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ALOHA UTILITIES, INC.

DIRECT TESTIMONY OF LOIS A. SORENSEN

MARGARET M. LYTLE, APPEARING ON BEHALF OF

INTERVENOR, SOUTHWEST FLORIDA WATER

MANAGEMENT DISTRICT

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DIRECT TESTIMONY OF LOIS A. SORENSEN

Q. Please state your name and professional address.

A. Lois A. Sorensen, 2379 Broad Street, Brooksville, Florida, 34604-6899.

Q. Where are you employed?

A. The Southwest Florida Water Management District (SWFWMD).

Q. What is your position with SWFWMD?

A. Water Shortage Coordinator.

Q. Please describe your duties in this position.

A. I coordinate implementation of SWFWMD's Water Shortage Plan and related demand management activities.

Q. What is the Water Shortage Plan, and what are your main duties in relation to it?

A. The Water Shortage Plan is a Rule of the SWFWMD. This plan provides the framework for SWFWMD's responses to droughts and other water shortage events. My main duties in relation to the plan involve participation in, and coordination of, several staff efforts, including: monitoring hydrologic conditions, detecting each water shortage event, determining and tracking each event's level of severity, recommending condition-appropriate education messages, recommending condition-appropriate water shortage declarations, and implementation and enforcement of water use restrictions related to each water shortage declaration. These duties all require ongoing and frequent interaction with water utilities, local

governments and the general public in order to assure and improve the effectiveness of the plan and its water use restrictions.

Q. What do you mean by "related demand management activities" and what are your main duties in relation to these activities?

A. SWFWMD staff use the term "demand management" when referring to mandatory water conservation efforts. As such, in addition to the Water Shortage Plan duties described above, my demand management duties include: administering SWFWMD's Year-Round Water Conservation Measures (basic water use restrictions which are in full force and effect when a water shortage declaration is not applicable) and advising Water Use Permits holders and SWFWMD regulatory staff on permit-related water conservation requirements.

Q. Please describe your training and experience.

A. I have a B.S. in Engineering and a Masters in Business Administration. I also am a graduate of the University of Florida Institute of Food and Agricultural Science's Master Gardener Program. I have worked for SWFWMD in various water conservation capacities since 1988, and have been in my current position since 1994. My previous positions at SWFWMD included work on water use estimates and projections, population data and other demographics, water conservation grant project administration, and reclaimed water cooperative funding project administration.

Q. In the course of your duties with SWFWMD, do you evaluate and promote

the use of water conservation programs for water utilities?

A. Yes.

Q. In the course of your duties with SWFWMD, have you become familiar with Aloha Utilities, Inc. (Aloha)?

A. Yes.

Q. In general, what water conservation requirements are placed on a water utility by the SWFWMD?

A. Water utilities must develop and implement a utility-specific water conservation plan or program.

Q. Why does SWFWMD promote water conservation programs by utilities?

A. There are two closely-tied reasons that SWFWMD promotes utility-specific water conservation programs. First, utility-specific water conservation programs can supplement and compliment SWFWMD's regional water conservation efforts. Second, and more importantly, Section 373.621, Florida Statutes requires all water management districts to incorporate water conservation concepts into their regulatory and non-regulatory programs, including rules which are used to implement provisions of Part II of Chapter 373, Florida Statutes and the State of Florida Water Policy. Specific to water conservation efforts needed to respond to droughts and other water shortage events, each water management district is required by 373.246, Florida Statutes to have a Water Shortage Plan.

Q. What are the typical elements of a water utility's water conservation

program?

A. Elements of a water utility's water conservation program can be broken-down into four main types of measures: (1) education, (2) operation, (3) regulation, and (4) incentive.

Q. Please describe some typical education measures.

A. Education measures includes things like direct mail ("billstuffers"or separate mailings to customers), brochures on display racks, newspaper ads, radio or television announcements, newspaper articles, shows on cable television and other means of informing customers about why they need to conserve and how to do it. In addition to being a stand-alone water conservation measure, education is also used to enhance the effectiveness of regulation and incentive measures by increasing people's awareness of those other measures.

Q. Are education measures effective in conserving water?

A. Yes. The exact effect on water demand depends on the demographics and the aggressiveness of implementation in a particular community. Water savings on the order of 4% have been attributed to education measures.

Q. Are such programs cost effective?

A. Yes. The exact cost in relation to water savings depends on the demographics and the aggressiveness of implementation in a particular community, plus the degree to which one can separate the effect of education from other water conservation measures that occur during the

same time frame. Education is often used to enhance the effectiveness of other water conservation measures, so it can be difficult to determine where the education effect ends and where the incentive or regulation effect begins. One combination education and regulation effort that has been studied by the SWFWMD for possible implementation within Aloha's service area, the "water budget" lawn watering restriction alternative, is estimated to have a cost effectiveness ratio as low as $0.11 program cost per thousand gallons saved. In other words, the "water budget" alternative would cost approximately one-sixth to one-eight the amount of money that most utilities pay to pump and chlorinate the same amount of groundwater.

