BEFORE THE WASHINGTON

UTILITIES & TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION,

Complainant,

v.

AVISTA CORPORATION d/b/a AVISTA UTILITIES,

Respondent.

DOCKETS UE-140188 & UG-140189

DIRECT TESTIMONY OF GLENN A.WATKINS (GAW-1T)

ON BEHALF OF

PUBLIC COUNSEL

JULY 22, 2014

DIRECT TESTIMONY OF GLENN A. WATKINS (GAW-1T)
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I. INTRODUCTION AND SUMMARY

Q. Please state your name and business address.

A: My name is Glenn A. Watkins. My business address is 9030 Stony Point Parkway, Suite 580, Richmond, Virginia 23235.

Q: By whom are you employed and in what capacity?

A: I am a Principal and Senior Economist with Technical Associates, Inc., which is an economics and financial consulting firm with offices in Richmond, Virginia.

Q: On whose behalf are you testifying?

A: I am testifying on behalf of the Public Counsel Section of the Washington Attorney General's Office (Public Counsel).

Q: Please describe your professional qualifications.

A: Except for a six-month period during 1987, in which I was employed by Old Dominion Electric Cooperative as its forecasting and rate economist, I have been employed by Technical Associates continuously since 1980.

During my thirty-four year career at Technical Associates, I have conducted marginal and embedded cost of service, rate design, cost of capital, revenue requirement, and load forecasting studies involving numerous gas, electric, water/wastewater, and telephone utilities, and have provided expert testimony in Alabama, Arizona, Delaware, Georgia, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, North Carolina, New Jersey, Ohio, Illinois, Pennsylvania, Vermont, Virginia, South Carolina, Washington, and West Virginia. I hold an M.B.A. and B.S. in economics from Virginia Commonwealth University. I am a member of several professional organizations as well as a Certified Rate of Return Analyst. A more complete description of my education and experience is provided in Exhibit No. GAW-2T.

Q: What is your ratemaking experience within Washington State?

A: I have testified on behalf of Public Counsel in numerous electric and gas rate cases over the last several years, including the last three general rate cases involving Puget Sound Energy, the last two Pacific Power and Light cases, as well as Avista's 2009 and 2012 rate cases.

Q: What is the purpose of your testimony in this proceeding?

A: Technical Associates has been engaged to review and evaluate the appropriateness of Avista's natural gas class cost of service study ("CCOSS"), its proposed natural gas class revenue allocations, and proposed Residential customer charges for electric and natural gas. The purpose of my testimony is to present my findings and recommendations based on the studies I have undertaken in this matter.

II. CLASS COST OF SERVICE

A. Concepts and Methods.

Q: Please briefly explain the concept of a CCOSS and its purpose in a rate proceeding.

A: Generally there are two types of cost of service studies used in public utility ratemaking: marginal cost studies and embedded, or fully allocated, cost studies. Consistent with the practices of this Commission, Avista has utilized a traditional embedded cost of service study for purposes of establishing the overall revenue requirement in this case, as well as for class cost of service purposes.

Embedded class cost of service studies are also referred to as fully allocated cost studies because the majority of a public utility's plant investment and expense is incurred to serve all customers in a joint manner. Accordingly, most costs cannot be specifically attributed to a particular customer or group of customers. To the extent that certain costs can be specifically identified and attributed to a particular customer or group of customers, these costs are often directly assigned in the CCOSS. The costs jointly incurred to serve all or most customers, therefore, must be allocated across specific customers or customer rate classes.

It is generally accepted that to the extent possible, joint costs should be allocated to customer classes based on the concept of cost causation. That is, costs are allocated to customer classes based on analyses that measure the causes of the incurrence of costs to the utility. Although the cost analyst strives to abide by this concept to the greatest extent practical, some categories of costs, such as corporate overhead costs, cannot be attributed to specific exogenous measures or factors, and must be subjectively assigned or allocated to customer rate classes. With regard to those costs in which cost causation can be attributed, there is often disagreement among cost of service experts on what is an appropriate cost causation measure or factor, e.g., peak demand, energy or throughput usage, number of customers, etc.

Q: In your opinion, how should the results of a CCOSS be utilized in the ratemaking process?

A: Although there are certain principles used by all cost of service analysts, there are often significant disagreements on the specific factors that drive individual costs. These disagreements can and do arise as a result of the quality of data and level of detail available from financial records. There are also fundamental differences in opinions regarding the cost causation factors that should be considered to properly allocate costs to rate schedules or customer classes. Furthermore, and as mentioned previously, cost causation factors cannot be realistically ascribed to some costs such that subjective decisions are required.

In these regards, two different cost studies conducted for the same utility and time period can, and often do, yield different results. As such, regulators should consider CCOSS only as a guide, with the results being used as one of many tools to assign class revenue responsibility.

Q: Have the higher courts opined on the usefulness of cost allocations for purposes of establishing revenue responsibility and rates?

A: Yes. In an important regulatory case involving Colorado Interstate Gas Company and the Federal Power Commission (predecessor to FERC), the United States Supreme Court stated:

> But where as here several classes of services have a common use of the same property, difficulties of separation are obvious. Allocation of costs is not a matter for the slide-rule. It involves judgment on a myriad of facts. It has no claim to an exact science.[1]

[1] 324 U.S. 581, 65 S. Ct. 829 (1945).

Q: Does your opinion, and the findings of the U.S. Supreme Court imply that cost allocations should play no role in the ratemaking process?

