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June 28, 2003

**BY FEDERAL EXPRESS**



Ms. Blanca Bayo
Commission Clerk and Administrative Services Director
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399

Re: Docket No. 020071-WS; Application of Utilities, Inc. of Florida for a rate increase
Our File No.: 30057.40

Dear Ms. Bayo:

Enclosed please find for filing in the above-referenced docket an original and fifteen (15) copies of the Rebuttal Testimony of the following witnesses:

1. Rebuttal Testimony of Steven M. Lubertozzi 05764-03
2. Rebuttal Testimony of Patrick C. Flynn 05765-03
3. Rebuttal Testimony of David L. Orr 05766-03
4. Rebuttal Testimony of Frank Seidman 05767-03
5. Rebuttal Testimony of Hugh A. Gower 05768-03
6. Rebuttal Testimony of Pauline M. Ahern 05769-03

AUS
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ECR
GCL 1
OPC
MMS
SEC 1
OTH

Please contact me if you have any questions.

Very truly yours,

VALERIE L. LORD
Of Counsel

VLL/dlv
Enclosures

cc: Stephen Burgess, Esquire (w/enclosure)(by Federal Express)
Rosanne Gervasi, Esquire (w/enclosure) (by Federal Express)
Mr. Steven M. Lubertozzi (w/enclosure) (by Federal Express)
Mr. Patrick Flynn (w/enclosure) (by hand delivery)
Mr. David L. Orr (w/enclosure) (by hand delivery)
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Mr. Frank Seidman (w/enclosure) (by Federal Express)
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utilities, inc.\2002 rate case\psc clerk (bayo) 083 (Rebuttal testimony) ltr.wpd

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

**DOCKET NO. 020071-WS**

**UTILITIES, INC. OF FLORIDA**

**REBUTTAL TESTIMONY OF**

**FRANK SEIDMAN**

**REGARDING THE APPLICATION FOR**

**INCREASE IN WATER AND WASTEWATER**

**RATES AND CHARGES**

**IN**

**MARION, ORANGE, PASCO, PINELLAS AND SEMINOLE**

**COUNTIES**

REBUTTAL TESTIMONY OF FRANK SEIDMAN

**Q. Please state your name, profession and address.**

A. My name is Frank Seidman. I am President of Management and Regulatory Consultants, Inc., consultants in the utility regulatory field. My mailing address is P.O. Box 13427, Tallahassee, FL 32317-3427.

**Q. Have you previously filed direct testimony on behalf of the Applicant, Utilities, Inc. of Florida (UIF)?**

A. Yes.

**Q. What is the purpose of your rebuttal testimony?**

A. The purpose of my rebuttal testimony is to respond to the direct, prefiled testimony of Office of Public Counsel (OPC) witnesses Biddy and Deronne. In addition I will respond to the direct, prefiled testimony of Commission Staff witness Redemann.

RESPONSE TO MR. BIDDY

**Q. Are there specific areas of Mr. Biddy's testimony to which you are responding?**

A. Yes. Mr. Biddy addresses several areas related to the determination of used and useful. I will be responding to certain portions. My response will follow the order in which Mr. Biddy addresses them.

UNACCOUNTED-FOR-WATER

**Q. Would you please respond to Mr. Biddy's testimony regarding unaccounted-for-water?**

A. Yes. At pages 6 and 7 of his prefiled testimony, Mr. Biddy addresses the levels of unaccounted-for-water for the 17 UIF water systems. He has prepared an analysis that is summarized in his Exhibit TLB-4. I have reviewed his results and they agree with those of the Utility as shown on the "F-1" schedules of the MFR for each system. However, in the course of my review, it came to my attention that the "F-1" schedule filed for the Marion County Golden Hills/Crownwood system is an incorrect, draft schedule. For whatever reason, the final "F-1" schedule for the Marion County Golden Hills/Crownwood system did not get filed. The correction to Schedule "F-1" also affected the calculations on Schedules "F-3" and "F-5". Copies of the correct schedules are attached as FS-4.

**Q. What is the difference between the schedule as filed and available to Mr. Biddy and the corrected schedule?**

A. The schedule as filed and available to Mr. Biddy showed 59.497 million gallons pumped and a resulting 22.2% unaccounted-for-water. Mr. Biddy's calculations were in agreement with that amount and result. The correct schedule takes note of the fact that tests were made for the water well flow meters indicating that they were reading high. When the meter flow reading correction is taken into account, the gallons pumped drops to 49.536 million gallons and the unaccounted-for-water level drops to 6.6%.

**Q. Why was this meter flow test undertaken?**

A. When I was preparing the engineering MFR schedules, I became concerned with the flow results for the Crownwood system and asked the company to check them out. The company communicated its response to me by e-mail, a copy of which is attached as FS-5. The results of the testing for the wastewater system were properly reflected in the "F-2" schedule as filed. Inadvertently, the results for the water system were not.

**Q. Mr. Biddy uses a 10% unaccounted-for-water level as acceptable and considers anything above that as "excess". He states that it is the historical policy of the Commission to use a limit of 10%. Would you please respond to Mr. Biddy's position?**

A. Yes. It is true that the Commission has often used 10% as the limit for an acceptable level of unaccounted-for-water in rate cases. But not always. The Commission's policy is not set by rule and is therefore open to review in each case. The Commission's Standard Operating Procedures (SOP) state that a fair average of unaccounted-for-water might be 10-20% for fully metered systems with good meter maintenance programs and average conditions of service. Although the SOP is no longer utilized because it was never formalized into a rule, it does reflect the historical position of the Commission and its staff. So there is room for legitimate discussion. When the Commission opened a Docket to consider adopting specific rules for used and useful, it did propose 12.5% as an acceptable level. That proposal took into consideration a new system leakage design level of 2-

3% as a base before including a 10% level of unaccounted-for-water. Another point for consideration is that of meter accuracy. Commission rules acknowledge that the accuracy limits of displacement meters are between 90-101.5 percent of actual flows. For current and compound meters, the limits are 90-102% and 90-103% respectively. Since meters typically run slow as they age, even a system that had zero unmetered water could still have up to a 10% differential between water pumped and metered that would show up as unaccounted-for-water.

**Q. Are you aware of any other indications that a 10% allowance for accounted-for-water may be too low?**

A. Yes. There are indications from some water management districts in Florida that the range should be 12-15%. For example the Southwest Florida Water Management District (SWFWMD) has indicated that for most areas, there is no need to address reduction of unaccounted-for-water levels of less than 15%. Even in water use caution areas, remedial action is not required for unaccounted-for-water levels of less than 12%. So, there is legitimate reason to set an acceptable level of unaccounted-for-water at a level higher than 10%, and 12.5% is a conservative goal.

INFLOW AND INFILTRATION

**Q. At page of his prefiled direct testimony, Mr. Biddy next addresses inflow and infiltration (I&I). He shows I&I calculations for three**

**systems - Summertree, Weathersfield and Ravenna Park/Lincoln Heights. Would you please respond to his approach and his findings?**

A. Yes. Mr. Biddy calculated infiltration and inflow (I&I) for each of these systems and found that they had "excess" I&I. Mr. Biddy considered any I&I greater than 10% of treated flows to be excess. I am not aware of any basis for 10% of treated flows as a standard for measuring excess I&I. The standard of which I am aware is a specification allowance of 500 gpd/inch-diameter/mile of gravity mains for infiltration, excluding inflow. That is a measure recommended in the previously referred to SOP's, and one which the Commission has used and accepted in other rate proceedings. The basis for this specification allowance is Water Pollution Control Federation (WPCF) Manual of Practice No. 9, developed in 1970, superceded in 1982 by WPCF Manual of Practice No. 5.

