Energy, Inc. ("PSE") in the last three general rate cases<sup>33</sup>, but was never fully  
8 litigated to a Commission decision, due to settlements.

9

10 **Q. Have you prepared a table summarizing the results of Staff's cost of service**  
11 **study?**

12 A. Yes. Table 6 below sets forth the parity ratios under current rate structure using the  
13 Company's cost of service, the Company's proposal, and Staff's proposal. As I  
14 explained earlier in my discussion of the electric cost of service study, the parity  
15 ratios indicates what portion of the cost of service customers pay under each of the  
16 rate structures, relative to other customer classes. These results are provided in the  
17 summary of results from the cost of service study on page one, line 220 of my  
18 Exhibit No. \_\_\_ (CTM-5).

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<sup>33</sup> Dockets UG-090705, UG-101644, and UG-111049, see Direct Testimony of Janet K. Phelps.

Table 6: Summary of Parity Ratios

Customer Class	Current	Company Proposal	Staff Proposal
Total System	1.00	1.00	1.00
General Service (Schedule 101)	0.99	0.99	1.00
Large General Service (Schedules 111, 112)	1.02	1.03	1.03
Extra Large General Service (Schedules 121, 122)	1.02	1.05	1.03
Interruptible (Schedule 131, 132)	1.01	1.04	0.92
Transportation (Schedule 146)	1.00	0.93	0.77

**Q. What does this table show?**

A. This table shows that using the Company's cost of service study, but allocating distribution mains per Staff's proposed method, large customers on Schedules 131, 132, and 146 benefit at the expense of all other customers through the use of the Company's gas cost of service model because they do not cover the cost to serve them.

**Q. Are there any other issues Staff recommends the Commission require the Company to address in its next general rate case?**

A. Yes. Staff recommends the Commission require the Company to run its cost of service study and rate design models with Special Contracts as a separate customer class (or column), instead of the credit methodology<sup>34</sup> the Company currently uses.

<sup>34</sup> Direct Testimony of Tara L. Knox, Exhibit No. \_\_\_\_ (TLK-5), at 5.

1 Alternatively, the Commission should require the Company to demonstrate that each  
2 Special Contract is recovering the costs they impose on the system.

3 This would allow Staff to evaluate the analysis and make sure the amount of  
4 revenue collected from Special Contracts customers is fair, just, reasonable and  
5 sufficient. If not, then the Commission can adjust long-term contracts by imputing  
6 revenues within the rate case to prevent harm to other customer classes. These types  
7 of adjustments within general rate cases will also likely cause Avista not to sign  
8 long-term special contracts without an adjustment clause. As the Commission has  
9 previously stated: "Rate spread should recognize that rates must be just and  
10 reasonable and not cause undue discrimination. To this end, revenue responsibility  
11 for any class should be informed by the cost to serve the class."<sup>35</sup>

12  
13 **Q. Is any other Commission-regulated utility currently evaluating Special**  
14 **Contracts as a separate item in the cost of service study and rate design?**

15 A. Yes. PSE currently runs its cost of service and rate design with Special Contracts  
16 represented as a distinct schedule (or column) within both its electric and gas  
17 models.<sup>36</sup> PSE shows the parity ratios for Special Contracts customers, and adjusts  
18 the Special Contracts accordingly to insure Special contracts customers share the  
19 cost of the system and pay their fair share of the costs they impose on the system.

20 Avista should do no less.

21  

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<sup>35</sup> *Utilities & Transp. Comm'n v. Puget Sound Energy, Inc.*, Dockets UE-111048 and UG-111049, Order 08 (May 7, 2012), at 120.

<sup>36</sup> For Dockets UE-111048 and UG-111049, see the Prefiled Direct Testimony (Nonconfidential) of Jon A. Piliaris, Exhibit No. \_\_\_ (JAP-1T) and Prefiled Direct Testimony (Nonconfidential) of Janet K. Phelps, Exhibit No. \_\_\_ (JKP-1T).