A: Not at all. It simply means that regulators should consider the fact that cost allocation results are not surgically precise and that alternative, yet equally defensible, approaches may produce significantly different results. In this regard, when all cost allocation approaches consistently show that certain classes are over or under contributing to costs and/or profits, there is a strong rationale for assigning smaller or greater percentage rate increases to these classes. On the other hand, if one set of cost allocation approaches show dramatically different results than another approach, caution should be exercised in assigning disproportionately larger or smaller percentage increases to the classes in question.

Q: Please explain the basic concepts of cost allocation for public utilities and natural gas local distribution companies ("NGDCs").

A: As I mentioned earlier, the majority of a NGDC's plant investment serves customers in a joint manner. In this regard, the NGDC's infrastructure is a system benefiting all customers. If all customers were the same size and had identical usage characteristics, cost allocation would be simple (even unnecessary). However, in reality, a utility's customer base is not so simple. Customers (or customer groups) tend to vary greatly in the amount of service required throughout the year such that there are small usage and large usage customers. Therefore, differences in usage should be considered. Because different groups of customers also utilize the system at varying degrees during the year, consideration should also be given to the demands placed on the system during peak usage periods.

Q: With regard to NGDCs, is there any aspect of class cost allocations that tends to overshadow other issues or is often controversial?

A: Yes. For virtually every NGDC, the largest single rate base item (account) is distribution mains. Furthermore, several other rate base and operating income accounts are typically allocated to classes based on the previous assignment of distribution mains. As such, the methods and approaches used to allocate distribution mains to classes are usually by far the most important [in terms of class rate of return ("ROR") results] and tend to be the most controversial.

Q: Which method, or methods, did the Company use to allocate costs to customer classes for this case?

A: Company witness, Joseph Miller conducted Avista's natural gas cost allocation study that utilizes a modified version of the Peak and Average ("P&A") method to allocate mains. I refer to this as a modified method due to the fact that Mr. Miller has bifurcated the Company's investment in distribution mains between those that are less than four inches in diameter ("small mains") and those four inches and greater in diameter ("large mains").

Q: In general, is there a preferred method to allocate natural gas distribution mains costs?

A: Yes. The P&A approach is the most fair and equitable method to assign natural gas distribution mains costs to the various customer classes. This method recognizes each class's utilization of the Company's facilities throughout the year yet also recognizes that some classes rely upon the Company's facilities (mains) more than others during peak periods.

Q: Has this Commission provided guidance as to a preferred approach to be used in natural gas local distribution company class cost of service study?

A: Yes. Based on my experience in Washington State, the P&A method has been the accepted natural gas distribution cost allocation approach and has been utilized by virtually every natural gas distribution company in the State for many years.

B. Avista's Natural Gas Class Cost of Service

Q: Have you examined the details of Mr. Miller's natural gas cost allocation study?

A: Yes. I have examined the computer model utilized by Mr. Miller as well as all of the workpapers utilized to develop his various allocators. Furthermore, during the course of discovery, the Company provided additional detailed data relating to its investment in plant and equipment, as well as the composition of its customer base.

Q: As a result of your examination, did you find Mr. Miller's CCOSS to be mathematically accurate?

A: Yes. Although Mr. Miller's cost allocation model is needlessly complex in structure, I was able to replicate his results using my own computerized cost allocation model and have concluded that his CCOSS is mathematically accurate.

Q: Do you have any areas of disagreement regarding Mr. Miller's CCOSS?

A: Yes. I have two disagreements with Mr. Miller's CCOSS. The first disagreement concerns Mr. Miller's bifurcation of mains between small and large. My second disagreement is relatively minor and concerns the allocation of distribution Land, Structures & Improvements (Accounts 374 and 375). However, it should be noted that when both of my recommended changes are applied, the resulting class rates of return are not dramatically different for three of the five customer classes, but are significantly different for the Interruptible (Schedule 131) and Large Transportation (Schedule 146) classes.

Q: Please generally describe the issue concerning the Company's proposed bifurcation of mains investment between small and large mains.

A: Typically, and with the exception of mains that can be directly assigned to specific customers, mains gross plant investment, depreciation reserve, and depreciation expense are treated as joint-use throughout an entire NGDC system. In other words, no attempt is traditionally made to disaggregate an NGDC's various sizes and types of pipes (and attendant investment). Rather, all pipes are considered "joint-use" and allocated to classes based on a selected general allocation methodology, e.g., Peak & Average. Avista deviates from this traditional practice in that Mr. Miller proposes to disaggregate mains investment into two separate categories and allocate each based on different criteria.

Mr. Miller's logic is that large volume Commercial and Industrial customers generally only utilize large diameter mains and do not use or rely upon the Company's smaller diameter mains (less than four inches). Furthermore, the Company's Residential and Small Commercial customers rely upon both small and large mains. As such, Mr. Miller has attempted to disaggregate usage of mains across classes.

Q: Why is Mr. Miller's bifurcation of mains inappropriate for cost allocation purposes?

A: There are three reasons why Mr. Miller's proposed bifurcation of mains are inappropriate and should be rejected. First, it is conceptual in nature, and relates to how a NGDC system in general, and Avista's system in particular, is designed and operated.

The second reason relates to the fact that when actual data is considered, many Large Commercial/Industrial volume customers actually do use and rely upon smaller diameter mains, while many Residential and Small Commercial do not rely upon or use small diameter mains.