**Q. At page 8 of his prefiled direct testimony, Mr. Biddy indicates that he normally would proceed to determine the amount of I/I per inch of sewer diameter per mile, but that the utility did not furnish sizes of mains or lengths or reasonable maps. Was that information available?**

A. Yes. But to the best of my knowledge OPC did not specifically request that detail, even though it did not hesitate to requests hundreds of other pieces of information during the discovery process. Such information was previously available in Commission annual reports, although it stopped

requiring the reporting of this data several years ago. Nevertheless, it is available from the company. Such information was requested by PSC Staff for the Ravenna Park/Lincoln Heights system, was furnished and was used to analyze I&I for that system, and is referenced in Staff Witness Redemann's testimony.

**Q. Do you agree with how Mr. Biddy calculated I&I?**

A. No. He estimated I&I for all systems as the difference between treated wastewater flows and what he identifies as 80% of water sold to wastewater connections. First, the general assumption that only 80% of water used is returned to the wastewater system is typically applied only to residential service and is based on the assumption that irrigation water is included in residential use. Mr. Biddy made no distinction for systems where irrigation is separately metered and already excluded from residential use. Second, this Commission typically assumes that 96% of general service water is returned to the wastewater system. Mr. Biddy made no distinction between residential and general service. Third, he sometimes used the wrong numbers as input.

**Q. Would you please address Mr. Biddy's I&I calculations for the Pasco County - Summertree system?**

A. Yes. For the Pasco County - Summertree system, I agree with the treated wastewater flow of 23.690 million gallons used by Mr. Biddy. This is the amount shown on MFR Schedule "F-2". I also agree with the 22,027,023

gallons that he identifies as water sold to wastewater connections. That is an amount provided to OPC in response to its Interrogatory No. 106 which the company identified as returnable water. I do not agree with Mr. Biddy's assumption that only 80% of these flows are actually returned for wastewater treatment for this system. He did not adjust for the fact that Summertree has separately metered irrigation and irrigation use has already been removed from residential use. He made no distinction between residential and general service. Finally, as the company has pointed out in response to OPC and Staff discovery requests, the Summertree system is unique in that it has separately metered irrigation for all common sites and residential lot sites in the Arborwood area. This issue was addressed in Summertree's last rate case, Docket No. 910020-WS. In Final Order No. 25821, the Commission agreed that due to the unique circumstances, it was proper to assume that 96% of all flows would be returned to the wastewater system. For this test year, 96% x 22,027,023 = 21,145,942 gallons. Based on this assumption, I&I, the difference between water returned and waster treated would be 2,554,058 gallons, rather than the 6,068,382 gallons calculated by Mr. Biddy.

**Q. Did you make an analysis of allowable infiltration flows for Summertree based on the 500 gpd/inch-diameter/mile criterion?**

A. Yes. My analysis is shown on FS-6, page 1. The company's records show, through year 2000, 1,260 feet of 6" mains, 25,165 feet of 8" mains, and

2,677 feet of 10" mains. Based on these quantities and an allowance of 500 GPD per inch-diameter mile, the allowable infiltration would be 22,315 GPD or 8.14 million gallons. This compares to the actual I&I of 2.5 million gallons, as discussed above. Keep in mind that this is an infiltration allowance only and does not include any allowance for inflow. Also, keep in mind that this calculation does not even include the footage of service laterals which tend to account for a good deal of infiltration. There is no excess I&I at Summertree.

**Q. Would you please address Mr. Biddy's I&I calculations for the Seminole County - Weathersfield system?**

A. Yes. I disagree with Mr. Biddy's calculations because there is no valid basis for his determination of wastewater treated. The wastewater flows in the Weathersfield system are treated and disposed of by the City of Altamonte Springs under an agreement that dates back to 1995. The City bills for services, not on the basis of measured wastewater flows, but rather on the basis of a percentage of water consumed by Weathersfield's wastewater customers. There is no metering device to measure the flows sent to the City for treatment, so there is no measurement of treated flows against which to compare water consumed. Mr. Biddy has arrived at a number which he identifies as wastewater treated, but I do not know how he derived it, since neither the company nor the City has that information. Without knowledge of the treated flows, there is insufficient information

with which to calculate I&I. However, since the agreement with the City is to bill the utility on the basis of only 70% of water consumed, it can be reasonably concluded that the costs associated with any I&I that may exist is not being passed on the customers through the treatment and disposal costs. A determination of I&I is not necessary for this system.

**Q. Would you please address Mr. Biddy's I&I calculations for the Seminole County - Ravenna Park/Lincoln Heights system?**

A. Yes. The Ravenna Park/Lincoln Heights system is one for which there is general agreement between OPC, the Staff and the company that there is the appearance of excessive I&I. The company's assumptions were provided to the PSC Staff in response to interrogatories and they are correctly summarized and characterized in the prefiled direct testimony of PSC Staff witness Redemann. I will not repeat them here. Although Mr. Biddy's assumptions and calculations are somewhat different, there is not a substantial difference in the results. Based on Mr. Biddy's input and calculation the estimated allowable treatable flows, including I&I, would be 24,466,200 gallons. This compares to 22,028,144 gallons calculated by Mr. Redemann using the company's input.

**Q. Have you made calculations for the other wastewater systems?**

A. Yes. Mr. Biddy did not make a calculation of I&I for the Marion County - Golden Hills/Crownwood system. My calculation is shown at FS-6. It indicates there were 860,564 gallons of Infiltration & Inflow. Of this

amount, 773,689 gallons was determined to be an acceptable allowance for infiltration, excluding any allowance for infiltration through service laterals. The remaining 86,874 represents only 2.84% of treated flows, which is not significant and could well be attributed to infiltration through service laterals and/or inflow. There is no excess I&I for this system.

I also made a calculation for the Pasco County - Wis-Bar system, which Mr. Biddy did not address and, as shown on FS-6, page 3, there is no excess I&I.

STATUTORY 5 YEAR GROWTH

**Q. Mr. Biddy states that in systems experiencing negative growth he applied the negative growth rate because "the statutory rule must apply both ways to have any meaning." Do you agree?**

A. No. The purpose of the statutory language and rule that enables it is to insure that a utility has sufficient plant to serve current and future needs and that the utility is compensated for the related investment. If there is no growth, then no further investment is required and no allowance for further growth will be provided. However, once a utility has constructed plant which has been found to be necessary (used and useful) to serve its customers, that plant cannot be removed without cost to the remaining customers and without harm to the service of existing customers simply because some of those customers no longer take service. In addition, by reducing demand by applying a negative growth factor, Mr. Biddy is

double counting. The existing demand level, itself, already reflects reduced demand. A negative growth factor just compounds the reduction, artificially spiraling it down without any regard for cause and effect. Mr. Biddy's interpretation is nothing more than gamesmanship.

FIRE FLOW

**Q. The utility had requested a fire flow allowance for 12 of its water systems. Mr. Biddy recommended that a fire flow allowance not be approved for two of those systems. Would you please respond?**

A. Yes. The company requested a fire flow allowance for the Orangewood system and the Oakland Shores system. In both of these systems, fire flow is furnished to only limited portions of the systems. Mr. Biddy believes that because of this there should be no allowance for it. The problem is that, limited area or not, the hydrants are in public areas and the company is responsible for providing the required fire flows and must have the capacity to do so. To deny the allowance would be to deny the utility the ability to recover the cost associated with a service to which it is obligated.

UTILITY'S RATIONALE FOR USED AND USEFUL FOR WATER FACILITIES

**Q. At pages 9 through 11 of his prefiled direct testimony, Mr. Biddy takes issue with your approach to determining used and useful for water supply, pumping, treatment and storage facilities. He describes it as novel. Would you please respond?**

A. Certainly. I appreciate the compliment that my approach is novel, but that is more than it deserves. The approach I used is simply a practical application of the Commission's basic formula for determining used and useful.

As I stated in my prefiled direct testimony, the format of the analysis is the same for each system. It begins with a listing of the various input parameters including the number and rating of the wells, type and size of the storage facilities, high service pumping capacity, system demand, fireflow requirements, and unaccounted for water. If system growth is relevant that is addressed in the used & useful formula.

