DOCKET NO.: 060368-WS - Application for increase in water and wastewater rates in Alachua, Brevard, Highlands, Lake, Lee, Marion, Orange, Palm Beach, Pasco, Polk, Putnam, Seminole, Sumter, Volusia and Washington Counties by Aqua Utilities Florida, Inc.

WITNESS: Direct Testimony of Paul W. Stallcup,
Appearing on Behalf of the Staff of the Florida Public Service Commission.

DATE FILED: August 21, 2007

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Q. Would you please state your name and business address?

A. My name is Paul W. Stallcup. My business address is 2540 Shumard Oak Boulevard, Tallahassee, Florida, 32399.

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

A. I am employed by the Florida Public Service Commission as the Supervisor of the Economics and Tariffs Section of the Division of Economic Regulation.

Q. Would you please summarize your educational and professional experience?

A. I graduated from Florida State University in 1977 with a Bachelor of Science degree in Economics with minors in Mathematics and Statistics. I received my Masters of Science Degree in Economics from Florida State University in 1979 and, as a Ph.D. candidate, completed the course work and doctoral examinations required for that degree in 1980.

In 1981, I was employed by Florida Power & Light Company as a Load Forecast Analyst. In this capacity, I prepared short and long term forecasts of company sales, peak demand, and customer growth. In 1983, I was employed by the Florida Public Service Commission as an Economic Analyst and in 1991 was promoted to my current position. In this capacity, I have analyzed and made recommendations on a variety of issues in all of the industries regulated by the Commission.

Q. Have you previously testified before the Florida Public Service Commission?

A. Yes. In 1983 I testified on behalf of the Commission staff in the Florida Power & Light rate case (Docket No. 830465-EI). In 1997, I testified on behalf of the staff in Florida Power Corporation's proposed buy-out of Orlando Cogen Limited's energy contract (Docket 961184-EQ). In 2000, I provided testimony in Aloha Utilities' wastewater rate case (Docket No. 991643-SU) and in BellSouth's Permanent Performance Measures case (Docket No. 000121-TP). Finally, in 2001 I provided testimony in Aloha Utilities' water rate case (Docket No. 010503-WU).

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to discuss four issues relevant to this case. First, I will discuss the appropriateness of the forecasted 2007 billing determinants used by the utility to calculate rates. Second, I will present an analysis of the utility's proposal to consolidate rates on a county-wide basis and offer two alternative rate consolidation plans. Third, I will discuss the Commission's Memorandum of Understanding (MOU) with the state's Water Management Districts and how this memorandum should affect any rate structure changes approved for the utility. Finally, I will discuss how and when it would be appropriate to make a repression adjustment in this case.

Forecasted Billing Determinants

Q. Have you reviewed the utility's forecasts for the number of bills and gallons sold for the 2007 test year to determine if they are appropriate for setting rates?

A. Yes.

Q. Do you agree with Office of Public Counsel (OPC) Witness Kimberly Dismukes' testimony that the projected number of bills and gallons sold for the 2007 test year are not appropriate for setting rates?

A. Yes.

Q. Would you please explain how the utility projected its test year billing determinants?

A. The utility's projection methodology consists of two parts: establishment of 2005 actual bills and gallons sold for each system, and the expected incremental growth in bills and gallons for 2006 and 2007 for each system. By adding the expected incremental growth to the 2005 base year, the utility should be able to project 2007 bills and gallons for each system.

Q. Why do you believe that this projection methodology resulted in 2007 bills and gallons that are not appropriate for setting rates?

A. The reason I believe the projected billing determinants are inappropriate is two-fold. First, the utility has failed to demonstrate that its 2005 base year billing determinants are accurate. Second, the utility has failed to show that their 2006 and 2007 incremental growth by system is reasonable. While either shortcoming could cast doubt on the appropriateness of their projections, taken together, these two failures lead me to the conclusion that the 2007 projected billing determinants provided by the utility are not sufficiently reliable to set rates.

Q. Why do you believe that the 2005 billing determinants may be inaccurate?

A. As part of my analysis of the utility's filing, staff requested that the utility provide monthly billing data for 2005 for each system (Staff's Sixth Request for Production of Documents Number 21). The purpose of this discovery request was to verify that the number of bills and gallons for each system contained in the utility's MFR Schedules E-13 was supported by the monthly billing data. If the two data sets matched, I could have confidence that the 2005 data in the utility's filing was based on actual historical billing information. Upon receipt of the data, I compared the bills and gallons in the MFRs to the monthly billing data. While most of the differences between the data sets were very small, a significant number showed potential material differences between the information contained in the MFRs and the information provided in the utility's response to POD 21. Of the 56 water systems, six systems had differences in the number of bills greater than two percent, and of the 24 wastewater systems, four systems had a difference greater than two percent. The Office of Public Counsel has requested that these differences be explained in its Interrogatory Number 198. Until these differences are appropriately reconciled, I could not recommend that the historical data for these systems be used as a basis for projecting 2007 billing determinants.

I am also concerned that the large number of customer complaints regarding billing errors could be indicative of broader problems with the number of bills and gallons for 2005. This issue is currently being examined by other members of the Commission staff. Until this

issue is resolved, I would again not be able to recommend that the historical billing data contained in the utility's filing be used as a basis for projecting 2007 billing determinants.

Q. Why do you believe that the utility's incremental growth projections for 2006 and 2007 are not appropriate for setting rates?

A. This belief is based upon the fact that the utility has provided no evidence that its growth projections are reasonable. In Staff's First Request for Production of Documents Number 2, issued on December 5, 2006, staff asked the utility to "provide all work papers and historical data used to support the calculated growth in ERCs" for each system for which growth was assumed. In its response received on January 4, 2007, the utility provided a set of spreadsheets that simply restated the number of additional customers in 2006 and 2007 without providing any supporting documentation explaining why the growth was reasonable.

On May 4, 2007 in Staff's Sixth Request for Production of Documents Number 22, staff asked the utility to "provide the workpapers showing the derivation of customer growth projections." In its response received July 30, 2007, the utility responded that there are no workpapers supporting the customer growth projections. However, in this same response, the utility claims to have consulted with developers about planned additions in the utility's service areas, reviewed historical customer growth rates, and reviewed county growth rates to validate their projections. While I agree that this approach to estimating future growth is reasonable, the utility's failure to produce any workpapers substantiating these claims is troubling to me. It is the utility's responsibility to show that its projections are reasonable. By failing to provide any workpapers demonstrating that the utility actually implemented the projection methodology described in the discovery response, I am unable to attest that the utility's projections are reasonable. Therefore, I cannot recommend that the utility's customer growth projections are appropriate for setting rates.

Q. Please summarize the results of your review of the utility's forecasts of the number of bills and gallons sold for the 2007 test year?

A. I agree with OPC Witness Dismukes that the 2005 billing determinants filed by the utility do not represent a reliable basis for projecting test year billing determinants. This belief is based upon differences between the 2005 billing data provided in the utility's MFRs and the historical billing data obtained through discovery. Furthermore, extensive customer testimony concerning possible billing errors creates additional doubt about the validity of this historical information. I also believe that the customer growth projections from 2005 through 2007 are not appropriate for establishing reliable test year billing determinants. This belief is based upon the utility's failure to show that its growth rates represent realistic expectations for the systems for which growth is projected. Until these issues are resolved, I do not believe that the utility's 2005 billing determinants or the customer growth projections from 2005 through 2007 represent a reliable basis for projecting 2007 billing determinants.

Rate Consolidation

Q. Have you read the direct testimony of utility Witness John F. Guastella and his representation of the benefits of single tariff pricing?

A. Yes.

Q. Do you agree with Mr. Guastella's assessment that consolidating the stand-alone system rates into a single tariff applicable to all systems within a county is beneficial to customers?