The third reason relates to the fact that the Company does not have accurate unit cost data relating to the cost of mains, which is necessary for an accurate and reasonable separation of the investment between large and small mains.

Q: Please discuss and explain your first reason for rejecting Mr. Miller's proposed bifurcation of mains which relates to how Avista's system is designed and operated.

A: In many ways, the mains' pipes of a natural gas distribution system can be viewed similarly to that of the trunk and branches of a tree. That is, natural gas is received from interstate pipelines and is distributed through progressively smaller and smaller pipes as the gas flows downstream. This can be thought of as natural gas being received at the trunk of the tree, and then flowing to major limbs and, finally, to very small branches. While at first glance the notion of assigning only large mains costs to those Commercial/Industrial customers that receive service closer to the trunk (i.e., large diameter mains) may have intuitive appeal, one must consider how and why the distribution system was designed. NGDCs design their systems to minimize the total cost of providing service. As such, when the specific geographical routes of an NGDC are selected and built, large diameter mains typically follow the closest practical path to major load centers and along major commercial thoroughfares. From these Commercial and Industrial areas, pipe sizes are continually reduced and follow the path to progressively smaller load centers.

Because of this practice to design NGDC systems that minimize total system costs, rather than those of individual customers or small load centers, the actual routes utilized to serve Residential and Small Commercial customers are much different than those that would otherwise occur. Therefore, if it were not for the need to route large distribution mains to first serve Large Industrial and Commercial customers, the routes to serve Residential and Small Commercial customers would certainly be shorter, and hence, less expensive. Mr. Miller's approach to assign large mains cost responsibility to all customer classes, but exempts large volume customer classes from the assignment of small mains cost responsibility, ignores the fact that Avista's NGDC system is designed and operated to minimize total system costs and because of economies of scale, all customers (large and small) benefit from this total system cost minimization. Rather, Mr. Miller's approach results in nothing more than the cream skimming of costs to the benefit of Large Commercial/Industrial customers and to the detriment of Residential and Small Commercial customers.

Q: Please discuss and explain your second reason for rejecting Mr. Miller's proposed bifurcation of mains which relates to the fact that many Large Commercial/Industrial customers use and rely upon small diameter mains, while many Residential/Small Commercial customers only use and rely upon large diameter mains.

A: Contrary to the basic hypothesis of Mr. Miller that Large Commercial/Industrial customers rely only upon large diameter mains and that all Residential/Small Commercial customers rely upon both large and small diameter mains, there is no such uniformity within Avista's system. As indicated on page 10 of his direct testimony, Mr. Miller acknowledges that 11 of the 38 Rate Schedule 146 (Large Transportation) customers actually receive service from small mains less than four inches in diameter. Furthermore, as part of discovery, the Company was requested to specify the number of Residential and Small Commercial customers that do not take service from small mains, but are served on mains larger than four inches. In response to Public Counsel Data Request No. 152, the Company responded as follows:

> The Company has not conducted an analysis to determine the number of Residential and Small Commercial customers that do not take service from "small mains," but that are served on Mains larger than 4 inches.
>
> Recent experience in Gas Engineering would suggest that approximately less than half (15%-35%) of residential/small commercial customers are served from mains 4" and greater in size.

> Although these larger mains can provide services to residential/small commercial customers, the larger mains primarily serve the smaller main laterals. Gas Engineering does not have the capability to query "main size" per customer.

As is evident from this response, a significant portion of Residential and Small Commercial customers do not rely upon small mains. It is apparent that there is no distinct uniformity across classes as to the use and reliance of distribution mains based on pipe size. However, Mr. Miller's approach is premised on the hypothesis that there is a clear and distinct separation of pipe size requirements (utilization) between small volume and large volume customer classes. Furthermore, this exemplifies how Avista's distribution system is just that -- a system, which is designed to serve all current and future customers jointly and minimize its overall cost of mains.

Q: Please discuss and explain your third reason for rejecting Mr. Miller's proposed bifurcation of mains, which relates to the methods and manner in which the Company has estimated mains unit costs for purposes of separating plant investment between large and small mains.

A: Typically, major public utilities maintain asset property records that record the quantities and costs by size and type of facility. For NGDCs, mains investment plant records are typically kept by vintage year (year of installation) in which the quantity and cost of mains are maintained by size and type of pipe. As such, it is usually possible to determine the actual embedded cost of pipe by size and type, in total, and on a per-unit (per foot) basis. However, such is not the case for Avista in that the Company does not maintain investment records by size and type of pipe. Whereas the

Company can determine the footage of mains by pipe diameter, it is not able to determine the cost differences that exist between various sizes and types of pipe. For example, the Company does not know the actual embedded cost relationship between the cost per foot of two inch pipe and ten inch pipe. Given this lack of detailed record keeping, Mr. Miller states that he relied on the Company's estimates of the current cost per foot of installing various sizes and types of pipe.