I then briefly discuss how each system functions and whether the system components should be evaluated individually or together. Based on the availability of well capacity, storage capacity and high service pumping capacity I made a determination as to whether demand should be evaluated on the basis of maximum day demand or instantaneous demand. I then made a calculation of used & useful using the Commission's standard formula of dividing the sum of (peak demand + fireflow - excess unaccounted for water + property needed to serve five years after the test year) by the firm reliable capacity.

Apparently, what Mr. Biddy found novel, was that I made a determination as to whether demand should be evaluated on the basis of maximum day

demand or instantaneous demand and found that most of the systems should be evaluated on the basis of instantaneous demand.

**Q. Under what circumstances did you determine that a system should be evaluated on the basis of instantaneous demand?**

A. I made a determination that a system should be evaluated on the basis of instantaneous demand when that system had no storage facilities or storage of such little consequence that it would be unable to support even a peak hour demand. Most of UIF's water systems are small, have simple chlorine treatment, only hydropneumatic storage and no high service pumping. Under these circumstances, the system demand is served directly from the well pumps. Clearly, as a practical matter, the well pumps see every instantaneous change in demand, and with no way to buffer that demand with storage, must respond directly to those changes. My approach of evaluating these systems on the basis of instantaneous demand merely recognizes what is actually occurring on the systems. There is nothing novel about it.

**Q. At page 11 of his prefiled direct testimony, Mr. Biddy concludes, after reviewing cases that you cited, that the Commission has never approved or even commented on instantaneous flow rationale. Do you agree with his conclusion?**

A. No. OPC, through interrogatories, had asked whether this used and useful rationale had ever been used or approved by the Commission and to

specify cases. The response, provide by me, was that the Commission had previously dealt with the concept of instantaneous demand. In each of the cases cited, the Commission dealt with the concept. I cited three rate cases in which the concept was introduced. In each of those, peak hour demand was used as a proxy for instantaneous demand. I also cited a rulemaking case in which the Commission proposed a rule which directly dealt with instantaneous demand in the same manner I have. Obviously, Mr. Biddy and I do not agree on how to interpret how the concept of instantaneous demand was addressed in each case. Nevertheless, the point is that the Commission is fully aware of the concept. What is at primary issue here is not whether the concept of instantaneous demand is new or legitimate, but whether it is best represented by a peak hour proxy or by a an estimate of diversified (coincident)instantaneous demand.

**Q. At page 11 of his prefiled direct testimony, Mr. Biddy alleges that your rationale is "obviously proposed to try to obtain a U/U percentage of 100% for all systems." Is that true?**

A. That is a strong allegation and the answer is emphatically, no. My rationale is to assure that the manner in which the systems operate is recognized to the greatest extent in used and useful. There is no doubt that I concluded that all of UIF's water systems were 100% used and useful. But that should come as no surprise - they had already been found to be 100% used and useful in previous cases and there has been no significant

change in any of the systems. My conclusions simply verify the conclusions reached in those previous cases.

DISTRIBUTION AND COLLECTION SYSTEMS

**Q. At page 11 of his prefiled testimony, Mr. Biddy alleges that the utility "ignored the long standing and Commission approved rationale and methodology" for determining used and useful for distribution and collection systems. Is that true?**

A. No. We simply didn't reinvent the wheel. As Mr. Biddy recognizes in his testimony, the company did not recalculate used and useful for systems which the Commission had previously found 100% used and useful and in which there has been no significant change. We did calculate used and useful for systems that had not previously been determined to be built out.

**Q. In Mr. Biddy's exhibits, he shows his calculations of used and useful for the distribution and collection portion of each of the 15 systems that you stated were previously found to be 100% used and useful by this Commission. Would it surprise you that in all but one case, his calculations yielded percentages less than 100%?**

A. Not at all. Apparently Mr. Biddy has relied on the strict mathematical calculation of lots served versus lots available as some sacrosanct formula to which reality and reason do not apply. It is not, nor are any of the many formulae utilized by the Commission. If they were, there would be neither need nor opportunity for the Commissioners to exercise any judgment.

With regard to the analysis of distribution and collection systems, it is perfectly reasonable for small, closed systems to be considered 100% used and useful even though some lots do not now, or may ever have customers, simply because all lines in place are required as a minimal, backbone system. I believe that is the gist of the Commission's previous findings for these systems.

I have attached FS-7 which summarizes customer activity information for the 15 systems for which the Commission has previously made a determination of 100% used and useful. The exhibit shows, for each system, the test year average single family residences, the average growth activity over the last five years, and the used and useful percentages calculated by Mr. Biddy. The systems are grouped according to the docket in which the Commission made its last used and useful determination. You can see most systems have had negligible activity since the Commission's last findings. You can also see that even according to Mr. Biddy's calculations, the lowest used and useful percentage is 82%. It is not unreasonable or unusual for the Commission to consider distribution and collection systems that are 80%+ buildout and have virtually no growth potential to be 100% used and useful.

**Q. There are two systems - Golden Hills/Crownwood and Summertree - that have not been previously determined to be 100% used and useful.**

**Did you make an evaluation for these systems, and if so, how did your results compare to those of Mr. Biddy?**

A. I did evaluate the distribution and collection portion of these systems. With regard to the Golden Hills/Crownwood water distribution system, I had made a calculation, that based on the 597 ERC capacity previously determined by the Commission, used and useful was approximately 97% and that 100% should be used. Through interrogatories, OPC requested that we make an actual lot count from system maps. On that basis, it appeared to us that approximately 586 units could be served. This approximation required an assumption as to how many multi-family units might be constructed on available sites. With that change, I would estimate that used and useful would calculate to approximately 90%. Mr. Biddy calculated it to be 88.64% using his count and assumptions. I would not dispute the differences because it is purely speculative what may or may not be developed. But based on the layout of the system and where available vacant lots are located, I would still recommend that the distribution system be considered 100% used and useful. With regard to the collection system, which only serves the Crownwood area, I made a determination that it was 100% used and useful based on the configuration of the system. The wastewater system only serves an area developed as quadraplexes. 18 quadraplex buildings have been developed out of what appears to have been a potential of anywhere from 26 to 34 total buildings,

depending on which plat drawing you look at. On that basis, the area served could be anywhere from 52% to 70% developed. However, there has been no development activity in at least five years and there does not seem to be any interest in further development. The service area is compact, consisting of less than 3,000 feet of mains. The wastewater collection system would probably not be any less, even if the existing buildings were all that were initially planned. On that basis, the collection system serving this grouping of buildings should be considered 100% used and useful.

With regard to Summertree, I did not make a determination of used and useful for the distribution and collection systems because they are fully contributed. Mr. Biddy determined that they were 77% and 65.96% used and useful, respectively. I did not check his calculations because, right or wrong, the associated investment is offset by CIAC.

**Q. In his calculation for three of the systems - Oakland Shores, Weathersfield and Park Ridge, Mr. Biddy reduced used and useful percentages by negative growth factors. Do you agree with this?**

A. No. Used and useful percentages should never be reduced by negative growth factors. Negative growth implies a demand for service once existed which the utility was obligated to serve and did. The utility cannot remove the lines which were committed to serving those sites nor should

the Commission penalize the utility for it, anymore than a utility should be penalized because demand may be reduced due to conservation.

**Q. Are there any specific reasons those systems show a negative growth?**

A. Yes. In the Weathersfield system, a portion of the service area was sold to the City of Altamonte Springs. This was a one time event and does not establish a pattern. In the Oakland Shores system, several customers were transferred to the City of Maitland service area when an adjacent small UIF system known as Druid Isles was purchased by the City of Maitland. This also was a one time event. For the Park Ridge system there is really not a negative growth pattern. The number of customers has not changed in many years, however, the annual consumption varies from year to year - sometimes up - sometimes down. Over the past five years the annual change has averaged less than one-half of one percent - hardly a pattern.