1           **B.     Revenue Allocation**

2  
3   **Q.     What is Staff's recommendation on revenue allocation for gas service?**

4   A.     As I mentioned above, the gas cost of service study results show that large customers  
5           are not covering their cost to serve, and Large and Extra Large General Service  
6           customers are paying more than the cost to serve. Because Staff recommends  
7           increasing overall gas revenue by 2.76 percent, and in order to move gas rate  
8           schedules closer to parity, Staff recommends the following increases:

- 9           • Schedule 101, General Service, gets an average increase of 3.05 percent.
- 10          • Schedules 111 and 112, Large General Service, gets an increase of 1.70 percent.
- 11          • Schedules 121 and 122, Extra Large General Service, gets an increase of 1.32  
12           percent.
- 13          • Schedules 131 and 132, Interruptible, gets an increase of 3.20 percent.
- 14          • Schedule 146, Transportation, gets an increase of 6.62 percent.

15  
16   **Q.     Please explain your analysis for Schedules 131, 132, and 146 getting a higher**  
17           **than average increase, while Schedules 111, 112, 121, and 122 get a lower than**  
18           **average increase.**

19   A.     To reach parity, Staff's analysis shows that customers on Schedules 131 and 132  
20           would require approximately a 330 percent of average increase, while Schedule 146  
21           would require a rate increase of approximately 1,300 percent of average. In contrast,  
22           customers on Schedules 111 and 112 would require a rate decrease of approximately

1 120 percent of average and Schedules 121 and 122 would require a rate decrease of  
2 approximately 140 percent of average increase to get these schedules to parity.

3 For the same reason as I explained earlier in my discussion of electric  
4 revenue allocation, the more moderate rate changes I recommend are more  
5 reasonable and would make a gradual step to address parity imbalances.

6  
7 **Q. How are the parity ratios affected by your proposed percentage increases?**

8 A. Table 7 below, shows the results that Schedules receiving average increases maintain  
9 ratios within five percent of theoretical parity. Schedules with above-average  
10 increases improve, but remain below parity at 79 percent and 93 percent. Exhibit  
11 No. \_\_\_ (CTM-5).

12 Table 7: Summary of Parity Ratios

13

14 Customer Class	Staff's Cost of Service	Staff Proposal
15 Total System	1.00	1.00
16 General Service (Schedule 101)	1.00	1.00
17 Large General Service (Schedules 111, 112)	1.03	1.02
18 Extra Large General Service (Schedules 121, 122)	1.03	1.02
19 Interruptible (Schedule 131, 132)	0.92	0.93
20 Transportation (Schedule 146)	0.77	0.79

21 **C. Rate Design**

22  
23 **Q. Please explain generally the concept of natural gas rate design.**

1 A. Similar to electric rate design, natural gas rate design takes the total allocated  
2 revenue for each rate schedule and determines the specific charges within the  
3 schedule, such as the basic charge per month, the demand charge per therms, and the  
4 exact cents per therms.

5  
6 **1. Monthly Customer Charge**

7  
8 **Q. What rate design does Staff propose for the monthly customer charge, given**  
9 **Staff's lower recommend revenue requirement?**

10 A. Staff proposes to increase the monthly customer charge to reflect the costs that are  
11 fixed and that vary with the number of customers. For the same reasons as I  
12 explained earlier in my discussion of electric rate design, these costs vary by the  
13 number of customers rather than usage, and so it is appropriate for Avista to recover  
14 these costs in the basic charge, rather than usage charges. Accordingly, Staff  
15 proposes that the monthly customer charge for General Service Schedule 101  
16 increases from \$6.00 to \$10.98. The development of this figure is shown in my  
17 Exhibit No. \_\_\_\_ (CTM-5), at 5, and line 31.

18  
19 **Q. What costs are covered by the gas monthly customer charge?**

20 A. The gas monthly customer charge includes the cost of meters, service drops, meter  
21 reading, meter maintenance, and billing. Mr. Ehrbar's Exhibit No. \_\_\_\_ (PDE-1T),  
22 starting on page 24, shows these costs total \$12.56 per customer per month, based on  
23 the Company's rate request increase of 9.01 percent.

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**2. Volumetric Blocks**

**Q. What is Staff's other natural gas rate design structure proposal?**

A. Staff recommends the Commission create a volumetric block for General Service Schedule 101 at 70 therms.

**Q. Please describe and explain the application of a volumetric block for General Service Schedule 101.**

A. A volumetric block at 70 therms is above the Schedule 101 monthly average usage of 68 therms, and according to HUD, the end-use consumption of only cooking, domestic hot water, and space heating is between 69 and 77 therms (based on two-bedroom dwelling unit and 2.5 bedroom dwelling unit, respectively).<sup>37</sup> These statistics support Staff's recommendation for a block at, or around, 70 therms.