When the details of Mr. Miller's analyses are examined, we can see that his approach produces illogical results, which are the basis for his allocation of mains across classes. As shown in my Exhibit No. GAW-3, Mr. Miller's workpaper JDM-G-44 provides his estimated "current cost" per foot (unit) of mains by size and type of pipe utilized to develop his mains allocators. Mr. Miller was asked to provide information as to how he developed his estimated current costs per unit by size and type of main in Public Counsel Data Request No. 161, which is provided in my Exhibit No. GAW-4. While there is no need to explain the detailed calculations embedded in Mr. Miller's response to Public Counsel Data Request No. 161, one can simply compare the unit costs by size and type to observe that his end results are unrealistic and unreasonable. The following are Mr. Miller's estimated costs per foot of pipe used to develop his mains allocators:

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Table 1: Avista Estimated Costs Per Foot of Mains Investment

Type	Size (Diameter)	Estimated Cost Per Foot
Plastic	All Pipe 0.5” to 2”	$54.20
	All Pipe 3” to 4”	$38.20
	6” Pipe	$97.08
Steel	All Pipe 0.5” to 2”	$40.91
	All Pipe 3” to 4”	$73.09
	6” Pipe	$76.72
	All Pipe 8” to 24”	$22.30

As can be seen above, Mr. Miller’s cost estimates make no sense and bear no resemblance to the realities of the facts that plastic pipe is cheaper than steel pipe, and that as pipe increases, so does the cost per foot. To illustrate, consider that the least expensive natural gas mains installed in the real world is small plastic pipe and that the most expense natural gas mains installed in the real world is large steel pipe. Mr. Miller’s estimates portray the exact opposite relationship. Mr. Miller estimates that the cost per foot of small plastic pipe (0.5” to 2”) is $54.20, while the cost for very large steel pipe (8” to 24”) is less than half the cost of small plastic pipe at $22.30 per foot. While it is certainly possible that there will be some minor anomalies between the per unit costs for incrementally different size pipe (i.e., 1.5” plastic pipe versus 2” plastic pipe), Mr. Miller’s estimates quite frankly, bear no resemblance to reality.

Q: Did Avista provide current cost estimates per foot of mains in discovery that are contrary to Mr. Miller’s own current cost estimate?

A: Yes. In response to Public Counsel Data Request No. 161, the estimated current (2012) cost of two inch plastic pipe is $25.06 per foot. However, as shown above, Mr. Miller utilized a unit cost of $54.20 per foot.

Q: What is your recommendation as to how Avista's distribution mains should be allocated across classes?

A: I concur with the use of the P&A method. While I disagree with Mr. Miller's use of the system load factor to distinguish the portion of mains costs that should be allocated on peak versus average demands, I have accepted this approach because my preferred 50%/50% split between peak and average results in no material difference in class RORs. Furthermore, I recommend that all of Avista's distribution mains be treated as joint costs, such that no bifurcation of mains is considered.

Q: Earlier you indicated that your other disagreement with Mr. Miller's CCOSS concerns the allocation of Land and Distribution Structures & Improvements. Please explain this disagreement.

A: First, it must be recognized that the Company separates its investments in Land & Land Rights as well as Structures & Improvements between storage, distribution, and general plant. My disagreement with Mr. Miller only relates to his allocation of "distribution" Land & Land Rights and Structures & Improvements (Accounts 374 and 375). Investments in these two Accounts are directly related to, and support, the Company's distribution system of mains and, to a lesser degree, its Measuring & Regulating Station Equipment. However, Mr. Miller has allocated these two Accounts based on his prior allocation of Distribution Mains (Account 376), Measuring & Regulating Station Equipment (Accounts 378, 379 and 385), Service Lines (Account 380), and Meters (Account 381). Although Land and Structures & Improvements do not support Service Line investments or Meters, these two Accounts represent more than 47% of the Company's investment in distribution plants (excluding Accounts 374 and 375). Furthermore, because of the manner in which Services and Meters are allocated, the Residential class is responsible for the vast preponderance of these costs. As such, Mr. Miller's approach over-allocates the costs of Accounts 374 and 375 to the Residential class. I have allocated Accounts 374 and 375 based on peak and average demands, which is the same manner in which Mains and Measuring & Regulating Station Equipment facilities are allocated.

Q: Please provide a comparison of your natural gas CCOSS results to those obtained and proposed by Avista.

A: The following table provides a summary comparison of class rates of return at current rates under Mr. Miller's and my CCOSS:

Table 2: Comparison of Avista and Public Counsel Class Rates of Return at Current Rates

		Rate of Return		Indexed Rate of Return	
Schedule	Class	Avista	Public Counsel	Avista	Public Counsel
101	Resid/Sm. Comm.	4.21%	4.65%	91%	101%
111	Large Gen. Service	6.29%	6.43%	136%	140%
121	High LF (Lg. Gen. Service)	6.73%	6.81%	146%	148%
131	Interruptible	7.99%	2.34%	173%	51%
146	Large Transportation	3.73%	-1.08%	81%	-23%
TOTAL		4.61%	4.61%	100%	100%

As can be seen above, Mr. Miller's and my results are not materially different for the Residential/Small Commercial, Large General Service, and High Load Factor classes. Primarily due to differences in the manner in which mains investment is allocated between Mr. Miller's and my CCOSS, there are significant rate of return differences for the Interruptible and Large Transportation classes. The details of my natural gas class cost of service study are presented in my Exhibit No. GAW-5T.

III. NATURAL GAS CLASS REVENUE ALLOCATION

Q: How does the Company propose to assign its requested overall natural gas increase of $12.135 million to individual rate classes?