WASTEWATER TREATMENT PLANT

**Q. At page 12 of his prefiled testimony, Mr. Biddy takes issue with your approach to calculating used and useful for the Crownwood wastewater treatment plants. He alleges that you have not used any of the "longstanding and Commission recognized and approved methodologies" and seem "intent on breaking new ground." Is that true?**

A. No. I have no idea what Mr. Biddy is talking about. I calculated used and useful for the Crownwood plant using exactly the same formula and

components that he did, and in compliance with Commission Rule 25-30.432, F.A.C. We differ only in our calculation of growth and in the application of excess I&I. He used the three month average daily flow of 25,282 GPD to represent demand and I used the three month average daily flow of 25,282 GPD to represent demand. He used the three month average daily flow permitted capacity of 40,000 GPD and I used the three month average daily flow permitted capacity of 40,000 GPD. He used 2,178 GPD to represent 5 years growth and I used 2,207 GPD to represent growth - an insignificant difference. He deducted 362 GPD as representing excess I&I. I concluded that there was no excess I&I. He concluded that the plant was 67.75% used and useful. I concluded that the plant was 68.72% used and useful. Whatever Mr. Biddy read into my methodology, just isn't there.

**Q. Mr. Biddy faults you for not making a used and useful determination for treatment plant investment that was allegedly removed from service in three systems - Ravenna Park, Weathersfield and Summertree - that now transport their effluent for treatment. Would you please respond?**

A. When I prepared my used and useful analysis, I was not aware that any facilities were on the books of the company that were not providing service. If they are, obviously some accounting treatment for that

investment should be considered. Mr. Lubertozzi will be addressing Mr. Biddy's allegations in his rebuttal testimony.

MR. BIDDY'S RATIONAL FOR DETERMINING USED AND USEFUL FOR WATER SUPPLY AND PUMPING FACILITIES

**Q. I would now like you to address Mr. Biddy's rationale for determining used and useful for water supply and pumping facilities. First, however, I would direct you to the corrected MFR Schedules you provided as FS-4. Will any of these corrected schedules affect Mr. Biddy's calculations as shown in his Exhibit TLB-3?**

A. Yes. It affects his calculation of used and useful for the Marion County Golden Hills/Crownwood Water System Source of Supply and Pumping as shown under Par. 1.1.7. of his exhibit. It will result in a reduction in the used and useful that he calculated. In all fairness to Mr. Biddy, I have recalculated what the amounts would be and show them in FS-8 which is a marked up reproduction of his exhibit TLB-3, page 2.

**Q. At page 15 of his prefiled testimony, Mr. Biddy proposes that source of supply and pumping should be evaluated in accordance with the FDEP rule for design. Would you please address his proposal?**

A. Yes. According to Mr. Biddy's testimony, source of supply and pumping components should be evaluated in accordance with FDEP rules; specifically FDEP Chapter 62-500, F.A.C. I believe that is an inadvertent and incorrect reference. There is no FDEP Chapter 62-500, F.A.C.

However, judging from additional statements in Mr. Biddy's testimony, I will assume he meant to refer to Chapter 62-555, F.A.C. which addresses the permitting and construction of public water systems. Mr. Biddy's testimony states that the FDEP rule sets forth Section 3.2.1.1 of *Ten States Standards* as the governing rule. I can find no specific reference to Section 3.2.1.1 of the *Ten States Standards* in this FDEP rule or any other FDEP rule. There is, however, a general reference, in FDEP Rule 62-555.330, F.A.C., to the *Recommended Standard for Water Works*, which is the official name of the *Ten States Standards*. The stated purpose of that reference in the FDEP rule, and the six other general references that are listed, is "to be applied in determining whether applications to construct or alter a public water system shall be issued or denied." Since the FDEP has approved all of the applications to construct all of UIF's wells, one would have to conclude that the utility met the test that Mr. Biddy references.

That being said, I disagree that this particular DEP rule , or any DEP rule, should become the basis for the Commission's evaluation of used and useful. The Commission can and does consider DEP design and operating requirements as a factor in a rate case. It does, in fact, review whether a utility is in compliance with DEP requirements. But the evaluation of used and useful requires judgment not only of engineering considerations, but

also efficiency, economics and sufficiency. That is not necessarily evident in any particular DEP rule or rules.

With regard to the specific paragraph in Ten State Standards relied on by Mr. Biddy to support his used and useful calculations, his interpretation is myopic. The paragraph quoted by Mr. Biddy states that groundwater source capacity shall equal or exceed design maximum day demand and equal or exceed the design average day demand with the largest producing well out of service. Mr. Biddy assumes, for his calculations, that only capacity equal to the stated quantities is 100% used and useful, but any capacity that exceeds the stated minimum requirement is excessive and non-used and useful. He does this even though it is clear from the wording that these required quantities are minimum quantities.

Even if one were to rely on this particular paragraph, it would have to be done in the context of other portions of the document. For example, Section 7.2 of Ten State Standards addresses hydropneumatic systems. According to Section 7.2.2, "the capacity of the wells and pumps in a hydropneumatic system should be at least ten times the average daily consumption rate." Nine of UIF's 17 water systems are hydropneumatic systems. If Section 7.2.2 were applied, rather than Section 3.2.1.1, the used and useful percentages for these system would range from 86% to well over 100%. This compares to a range of 13% to 100% using Mr. Biddy's approach. FS-9 provides a system by system comparison.

**Q. Are you recommending that Ten State Standards Section 7.2.2 be used as a basis for evaluation used and useful for hydropneumatic systems?**

A. No. I am just trying to point out the problems that arise when one tries to evaluate used and useful on the basis of various design criteria without looking at the whole picture. Drawing on singular paragraphs as a standard, without relating them to any other requirements says nothing about the presence or absence of other system components, their interrelationship, and their impact on the operation of the system.

**Q. Are there any other problems with Mr. Biddy's approach to his analysis of used and useful for supply and pumping that you would like to address?**

A. Yes. In relying on the minimum requirement of Ten State Standards Section 3.2.1.1 for systems with no or negligible storage capacity, Mr. Biddy looks only at average day and maximum day demand and completely ignores how demand in excess of that amount will be served. Whether that excess demand is characterized as peak hour demand as PSC Staff does, or instantaneous demand, as I do, the demand is there and must be met. With no storage available to supplement demand in excess of average day or maximum day, the capacity must come directly from the well pumps. The utility recognizes this deficiency in its proposed

approach and the Commission engineering staff recognizes this deficiency in its proposed approach.

The inadequacy of the result of Mr. Biddy's approach becomes clear when the allowable used and useful capacity of each system without storage is compared to the peak demands placed on those systems, whether measured by peak hour demand as proposed by the Staff or instantaneous demand as I have proposed. The bottom line is, it would not be possible for the systems that have no storage or negligible storage to adequately serve demand with the capacity which Mr. Biddy's approach would allow. FS-10 summarizes these inadequacies.

**Q. Thus far you directed your critique of Mr. Biddy's methodology to his reliance on DEP rules as a basis for evaluating used and useful. Do have comments regarding any other parts of his approach?**

A. Yes. Mr. Biddy has analyzed each water system on a component by component basis rather than on an integrated system basis. Although that is a legitimate approach for some systems, I do not think it is appropriate for these systems.

**Q. Why is that?**

A. All of the systems are small systems that dependent almost exclusively on well pumping capacity to serve demand. For most, the storage capacity for these systems is either hydropneumatic or limited ground storage and, as previously pointed out, analyzing each component fails to recognize the

interrelationship of those components. And as previously demonstrated that is one of the reasons Mr. Biddy's used and useful results are so low.

**Q. What about the UIF systems that have some storage and high service pumping capacity?**

A. The same is true for these systems. They should be evaluated as integrated systems in order to recognize the interrelationship of those components.