A. Yes. As a general proposition, I agree with Mr. Guastella that combining smaller stand-alone systems into a larger single entity, either within counties or even across multiple counties, can be beneficial to customers. The most important benefit that I see in this case is that the cost of system upgrades can be spread over a larger number of customers thereby

mitigating the dramatic increases in rates that can impact customers of smaller stand-alone systems.

Q. Do you believe that the utility's proposal to consolidate rates on a county-wide basis is the most equitable way to accomplish this goal?

A. No. Based on an analysis of the requested revenue requirements contained in the utility's filing, the company's rate consolidation plan would result in what I believe to be excessive cross-subsidies being paid by customers of some systems. The company's proposal would also result in very high rates for customers in Brevard, Putnam, and Sumter Counties, giving rise to affordability issues. Later in my testimony, I will present two alternative rate consolidation methodologies that can help accomplish the desirable goals of rate consolidation without imposing excessive cross-subsidies and that address the affordability issue.

Q. Would you explain how rate consolidation can cause some customers to pay excessive cross-subsidies?

A. Yes. Cross-subsidies are created when systems with low average costs are combined with systems with high average costs. For the customers of the lower cost system, the rates of the combined systems will be necessarily higher than its original stand-alone rates. When the differential between the stand-alone rates for the low cost systems and the combined rates becomes sufficiently large, customers of the low cost system will be paying an excessive premium, or subsidy, resulting solely from the imposition of rate consolidation.

For example, consider two stand-alone systems that are identical in all respects except that the first system has half the revenue requirement of the second system. The stand-alone rates for the first system would therefore be half the rates of the second system with typical monthly bills of, say, $20 and $40, respectively. On a stand-alone basis, the bills that the customers of each system would pay would cover the costs of providing service to its respective service territories. If the two systems were to be combined under a single rate

structure, however, the typical bill that customers of both systems would pay would be $30 per month. For the customers of the lower cost system, the combined rates would include a $10 per month subsidy that they must pay over and above its actual cost of service, while customers of the higher cost system would receive a $10 per month subsidy.

Q. Why do you believe that it is important that the Commission consider cross-subsidies between customer groups in this case?

A. Chapter 367.081(2)(a)1., Florida Statutes, states that in setting rates for water and wastewater systems, "The commission shall, either upon request or upon its own motion, fix rates which are just, reasonable, compensatory, and not unfairly discriminatory." In order to be sure that rates are not unfairly discriminatory across customer groups, I believe that the Commission must evaluate the subsidies resulting from rate consolidation and determine whether or not the rates resulting from rate consolidation satisfy the requirements of the statute.

Q. Has the Commission considered cross-subsidies between customers resulting from rate consolidation in prior cases?

A. Yes. In the Southern States rate case (Docket 950495-WS), the utility proposed consolidating the rates of over 150 separate water and wastewater systems in 25 counties. Although the Commission reaffirmed consolidated state-wide rates as an appropriate long term goal, it instead adopted a capband rate structure that emphasized affordability and the avoidance of excessive cross-subsidies. Under the capband rate structure, systems with very high stand-alone rates were capped at a level deemed to be affordable ($52 per month for 10 kgal for water and $65 per month for 6 kgal for wastewater). The revenue shortfall created by the cap was then allocated to the remaining systems with lower stand-alone rates. The remaining water systems were separated into eight groups and the wastewater systems into six groups, each of which were given its own consolidated rate structure. Each group contained

systems with similar cost characteristics so that the resulting stand-alone and combined rates were also similar. This scheme minimized the cross-subsidies between customers of the systems contained within each group. Of the customers who paid a subsidy under the capband rate structure, only 5 percent of those customers paid a subsidy greater than $2.00, with a maximum subsidy of $3.64 per month.

In the Utilities, Inc. of Florida rate case (Docket 020071-WS), the utility proposed consolidating the water rates for its systems in Pasco and Seminole counties. In evaluating the subsidies resulting from consolidation in Seminole County, the Commission noted in order PSC-03-1440-FOF-WS that the $2.00 per month subsidy "benchmark" employed in the Southern States case, when adjusted for the effects of inflation from 1996 to 2003, would equal $2.35. Given this inflation adjusted benchmark, the Commission found that consolidating rates in Seminole County, which resulted in customers of the Oakland Shores subdivision paying a subsidy of $2.35 per month, was consistent with prior Commission decisions. The Commission also found that the subsidies resulting from the combined rates were not excessive or unduly discriminatory and therefore approved a consolidated rate structure.

In this same Utilities, Inc. rate case, the Commission considered whether it was appropriate to consolidate the rates for the two wastewater systems in Pasco County. The Commission found that a subsidy of $4.89 per month in 2003 was not consistent with the requirements of Section 367.081(2)(a)1., Florida Statutes, requiring that rates not be unduly discriminatory. Given the magnitude of this subsidy, the Commission found it appropriate to reject consolidated rates for the wastewater systems and to calculate rates on a stand-alone basis.

Q. Given the Commission's prior decisions regarding subsidies and affordability, do you have any recommendations on how to evaluate subsidies and affordability in this case?

A. Yes. Based upon the Commission's decisions in the Southern States and Utilities Inc. of Florida cases cited above, and adjusting the dollar amounts in these cases for inflation through 2008 (the first year the new rates will be in effect), I would recommend:

1. Subsidies paid by customers equal to or less than $2.76 per month are not excessive and are therefore not unduly discriminatory. This amount is derived by adjusting the $2.35 used in the Utilities, Inc. of Florida case for the effects of inflation from 2003 to 2008.
2. Subsidies paid by customers greater than or equal to $5.76 per month are excessive and are not consistent with the requirements of Section 367.081(2) (a) 1, Florida Statutes. This amount is derived by adjusting the $4.89 used in the Utilities, Inc. of Florida case for the effects of inflation from 2003 to 2008.
3. Subsidies paid by customers greater than $2.76 per month and less than $5.76 per month have not been previously decided upon by the Commission. The Commission could select any dollar amount within this range as a threshold for determining when subsidies become excessively large and therefore inconsistent with Florida Statutes.
4. Water bills of $71.81 per month and wastewater bills of $89.70 per month can be considered as appropriate maximum amounts for the purposes of defining affordability. These amounts are derived by adjusting the $52.00 per month for water and $65.00 per month for wastewater bill amounts used in the Southern States rate case for the effects of inflation from 1996 to 2008.

The calculations used to derive these amounts are shown in my Exhibit PWS–1.

Q. Have you evaluated the subsidies that would result from the utility's proposal to consolidate rates on a county-wide basis?

A. Yes. Using the billing data and revenue requirement amounts for each water and wastewater system contained in MFR Schedule E-13, I constructed a hypothetical scenario based upon the presumption that the utility will receive 75 percent of its requested rate relief. I then calculated what the stand-alone and county-wide consolidated residential rates would be for each system. Finally, I calculated what the resulting stand-alone and consolidated customer bills would be at 5.866 kgal per month usage for water and 3.499 kgal per month for wastewater (the average usages per customer for all water and wastewater systems).

As shown in my Exhibit PWS–2, county-wide rate consolidation can result in some customers paying subsidies that would be considered excessive given the prior Commission decisions described above. For example, in Putnam County, the water customers of the Interlachen Lakes Estates system would pay a subsidy of $28.33 per month, and in Highlands County the water customers of the Lake Josephine system would pay a subsidy of $12.44 per month. For the wastewater systems, county-wide rate consolidation would result in customers of the Palm Port system in Putnam County paying a subsidy of $25.16 per month and the customers of the Valencia Terrace system in Lake County paying a monthly subsidy of $16.99.