A: Company witness, Patrick Ehrbar sponsors Avista's proposed class revenue allocation and rate design. Mr. Ehrbar presents his proposed class revenue increase in Exhibit No. PDE-7. However, Mr. Ehrbar's discussion and presentation of his proposed class revenue percentage increases are somewhat misleading in that he has included gas costs for all classes. Because the transportation class does not incur gas costs, and because gas costs are fully recoverable on a dollar-for-dollar basis, and not subject to this rate case, a more appropriate presentation should only reflect the changes in non-gas distribution (margin) rates. The following table presents Mr. Ehrbar's revenue allocation proposal, excluding gas costs:

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Table 3: Avista Natural Gas Proposed Class Revenue Allocation ($000)

Rate Schedule	Current Rate Rev. Including Base Gas Costs	Base Gas Costs	Current Margin Rates	Avista Proposed Increase	Avista Percent Increase
101	$107,941	$57,157	$50,784	$9,361	18.43%
111	$33,798	$22,446	$11,353	$2,168	19.10%
121	$3,762	$2,692	$1,070	$195	18.18%
131/132	$730	$550	$180	$28	15.52%
146	$2,253	$16	$2,237	$384	17.15%
Subtotal	$148,485	$82,861	$65,624	$12,135	18.49%
148	$1,544	$0	$1,544	$0	0.00%
TOTAL	$150,029	$82,861	$67,168	$12,135	18.07%

As shown above, the Company's proposed class percentage increases are fairly narrow with the exception of the Interruptible class (Schedule 131/132) and Special Contract customers (Schedule 148). It should be noted that the Company's proposal to not increase revenues associated with the Special Contracts' class (Schedule 148) is a result of these rates being negotiated and/or flexed as per the current Tariff. However, and as I will discuss later in my testimony, Mr. Ehrbar proposes a somewhat larger percentage increase to the Large General Service class (Schedule 111) increase even though this class exhibits a higher ROR at current rates than the system average and a somewhat smaller increase to the Transportation class (Schedule 146) even though this class exhibits a lower ROR at current rates than the system average.

Q: Is Mr. Ehrbar's proposed natural gas class revenue increase allocation reasonable?

A: In some regards, Mr. Ehrbar's proposed class increases are reasonable, while in other regards, modifications to Mr. Ehrbar's proposal should be implemented.

Q: Please explain.

A: As shown in Table 2 above, the Residential class is currently contributing about the same level of profitability as the system-wide average, i.e., its indexed RORs are fairly close to 100%. As such, it is reasonable and appropriate for the Residential class to sustain an increase at about the same percentage increase as the overall system average increase. However, the Large General Service (Schedule 111) and High Load Factor (Schedule 121) classes are contributing considerably more than the system average ROR, suggesting that increases less than the system-wide average percentage increase are warranted. Conversely, the Interruptible (Schedule 131/132) and Large Transportation (Schedule 146) classes are contributing significantly less than the system-wide average ROR, indicating that increases greater than the system-wide average percentage increase are appropriate.

Q: Do you recommend an alternative to the natural gas class revenue allocation proposed by Mr. Ehrbar?

A: Yes. I have accepted Mr. Ehrbar's proposed $9.361 million increase to Schedule 101, which is, for all intents and purposes, equal to the system-wide average percentage increase (net of Special Contract revenues). With regard to the Interruptible and Large Transportation (Schedules 131/132 and 146), these classes are contributing significantly less than their overall allocated cost of service. As such, I recommend that these classes be increased at 150% of the system-wide average increase, which equates to a 27.74% increase at the Company's requested overall level. Finally, because the Large General Service (Schedule 111) and High Load Factor (Schedule 121) classes are contributing more than the system-wide ROR, I recommend a somewhat small increase for these classes. Specifically, I have treated Schedules 111 and 121 as a residual so that the remaining revenue requirement is achieved. Table 4 below provides the details of my recommended natural gas class revenue increases:

Table 4: Public Counsel Recommended Natural Gas Class Revenue Increases ($000)

Rate Schedule	Current Margin Rates	Public Counsel Proposed Increase	Public Counsel Percent Increase
101	$50,784	$9,361	18.43%
111	$11,353	$1,923	16.93%
121	$1,070	$181	16.93%
131/132	$180	$50	27.74%
146	$2,237	$621	27.74%
Subtotal	$65,624	$12,135	18.49%
148	$1,544	$0	0.00%
TOTAL	$67,168	$12,135	18.07%

Q: Do your recommended natural gas class revenue increases move classes closer to equalized rates of return?

A: Yes. The following table presents a comparison of indexed RORs at current rates as well as under my recommended class revenue increases:

Table 5: Avista Natural Gas
Class Indexed RORs Under Current and
Public Counsel Proposed Revenue Allocation

		Public Counsel Indexed Rate of Return	
	Class	Current Rates	At Recommended Class Increases
101	Resid/Sm. Comm.	101%	102%
111	Large Gen. Service	140%	117%
121	High LF (Lg. Gen. Service)	148%	106%
131	Interruptible	51%	58%
146	Large Transportation	-23%	24%
TOTAL		100%	100%

Q: If the Commission authorizes an overall natural gas increase less than the $12.135 million requested by Avista, how should this lower increase be assigned to individual rate classes?

A: My recommended class revenue allocation shown in Table 4 should be reduced proportionately.

IV. RESIDENTIAL RATE DESIGN AND CUSTOMER CHARGES

Q: Please explain Avista's current and proposed electric and natural gas Residential rate structures.

