SPECIAL PUBLICATION SJ2005-SP2

TECHNICAL MEMORANDUM

FINANCIAL IMPACT OF ALTERNATIVE WATER SUPPLY

St. Johns River Water Management District
<u>Financial Impact of Alternative Water Supply</u>
Technical Memorandum
Table of Contents

Section **Page**

St. Johns River Water Management District
Financial Impact of Alternative Water Supply
Technical Memorandum
Table of Figures

St. Johns River Water Management District
Financial Impact of Alternative Water Supply
Technical Memorandum
Table of Tables

St. Johns River Water Management District
<u>Financial Impact of Alternative Water Supply</u>
Technical Memorandum

I. INTRODUCTION

A. BACKGROUND

Due to the cumulative effects of growth, local utilities throughout the State of Florida are facing the need to identify viable and economic sources of potable water as alternatives to groundwater, which serves as the primary water source for most of the State. The situation is particularly critical in the East/Central Florida portion of the St. Johns River Water Management District (the District). In order to evaluate the projected impact of the cost of alternative water upon the cost of delivered potable water in the East/Central area, the District commissioned Burton & Associates to conduct the analysis presented in this Technical Memorandum (TM).

The impact of the cost of providing potable water from alternative water sources upon the cost of delivered potable water for local utilities is dependent upon the timing, sizing and cost of the alternative water supply, treatment and transmission facilities (alternative water facilities) required. Also, each local utility is different in terms of its existing groundwater treatment capacity, allowed/permitted groundwater withdrawals, projected growth, existing capital structure, operations and maintenance costs and other factors unique to each individual utility. It was not feasible, within the scope of this analysis, to evaluate every local utility in East/Central Florida; therefore, it was determined that the analysis would focus on the marginal impact of the cost of potable water from an alternative water source, compared to continuing with groundwater, for a *typical* moderately sized water utility. It was concluded that, although the impact of the cost of alternative water facilities upon the cost of delivered water may be somewhat more for a smaller utility and somewhat less for a larger utility due to the effects of economies of scale, the results of the analysis using a moderately sized utility would be representative of the impact of the cost of alternative water facilities upon the cost of delivered water.

For this project, the District commissioned the engineering firm of CH2MHill to work with Burton & Associates to provide guidance regarding the determination of the cost of alternative water facilities for the typical utility evaluated. It was assumed that for this analysis the alternative water would be surface water from the St. Johns River (surface water). The St. Johns River was chosen as the alternative water supply source because, other than desalinization of seawater (which is being evaluated under other work efforts of the District), the river is the only viable surface water source in this area with sufficient capacity to meet projected water demands.

To allow flexibility regarding evaluation of the impact of alternative sets of assumptions in the cost impact analysis, it was important to be able to develop a dynamic model that could include an algorithm that would calculate the capital and incremental operations and maintenance costs of surface water supply, treatment and transmission facilities (surface water facilities) based upon the timing and size of required surface water facilities. CH2MHill developed a cost determination algorithm that calculates all of the required groundwater and surface water facilities' capital and incremental operations and maintenance costs based upon the timing and size of the required facilities. This algorithm was incorporated into the cost impact model. CH2MHill has reviewed the output of the cost impact model and participated in interactive review sessions with the District and utility representatives to ensure that the algorithm has been correctly applied in the cost impact model.

B. OBJECTIVE AND SCOPE

The objective of this analysis was to determine the relative comparative impact of using an alternative water supply source (compared to the current groundwater source) upon the cost of delivered potable water for typical local utilities in East/Central Florida. The alternative water supply source evaluated was surface water from the St. Johns River (surface water). The analysis included a projection of the cost of delivered water over a twenty-year period (the projection period). Twenty years was selected as the projection period, because it is consistent with the District's Water Supply Planning projection period and it is consistent with the projection period of the master plans of most local utilities in the East/Central Florida area.
It is understood that each local utility is unique and that this analysis will not replicate the exact financial dynamics of any specific utility. However, by examining the general cost of surface water as an alternative water supply source for a *typical* local utility, it was felt that the marginal cost of meeting the demands of growth with surface water compared to the cost of continuing with groundwater would be representative of the financial impact of using surface water as an alternative water supply after maximum allowed groundwater withdrawals are reached. For this analysis, it was assumed that the typical local utility is governmentally owned, therefore, the rate revenue requirements are determined using the cash needs approach. Evaluation of the structure of the water rates was not included in the scope of this analysis.