The utility's proposed county-wide consolidation plan does not adequately resolve the issue of affordability either. In Brevard, Putnam, and Sumter Counties, water customers would pay in excess of $71.81 per month based upon overall average usage per customer. For the wastewater systems, the issue of affordability becomes more pronounced. Customers of the South Seas wastewater system in Lee County would pay $128.98 per month and customers of the Jungle Den wastewater system in Volusia County would pay $107.04 per month.

Q. What conclusions do you draw based upon your analysis of the utility's proposal to consolidate rates on a county-wide basis?

A. In my opinion, the utility's proposal to consolidate rates on a county-wide basis would lead to excessive cross-subsidies between customer groups and fail to adequately address the issue of affordability. For these reasons, I do not recommend that the Commission approve the utility's proposed rate consolidation plan.

Q. Are there alternative rate consolidation plans that could achieve the desirable outcomes of rate consolidation while addressing the issues of excessive subsidies and affordability?

A. Yes, I believe there are two possible alternatives. The first alternative plan is the capband rate structure used in the Southern States rate case. As discussed previously, this rate consolidation plan is capable of promoting the long run positive effects of rate consolidation while simultaneously addressing the issues of affordability and excessive cross-subsidies.

The second alternative rate consolidation plan involves grouping smaller systems with high stand-alone rates with larger systems that have lower stand-alone rates, regardless of the county in which the systems are located. By carefully selecting the systems to be combined, the resulting consolidated rates for each group can be much lower for customers of the smaller systems and only slightly greater for the customers of the larger systems. The idea is similar to the premise behind financial portfolio management in which securities with high risk are combined with securities with low risk to yield a moderate level of risk for the portfolio.

Q. Can you provide an example of how the second alternative rate consolidation plan works?

A. Yes. Suppose there are two systems that can be consolidated. The first system is a small high cost system with 50 customers and a revenue requirement of $60,000. The second system is a larger low cost system with 750 customers and a revenue requirement of $180,000. The customers of both systems use 5 kgals per month. If we calculate stand-alone rates for each system using a Base Facility Charge (BFC) allocation of 40 percent and a uniform gallonage charge rate structure, the resulting customer bill at 5 kgal per month would be $100

for the small system and $20 for the large system. If we combine the two systems, there will be a total of 800 customers with a combined revenue requirement of $240,000, and the resulting customer bill for 5 kgal usage would be $25. These calculations are presented in my Exhibit PWS-3.

In this example, the issue of affordability is addressed by significantly reducing the bill for customers of the smaller system from $100 to $25. This positive outcome is offset, however, by a relatively small increase in the bill for customers of the larger system from $20 to $25. This increase of $5 per month for customers of the larger system is the cross-subsidy that they pay to subsidize the reduction in the bills for the customers of the smaller system.

Q. Have you analyzed whether these alternative rate consolidation plans will satisfactorily address the issues of cross-subsidies and affordability in this case?

A. Yes. Using the same hypothetical scenario I used to evaluate the utility's county-wide rate consolidation plan, I calculated the rates and resulting customer bills using both of the alternative rate consolidation plans.

For the capband rate consolidation plan, I first consolidated rates for all water and wastewater systems whose stand-alone rates resulted in bills in excess of the affordability thresholds of $71.81 per month for water and $89.70 per month for wastewater. For the 20 water systems whose bills exceeded the affordability threshold, capping their bills at $71.81 resulted in a revenue shortfall of $494,731. This amount was spread over the remaining 36 systems whose stand-alone rates resulted in bills less than the affordability threshold. These remaining 36 systems were then separated into five groups, with each group being given its own consolidated rate structure. Each group contained systems with similar cost characteristics so that the stand-alone and combined rates were also similar. This resulted in cross-subsidies within each group falling below the $5.76 benchmark described above. A similar set of calculations was performed for the wastewater systems as well.

The results of these calculations are shown in my Exhibit PWS-4. As shown in this exhibit, using the capband rate consolidation methodology results in customer bills that satisfy the affordability criteria and prevents excessive cross-subsidies.

For the second alternative rate consolidation plan, I grouped smaller systems with high stand-alone rates with larger systems that have lower stand-alone rates. The objective of this grouping was to significantly lower rates for customers of the small high cost systems without excessively increasing rates for customers of the larger low cost systems. This selection process resulted in eight groupings for the water systems and six groupings for the wastewater systems, each of which was given a consolidated rate structure. The results of these consolidations are shown in my Exhibit PWS-5. As these exhibits show, this second rate consolidation plan can significantly lower bills for customers of small high cost systems while simultaneously restricting cross-subsidies to acceptable levels. This is especially evident for the water systems where the maximum combined bill is $50.08 (compared to a maximum bill of $71.81 for the capband rate consolidation plan). For the wastewater systems, however, I was not able to create combined systems that simultaneously satisfied both the affordability and excessive cross-subsidy criteria. As shown on page 3 of Exhibit PWS-5, while the subsidy amounts are acceptable, the combined rates for the third rate group result in a bill of $101.47. This is because in this hypothetical scenario, there are too many relatively large wastewater systems with high costs for this alternative rate consolidation plan to work.

Q. Do you believe that one alternative rate consolidation plan is necessarily better than the other?

A. No, not necessarily. Both alternative rate consolidations are capable of simultaneously addressing the issues of excessive cross-subsidies and affordability. Until the Commission approves actual revenue requirements, there is no way to identify the appropriate system groupings that will minimize subsidies and promote maximum affordability under either plan.

I would suggest that once revenue requirements have been decided, both alternative plans can be evaluated and the one that best satisfies the affordability and cross-subsidy criteria should be adopted. I do believe, however, that either alternative rate consolidation plan offers a more equitable approach to rate consolidation than the utility's proposed plan.

Q. Would you please summarize the results of your analysis of the utility's proposal to consolidate rates on a county-wide basis?

A. I believe that the utility's proposal to consolidate rates on a county-wide basis would result in excessive cross-subsidies that could be considered unduly discriminatory and therefore inconsistent with Florida Statutes. The utility's proposal could also result in water customers in Brevard, Putnam, and Sumter Counties, and wastewater customers in Lee and Volusia Counties paying very high rates raising affordability issues as well.

I believe that the two alternative rate consolidation plans I presented above are capable of addressing the cross-subsidy and affordability issues. I therefore recommend that the Commission consider both of these alternative rate consolidation plans once final revenue requirements are approved.

Memorandum of Understanding between the Commission and the Water Management Districts

Q. Would you please describe the Memorandum of Understanding that exists between the Commission and the State's five Water Management Districts?

A. In 1991, the Commission and the five Water Management Districts (WMDs) entered into a Memorandum of Understanding (MOU) that memorialized each agency's responsibilities in jointly promoting efficient and conservative utilization of the State's water resources. Among the objectives stated in the MOU, the WMDs would provide technical expertise regarding water resource management and recommend preferred solutions including

consumer education programs and conservation promoting rate structures. The Commission would provide recommendations on the economic, financial, and rate making aspects associated with implementing specific solutions recommended by the WMDs.

Q. Have the WMDs made specific recommendations for the water systems in this case?

A. Yes, Ms. Walker from the St. John's River Water Management District and Mr. Yingling from the Southwest Florida Water Management Districts have filed testimony on behalf of the Commission. Both of these witnesses have recommended that the Commission approve inclining block rate structures to encourage water conservation.

Q. Do you believe that inclining block rate structures are appropriate for the systems under consideration in this case?

A. Yes. Given the recommendations from the witnesses from the WMDs concerning the need to implement water conserving rate structures and the MOU between the Commission and the WMDs, I believe it would be appropriate to implement inclining block rate structures for these systems.