A: Currently, Avista's electric Residential rates include a fixed monthly customer charge plus a three-tiered inverted block energy charge rate structure for all energy (KWH) consumed. Although the Company proposes to maintain its current rate structure in this case, it proposes a significant shift in revenue collection from volumetric to fixed monthly charges. Specifically, Avista is proposing to increase the electric Residential customer charge by 87.5%, from $8.00 to $15.00 per month.

Regarding natural gas service, the Company's General Service rate (which includes Residential and Small Commercial) is structured with a fixed monthly customer charge and a two-tiered inverted block usage charge per Therm. Avista proposes a 50% increase to the fixed monthly natural gas customer charge from the current rate of $8.00 to $12.00 per month.

Q: Are Avista's proposed increases to Residential electric and natural gas customer charges reasonable or in the public interest?

A: No. The Company's proposed increases violate the regulatory principle of gradualism, violate the economic theory of efficient competitive pricing, and promote increased customer consumption.

Q: What justification does the Company provide in support of its large increases to fixed Residential monthly customer charges?

A: Mr. Ehrbar sponsors the Company's rate design proposals wherein the only justification alleged by Mr. Ehrbar is that because the majority of Avista's electric and natural gas costs of providing service reflect "fixed costs," prices (rates) should also be largely "fixed" in nature.

Q: Is there any recognized economic theory that supports Mr. Ehrbar's contention that "fixed costs" should be collected through fixed charges?

A: No. Indeed, the exact opposite is true. The most basic tenet of microeconomic theory is that prices determined through competitive markets ensure the most efficient allocation of society's resources. Because public utilities are generally afforded monopoly status under the belief that resources are better utilized without duplicating the fixed facilities required to serve consumers, a fundamental goal of regulatory policy is that regulation should serve as a surrogate for competition to the greatest extent practical.[2] As such, the pricing policy for a regulated public utility should mirror those of competitive firms to the greatest extent practical.

Perhaps the best known microeconomic principle is that in competitive markets (i.e., markets in which no monopoly power or excessive profits exist) prices are equal to marginal cost. Marginal cost is equal to the incremental change in cost resulting from an incremental change in output. I will not explain the calculus involved in determining marginal costs. However, it is readily apparent that because marginal costs measure the changes in costs with output, short-run "fixed" costs are irrelevant in efficient pricing. This is not to say that efficient pricing does not allow for the recovery of short-run fixed costs. Rather, they are reflected within a firm's production function such that no excess capacity exists and that an increase in output will require an increase in costs -- including those considered "fixed" from an accounting perspective. As such, under efficient pricing principles, marginal costs capture the variability of costs, and prices are variable because prices equal these costs.

Q: You have briefly described the economic theory of efficient pricing, but in practice, how are prices generally structured in competitive markets?

A: Because Mr. Ehrbar observes that the majority of Avista's cost of providing service reflects short-run "fixed costs," I will focus on the pricing structure of those industries that also confront a varying degree of short-run fixed costs. Competitive firms that

[2] James C. Bonbright, et al. Principles of Public Utility Rates at 141 (Second Edition, 1988).

operate in the manufacturing, agricultural, and transportation industries all confront costs structures that reflect a large percentage of short-run "fixed costs" due to the high level of capital investments required. Obvious examples of these industries include: automobile and truck manufacturing; petroleum production; farming; airline; and shipping transportation. As is well known, the pricing structures in each of these competitive industries is predominately, or entirely, volumetric based. Furthermore, even those competitive industries that were once regulated such as rail service and airline travel, price was almost exclusively under volumetric pricing structures. Indeed, there is no doubt from either a theoretical or practical perspective, that fixed charges promote the inefficient utilization of resources.

Q: On page 28 of his direct testimony, Mr. Ehrbar states that "many other utility assessments (phone, water, sewer, solid waste, television, internet, etc.) are generally a flat monthly fee." Do you have any response to Mr. Ehrbar's statement in support of high fixed monthly charges?

A: Yes. First, one must consider why there are a few competitive industries that have price structures comprised of fixed monthly charges. Primarily, these competitive industries relate to telecommunications. When the telecommunications industry (telephone, cable television, and internet) advanced from largely analog to digital technology, the incremental (marginal) cost of providing an additional minute or unit of use became virtually negligible. As such, these industries had a significant amount of excess capacity in terms of additional units of output. However, as we have seen in recent years, consumers are now demanding a tremendously larger amount of digital data for internet communications as well as certain video telecommunications. As such, the days of flat fees with no restriction of use are over in many, if not most, telecommunications industries. It is common knowledge with today's internet and cable television packages that one must pay for incremental usage over a certain amount depending on the "payment package" that the consumer selects. This is also true with pay-per-view television.

With regard to the water and sewer public utility industries, I disagree with Mr. Ehrbar that these regulated industries' price structures are comprised primarily of fixed monthly customer charges. In fact, in many areas on the East Coast in which old water treatment facilities are being replaced and groundwater supplies are being contaminated or depleted, we are seeing a distinct movement away from flat and declining block usage rates towards inverted block usage rate structures to promote the conservation of resources. Finally, water utilities are the oldest utility industry in the United States. When water utilities were first introduced in Pennsylvania, New Jersey, and New York, customers paid a flat fee to subscribe to water service regardless of the amount consumed. It was quickly realized that this pricing structure was not only unfair but was inefficient, such that meters were installed and public utilities were required to charge for water based on the amount consumed.

Q: Do high fixed customer charge rate structures promote additional consumption?