For the same reason as I mentioned earlier in my discussion of electric rate design, this is reasonable because most usage over 70 therms would be considered elastic, and applying at least a first block will provide a more meaningful price signal for customers to conserve, or at least discourage wasteful use, and reflects some of the future social costs which are sound rate structure attributes.

It may seem like a usage block is not needed because of the recent surge in supply of natural gas through advanced exploration and production technologies, such as hydraulic fracturing and horizontal drilling. However, we should not take these current abundant resources for granted.

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<sup>37</sup> Exhibit No. \_\_\_\_ (CTM-7), at 5, line 20.



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**Q. Did Staff have any concerns about creating a 70 therms usage block?**

A. Yes. Staff had a concern about applying a residential block to a tariff that is labeled “General Service.” However, the facts show for General Service Schedule 101, 91.8 percent is residential, 8.1 percent is commercial, and 0.1 percent is industrial. Moreover, bill frequency analysis shows the majority of the usage in Schedule 101 customers is below 70 therms per month.<sup>38</sup> Therefore, it is reasonable to create this block in Schedule 101.

**3. Volumetric Rates**

**Q. How did Staff set the rate per therm for the new usage block in Schedule 101?**

A. Staff analyzed the price point at which General Service customers become Large General Service (Schedule 111 and 112) customers. This price point is well-defined at 200 therms per month.<sup>39</sup> At 200 therms per month, it is reasonable for a General Service customer to shift to Large General Service because at this usage point, Large General Service customers would be going into the next usage block. Therefore, Staff essentially “backed into” a rate per therm that would get a total bill for 200 therms that equals the same amount regardless whether the customer was using Schedule 101 or Schedule 111. Depending on the revenue requirement the Commission ultimately determines, the range for the rate per therm for the newly

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<sup>38</sup> Exhibit No. \_\_\_\_ (CTM-7), at 1.  
<sup>39</sup> Exhibit No \_\_\_\_ (CTM-6), at 3.

1 created 70 therm block is between approximately 5.0 to 18.0 cents per therm greater.  
2 Staff's proposed rate per therm is approximately 10.0 cents greater.

3 The following shows how to calculate this rate using Staff's rate design work  
4 papers, step by step:

- 5 1. Input the monthly customer charge for General Service Schedule 101.
- 6 2. Increase the uniform percentage rate to reflect zero revenue remaining.
- 7 3. Repeat steps 1 and 2 for the other Schedules.
- 8 4. On the "Breakeven Proof Calc." at 200 therms compare "101" to "111" to see  
9 how much the total customer bill differs by.
- 10 5. Increase the last calculated therm rate for General Service Schedule 101 until the  
11 crossover at 200 therms equal the same total customer bill for both "101" and  
12 "111".
- 13 6. A couple of iterations of steps 4 and 5 might be needed.

14

15 **Q. Do you have any other rate design recommendations?**

16 A. Yes. Staff recommends the Commission direct the Company to study interruptible  
17 rate (Schedules 131 and 132) offerings and require the Company to assure that there  
18 is sufficient justification for the discounted rate.

19

20 **Q. What is the basis for this recommendation?**

21 A. The Company's response to Staff Data Request 003 stated, in part, "the Company  
22 has not interrupted any of its Schedules 131 and 132 (Interruptible Service) from  
23 2002 through 2011."

1           The Commission has expressed concerns about interruptible customers  
2           paying their fair share:

3           We [the Commissioners] expect that the utilities' analyses will include  
4           overall costs to the system and load management factors, and we require that  
5           each of the studies, as to each of the interruptible rates thus offered, require  
6           assurance that customers are not merely given a discount rate. The utilities  
7           will study the desirability and feasibility of interruptible rate offerings as well  
8           as their acceptability to customers.<sup>40</sup>  
9

10           There may be real system benefits resulting from Avista's interruptible  
11           schedule, but the Company needs to provide an analysis which supports the existence  
12           of those benefits, including a methodology for determining when to interrupt  
13           customers on the schedule.  
14

15   **Q.    Does this conclude your testimony?**

16   **A.    Yes.**  
17

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<sup>40</sup> *Utilities & Transp. Comm'n v. Pacific Power & Light Company, Puget Sound Power & Light Company, and the Washington Water Power Company*, Cause U-78-05, Commission Decision and Order (October 29, 1980), at 9.