Q. Are you able to make any specific rate design recommendations at this time?

A. No. At this point, there are too many outstanding issues that need to be resolved before an appropriate rate design can be identified. Besides the forecasted billing determinants issue, it is necessary to resolve what the appropriate revenue requirements are for each system as well as the extent to which it is appropriate to combine systems into a consolidated rate structure.

Q. Would you please summarize the MOU between the WMDs and the Commission, and how this MOU affects the appropriate rate designs for the systems in this case?

A. The MOU between the WMDs and the Commission memorialized each agency's responsibilities in jointly promoting efficient and conservative utilization of the state's water resources. The responsibilities of the WMDs are to recommend appropriate conservation

actions that promote this goal, while the Commission is responsible for implementing these recommendations wherever possible for the systems under its jurisdiction. I therefore recommend that the Commission approve the conservation oriented rate structures recommended by the witnesses from the WMDs. However, this recommendation is predicated on the assumption that the utility successfully resolves the forecasted billing determinant issues I described earlier. Unless these issues are resolved, it will not be possible to appropriately calculate rates.

Repression

Q. Do you believe that it would be appropriate to make a repression adjustment in this case?

A. Yes. If the Commission approves either an increase in revenue requirements large enough to significantly increase rates, or approves a conservation oriented rate structure, I believe it would be appropriate to make a repression adjustment. As discussed by witnesses Yingling and Walker from the WMDs, the price signals sent to consumers through higher prices are effective in causing a reduction in the number of gallons sold (e.g. conservation). A repression adjustment is simply the calculation that estimates the magnitude of this reduction.

Q. Would you please explain how a repression adjustment is made?

A. A repression adjustment is a reduction in the number of gallons sold in the test year to account for customers' reaction to higher prices. As described by Witness Yingling from the Southwest Florida Water Management District, the size of this adjustment depends upon the magnitude of the price increase and the sensitivity of customers' water demand to changes in prices. This sensitivity is called the price elasticity of demand and is defined to be the percentage change in the quantity demanded divided by the percentage change in price.

As a simple example of how a repression adjustment is made, suppose that a water

utility has 100 customers, each of whom consume 5,000 gallons per month for which they pay $20 per month. Now suppose that this utility increases its rates 50 percent so that a customer consuming 5,000 gallons per month would pay $30 per month. A repression adjustment is calculated by relating this 50 percent increase in rates to the sensitivity of water consumption to changes in prices (e.g., the price elasticity of demand). A typical value for this sensitivity is negative .40, meaning that if prices go up by 10 percent, the amount of water sold will go down by 4 percent. So in this example, with a 50 percent increase in price and an elasticity of -.40, the resulting repression adjustment is -1,000 kgals (50 percent x -.40 = -20 percent; -20 percent x 5,000 gallons = -1,000 gallons.). Therefore, after taking into account customers' sensitivity to changes in price, each customer would consume 4,000 gallons per month instead of the original 5,000 gallons per month.

Q. Why is it important to make a repression adjustment?

A. A repression adjustment insures that the rates customers will pay will generate sufficient revenues to cover the utility's revenue requirement. If a repression adjustment is not made when it would have been appropriate to do so, the utility will under-earn and not be able to cover its revenue requirement. This can be illustrated using the example given above.

Suppose the utility's new higher rates are supposed to generate revenues of $36,000 per year. As shown in my Exhibit PWS-6, calculating rates without making a repression adjustment results in a Base Facility Charge of $12.00 per month and a gallonage charge of $3.60 per kgals. If, however, customers reduce their consumption from 5,000 gallons per month to 4,000 gallons, these rates will generate only $31,680 per year resulting in a revenue shortfall of $4,320 per year. Therefore, in order for the rates to be compensatory as required by Chapter 367.081(2)(a)1., Florida Statutes, I believe the Commission should make a repression adjustment whenever it determines that an increase in rates will cause a material reduction in the number of gallons sold.

Q. Has the Commission approved repression adjustments in prior cases?

A. Yes. Staff has recommended and the Commission has approved repression adjustments in approximately two dozen water cases since 2000.

Q. What does staff typically consider when recommending a repression adjustment?

A. There are three primary factors that staff considers when recommending a repression adjustment. These factors are the magnitude of the increase in customers' bills, the appropriate value for the price elasticity of demand, and the amount of discretionary (e.g. outdoor irrigation) usage consumed by the utility's customers.

Q. Please explain how these factors influence repression?

A. Customer bills provide the medium through which price signals are sent. If customer bills increase significantly, customers will receive a strong price signal causing them to curtail usage. On the other hand, if customer bills increase only slightly, the price signal will be very weak causing little, if any, response. In calculating its recommended repression adjustments, staff sets a threshold below which the price signal is considered too small to cause material changes in customers' consumption patterns. This threshold typically requires that customer bills must increase by at least 10 percent and at least $5.00.

The appropriate value for the price elasticity of demand (i.e. the sensitivity of the level of water consumption to changes in price) is initially set to a value of -.40. This value for the price elasticity of demand is based upon the historically observed average response rate of water customers to price changes approved by the Commission, and is also consistent with other econometric studies of water consumption. Staff, however, may adjust this value if it is believed that the economic and/or demographic characteristics of the utility's service territory warrant such a change. For example, if the customers of a service territory are very affluent, they may not be very sensitive to, or even notice, a change in their water bill. In such a circumstance, staff would reduce the value of the price elasticity of demand.

The final factor considered by staff in calculating its recommended repression adjustment is the appropriate level of discretionary usage for the utility's service territory. For the purposes of calculating a repression adjustment, staff separates total water consumption into non-discretionary, or essential, usage and discretionary, or non-essential, usage. For the residential customer class, non-discretionary usage is water used for drinking, cooking, washing, etc. These uses, which can be conveniently grouped together as indoor uses, are essential for customers' health and are therefore not very sensitive to changes in price. Discretionary usage, on the other hand, is water used for non-essential purposes, the most significant of which is outdoor irrigation. Because this type of usage is not essential for customers' health, the level of discretionary usage is considered to be more sensitive to price changes. Therefore, when staff calculates its recommended repression adjustments, it is based on the level of discretionary water usage, not total water usage.

Q. How is the level of discretionary usage determined?

A. For residential customers, discretionary usage is calculated by subtracting estimated non-discretionary usage from total residential consumption. Non-discretionary, or indoor, usage is presumed to depend upon the average number of people per household in the service territory. By multiplying the average number of people per household by a range of 50 to 75 gallons per day per person, staff is able to calculate how much consumption is devoted to indoor usage per household. Any usage in excess of this amount is attributed to outdoor usage (e.g. outdoor irrigation).

For the non-residential customer classes (e.g. General Service), staff assumes that any increase in the business's water costs can be passed along to their customers. This ability to pass along increase costs reduces the incentive to curtail water consumption. Therefore, staff does not include any reduced consumption for the non-residential customer classes in its recommended repression adjustments.

Q. How does staff incorporate this information into their calculation of an appropriate repression adjustment and the resulting final rates?

A. Staff has developed a spreadsheet that automates the process used to calculate the appropriate repression adjustments and resulting rates. The principle inputs to the spreadsheet are the average number of people per household in the service area, an appropriate value for the price elasticity of demand, a proposed rate design, and the billing analysis for the utility's residential customers (the billing analysis is a breakdown of monthly customer bills by level of consumption for the test year). Once a value for the appropriate revenue requirement becomes available, staff simply inserts the revenue requirement into the spreadsheet and it generates the resulting "post-repression" rates. A sample output page of this spreadsheet is provided in my Exhibit PWS-7.