Q. Are customer education programs appropriate for both privately owned and publicly owned utilities?

A. Yes, to some extent. However, private utilities generally have access to fewer education avenues than a public utility -- unless they pay for them. In addition, except for customer-specific direct mail pieces and information at utility offices, it can be difficult for a private utility to spend money on "mass education" efforts efficiently (in other words, only reach its customers, instead of a broader group of readers or listeners).

Q. Please describe some typical operation measures which can be taken to conserve water.

A. Operation measures focus on how efficiently the utility system is managed and maintained. Examples include meter calibration and replacement programs, system-level audits and leak detection efforts, recycling treatment "reject" water, and using water-saving devices at utility offices and facilities.

Q. Are operation measures effective in conserving water?

A. Yes. Operation measures reduce the amount of "unaccounted for water" (water produced, but not paid for by customers).

Q. Are such operation measures cost effective?

A. Yes. Although I do not have a recent, Aloha-specific figure like I did for the "water budget" water restriction alternative, my "yes" answer is based on this premise: since operation measures reduce the amount of "unaccounted for water" (water produced, but not paid for by customers), the utility incurs less pumping and treatment costs while continuing to serve the same paying customer base.

Q. Are operation measures appropriate as a part of a water conservation program for both publicly owned and privately owned utilities?

A. Yes.

Q. Please describe regulation measures which can be used to conserve water.

A. Regulation measures involve the use of watering restrictions, landscape codes and other forms of mandatory water conservation (demand management).

Q. Would you expect a private or investor-owned utility to institute regulatory measures as a part of its water conservation program?

A. Not to the same extent as a publicly owned utility. Private utilities typically have no regulatory authority, unlike a public utility that would be able to have its city council or county commission impose water restrictions or require the use of certain water-wise landscape standards.

Q. Please describe the use of incentive measures for water conservation.

A. Incentive measures include water conserving rate structures, rebates for installing water conserving devices, and retrofit kit give-aways.

Q. Are incentive measure an effective means to conserve water?

A. Yes. The exact effect on water demand depends on the demographics and the aggressiveness of implementation of a particular measure in a specific community. SWFWMD has studied several incentive efforts for possible implementation within Aloha's service area. These efforts range from clothes-washing machine rebates (to minimize the extra purchase cost of a high-efficiency machine compared to a standard model), which has an estimated potential to save 12.9 gallons per day per residential customer account, to water-efficient landscape and irrigation system rebates (incentives to change or regroup plantings, combined with appropriate use of low-volume irrigation technology and other Xeriscape principles), which has an estimated potential to save

132 gallons per day per residential customer account.

Q. Are such measures cost effective?

A. Yes. The water-efficient landscape and irrigation system rebates described above have estimated to have a cost effectiveness ratio of $0.66 program cost per thousand gallons saved.

Q. Are incentive measures appropriate for both privately owned and publicly owned utilities?

A. Yes. The main barrier to implementation is the up-front program cost to the utility.

Q. Should Aloha implement a water conserving rate structure as a part of its water conservation program?

A. Yes, a water conserving rate structure may be the most important and effective measure Aloha could take to effect water conservation. Properly designed rates create a financial incentive to save water by imposing a higher cost for wasteful or excessive use. In addition, some utilities use such rates to create a water conservation fund to help pay for other tools (water conservation measures) that they would otherwise not be able to afford to implement.

Q. If Aloha was allowed to use revenues generated from a water-conserving rate structure to create a dedicated water conservation fund, or allocate funds from other disallowed expenses to water conservation, how would you recommend the money be used?

A. I would recommend that Aloha include all four types of water conservation measures to create a comprehensive water conservation program.

Q. How should Aloha accomplish this goal?

A. Aloha should start with a review of demographic data about its customer base, so that it may select and implement appropriate measures. If it has not already done so, it may be helpful for it to establish a customer water conservation committee to give feedback on the acceptability to Aloha's customers of water conservation measures under consideration. This committee could also give the customers assurance that their rates are being spent wisely.

Q. Do you have any experience or personal knowledge of the use of such a committee?

A. Yes. I served as the SWFWMD advisor/representative to a customer committee for the Florida Cities Water Company - Carrollwood Division in the early and mid 1990's.

Q. Please elaborate.

A. Florida Cities - Carrollwood, an investor-owned utility, was required to reduce water consumption 25% and implement a water-conserving rate structure to comply with its SWFWMD permit. The utility formed a customer water conservation committee which, after reviewing all conservation options and funding mechanisms, supported the utility's

proposed water-conserving rate structure. The rate, as approved by the Hillsborough County Board of County Commissioners, included the establishment of a water conservation fund that the customer water conservation committee was charged with monitoring. The fund was used to pay for community-appropriate measures that the committee helped select, including: aggressive customer education, property-specific water audits, rebates for low volume irrigation and rain sensors, retrofit kit give-aways, and Xeriscape demonstration sites at the utility's pump station and neighborhood community park.