This analysis computes percentage increases in the cost of surface water and it also calculates the cost per 1,000 gallons of water usage and the average monthly water cost per equivalent residential connection (ERC). It was determined that the percentage increases, the cost per 1,000 gallons and the average monthly water cost per ERC would assume a blended groundwater/surface water rate. To the extent that a local utility's existing underlying financial and operational parameters cause its groundwater to be more costly than what is assumed for the *typical* utility in this analysis, the percentage increases may be smaller and the absolute cost per

1,000 gallons and the average monthly water cost per ERC of blended groundwater/surface water may be higher. Conversely, to the extent that a local utility's existing underlying financial and operational parameters cause its groundwater to be less costly than what is assumed for the *typical* utility in this analysis, the percentage increases may be larger and the absolute cost per 1,000 gallons and the average monthly water cost per ERC of blended groundwater/surface water may be lower.

However, for general planning purposes, it was felt that the results of this analysis 1) are representative of the impact upon the cost of delivered potable water of using surface water as a source to meet water demands resulting from growth which are in excess of allowed groundwater withdrawals compared to continuing to meet those increased water demands with groundwater, and 2) demonstrate the need for proactive planning for these increased costs and for the governance structure within which water from sources other than groundwater can be economically provided.

C. STUDY PROCEDURES

In order to perform the analysis required, it was determined that a dynamic model should be developed to determine the cost of water for a typical moderately sized East/Central Florida utility. The model needed to be dynamic so that it could automatically adjust the timing, sizing and cost of additional water supply, treatment and transmission facilities, and all of the resulting projections, as the underlying assumptions of the model are changed.

This dynamic model (the model) was developed and it incorporates the financial and operating parameters of what was defined as a "typical" moderately sized local utility. The model includes a twenty-year projection of the financial results of operations, including the annual percentage increases in rates that would be necessary to provide sufficient revenues to cover the utility's costs. The delivered cost of potable water in dollars per 1,000 gallons and the average monthly water cost per ERC are also calculated in each year. All of the assumptions included in the model are described in Section IIC - Assumptions.

The timing of the need for alternative water, surface water from the St. Johns River in this analysis, and the size of the supply, treatment and transmission facilities required are determined by specific functionality developed in the model. This functionality includes assumptions as to annual customer growth and tracks usage, capacity and allowed groundwater withdrawals each year. Also, the model determines when alternative water supply facilities must be provided and how large the required water supply, treatment and transmission facilities must be based upon 1) an assumed margin reserve requirement (the excess capacity required at all times), and 2) the number of years of growth to be provided in the capacity of the new facilities. The model also includes an algorithm, developed by CH2MHill, that determines the capital and incremental operations and maintenance costs of additional groundwater and/or surface water facilities based upon the timing and size of the facilities required.

Several interactive work sessions were held with District staff to review the results of the analysis. During these work sessions, the graphical output of the model was projected on a large viewing screen and alternative scenarios were evaluated. Changes to variables such as growth, cost escalation rates, etc. could be made during the work sessions and the implications were seen immediately. In addition, several workshops were held with the District's Projects and Lands Committee and local East/Central Florida utility representatives. In these workshops, the model results were presented and the Committee members and local utility representatives were given the opportunity for questions and comments.

Based upon input from the workshops with District staff, the Projects and Lands Committee and local utility representatives, the model was finalized and the results were documented in this Technical Memorandum.

II. THE ANALYSIS

A. OVERVIEW OF THE ANALYSIS

A detailed description of each scenario and sub-scenario evaluated is presented in the next sub-section, however, this section presents an overview of the analysis and the three basic scenarios evaluated. A dynamic model (the model) was developed to determine the cost of potable water for what was defined as a typical moderately sized East/Central Florida utility with assumed current water usage of about 7.78 million gallons per day (GPD). The model is a twenty-year projection of the financial results of operations, including the annual percentage increases in rates that would be necessary to provide sufficient revenue to cover the utility's costs in all years of the projection period. The delivered cost of potable water in dollars per 1,000 gallons and the average monthly water cost per ERC are also calculated in each year. The model was used to perform comparative analyses of alternative scenarios described in the following paragraphs.