A: Yes. High fixed charge rate structures promote additional consumption because a consumer's price of incremental consumption is less than what an efficient price structure would otherwise be. A clear example of this principle is exhibited in the natural gas transmission pipeline industry. As discussed in its well known Order 636, the FERC's adoption of a "Straight Fixed Variable" ("SFV") pricing method[3] was a result of national policy (primarily that of Congress) to encourage increased use of domestic natural gas by promoting additional interruptible (and incremental firm) gas usage. The FERC's SFV pricing mechanism greatly reduced the price of incremental (additional) natural gas consumption. This resulted in significantly increasing the demand for, and use of, natural gas in the United States after Order 636 was issued in 1992.

FERC Order 636 had two primary goals. The first goal was to enhance gas competition at the wellhead by completely unbundling the merchant and transportation functions of pipelines.[4] The second goal was to encourage the increased consumption of natural gas in the United States. In the introductory statement of the Order, FERC stated:

> The Commission's intent is to further facilitate the unimpeded operation of market forces to stimulate the production of natural gas . . . [and thereby] contribute to reducing our Nation's dependence upon imported oil . . . . [Order at 8].

With specific regard to the SFV rate design adopted in Order 636, FERC stated:

> Moreover, the Commission's adoption of SFV should maximize pipeline throughput over time by allowing gas to compete with alternate fuels on a timely basis as the prices of alternate fuels change. The Commission believes it is beyond doubt that it is in the national interest to promote the use of clean and abundant gas over alternate fuels such as foreign oil. SFV is the best method for

[3] Under Straight Fixed Variable pricing, customers pay a fixed charge that is designed to recover all of the utility's fixed costs.
[4] Federal Energy Regulatory Commission, Docket Nos. RM91-11-001 and RM87-34-065, Order No. 636 (Apr. 9, 1992), p. 7.

doing that [Order at 128-129].

Recently, some public utilities have advocated SFV Residential pricing. The companies claim a need for enhanced fixed charge revenues. To support their claim, the companies argue that because retail rates have been historically volumetric based, there has been a disincentive for utilities to promote conservation or encourage reduced consumption of electricity and natural gas. However, the FERC's objective in adopting SFV pricing suggests the exact opposite. The price signal that results from SFV pricing is meant to promote additional natural gas consumption, not reduce consumption. Thus, a rate structure that is heavily based on a fixed monthly customer charge sends an even stronger price signal to consumers to use more energy.

Q: Have there been any recent changes in utility company structures, or the business risks confronted by Avista, that provide a compelling reason to change the accepted wisdom and policies of volumetric pricing for utility services?

A: No. Conservation through efficiency gains has been on-going for many years and is not a new risk. As a result, even though average Residential electric and natural gas usage per appliance has been declining, utilities have been able to earn fair rates of return on their investments under volumetric pricing structures. Also, FERC's movement to straight fixed variable pricing for pipelines was unquestionably initiated to promote additional demand for natural gas, not less. In short, nothing has changed in the industry to abandon the collective wisdom of generations of regulators and pricing economists.

Q: As a public policy matter, what is the most effective tool that regulators have to

promote cost effective conservation and the efficient utilization of resources?

A: Unquestionably, one of the most important and effective tools that this, or any, regulatory Commission has to promote conservation is developing rates that send proper pricing signals to conserve and utilize resources efficiently. A pricing structure that is largely fixed such that customers' effective prices do not properly vary with consumption, promotes the inefficient utilization of resources. Pricing structures that are weighted heavily on fixed charges are much inferior from a conservation and efficiency standpoint than pricing structures that require consumers to incur more cost with additional consumption.

Q: A customer's total electric or natural gas bill is comprised of a base rate component and a fuel or purchased gas cost component. These fuel-related costs are volumetrically priced and represent the majority of a customer's bill. Does the volumetric pricing of this component overshadow the need for a proper pricing signal from distribution rates?

A: No. The rationale of fixed charge pricing approaches escapes me as an economist. This notion implies that even though marginal rates may be inefficiently structured, this error is acceptable due to other aspects within a customer's electric or natural gas bill. To me, this argument is no more plausible than establishing rates that provide for clearly excessive monopolistic profits under the notion that the additional cost to consumers only represents a small portion of their energy bills and/or cost of living.

Q: Notwithstanding the efficiency reasons as to why regulation should serve as a surrogate for competition, are there other relevant aspects to the pricing

structures in competitive markets *vis a vis* those of regulated utilities?

A: Yes. In competitive markets, consumers, by definition, have the ability to choose various suppliers of goods and services. Consumers and the market have a clear preference for volumetric pricing. Utility customers are not so fortunate in that the local utility is a monopoly. The only reason utilities are able to achieve pricing structures with high fixed monthly charges is due to their monopoly status. In my opinion, this is a critical consideration in establishing utility pricing structures. Competitive markets and consumers in the U.S. have demanded volumetric based prices for generations. Hence, a regulated utility's pricing structure should not be allowed to counter the collective wisdom of markets and consumers simply because of its market power.

Q: Have you conducted any studies or analyses to indicate the levels at which Avista's Residential electric and natural gas customer charges should be established?

A: Yes. In designing public utility rates, there is a method that produces maximum fixed monthly customer charges and is consistent with efficient pricing theory and practice. This technique considers only those costs that vary as a result of connecting a new customer and which are required in order to maintain a customer's account. This technique is a direct customer cost analysis and uses a traditional revenue requirement approach. Under this method, capital cost provisions include a return (margin), interest, and depreciation associated with the investment in service lines and meters. In addition, operating and maintenance provisions are included for customer metering and billing.