Q. Does this conclude your testimony?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION

In re: Application for increase in water and wastewater rates in Alachua, Brevard, Highlands, Lake, Lee, Marion, Orange, Palm Beach, Pasco, Polk, Putnam, Seminole, Sumter, Volusia, and Washington Counties by Aqua Utilities Florida, Inc.	DOCKET NO. 060368-WS DATED: AUGUST 21, 2007

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the DIRECT TESTIMONY OF PAUL W. STALLCUP has been served by U.S. Mail to Kenneth A. Hoffman and Marsha E. Rule, Esquires, Rutledge, Ecenia, Purnell & Hoffman, P. A., P.O. Box 551, Tallahassee, FL 32302-0551, on behalf of AQUA UTILITIES FLORIDA, INC., and that a true and correct copy thereof has been furnished to the following by U. S. Mail, this 21st day of August, 2007.

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c/o The Florida Legislature
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Calculation of Inflation Adjusted Subsidy and Affordability Amounts

Year	CPI	Growth Factor	SSU Subsidy Benchmark	UIF Wastewater Benchmark	Water Affordability Threshold	Wastewater Affordability Threshold
1996	156.9	1.00	$2.00	-	$52.00	$65.00
1997	160.5	1.02	$2.05	-	$53.19	$66.49
1998	163.0	1.04	$2.08	-	$54.02	$67.53
1999	166.6	1.06	$2.12	-	$55.21	$69.02
2000	172.2	1.10	$2.20	-	$57.07	$71.34
2001	177.1	1.13	$2.26	-	$58.69	$73.37
2002	179.9	1.15	$2.29	-	$59.62	$74.53
2003	184.0	1.17	$2.35	$4.89	$60.98	$76.23
2004	188.9	1.20	$2.41	$5.02	$62.61	$78.26
2005	195.3	1.24	$2.49	$5.19	$64.73	$80.91
2006	201.6	1.28	$2.57	$5.36	$66.81	$83.52
2007	209.0	1.33	$2.66	$5.55	$69.27	$86.58
2008	216.7	1.38	$2.76	$5.76	$71.81	$89.76

Notes: 2007 and 2008 CPI values are projections taken from Blue Chip Economic Forecasts.

Effect of Utility's Proposed County-wide Rate Consolidation on Test Year Water Residential Bills

County	System	Number of Customers	Stand-alone Bill	Consolidated Bill	Subsidy
Alachua	Arredondo Estates/Farms	535	$45.43	$45.43	$0.00
Brevard	Kingswood	61	$96.87	$82.01	-$14.86
Brevard	Oakwood	205	$77.15	$82.01	$4.86
Highlands	Sebring Lakes	73	$145.26	$58.25	-$87.01
Highlands	Leisure Lakes	284	$77.90	$58.25	-$19.65
Highlands	Lake Josephine	555	$45.81	$58.25	$12.44
Lake	Stone Mountain	9	$163.91	$35.08	-$128.83
Lake	Palms Mobile Home Park	60	$144.80	$35.08	-$109.72
Lake	Morningview	29	$100.04	$35.08	-$64.96
Lake	East Lake Harris Estates	174	$92.18	$35.08	-$57.10
Lake	Holiday Haven	120	$75.34	$35.08	-$40.25
Lake	Imperial Mobile Terrace	245	$58.91	$35.08	-$23.83
Lake	Skycrest	115	$52.29	$35.08	-$17.21
Lake	Quail Ridge	89	$50.68	$35.08	-$15.60
Lake	Ravenswood	43	$49.16	$35.08	-$14.08
Lake	Friendly Center	46	$46.60	$35.08	-$11.52
Lake	J. Swiderski - Summit Chase	216	$44.56	$35.08	-$9.48
Lake	Piney Woods	170	$43.87	$35.08	-$8.78
Lake	Venetian Village	154	$42.32	$35.08	-$7.24
Lake	Haines Creek	108	$41.55	$35.08	-$6.47
Lake	J. Swiderski - 48 Estates	79	$40.65	$35.08	-$5.56
Lake	Hobby Hills	99	$39.65	$35.08	-$4.57
Lake	Valencia Terrace	324	$38.85	$35.08	-$3.77
Lake	Fern Terrace	123	$36.93	$35.08	-$1.85
Lake	Grand Terrace	110	$36.72	$35.08	-$1.63
Lake	Carlton Village	231	$35.96	$35.08	-$0.88
Lake	Picciola Island	145	$35.17	$35.08	-$0.09
Lake	Silver Lake / Western Shores	1,412	$27.65	$35.08	$7.43
Lake	J. Swiderski - Kings Cove	207	$26.19	$35.08	$8.89
Marion	Ocala Oaks	1,825	$32.96	$32.96	$0.00
Orange	Tangerine	256	$32.61	$32.61	$0.00
Palm Beach	Lake Osborne Estates	458	$35.20	$35.20	$0.00
Pasco	Zephyr Shores	493	$89.52	$41.12	-$48.40
Pasco	Palm Terrace	1,170	$45.29	$41.12	-$4.18
Pasco	Jasmine Lakes	1,513	$34.73	$41.12	$6.39

Effect of Utility's Proposed County-wide Rate Consolidation on Test Year Water Residential Bills (Continued)

County	System	Number of Customers	Stand-alone Bill	Consolidated Bill	Subsidy
Polk	Rosalie Oaks	97	$84.89	$32.59	-$52.29
Polk	Village Water	138	$62.46	$32.59	-$29.87
Polk	Orange Hill / Sugar Creek	235	$40.20	$32.59	-$7.61
Polk	Gibsonia Estates	167	$36.18	$32.59	-$3.59
Polk	Lake Gibson Estates	808	$22.66	$32.59	$9.93
Putnam	Wootens	27	$209.19	$72.16	-$137.03
Putnam	Silver Lake Oaks	40	$133.58	$72.16	-$61.42
Putnam	Hermits Cove	181	$116.34	$72.16	-$44.18
Putnam	Beecher's Point	48	$93.83	$72.16	-$21.67
Putnam	River Grove	107	$82.42	$72.16	-$10.26
Putnam	Welaka / Saratoga Harbour	146	$75.79	$72.16	-$3.63
Putnam	Palm Port	108	$66.92	$72.16	$5.24
Putnam	Pomona Park	144	$57.37	$72.16	$14.79
Putnam	St. Johns Highlands	96	$54.15	$72.16	$18.01
Putnam	Interlachen Lakes Estates	271	$43.83	$72.16	$28.33
Seminole	Harmony Homes	61	$76.86	$39.91	-$36.95
Seminole	Chuluota	1,369	$38.54	$39.91	$1.37
Sumter	The Woods	67	$77.09	$77.09	$0.00
Volusia	Jungle Den	111	$121.51	$44.38	-$77.13
Volusia	Tomoka	262	$37.37	$44.38	$7.00
Washington	Sunny Hills	556	$51.44	$51.44	$0.00

Note: Stand-alone and consolidated water rates are calculated using a 40% BFC allocation, a uniform gallonage charge rate structure, usage of 5.866 kgals per month, and an assumption that 75% of the utility's requested rate relief is approved.