1. The Three Basic Scenarios Evaluated

Three basic scenarios were evaluated. Scenario 1 assumes that the utility could continue to use groundwater throughout the twenty-year projection period (the projection period). This is not a viable scenario based upon the District's current assessment of available groundwater withdrawals in East/Central Florida; however, it is presented as a benchmark scenario for the comparative analysis with Scenarios 2 and 3. Scenario 2 assumes that when its allowed groundwater withdrawal limit is reached, the utility will have to begin to rely on surface water to meet its incremental demands, and it will fund, own and operate the required surface water facilities as a stand alone utility. Scenario 3 is similar to Scenario 2 except that it is assumed that the surface water facilities will be owned, funded and operated by a water supply entity serving numerous local utilities. This entity could be an existing local utility or a new entity. Evaluation of the specific form of the water supply entity is beyond the scope of this analysis, however, a discussion of the governance options is included in Section IIA3c – Ownership, Funding and Operation of Water Supply, Treatment and Transmission Facilities.

It should be pointed out that these three scenarios are not presented as equally viable options, but as a comparative referencing to evaluate the financial impact of surface water. As stated in the previous paragraph, Scenario 1 is not a viable option because continued groundwater withdrawals are approaching the level at which unacceptable consequences will occur in wetlands, springs and other water resources effected by groundwater withdrawals. Scenario 2 has only limited viability due to the fact that there are only a limited number of feasible sites for a surface water plant in the region and there are many local utilities. Therefore, from a practical standpoint, Scenario 3, which is a regional approach, is the only really viable option for most utilities in the East/Central Florida region. Comparison of Scenario 3 to Scenarios 1 and 2 provides interesting information, however, the primary purpose of this analysis was to determine and evaluate the financial/rate impact of Scenario 3 in terms of its ultimate affordability.

2. The Typical Utility Evaluated

For the purposes of this analysis, it was assumed that the *typical* local utility evaluated in each scenario would be in Seminole County and that in Scenario 3, where a surface water supply entity is assumed (either a new entity or one of the existing utilities in Seminole County), the entity would serve all of the incremental surface water demands above allowed groundwater withdrawals in Seminole County. However, it is assumed that the entity would have the ability to set rates using blended groundwater/surface water costs based upon 1) the cost of groundwater to meet water demands up to the combined allowed groundwater withdrawal limits of its members/customers and 2) the cost of surface water experienced by the new entity for water demands in excess of the combined allowed groundwater withdrawal limits of its members/customers.

It is recognized that the potential challenges in implementing either interlocal agreements and/or creating such a countywide surface water supply entity might preclude such a countywide approach to the provision of surface water. The countywide assumption was made simply to evaluate the cost impact of the economies of scale, on a unit cost basis, of larger surface water facilities. It is recognized that if such a water supply entity is implemented, it might meet water demands for a sub-set of the County or across county boundaries. This analysis included all of, and was limited to, Seminole County strictly for demonstration purposes.

In Scenarios 2 and 3, groundwater withdrawals are assumed throughout the projection period up to the allowed groundwater withdrawal limit and it is assumed that surface water will be used for all demands above the allowed groundwater withdrawal limit. In order to demonstrate the differential effects of the cost of surface water versus groundwater (Scenarios 2 and 3 versus Scenario 1), the financial and operational characteristics of the typical utility were set up so that minimal rate increases were required during the projection period. This assumes a regular budget for annual capital improvements (other than additional water supply and treatment facilities) and renewal and replacement and that no extraordinary repairs or replacements will be necessary during the projection period. The analysis also assumes that the utility begins the projection period with adequate revenues such that the need for rate increases does not emerge until new water supply facilities are required, and the need for rate increases between the years when additional water supply facilities are added is due primarily to inflationary pressures on costs.