**Q. Can you give an example of how considering components separately doesn't recognize the interrelationship of the components?**

A. Yes. Let's look at how Mr. Biddy analyzed the Weathersfield water system. This system has only two wells, but it has 100,000 gallons of storage as a part of a cascade aeration system. Mr. Biddy found the wells and pumps to be only 56.3% used and useful which, according to his calculations resulted in 346,428 GPD excess capacity on an average daily flow basis. However, he found the 100,000 storage tank to be over 100% used and useful, because, according to his calculations, there is a 248,197 GPD deficit. If there is 248,197 GPD storage deficit, where is the capacity required to serve the difference between the ADF and the MDF and the peak hourly flows going to come from? It will obviously have to come from the "excess" well capacity. Now, if we accepted Mr. Biddy's approach on its face, and just added the storage deficit to the demand on the well pumps, you would be up to 92% used and useful, no questions asked. You just can't look at these small systems in a piece meal fashion.

**Q. While we are looking at Weathersfield, what about the way Mr. Biddy's has handled water treatment plant?**

A. That's a good question. Mr. Biddy has also analyzed the aerator as a separate component. That is all that makes up the water treatment equipment, other than chlorination. Mr. Biddy correctly identifies the capacity of the aerator as 1,500 gpm. He then carries out a typical demand vs. capacity analysis as if the aerator were sized just on the basis of serving demand and reaches the conclusion that the aerator is 27.5% used and useful. The aerator is not sized just on the basis of serving demand. It is sized to handle the flows when all wells are operating and directing flows into the storage tank associated with the aerator. Weathersfield has a total well pumping capacity of 1,550 gpm and an aerator capacity of 1,500 gpm. If the other systems with aerators are analyzed you will find that the capacity of each matches the well pumping capacity. They are all 100% used and useful. Mr. Biddy's piecemeal approach simply distorts the results for these systems.

RESPONSE TO MS. DERONNE

**Q. What is your understanding of Ms. DeRonne's testimony?**

A. It is my understanding that she has prepared a financial evaluation of UIF's rate request on behalf of the Office of Public Counsel. It is also my understanding that, in preparing her evaluation, she has relied on, and incorporated, the conclusions of Mr. Biddy with regard to used and useful,

including his conclusions regarding any alleged excess unaccounted-for-water or I&I.

**Q. What is the purpose of your response to her testimony.**

A. The only purpose is to state, that to the extent I disagree with Mr. Biddy's results, I also disagree with the effect incorporating those results would have on her financial evaluation. I have not done any analysis of her testimony with regard to her use of Mr. Biddy's input. Suffice it to say, that whatever decision the Commission makes in this proceeding regarding used and useful, unaccounted-for-water and I&I, will have a fallout effect on the rate base and expense components to which they apply.

RESPONSE TO MR. REDEMANN

**Q. Have you reviewed the prefiled direct testimony and exhibits of Mr. Redemann?**

A. Yes, I have.

**Q. Do you have any general observations?**

A. Yes. Mr. Redemann's testimony discusses the appropriate methodology for determining used and useful. After reviewing his testimony, I would conclude that we are in general agreement on several points. It appears that with regard to determining used and useful for water plant for this particular utility he has (1) evaluated the systems on an integrated basis rather than on a component by component basis, (2) determined that they

be evaluated on the basis of the firm reliable capacity of the wells, (3) determined that systems with little or no storage must meet peak demands from their well capacity, and (4) determined that for systems with little or no storage, the evaluation should on the basis of gallons per minute (gpm) rather than gallons per day (GPD).

**Q. Are there any points in Mr. Redemann's testimony with which you take issue?**

A. Yes. As previously noted, Mr. Redemann and I appear to agree that water systems with little or no storage must meet peak demands from their well capacity and should be evaluated on the basis of (gpm) rather than (GPD). However, we do not agree on how peak demands should be represented. Mr. Redemann has taken the position that peak demand should be represented by peak hour demand. I have taken the position that it should be represented by the system's instantaneous demand.

**Q. Are your positions that far apart on this issue?**

A. No. In fact I believe we are not at all apart in goal; i.e., to find a valid proxy for the maximum demand faced by well pumps in a system with little or no storage. We differ only in how to practically represent that demand.

**Q. What is Mr. Redemann's rationale for using the peak hour demand rather instantaneous demand?**

A. As I understand Mr. Redemann's prefiled testimony, the primary reason he would rather uses peak hour demand is because more information is available about how to estimate peak hour demand than there is about how to estimate instantaneous demand, peak hour demand is more commonly used, and peak hour demand can be estimated from actual system data. In addition, he believes that the information I used for estimating instantaneous demand is from an old source that is used as a design criteria and does not necessarily reflect current water usage patterns.

**Q. Would you please respond to that rationale?**

A. Yes. First I would like to point out that whether peak hour demand or instantaneous demand is used, both are typically determined from estimates, not from directly recorded data. Mr. Redemann provides an AWWA reference that shows peak hour demand to be estimated as between 1.3 and 2.0 times peak day. Another AWWA reference, Distribution System Requirements for Fire Protection, Manual M31, goes further and states that for small systems, peaking factors may vary significantly higher. So, even though his base may be recorded maximum day flows, estimation is still involved.

With regard to the age of the resource I used to estimate instantaneous demand, I admit it is old - some 38 years. However, through an interrogatory, Staff asked whether I had considered relying on a 1999 Army Corps of Engineers reference that followed virtually the same

rationale as my 38 year old resource. So, the age of the reference is immaterial as long as the rationale is valid. As was explained in the response to the interrogatory, I rejected the newer reference because it appeared to produce results that were too low for small systems and too high for what would be expected for larger systems.

**Q. Are the rationales for estimating peak hour demand and instantaneous demand the same?**

A. Yes. Both of these measurements depend on customer diversity. Each individual customer, if its demand were measured, will produce a single highest instantaneous demand on the system at some time during a day. But the combined demand of many customers is not the simple arithmetic total of each individual demand. The reason is that all customers do not necessarily produce their individual demand at exactly the same time. And the more customers there are on the system, the less the probability that customer demands will be coincident. In addition, the longer the period over which individual demands are measured, the less the probability that demands will be coincident and the more the probability that they will be diverse. So, for the same set of customers in a system, one should expected the coincident instantaneous demand to be higher than the coincident peak hour demand, since the peak hour demand reflects the average of 60 instantaneous demands.

**Q. Why is it important to understand this?**

A. It is important because it explains not only why instantaneous demands will be higher than peak hour demands, but also why, as systems become larger and diversity increases, coincident instantaneous demands will continue to be reduced until they approach the limit of the peak hour demand. In Mr. Redemann's testimony, he indicated that the peak hour design criteria is 1.1 gpm per ERC. The resource I have used to estimate instantaneous demand begins with an estimate of 15 gpm for a single residential customer (ERC), but it quickly drops to 3.19 gpm/ERC for 100 customers, 1.54 gpm/ERC for 500 customers, and reaches a limit of 1.07 gpm/ERC for systems of 1,000 or more. This is right in line with the design criteria of 1.1 gpm/ERC for peak hour demand and tends to support the method I have used to estimate instantaneous demand.

**Q. How do you respond to the Commission's comment cited by Mr. Redemann that your resource for estimating instantaneous demand does not necessarily reflect current water usage patterns?**

A. I do not believe it is relevant. I interpret the comment to mean that the Commission believes that current efforts toward water conservation would probably result in lower numbers than reflected in a 38 year old document. However, conservation by customers is usually reflected in a lower total volume of water used or a lower seasonal volume of water used, but not necessarily a lower use at the peak. Therefore, one should expect to see a lower average day demand and even a lower maximum day demand, but

not necessarily any significant reduction in instantaneous or peak hour demand. In fact, the ratio of instantaneous or peak hour demand to average or maximum day demand may be exacerbated.

**Q. The results of your analysis and Mr. Redemann's analysis produce the same used and useful results in this case. Why, then, are you addressing this an issue?**

A. The fact that Mr. Redemann and I reached the same conclusion through different means in this case doesn't carry over to any other case. And, although the concept of instantaneous demand as a basis for used and useful has been addressed to some degree in other cases, it has never been addressed at a hearing. I believe it is a legitimate and meaningful approach for small systems without storage, and it is important that the Commission have the opportunity to explore it. The wells and pumps in water systems without storage have to meet all demand - instantaneous, as well as hourly and daily. I do not believe that using only the peak hour demand captures that requirement.