Q. How should Aloha implement education measures?

A. In terms of education, Aloha should continue offering existing written material and expand into other "mass education" outlets (the company has expressed an intention to creating a website, for example, and could link customers to existing on-line water conservation information by doing so). More importantly, Aloha should also invest in educational opportunities that allow for more person-to-person contact. To maximize credibility and minimize start-up costs, they should consider tapping into existing programs offered by outside agencies, such as: landscape/irrigation evaluations (including "water budget" information), community water counselor workshops, and the Florida Yards & Neighborhoods Program. It might also be helpful for Aloha to work with builders to promote the use of Xeriscape principles in residential and

commercial landscaping within its service area.

Q. Can you estimate what would be a reasonable cost for the education measures you described?

A. Aloha estimates the cost of conservation messaging to be $15,000 per hear and the cost of a website to be $12,000 per year. In addition to these items and associated staffing, assuming no donations or in-kind services from outside agencies, Aloha would be looking at a cost range of $11.00 to $160.00 per customer. The low end of the range involves developing a water budget for each customer and then simply helping customers track consumption in comparison to their budgets, whereas the high end of the range includes a professional evaluation of each landscape and irrigation system and associated one-on-one education with each customer.

Q. What operation measures should Aloha take as a part of its water conservation program?

A. In terms of operation, Aloha should ensure that it meets, or makes progress towards meeting, American Water Works Association standards for meter repair or replacement frequency, system-level water audit and leak detection, and other operational efficiency efforts. Aloha should also implement any staff or equipment changes needed to ensure prompt investigation and repair of any water system malfunctions reported by customers.

Q. Would creation of a full time staff position for a water auditor, to perform water audits, irrigation audits, and promote conservation with customers, assist Aloha in accomplishing theses goals?

A. Yes, assuming part of the auditor's time is also devoted to meter repair or replacement, system-level water audit and leak detection, and other operational efficiency efforts. Also, by interacting with the public during customer-level water audits and promotion-type work, the auditor can become the proactive eyes & ears of the utility with respect to potential system-level leaks and other inefficiencies.

Q. What would be a reasonable cost for such a staff position?

A. According to information provided to SWFWMD by Aloha, the water auditor would cost approximately $38,000 a year and additional staff would cost another $30,000. The exact break-down of what percent of staff resources would be used for operation measures is not clear, based on information provided by Aloha.

Q. What incentives, other than a water conserving rate structure, should Aloha include as a part of its water conservation plan?

A. In terms of incentives, SWFWMD has (as part of its Regional Water Supply Plan development process) has studied several measures that Aloha would benefit from implementing, including: plumbing retrofit kit give-aways, water-efficient landscape/irrigation rebates, rain sensor rebates, ultra-low volume toilet rebates, water-efficient clothes-washing machine

rebates, on-demand hot water heater rebates, landscape water audit services, and site-specific water audits (indoor as well as outdoor) for residential and non-residential customers. Some of these measures were included in the compliance plan filed with SWFWMD by Aloha; for example, Aloha estimates that a retrofit kit give-away would cost $25,000 each year. Costs for the various incentive efforts listed in SWFWMD's Regional Water Supply Plan studies range from $0.11 $3.07 per 1,000 gallons saved. Aloha may be able to partner with the county to reduce its per-unit costs on some of these efforts. Aloha should also budget for a rate study on a regular basis to determine any changes that may be needed to ensure that the water-conserving rate structure, once approved, operates as intended. SWFWMD staff have also discussed the possibility of Aloha instituting a $30,000 pilot project to provide high-efficiency water heaters and low-flow toilets to customers, monitor the effect of such devices on water use, and report the results to SWFWMD. Such a cautious pilot project approach could also be used with many of the items listed above, as a means of providing valuable data for use in designing and targeting future water conservation measures for Aloha's service area.

Q. Are there any regulatory measures Aloha should explore?

A. In terms of regulation, Aloha may be able to partner with Pasco County in low- or no-cost ways, such as asking its employees to report possible

water restriction violations or educating its customers about conservation-related county, SWFWMD and state regulations.

Q. Does development or expansion of reclaimed water or other alternative water supplies play a role in water conservation?

A. Source substitution or supplementation from reclaimed water and alternative water supplies do not necessarily reduce total water demand. However, access to reclaimed water can be an important potable water conservation tool. Many of the measures I discussed can also been done fairly quickly, if necessary, to help Aloha come back into compliance with its Water Use Permit quickly. Reclaimed water is probably a viable supply-side option to help keep Aloha in compliance, but demand-side options are also needed to bring Aloha into compliance.

Q. If Aloha implements your recommendations, what effect would you expect to see on demand?

A. I would expect to see per-customer and per-person demand go down. Without specifics on exactly how quickly and aggressively the recommendations would be implemented, I reserve judgement on the exact amount of reduction that would occur.

Q. Can SWFWMD staff assist Aloha in developing a complete, detailed conservation plan, and provide advice or supervision in the implementation of such plan?

A. Yes.

CERTIFICATE OF SERVICE

I certify that a true copy of the foregoing was sent by U.S. Mail to the following persons on this 5 day of November 2001:

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