Effect of Utility's Proposed County-wide Rate Consolidation on Test Year Wastewater Residential Bills

County	System	Number of Customers	Stand-alone Average Bill	Consolidated Bill	Subsidy
Alachua	Arredondo Farms	315	$51.09	$51.09	$0.00
Highlands	Leisure Lakes	280	$45.76	$45.76	$0.00
Lake	Morningview	28	$117.18	$59.96	-$57.23
Lake	Holiday Haven	106	$108.32	$59.96	-$48.36
Lake	Venetian Village	97	$83.20	$59.96	-$23.24
Lake	J. Swiderski - Summit Chase	216	$57.32	$59.96	$2.63
Lake	J. Swiderski - Kings Cove	199	$50.07	$59.96	$9.88
Lake	Valencia Terrace	323	$42.96	$59.96	$16.99
Lee	South Seas	33	$128.98	$128.98	$0.00
Polk	Rosalie Oaks	95	$108.59	$99.55	-$9.04
Polk	Lake Gibson Estates	314	$100.48	$99.55	-$0.92
Putnam	Beecher's Point	17	$190.79	$101.54	-$89.25
Putnam	Silver Lake Oaks	40	$128.60	$101.54	-$27.06
Putnam	Park Manor/Interlocken	27	$117.71	$101.54	-$16.17
Putnam	Palm Port	106	$76.38	$101.54	$25.16
Seminole	Chuluota	614	$77.19	$77.19	$0.00
Sumter	The Woods	63	$83.79	$83.79	$0.00
Volusia	Jungle Den	114	$107.04	$107.04	$0.00
Washington	Sunny Hills	185	$62.35	$62.35	$0.00

Note: Stand-alone and consolidated wastewater rates are calculated using a 50% BFC allocation, a uniform gallonage charge rate structure, usage of 3.499 kgals per month, and an assumption that 75% of the utility's requested rate relief is approved.

Example of How the Combining Systems Affects Rates

	Smaller System	Larger System	Combined Systems
Annual Revenue Requirement	$60,000	$180,000	$240,000
Number of Customers	50	750	800
Number of Bills per Year	600	9,000	9,600
Average Usage per Month in Kgals	5	5	5
Total Kgals Consumed per Year	3,000	45,000	48,000
Base Facility Charge	$40.00	$8.00	$10.00
Gallonage Charge	$12.00	$2.40	$3.00
Monthly Bill at 5 Kgal	$100.00	$20.00	$25.00

Note: Rates calculated using a 40% BFC allocation and a uniform gallonage charge rate structure.

Effect of First Alternative (Capband) Rate Consolidation on Test Year Water Residential Bills

Group	System	Number of Customers	Stand-alone Bill	Consolidated Bill	Subsidy
Capped	Wootens	27	$209.19	$71.81	-$137.38
	Stone Mountain	9	$163.91	$71.81	-$92.10
	Palms Mobile Home Park	60	$144.80	$71.81	-$72.99
	Sebring Lakes	73	$145.26	$71.81	-$73.45
	Silver Lake Oaks	40	$133.58	$71.81	-$61.77
	Jungle Den	111	$121.51	$71.81	-$49.70
	Hermits Cove	181	$116.34	$71.81	-$44.53
	Morningview	29	$100.04	$71.81	-$28.23
	Kingswood	61	$96.87	$71.81	-$25.06
	Beecher's Point	48	$93.83	$71.81	-$22.02
	East Lake Harris Estates	174	$92.18	$71.81	-$20.37
	Zephyr Shores	493	$89.52	$71.81	-$17.71
	Rosalie Oaks	97	$84.89	$71.81	-$13.08
	River Grove	107	$82.42	$71.81	-$10.61
	Leisure Lakes	284	$77.90	$71.81	-$6.09
	Oakwood	205	$77.15	$71.81	-$5.34
	The Woods	67	$77.09	$71.81	-$5.28
	Harmony Homes	61	$76.86	$71.81	-$5.05
	Welaka / Saratoga Harbour	146	$75.79	$71.81	-$3.98
	Holiday Haven	120	$75.34	$71.81	-$3.53
Group 1	Palm Port	108	$66.92	$62.41	-$4.51
	Village Water	138	$62.46	$62.41	-$0.05
	Imperial Mobile Terrace	245	$58.91	$62.41	$3.50
	Pomona Park	144	$57.37	$62.41	$5.04
Group 2	St. Johns Highlands	96	$54.15	$53.91	-$0.24
	Skycrest	115	$52.29	$53.91	$1.62
	Sunny Hills	556	$51.44	$53.91	$2.48
	Quail Ridge	89	$50.68	$53.91	$3.23
	Ravenswood	43	$49.16	$53.91	$4.76
Group 3	Friendly Center	46	$46.60	$47.50	$0.90
	Lake Josephine	555	$45.81	$47.50	$1.69
	Arredondo Estates/Farms	535	$45.43	$47.50	$2.08
	Palm Terrace	1,170	$45.29	$47.50	$2.21
	J. Swiderski - Summit Chase	216	$44.56	$47.50	$2.94
	Interlachen Lakes Estates	271	$43.83	$47.50	$3.68
	Piney Woods	170	$43.87	$47.50	$3.64
	Venetian Village	154	$42.32	$47.50	$5.18

Effect of First Alternative (Capband) Rate Consolidation on Test Year Water Residential Bills Continued)

County	System	Number of Customers	Stand-alone Bill	Consolidated Bill	Subsidy
Group 4	Haines Creek	108	$41.55	$38.23	-$3.32
	J. Swiderski - 48 Estates	79	$40.65	$38.23	-$2.42
	Orange Hill / Sugar Creek	235	$40.20	$38.23	-$1.97
	Hobby Hills	99	$39.65	$38.23	-$1.42
	Valencia Terrace	324	$38.85	$38.23	-$0.62
	Chuluota	1,369	$38.54	$38.23	-$0.31
	Tomoka	262	$37.37	$38.23	$0.85
	Fern Terrace	123	$36.93	$38.23	$1.30
	Grand Terrace	110	$36.72	$38.23	$1.51
	Gibsonia Estates	167	$36.18	$38.23	$2.05
	Carlton Village	231	$35.96	$38.23	$2.26
	Picciola Island	145	$35.17	$38.23	$3.06
	Lake Osborne Estates	458	$35.20	$38.23	$3.02
	Jasmine Lakes	1,513	$34.73	$38.23	$3.50
	Ocala Oaks	1,825	$32.96	$38.23	$5.27
	Tangerine	256	$32.61	$38.23	$5.62
Group 5	Silver Lake / Western Shores	1,412	$27.65	$30.33	$2.68
	J. Swiderski - Kings Cove	207	$26.19	$30.33	$4.14
Group 6	Lake Gibson Estates	808	$22.66	$25.53	$2.87

Note: Stand-alone and consolidated water rates are calculated using a 40% BFC allocation, a uniform gallonage charge rate structure, usage of 5.866 kgals per month, and an assumption that 75% of the utility's requested rate relief is approved.

Effect of First Alternative (Capband) Rate Consolidation on Test Year Wastewater Residential Bills

Group	System	Number of Customers	Stand-alone Average Bill	Consolidated Bill	Subsidy
Capped	Beecher's Point	17	$190.79	$89.70	-$101.09
	South Seas	33	$128.98	$89.70	-$39.28
	Silver Lake Oaks	40	$128.60	$89.70	-$38.90
	Morningview	28	$117.18	$89.70	-$27.48
	Park Manor/Interlocken	27	$117.71	$89.70	-$28.01
	Holiday Haven	106	$108.32	$89.70	-$18.62
	Rosalie Oaks	95	$108.59	$89.70	-$18.89
	Jungle Den	114	$107.04	$89.70	-$17.34
	Lake Gibson Estates	314	$100.48	$89.70	-$10.78
Group 1	Venetian Village	97	$83.20	$87.29	$4.09
	The Woods	63	$83.79	$87.29	$3.50
Group 2	Chuluota	614	$77.19	$81.68	$4.49
	Palm Port	106	$76.38	$81.68	$5.30
Group 3	Sunny Hills	185	$62.35	$67.22	$4.87
Group 4	J. Swiderski - Summit Chase	216	$57.32	$62.19	$4.87
Group 5	Arredondo Farms	315	$51.09	$54.84	$3.74
	J. Swiderski - Kings Cove	199	$50.07	$54.84	$4.76
Group 6	Leisure Lakes	280	$45.76	$48.54	$2.78
	Valencia Terrace	323	$42.96	$48.54	$5.57

Note: Stand-alone and consolidated wastewater rates are calculated using a 50% BFC allocation, a uniform gallonage charge rate structure, usage of 3.499 kgals per month, and an assumption that 75% of the utility's requested rate relief is approved.