Also, the utility was set up so that it has sufficient groundwater capacity and a large enough allowed groundwater withdrawal limit, relative to its current water usage, so that additional capacity would not be needed for about five to six years. To the extent that a local utility's capacity or allowed groundwater withdrawal limit relative to its current water usage is different, alternative water may be needed sooner or later than projected in this analysis.

3. The Model

The analysis represented in the model is a twenty-year revenue sufficiency analysis, with the identification of annual percentage rate increases necessary to meet all of the financial requirements of the utility being evaluated. The model projects revenues, including the effects of growth and any prior year rate adjustments, and expenses, including inflationary escalation factors. The model also includes a capital improvement program consisting of 1) miscellaneous capital improvement and renewal and replacement projects equal to $2.0 million in the first year, which were escalated each year such that the total amount funded in the last year of the projection period is assumed to be $3.5 million (this ranges from about 30% to about 15% of gross revenues in the first and last years respectively), and 2) water supply, treatment and transmission facilities necessary to meet the demands of growth when water demands exceed current capacity.

a. Additional Water Supply, Treatment and Transmission Facilities

Timing, Sizing and Funding - The timing and sizing of required additional water supply, treatment and transmission facilities are dynamically calculated by the model using several algorithms. For each year in the projection period, the model tracks customer growth, water usage as it increases due to growth, and allowed groundwater withdrawals. When current capacity is no longer available to meet the demands of growth, the model determines the amount of required new capacity and the cost of that capacity. The amount of capacity is determined by summing the projected future demands for the number of years for which the new facilities are to be sized. For groundwater facilities the sizing assumption (provided by CH2MHill) was seven years and for surface water facilities the sizing assumption (also provided by CH2MHill) was ten years.

In the scenarios that include surface water, when water demands exceed groundwater capacity (net of margin reserve), or if the maximum allowed groundwater withdrawal limit is reached, the model sizes additional surface water facilities to last ten years. To simplify the analysis, the maximum allowed groundwater withdrawal limit is assumed to be equal to the utility's current groundwater capacity. Based upon the assumed water usage for the utility, this provides for about 5 to 6 years of growth before additional water supply and treatment facilities will be required. When additional water supply and treatment facilities are added, any financing associated with the original groundwater facilities remains in the cost basis of the model until the end of the financing term. For the purposes of this analysis, the initial debt service, which may have funded items other than water supply and treatment facilities, is assumed to continue throughout the projection period.

The model also tracks unrestricted reserves and impact fees from new connections. Each year eligible capital projects are first funded from these sources and, if these sources are not sufficient, the remaining capital costs are assumed to be funded with 30-year term conventional revenue bond debt. The model identifies rate increases, if required, to ensure that sufficient revenues are generated each year to meet all typical revenue bond covenants, such as debt service coverage requirements.

Basis of Capital and Operations and Maintenance Cost Estimates – A general discussion of the basis of the capital and operations and maintenance cost estimates derived by use of the algorithms in this Study was provided by CH2MHill and is included below with additional information provided in Appendix D. The plant size for all cost estimates was determined to include sufficient capacity to serve ten (10) years of projected growth.

Surface Water Supply Systems Components

The surface water supply system considered in this water rates impacts analysis will withdraw water from the main stem of the middle St. Johns River. Compared to traditional Floridan aquifer groundwater, this source of supply will be more difficult and expensive to develop. Facilities required will include storage and treatment systems as well as transmission systems to transport the treated water to the various demand centers. In addition, modifications to existing water supply systems to provide compatible disinfection methods and re-pumping may also be required in some cases.

Storage and Treatment System - The St. Johns River is highly variable both in terms of raw water quality and flow rate. Therefore, treatment requirements will be extensive and storage will be required to provide the needed water supply system reliability. For the purposes of this analysis, the storage and treatment facilities are assumed to be located approximately ____ miles from the river intake. The surface water supply storage and treatment system will include, raw water pumping, an off line raw water storage reservoir, pre treatment, filtration, membrane treatment, ozone treatment, granular activated carbon filtration and residual disinfection. Treated water will also be stored in an aquifer storage recovery system to provide for seasonal demand variations and drought protection. Treatment capital and O&M cost estimates, included in this rates impacts analysis, provide for all of these items plus other associated components required to provide a complete surface water storage and treatment system. Additional detail on the water supply systems sizing criteria and cost elements are presented in Appendix D.