Under this direct customer cost approach, there is no provision for corporate overhead expenses or any other indirect costs as these costs are more appropriately recovered through energy (KWH) and commodity (Therm) charges.

Q: Have you conducted direct customer cost analyses applicable to Avista's electric and natural gas Residential operations?

A: Yes. I conducted a separate direct Residential customer cost analysis for both electric and natural gas operations. The details of these analyses are provided in my Exhibit No. GAW-6T, page 1 for electric and page 2 for natural gas.

As indicated in this exhibit, the Residential electric direct customer cost is in the range of $7.73 to $7.98, while the Residential direct customer cost applicable to Avista's natural gas operations is in the range of $11.80 to $12.33.

Q: Has the Company conducted similar customer cost analyses?

A: Yes. However, the Company's customer cost analyses contain a significant mathematical error for both electric and natural gas operations. Avista witness, Tara Knox provides the results of her electric customer cost analyses in Exhibit No. TLK-4, page 4, while Mr. Miller sponsors a similar natural gas customer cost analyses in his Exhibit No. JDM-3, page 4. As can be seen by comparing my analyses to those conducted by the Company, we all use the same cost (rate base and expense) items. However, when Ms. Knox and Mr. Miller calculated the revenue requirements associated with rate base, they both incorrectly applied the incremental revenue conversion factor (line 19 of Knox's analysis and line 18 of Miller's analysis) to the after tax return on rate base. This error has the effect of ignoring the tax deductibility of interest embedded in the overall rate of return. The Company's errors can readily be seen by separating rate base and return between debt and equity and calculating the revenue requirement properly as is conducted to determine the Company's overall revenue requirement. To illustrate, consider the Company's electric customer cost as shown below:

Table 6: Residential Electric Direct Customer Cost (Rate Base Related)

	Debt	Equity	Total
Rate Base [a/]	$29,206,744	$28,061,381	$57,268,125
Cost Rate [a/]	5.42%	10.10%	7.7132%
After Tax Return	$1,583,006	$2,834,199	$4,417,205
Income Tax @ 35% [b/]	$0	$1,526,107	$1,526,107
Before Tax Return	$1,583,006	$4,360,306	$5,943,312
Uncollectible, Commission Fees, Excise Tax [c/]	$74,611	$205,512	$280,123
Total Rate Base Revenue Rqmt.	$1,657,617	$4,565,818	$6,223,435

[a/] Utilizing Avista's proposed capital structure and cost rates per Exhibit No. ___(EMA-2).
[b/] Calculated as: t/(1-t).
[c/] Calculated based on 4.501% rate per Exhibit No. __(EMA-2). Calculated as: t/(1-t).

As can be seen above, accepting Avista's proposed cost of capital, an electric customer cost rate base revenue requirement of $6,223,435 is obtained and compares with Ms. Knox's incorrect calculation of $7,113,079 as shown in Exhibit No. TLK-4, page 4, line 10.

Q: Are there any other key policy considerations regarding the appropriate customer charges for Avista's Residential electric and natural gas customers that you would like to address?

A: Yes. In a recent PacifiCorp rate case (Docket No. UE-100749), the Commission rejected any increase to PacifiCorp's Residential customer charge. In that case, the Commission observed the current difficult economic times confronted by ratepayers and that "many customers will view any basic charge increase as an additional increase above and beyond the rates approved in this Order."[5] Furthermore, the Commission opined that lower energy charges (as a result of increasing customer charge rates and revenue) could result in reduced deployment of energy efficiency. Finally, the Commission concluded that "not recovering some of the 'basic' costs through the basic charge does not mean those costs will not be recovered; rather, those costs will just be recovered through the variable charges."[6]

In addition, it is my understanding that this Commission has instituted a policy to endorse and support revenue decoupling. Indeed, Avista is proposing decoupling mechanisms in this case. It is often claimed that one of the primary reasons for the need to have fixed monthly customer charges, or in support of higher such charges, is to promote revenue stability. Clearly, the Company's revenue decoupling mechanisms will ensure revenue stability, thereby, reducing its business risk. As such, with decoupling in place, any argument supporting the need for higher customer charges due to a desire for more revenue stability is moot.

Q: What is Public Counsel's position on Avista's proposed decoupling mechanism?

A: Public Counsel witness, Stephen Hill addresses the proposed decoupling mechanism in this case. It is my understanding that Public Counsel does not oppose Avista's proposed mechanism, but recommends that if the mechanism is approved an attendant

[5] *WUTC v PacifiCorp*, Docket UE-100749, Order 06 at ¶ 333 (March 25, 2011).
[6] *Id*.

ROE reduction of 25 basis points should be made to reflect the reduced risk associated with the decoupling.

Q: Based on your overall experience, as well as the studies and analyses you conducted for this case, what is your recommendation regarding the appropriate customer charges for Avista's Residential electric and natural gas rate schedules?

A: Considering all factors, I recommend no increase to the current Residential electric customer charge of $8.00 per month and a Residential natural gas customer charge of no more than $9.00 per month. Although my recommended Residential customer charge for natural gas is lower than that produced from the direct customer cost analysis, I have also considered gradualism and the impact on small customers in limiting this increase.

Q: Does this complete your testimony?

A: Yes.