**Q. Does that conclude your rebuttal testimony?**

A. Yes it does.

DOCKET NO. 020071-WS

REBUTTAL EXHIBITS

OF

FRANK SEIDMAN

| | |
|---|---|
| Exhibit (FS-4)_____ | Correct MFR Schedules F-1, F-3, and F-5 |
| Exhibit (FS-5)_____ | E-memo; Haws to Seidman, 6/14/02 |
| Exhibit (FS-6)_____ | Estimate of Infiltration Flows |
| Exhibit (FS-7)_____ | Distribution & Collection Systems Previously Determined to be 100% U&U by PSC |
| Exhibit (FS-8)_____ | Marked up Copy of TLB-3, page 2 |
| Exhibit (FS-9)_____ | Well and Pumping Capacity - Hydropneumatic Systems Comparison of Biddy U&U to Ten State Standards Section 7.2.2 |
| Exhibit (FS-10)_____ | Analysis of Biddy Used and Useful for Systems with No or Negligible Storage |

# UTILITIES, INC. OF FLORIDA
# DOCKET NO.: 020071-WS

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## EXHIBIT (FS-4) ____.

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Gallons of Water Pumped, Sold and Unaccounted For
In Thousands of Gallons

Florida Public Service Commission

Schedule F-1
Page 1 of 1
Preparer: Seidman, F.

Company: Utilities, Inc. of Florida (630/635-Golden Hills/Crownwood)
Docket No.: 020071-WS
Test Year Ended: December 31, 2001

Explanation: Provide a schedule of gallons of water pumped, sold and unaccounted for each month of the test year. The gallons pumped should match the flows shown on the monthly operating reports sent to DEP. The other uses may include plant use, flushing of hydrants and water and sewer lines, line breakages and fire flows. Provide all calculations to substantiate the other uses. If unaccounted for water is greater than 10%, provide an explanation as to the reasons why; if less than 10%, then Columns 4 & 5 may be omitted.

| Month/ Year | (1) Total Gallons Pumped | (2) Gallons Purchased | (3) * Gallons Sold | (4) Other Uses | (5) Unaccounted For Water (1)+(2)-(3)-(4) | (6) % Unaccounted For Water |
|---|---|---|---|---|---|---|
| Jan-01 | 4.763 | 0 | | 0.321 | | |
| Feb-01 | 4.208 | 0 | 6.379 | 0.025 | 2.246 | 25.0% |
| Mar-01 | 4.441 | 0 | | 0.014 | | |
| Apr-01 | 5.937 | 0 | 8.231 | 0.080 | 2.053 | 19.8% |
| May-01 | 7.859 | 0 | | 0.085 | | |
| Jun-01 | 5.251 | 0 | 10.107 | 0.090 | 2.828 | 21.6% |
| Jul-01 | 3.999 | 0 | | 0.007 | | |
| Aug-01 | 4.219 | 0 | 6.064 | 0.042 | 2.105 | 25.6% |
| Sep-01 | 3.637 | 0 | | 0.030 | | |
| Oct-01 | 5.219 | 0 | 7.061 | 0.066 | 1.699 | 19.2% |
| Nov-01 | 5.057 | 0 | | 0.083 | | |
| Dec-01 | 4.907 | 0 | 7.590 | 0.010 | 2.281 | 22.9% |
| Total | 59.497 | 0 | 45.432 | 0.853 | 13.212 | 22.2% |
| Corrected | 49.536 | 0 | 45.432 | 0.853 | 2.398 | 6.6% |

(Above data in millions of gallons)

* Total Gallons Sold includes water sold to Golden Hills and Crownwood subdivisions.

Note: Recent tests with a portable flow meter indicate that water well flow meters have been reading high. The comparative results are:

| | Flow Meter, gpm | Portable Flow Meter, gpm |
|---|---|---|
| Well No. 1 | 224 | 192 |
| Well No. 2 | 439 | 360 |
| Total | 663 | 552 |
| Correction factor | | 83.26% |

The correction factor has been applied to the total gallons pumped in Col. (1) and the % unaccounted for water has been recalculated in Col (6)

Water Treatment Plant Data

Florida Public Service Commission

Company: Utilities, Inc. of Florida (630/635-Golden Hills/Crownwood)
Docket No.: 020071-WS
Test Year Ended: December 31, 2001

Schedule F-3
Page 1 of 1
Preparer: Seidman, F.

Explanation: Provide the following information for each water treatment plant. If the system has water plants that are interconnected, the data for these plants may be combined. All flow data must be obtained from the monthly operating reports (MORs) sent to the Department of Environmental Protection.

| | | Date | GPD |
|---|---|---|---|
| 1 | Plant Capacity<br>The hydraulic rated capacity. If different from that shown on the DEP operating or construction permit, provide an explanation. | | 600,000 |
| 2 | Maximum Day<br>The single day with the highest pumpage rate for the test year. Explain, on a separate sheet of paper if fire flow, line breaks, or other unusual occurrences affected the flow this day. | 1/30/2001<br>[Main break]<br>5/22/2001<br>[No unusual occurrences] | 348,027<br><br>320,551 |
| 3 | Five Day Max. Year<br>The five days with the highest pumpage rate from any one month in the test year. Provide an explanation if fire flow, line breaks or other unusual occurrences affected the flows on these days.<br>[May is the month with the highest pumpage rate.] | (1) 5/22/2001<br>(2) 5/28/2001<br>(3) 5/16/2001<br>(4) 5/27/2001<br>(5) 5/26/2001<br>AVERAGE | 320,551<br>306,397<br>281,419<br>276,423<br>275,591<br>292,076 |
| 4 | Average Daily Flow | Max Month<br>Annual | 211,078<br>135,715 |
| 5 | Required Fire Flow<br>The standards will be those as set by the Insurance Service Organization or by a governmental agency ordinance. Provide documents to support this calculation. | 500 gpm for 2 hours | |

Note: As indicated in Schedule F-1, it was determined that flow meters were reading high. The correction factor of 83.26%, determined in Schedule F-1, is reflected in all of the above numbers.

Used and Useful Calculations
Water Treatment Plant

Florida Public Service Commission

Company: Utilities, Inc. of Florida (630/635-Golden Hills/Crownwood)
Docket No.: 020071-WS
Test Year Ended: December 31, 2001

Schedule F-5
Page 1 of 2
Preparer: Seidman, F.

Explanation: Provide all calculations, analyses and governmental requirements used to determine the used and useful percentages for the water treatment plant(s) for the historical test year and the projected test year (if applicable).

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Recap Schedules: A-5,A-9,B-13

INPUT INFORMATION:

| | | |
|---|---|---|
| Total well pumping capacity, gpm | | 770 gpm |
| Firm Reliable well pumping capacity (largest well out), gpm | | 330 gpm |
| Ground storage capacity, gal. | | 0 gallons |
| Usable ground storage (90%), gal. | | 0 gallons |
| Hydropneumatic storage capacity, gal. | | 20,000 gallons |
| Usable hydropneumatic storage capacity (33.33%), gal. | | 6,667 gallons |
| Total usable storage, gal. | | 6,667 gallons |
| High service pumping capacity, gpm | | 0 gpm |
| Average day demand, maximum month | | 211,078 gpd |
| Maximum day, maximum month demand, | | 320,551 gpd |
| Peak hour demand = 2 x max day | | 641,102 gpd |
| Instantaneous demand (see table, page 2), | 456 customers | 734 gpm |
| Fire flow requirement | 500 gpm for 2 hours | 60,000 gpd |
| Unaccounted for water | 6.56% of water pumped | 6,570 gpd, avg |
| Acceptable unaccounted for | 12.50% | 16,964 gpd, avg |
| Excess unaccounted for | | 0 gpd, avg |

Used & Useful Analysis:
Rates were last set for this system in Docket No. 930826-WS, by stipulated settlement. Used & useful was last set for this system in Docket No. 881324-WS. The water treatment system was found to be 100% used & useful, as it had in the prior proceeding, with emphasis on the ability to meet instantaneous demand. There have been no significant changes in the system although ERCs appear to be increasing somewhat at a slow, erratic pace.