Effect of Second Alternative Rate Consolidation on Test Year Water Residential Bills

Group	System	Number of Customers	Stand-alone Bill	Consolidated Bill	Subsidy
Group 1	Wootens	27	$209.19	$37.79	-$171.40
	Stone Mountain	9	$163.91	$37.79	-$126.12
	Palms Mobile Home Park	60	$144.80	$37.79	-$107.01
	Sebring Lakes	73	$145.26	$37.79	-$107.47
	Ocala Oaks	1,825	$32.96	$37.79	$4.84
	Tangerine	256	$32.61	$37.79	$5.18
Group 2	Silver Lake Oaks	40	$133.58	$33.23	-$100.35
	Jungle Den	111	$121.51	$33.23	-$88.28
	Hermits Cove	181	$116.34	$33.23	-$83.11
	Morningview	29	$100.04	$33.23	-$66.81
	Carlton Village	231	$35.96	$33.23	-$2.73
	Picciola Island	145	$35.17	$33.23	-$1.94
	Lake Osborne Estates	458	$35.20	$33.23	-$1.97
	Jasmine Lakes	1,513	$34.73	$33.23	-$1.50
	Silver Lake / Western Shores	1,412	$27.65	$33.23	$5.58
Group 3	Kingswood	61	$96.87	$28.03	-$68.84
	Beecher's Point	48	$93.83	$28.03	-$65.80
	J. Swiderski - Kings Cove	207	$26.19	$28.03	$1.84
	Lake Gibson Estates	808	$22.66	$28.03	$5.37
Group 4	East Lake Harris Estates	174	$92.18	$41.54	-$50.63
	Zephyr Shores	493	$89.52	$41.54	-$47.97
	Rosalie Oaks	97	$84.89	$41.54	-$43.34
	River Grove	107	$82.42	$41.54	-$40.87
	Valencia Terrace	324	$38.85	$41.54	$2.69
	Chuluota	1,369	$38.54	$41.54	$3.01
	Tomoka	262	$37.37	$41.54	$4.17
	Fern Terrace	123	$36.93	$41.54	$4.61
	Grand Terrace	110	$36.72	$41.54	$4.83
	Gibsonia Estates	167	$36.18	$41.54	$5.36
Group 5	Leisure Lakes	284	$77.90	$45.20	-$32.70
	Venetian Village	154	$42.32	$45.20	$2.88
	Haines Creek	108	$41.55	$45.20	$3.65
	J. Swiderski - 48 Estates	79	$40.65	$45.20	$4.55
	Orange Hill / Sugar Creek	235	$40.20	$45.20	$5.00
	Hobby Hills	99	$39.65	$45.20	$5.55

Effect of Second Alternative Rate Consolidation on Test Year Water Residential Bills (Continued)

County	System	Number of Customers	Stand-alone Bill	Consolidated Bill	Subsidy
Group 6	Oakwood	205	$77.15	$49.21	-$27.94
	The Woods	67	$77.09	$49.21	-$27.88
	Harmony Homes	61	$76.86	$49.21	-$27.65
	Palm Terrace	1,170	$45.29	$49.21	$3.91
	J. Swiderski - Summit Chase	216	$44.56	$49.21	$4.65
	Interlachen Lakes Estates	271	$43.83	$49.21	$5.38
	Piney Woods	170	$43.87	$49.21	$5.34
Group 7	Welaka / Saratoga Harbour	146	$75.79	$50.08	-$25.71
	Holiday Haven	120	$75.34	$50.08	-$25.26
	Friendly Center	46	$46.60	$50.08	$3.48
	Lake Josephine	555	$45.81	$50.08	$4.27
	Arredondo Estates/Farms	535	$45.43	$50.08	$4.66
Group 8	Palm Port	108	$66.92	$54.33	-$12.58
	Village Water	138	$62.46	$54.33	-$8.13
	Imperial Mobile Terrace	245	$58.91	$54.33	-$4.58
	Pomona Park	144	$57.37	$54.33	-$3.03
	St. Johns Highlands	96	$54.15	$54.33	$0.18
	Skycrest	115	$52.29	$54.33	$2.04
	Sunny Hills	556	$51.44	$54.33	$2.90
	Quail Ridge	89	$50.68	$54.33	$3.65
	Ravenswood	43	$49.16	$54.33	$5.17

Note: Stand-alone and consolidated water rates are calculated using a 40% BFC allocation, a uniform gallonage charge rate structure, usage of 5.866 kgals per month, and an assumption that 75% of the utility's requested rate relief is approved.

Effect of Second Alternative Rate Consolidation on Test Year Wastewater Residential Bills

Group	System	Number of Customers	Stand-alone Average Bill	Consolidated Bill	Subsidy
Putnam	Beecher's Point	17	$190.79	$47.67	-$143.12
Highlands	Leisure Lakes	280	$45.76	$47.67	$1.91
Lake	Valencia Terrace	323	$42.96	$47.67	$4.70
Lee	South Seas	33	$128.98	$54.11	-$74.87
Alachua	Arredondo Farms	315	$51.09	$54.11	$3.02
Lake	J. Swiderski - Kings Cove	199	$50.07	$54.11	$4.03
Putnam	Silver Lake Oaks	40	$128.60	$101.47	-$27.12
Putnam	Park Manor/Interlocken	27	$117.71	$101.47	-$16.23
Lake	Morningview	28	$117.18	$101.47	-$15.71
Volusia	Jungle Den	114	$107.04	$101.47	-$5.56
Polk	Lake Gibson Estates	314	$100.48	$101.47	$1.00
Polk	Rosalie Oaks	95	$108.59	$81.21	-$27.38
Lake	Holiday Haven	106	$108.32	$81.21	-$27.11
Seminole	Chuluota	614	$77.19	$81.21	$4.02
Washington	Sunny Hills	185	$62.35	$59.68	-$2.68
Lake	J. Swiderski - Summit Chase	216	$57.32	$59.68	$2.35
Sumter	The Woods	63	$83.79	$80.02	-$3.77
Lake	Venetian Village	97	$83.20	$80.02	-$3.18
Putnam	Palm Port	106	$76.38	$80.02	$3.64

Note: Stand-alone and consolidated wastewater rates are calculated using a 50% BFC allocation, a uniform gallonage charge rate structure, usage of 3.499 kgals per month, and an assumption that 75% of the utility's requested rate relief is approved.