This system treats water by simple chlorination. The only storage is in hydropneumatic tanks and there is no high service pumping. All demands must be met by well pumping capacity. Used and useful is therefore determined on the basis of instantaneous demand. For this system, all components are considered together for purposes of determining used & useful. The current analysis supports the previous findings that the production, treatment, pumping and storage facilities are 100% used & useful.

Percent Used & Useful = (A + B + C - D)/E x 100%, where: 100.00%

| | | |
|---|---|---|
| A = | Peak demand | 734 gpm |
| B = | Property needed to serve five years after TY | 110.62 gpm |
| C = | Fire flow demand | 500 gpm |
| D = | Excess Unaccounted for water | 0 gpm |
| E = | Firm Reliable Capacity | 330 gpm |

The above used and useful factor is applicable to all source of supply, pumping and treatment accounts, as well as the land, structures and distribution resrvoir accounts.

# UTILITIES, INC. OF FLORIDA
# DOCKET NO.: 020071-WS

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## EXHIBIT (FS-5) ____.

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Docket No. 020071-WS
Exhibit (FS-5)_____

From: "Scotty Haws" <s.l.haws@utilitiesinc-usa.com>
To: <FRANKDEN@nettally.com>
Cc: "Don Rasmussen" <d.w.rasmussen@utilitiesinc-usa.com>; <g.l.chancellor@utilitiesinc-usa.com>
Subject: No subject was specified.
Date: Friday, June 14, 2002 10:52 AM

Mr. Seidman,

Don Rasmussen had wanted me to contact you regarding flows of our Crownwood Wastewater Facility. Our Personnel conducted Flow tests last week using a portable strap-on flowmeter which we had recently purchaced. It was noted that the treated wastewatwer flows calculated for the year 2001 were off, and the flowmeters used for our drinking water wells were also off.

Through flow readings taken from our portable meter we found that the pumps averaged 128 gpm @ 144 minutes avg.per day. This calculates to 6.728 million gallons for 2001 rather than 5.766 mg treated.

Also we found that the drinking water well flowmeters were also reading high, which would explain high unaccounted for water. Well #1 flowmeter read was 224 gpm, Portable flowmeter read was 192 gpm or 14% high.

Well #2 flowmeter read was 439 gpm, portable flowmeter read was 360 gpm or 18% high.

I hope this is information is helpful. If you have any questions, please contact me at (407) 869-8588, ext. 234.

Scotty L. Haws

# UTILITIES, INC. OF FLORIDA
# DOCKET NO.: 020071-WS

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## EXHIBIT (FS-6) ____.

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UTILITIES, INC. OF FLORIDA
ESTIMATE OF INFILTRATION FLOWS
Based on Infiltration Specification Allowance of 500 gpd/inch-dia./mile
Water Pollution Control Federation Manual of Practice - No. FD-5

**Paco County - Summertree System**

A. Infiltration allowance, excluding service laterals

| Main dia. inches | Main length feet | miles | Allowance @ 500 gpd/inch-dia./mile gpd | gpy |
|---|---|---|---|---|
| 6 | 1,260 | 0.239 | 716 | |
| 8 | 25,165 | 4.766 | 19,064 | |
| 10 | 2,677 | 0.507 | 2,535 | |
| Total | 29,102 | 5.512 | 22,315 | 8,145,099 |

B. Actual Inflow & Infiltration (I&I)

| | |
|---|---|
| Wastewater treated | 23,690,000 |
| Wastewater - returnable flows | 22,027,023 |
| All flows returned @ 96% | 21,145,942 |

Note: Irrigation is separately metered and already removed from residential flows; therefore all flows returned at 96%.

| | |
|---|---|
| Estimated I&I (treated less returned) | 2,544,058 |
| Actual less allowable | (5,601,042) |
| Excess, if any | 0 |
| Excess as percent of wastewater treated | 0.00% |

**Marion County - Golden Hills/Crownwood System**

A. Infiltration allowance, excluding service laterals

| Main dia. inches | Main length feet | miles | Allowance @ 500 gpd/inch-dia./mile gpd | gpy |
|---|---|---|---|---|
| 6 | 0 | 0.000 | 0 | |
| 8 | 2,798 | 0.530 | 2,120 | |
| 10 | 0 | 0.000 | 0 | |
| Total | 2,798 | 0.530 | 2,120 | 773,689 |

B. Actual Inflow & Infiltration (I&I)

Wastewater treated for UIF customers 3,056,000

Note: Total wastewater treated is 6,728,000 gallons, of which 3,672,000 gallons is from BFF,Inc. a bulk customer whose collection system doesn't contribute to the company's I&I or allowance. Therefore, only the gallons treated for UIF are used.

| Gallons billed to WW cust. (see note) | | Estimated returned | |
|---|---|---|---|
| Residential | 2,231,333 | 96% | 2,142,080 |
| General Service | 55,580 | 96% | 53,357 |
| Estimated flows returned | | | 2,195,436 |

Note: All residential customers are multiplex and there is virtually no irrigation. Therefore returned gallons assumed same as general service.

| | |
|---|---|
| Estimated I&I (treated less returned) | 860,564 |
| Actual less allowable | 86,874 |
| Excess, if any | 86,874 |
| Excess as percent of wastewater treated | 2.84% |

**Pasco County - Wis-Bar System**

A. Infiltration allowance, excluding service laterals

| Main dia. inches | Main length feet | miles | Allowance @ 500 gpd/inch-dia./mile gpd | gpy |
|---|---|---|---|---|
| 6 | 0 | 0.000 | 0 | |
| 8 | 4,662 | 0.883 | 3,532 | |
| 10 | 0 | 0.000 | 0 | |
| Total | 4,662 | 0.883 | 3,532 | 1,289,114 |

B. Actual Inflow & Infiltration (I&I)

| | | | |
|---|---|---|---|
| Wastewater treated | | | 3,488,000 |
| Gallons billed to WW cust. (see note) | | Estimated returned | |
| Residential | 3,437,992 | 80% | 2,750,394 |
| General Service | 0 | 96% | 0 |
| Estimated flows returned | | | 2,750,394 |

Note: WW is billed at flat rate. All customers are residential.
Assume 80 % of water flows are returnable.

| | |
|---|---|
| Estimated I&I (treated less returned) | 737,606 |
| Actual less allowable | (551,507) |
| Excess, if any | 0 |
| Excess as percent of wastewater treated | 0.00% |

# UTILITIES, INC. OF FLORIDA
# DOCKET NO.: 020071-WS

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## EXHIBIT (FS-7) ____.

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Docket No. 020071-WS
Exhibit (FS-7) _____

UTILITIES, INC. OF FLORIDA
DISTRIBUTION & COLLECTION SYSTEMS PREVIOUSLY DETERMINED TO BE 100% U&U BY PSC

Systems Determined by PSC in Docket No. 940917 to be 100% , as it had in past cases.

| | | TY Avg SFRs | Avg 5 yr Growth | | U&U per Biddy * | |
|---|---|---|---|---|---|---|
| County | System | W/WW | Water | WW | Water | WW |
| Seminole | Oakland Shores | 219 | -4.40% | | 95.70% | |
| Seminole | Weathersfield | 1194/1184 | -0.02% | -0.19% | 97.00% | 92.20% |
| Seminole | Ravenna/Lincoln Park | 346/242 | 0.00% | 0.21% | 91.20% | 89.10% |
| Seminole | Park Ridge | 101 | 0.00% | | 88.40% | |
| Seminole | Little Wekiva | 61 | 0.00% | | 83.60% | |
| Seminole | Bear Lake | 218 | 0.12% | | 92.90% | |
| Orange | Davis Shores | 44 | 0.58% | | 100.00% | |
| Orange | Crescent Heights | 283 | 0.36% | | 82.93% | |
| Seminole | Phillips | 74 | 1.40% | | 82.50% | |
| Seminole | Crystal Lake | 170 | 1.53% | | 84.70% | |
| Seminole | Jansen | 248 | 1.25% | | 96.30% | |
| Pasco | Orangewood | 584 | 1.06% | | 89.97% | |