Example of Under-Recovery When Repression Adjustment Is not Made

	Calculation of Rates without Repression Adjustment	
(1)	Revenue Requirement	$36,000
(2)	40% Allocation to Base Charge	$14,400
(3)	60% Allocation to Gallonage Charge	$21,600
(4)	Number of Customers	100
(5)	Number of Bills per Year	1,200
(6)	Monthly Base Facilty Charge (2) / (5)	$12.00
(7)	Average Monthly Consumption (Kgals)	5.000
(8)	Annual Gallons Sold (Kgals)	6,000
(9)	Gallonage Charge per Kgal (3) / (8)	$3.60
	Calculation of Post-Repression Revenues	
(10)	Number of Bills per Year	1,200
(11)	Monthly Base Facilty Charge	$12.00
(12)	Total Fixed Revenue (10) x (11)	$14,400
(13)	Post-Repression Average Consumption	4.000
(14)	Post-Repression Gallons Sold (Kgal)	4,800
(15)	Gallonage Charge per Kgal	$3.60
(16)	Gallonage Revenue (14) x (15)	$17,280
(17)	Total Revenues (12) + (16)	$31,680
	Calculation of Revenue Shortfall	
(18)	Total Revenues (17)	$31,680
(19)	- Revenue Requirement (1)	$36,000
(20)	Revenue Surplus/(Shortfall) (18) - (19)	($4,320)

Water Rates Calculator - Version 6.0

Company: Aqua Testimony Example
Docket: 060368
Analyst:
Date:

1 - Enter Data from the Accounting Spreadsheet

Original Revenue Requirement		$24,000
Change in Revenue Requirement		$12,000
New Revenue Requirement	100.0%	$36,000
% Fixed Cost	40.0%	$14,400
% Variable Cost	60.0%	$21,600
Purchased Power Expense		$500
Chemicals Expense		$250
Purchased Water Expense		$0
Monthly Fixed Cost Amount:		$1,200

2 - Enter Billing Determinants by Rate Class

Billing Determinants:	ERCs	Kgals
Residential:	1,200	6,000
General Service	0	0
Totals:	1,200	6,000

3 - Enter Existing Residential Rate Structure:

BFC	$10.00
Kgal Allotment in BFC:	0
Number of Rate Blocks:	1

Block	Lower	Upper	Rate
1	0	1,000,000	$2.00
2			
3			
4			
5			

4 - Set Discretionary Usage Threshold

Average # People per Household	2
x gpd/person non-discr. usage	50
=> Discr. usage threshold (Kgal)	3.000

5 - Set Elasticity for Discretionary Usage

Discretionary Usage Elasticity: -0.400

6 - Set Repression Threshold Values

Repression Threshold (% Change)	10.0%
Repression Threshold ($ Change)	$5.00

7 - Residential Usage Statistics

Percentage Change in Revenue Requirement:			50.0%
Percentage of Bills < 1 Kgal per month:			4.3%
	Total Kgals	(<= 1 Kgal)	(> 1 Kgal)
Number of Residential Bills:	1,200	52	1,148
Number of Residential Kgals:	6,000	26	5,974
Average Usage per Customer:	5.000	0.505	5.204
Discr.Usage per Customer:	2.000		2.204

Selectable Billing Analysis Data

Usage	% Bills	% Kgal	% Disc Kgals
1	4.3%	19.6%	0.0%
2	16.8%	38.1%	0.0%
5	78.9%	72.4%	40.2%
8	90.1%	81.7%	60.5%
15	96.7%	89.4%	77.1%
20	97.5%	92.4%	83.5%
30	98.3%	96.6%	92.6%
40	99.2%	99.1%	98.1%
50	100.0%	100.0%	100.0%

8 - Set Residential Rate Design Parameters

Set Target BFC Allocation: 40.00%

Initial Allocation		Conservation Adj.		Target Allocation	
BFC	Gallonage	BFC	Gallonage	BFC	Gallonage
$14,400	$21,600	$0	$0	$14,400	$21,600
40.0%	60.0%	0.0%	0.0%	40.0%	60.0%

Number of Rate Blocks: 2

Block	Lower	Upper	Rate Factor	Billing Determinants Units: Bills	Kgals	Disc. Kgals	Billing Determinants Proportions: Bills	Kgals	Disc. Kgals
1	0	5	1.00	947	4,343	1,116	78.9%	72.4%	40.2%
2	5	100	1.50	253	1,658	1,658	21.1%	27.6%	59.8%
3	100								
4									
5									
Totals:				1,200	6,000	2,774	100.0%	100.0%	100.0%

9 - Press <Ctrl-r> to Calculate Post Repression Rates

Valid Solution

Residential Rates, Repression, and Revenues

BFC	$11.97				
Block	Rate	Pre-Rep. Kgals	Kgals Repressed	Post-Rep. Kgals	Post-Rep. Revenues
1	$3.63	4,343	-191	4,152	$15,051
2	$5.44	1,658	-463	1,195	$6,497
3					
4					
5					
Totals:		6,000	-654	5,347	$21,549

All Other Classes Rates and Revenues				Revenue Sufficiency	
	Rate	Units	Revenues	Minimum	Surplus
BFC	$11.97	0	$0	Month	Amount
$/Kgal	$4.03	0	$0	Dec	$48,723

Price Induced Conservation Effects in Kgals/Cust

Pre-Repression	
Average Overall Consumption:	5.000
Average Resident Consumption:	5.204
Average Resident Discr. Consumption:	2.204
Post-Repression	
Average Overall Consumption:	4.456
Average Resident Consumption:	4.634
Average Resident Discr. Consumption:	1.634
Percentage Change	
Average Overall Consumption:	-10.9%
Average Resident Consumption:	-10.9%
Average Resident Discr. Consumption:	-25.8%

10 - Verify Post Repression Revenues = Post Repression Revenue Requirement

Pre-Repression Revenue Requirement:		$36,000		Residential BFC Revenues	$14,366
Adj Purchase Power	($54)			Residential Gallonage Revenues	$21,549
Adj Chemicals	($27)				
Adj Purchased Water	$0			*Non-Residential BFC Revenues*	$0
Total	($82)			Non-Residential Gallonage Revenues	$0
Grossed up for 4.5% RAFs		($86)			
Post Repression Revenue Requirement:		$35,914	EQUALS	Post Repression Revenues	$35,914

11 - Change in Bills

Kgals	% Change	$ Change	New Bill
0	19.7%	$1.97	$11.97
1	30.0%	$3.60	$15.60
2	37.3%	$5.22	$19.22
3	42.8%	$6.85	$22.85
4	47.1%	$8.47	$26.47
5	50.5%	$10.10	$30.10
6	61.5%	$13.54	$35.54
7	70.7%	$16.97	$40.97
8	78.5%	$20.41	$46.41
9	85.2%	$23.85	$51.85
10	91.0%	$27.29	$57.29
11	96.0%	$30.73	$62.73
12	100.5%	$34.16	$68.16
13	104.4%	$37.60	$73.60
14	108.0%	$41.04	$79.04
15	111.2%	$44.48	$84.48
16	114.1%	$47.91	$89.91
17	116.7%	$51.35	$95.35
18	119.1%	$54.79	$100.79
19	121.3%	$58.23	$106.23
20	123.3%	$61.67	$111.67
21	125.2%	$65.10	$117.10
22	126.9%	$68.54	$122.54
23	128.5%	$71.98	$127.98
24	130.0%	$75.42	$133.42
25	131.4%	$78.86	$138.86
26	132.7%	$82.29	$144.29
27	134.0%	$85.73	$149.73
28	135.1%	$89.17	$155.17
29	136.2%	$92.61	$160.61
30	137.2%	$96.04	$166.04
31	138.2%	$99.48	$171.48
32	139.1%	$102.92	$176.92
33	139.9%	$106.36	$182.36
34	140.8%	$109.80	$187.80
35	141.5%	$113.23	$193.23
36	142.3%	$116.67	$198.67
37	143.0%	$120.11	$204.11
38	143.7%	$123.55	$209.55
39	144.3%	$126.99	$214.99
40	144.9%	$130.42	$220.42
41	145.5%	$133.86	$225.86
42	146.1%	$137.30	$231.30
43	146.6%	$140.74	$236.74
44	147.1%	$144.18	$242.18
45	147.6%	$147.61	$247.61
46	148.1%	$151.05	$253.05
47	148.5%	$154.49	$258.49
48	149.0%	$157.93	$263.93
49	149.4%	$161.36	$269.36
50	149.8%	$164.80	$274.80
51	150.2%	$168.24	$280.24
52	150.6%	$171.68	$285.68
53	151.0%	$175.12	$291.12
54	151.3%	$178.55	$296.55
55	151.7%	$181.99	$301.99