* excluding negative growth applied by Biddy

Systems Determined by PSC in Docket No. 000793 to be virtually built out when they came under jurisdiction in 1

| | | TY Avg SFRs | Avg 5 yr Growth | | U&U per Biddy | |
|---|---|---|---|---|---|---|
| County | System | W/WW | Water | WW | Water | WW |
| Pasco | Wis-Bar | 140/170 | 0.00% | 0.00% | 97.20% | 97.20% |
| Pasco | Buena Vista | 1109 | 0.00% | | 98.20% | |

Systems Determined by PSC in Docket No. 930826 to be 100% U&U.

| | | TY Avg SFRs | Avg 5 yr Growth | | U&U per Biddy | |
|---|---|---|---|---|---|---|
| County | System | W/WW | Water | WW | Water | WW |
| Pinellas | Lake Tarpon | 504 | 0.15% | | 94.42% | |

# UTILITIES, INC. OF FLORIDA
# DOCKET NO.: 020071-WS

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## EXHIBIT (FS-8) ____.

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1.1.7 USED & USEFUL CALCULATIONS

U/U = MDF + FF + 5YRS. GROWTH - EXCESS UFW
TOTAL CAPACITY

U/U = ~~350,800~~ 292,076 + 60,000 + 51,743 - ~~42,833~~ 0 = ~~37.85%~~ 36.42 %
1,108,800

OR

U/U = ADF + FF + 5 YEARS GROWTH - EXCESS UFW
FRC

U/U = ~~163,005~~ 135,715 + 60,000 + 24,043 - ~~19,903~~ 0 = ~~47.80%~~ 46.24 %
475,200

LARGEST PERCENTAGE CONTROLS, U/U = ~~47.80%~~ 46.24 %

1.2 WATER TREATMENT PLANT

SYSTEM HAS NO STORAGE EXCEPT HYDROPNEUMATIC TANKS AND NO HIGH SERVICE PUMPING. THEREFORE THE USED AND USEFUL PERCENTAGE FOR THE OVERALL WATER TREATMENT PLANT SHOULD BE TAKEN AT 47.80% TO MATCH THE U/U PERCENTAGE FOR THE WELLS. THE ONLY FACILITIES INVOLVED ARE THE CHLORINATION FACILITIES AT EACH WELL.

1.3 WATER DISTRIBUTION SYSTEM

U/U = CONNECTED ERCS + 5 YRS GROWTH
TOTAL AVAILABLE ERCS

COUNT PER ORIGINAL SYSTEM DRAWING SUBMITTED BY UTILITY:

| | | |
|---|---|---|
| COMMERCIAL CONNECTIONS | = | 3 |
| SINGLE FAMILY RESIDENCES | = | 313 |
| VACANT RESIDENTIAL | = | 108 |
| MULTIFAMILY ERCS | = | 26 |
| VACANT MULTIFAMILY ERCS | = | 30 |
| IRRIGATION ERCS | = | 8 |
| QUAD CONNECTED ERCS | = | 72 |
| VACANT QUAD ERCS | = | 40 |

| | | | |
|---|---|---|---|
| SUMMARY: | CONNECTED ERCS | = | 422 |
| | TOTAL AVAILABLE ERCS | = | 600 |

# UTILITIES, INC. OF FLORIDA
# DOCKET NO.: 020071-WS

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## EXHIBIT (FS-9) ____.

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Docket No. 020071-WS
Exhibit (FS-9) _____

UTILITIES, INC.
WELL AND PUMPING CAPACITY - HYDROPNEUMATIC SYSTEMS
COMPARISON OF BIDDY U&U TO TEN STATE STANDARDS SECTION 7.2.2

| County | System | ADF GPD | 5 yr grwth GPD | Total ADF GPD | 10 x ADF GPD | Min. Required Cap. of Wells/Pumps gpm | Available Cap. of Wells/Pumps gpm | U&U | U&U per Biddy |
|---|---|---|---|---|---|---|---|---|---|
| Marion | Golden Hills/Crownwood | 135,745 | 24,043 | 159,788 | 1,597,880 | 1,110 | 770 | 144.11% | 46.24% |
| Pinellas | Lake Tarpon | 78,115 | 2,187 | 80,302 | 803,020 | 558 | 500 | 111.53% | 39.31% |
| Pasco | Buena Vista | 146,951 | 0 | 146,951 | 1,469,510 | 1,020 | 420 | 242.97% | 100.00% |
| Pasco | Summertree | 153,079 | 21,890 | 174,969 | 1,749,690 | 1,215 | 1,270 | 95.67% | 27.50% |
| Pasco | Orangewood | 102,244 | 2,971 | 105,215 | 1,052,150 | 731 | 850 | 85.96% | 13.20% |
| Seminole | Little Wekiva | 16,425 | 0 | 16,425 | 164,250 | 114 | 65 | 175.48% | 100.00% |
| Seminole | Phillips | 25,422 | 2,008 | 27,430 | 274,300 | 190 | 110 | 173.17% | 100.00% |
| Seminole | Crystal Lake | 38,751 | 2,964 | 41,715 | 417,150 | 290 | 240 | 120.70% | 100.00% |
| Seminole | Jansen | 77,827 | 4,047 | 81,874 | 818,740 | 569 | 430 | 132.23% | 29.90% |

Note: All input from Biddy exhibits except Golden Hills, which reflects correct MFR Schedules F-1 and F-3.

# UTILITIES, INC. OF FLORIDA
# DOCKET NO.: 020071-WS

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## EXHIBIT (FS-10) ____.

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Docket No. 020071-WS
Exhibit (FS-10) _____

UTILITIES, INC. OF FLORIDA
ANALYSIS OF BIDDY USED AND USEFUL FOR SYSTEMS WITH NO OR NEGLIGIBLE STORAGE

| County | System | Demand Basis | Biddy U&U | Capacity Basis GPD | Allowed U&U Capacity gpm | Pk Hr = M5DADF x 2 gpm | FF gpm | Pk Hr + FF gpm | Deficit with FF gpm | Deficit w/o FF gpm |
|---|---|---|---|---|---|---|---|---|---|---|
| Marion | Golden Hills/Crownwood | ADF | 46.24% | 475,200 | 153 | 487 | 500 | 987 | (835) | (335) |
| Pinellas | Lake Tarpon | M5DADF | 39.31% | 720,000 | 197 | 426 | 0 | 426 | (230) | (230) |
| Pasco | Buena Vista | ADF | 100.00% | 172,800 | 120 | 331 | 500 | 831 | (711) | (211) |
| Pasco | Summertree | ADF | 27.50% | 1,036,800 | 198 | 330 | 1,000 | 1,330 | (1,132) | (132) |
| Pasco | Orangewood | ADF | 13.20% | 756,000 | 69 | 217 | 500 | 717 | (648) | (148) |
| Seminole | Revenna Park - comps. | ADF | 33.90% | 288,000 | 68 | 198 | 0 | 198 | (130) | (130) |
| Seminole | Jansen | ADF | 29.90% | 273,600 | 57 | 190 | 0 | 190 | (133) | (133) |

NOTES:
1. The Demand Basis is that determined by Mr. Biddy to be appropriate.
   ADF = Average annual daily flow; M5DADF = Maximum 5 day, avarge daily flow.
2. The U&U percentage for Golden Hills reflects the correct MFR Schedules F-1 and F-3.
3. The Allowed U&U Capacity gpm = Capacity Basis/1440 x U&U percentage.
4. Pk Hr = Peak Hour. It is usually estimated as Maximum Day x 2; however to be conservative I have used M5DADF x 2 to be consistent with Mr. Biddy's assumptions.
5. FF = Fire Flow requirement.
6. The Deficit is exclusive of the requirement for growth 5 years after the test year.