Transmission System - The treated water will need to be transported from the treatment plant to the demand centers. This will require additional transmission facilities including pipelines, right of way easements, booster pumping stations, in line residual disinfection systems and ground storage tanks. For the purpose of this rates impacts analysis, costs for a 25 mile long point to point transmission system have been included.

Final Blending and Pumping - Is it likely that supplemental surface water supplies will be blended with existing groundwater supplies prior to final distribution. The blending of two different source waters could require adjustments to the existing groundwater disinfection systems as well as re-pumping the blended supplies. An allowance for these costs is also included in this rates impacts analysis.

Economies of Scale

In general the unit capital cost (dollars per unit of installed capacity) of a water supply facility decrease with increased capacity. This phenomena is termed "economies of scale" and can be an important consideration in water supply system design and construction phasing. However, economies of scale can vary significantly by major component. In general, the surface water storage and treatment facilities considered herein exhibit only moderate economies of scale, whereas the water transmission facilities exhibit much larger economies of scale.

For example, consider a 10 fold increase in treatment system capacity (say from 2 mgd to 20 mgd). The unit capital cost for the 20 mgd treatment system will be approximately 20% less than the unit capital cost of the 2 mgd treatment facility. Or, stated another way, it would cost 20% less to construct one 20 mgd treatment plant than it would to construct ten individual 2 mgd treatment plants.

Economies of scale are much greater for water transmission facilities. Considering the same 10 fold increase in capacity, from 2 to 20 mgd, with all else being equal, the unit capital cost for the 20 mgd system will be approximately 72% less than the unit capital cost of the 2 mgd facility. This is because the capital cost of a 20 mgd transmission system is only about 2.75 times greater than the capital cost of a 2 mgd transmission system. Therefore, a 10 fold increase in capacity is achieved by less than a 3 fold increase in capital cost.

Economies of scale are evident in the estimated costs presented in this rate impact analysis for complete surface water supply systems (storage, treatment and transmission), and most of the estimated economies of scale are associated with the water transmission systems.

Cost of Surface Water Assuming a Base Loaded Plant (flows at 100% of capacity) – Although this analysis was conducted assuming a blended groundwater/surface water rate at the retail level, Table 1a below calculates the "pure" surface water cost per 1,000 gallons to be $2.87 per 1,000 gallons in current dollars[1], assuming: 1) a fully loaded plant with flows at 100% of capacity, 2) operations and maintenance costs required to deliver 100% of the plant capacity in treated water in current dollars, and 3) capital costs for storage, treatment and transmission in current dollars. It is important to state that flows equal to 100% of capacity are not projected to occur until about year 16, therefore this "fully loaded" rate is not a rate that could be implemented initially without supplemental funding and it is calculated for informational purposes only.

Table 1a - Calculation of Surface Water Costs per 1,000 Gallons at 100% of Capacity (Includes Storage, Treatment and Transmission – 25 miles)

CALCULATION OF SURFACE WATER COSTS PER 1,000 GALLONS AT 100% OF CAPACITY
(Storage, Treatment and Transmission - 25 miles)

				Amount (1)
Capacity of Surface Water Plant (in mgd)				26.17
Flows at 100% of Capacity				26.17
O&M at 100% of Capacity		Term (Yrs)	Rate	$10,547,955
Annual Debt Service on Capital Cost of (2):	$232,592,107	30	6.00%	16,897,563
Annual Revenue Requirement for Surface Water				$27,445,518
Annual Surface Water Flow (000 gallons) at	100%	of Capacity		9,552,050
Surface Water Cost per 1,000 Gallons				**$2.87**

(1) In Current Dollars
(2) Includes Storage, Treatment and Transmission (25 miles), all in Current Dollars

For comparative purposes, Table 1b below shows that the calculation of the "pure" surface water cost per 1,000 gallons for a fully loaded plant with flows at 100% of capacity without the transmission costs which are included in Table 1a , is $2.25 per 1,000 gallons. All assumptions in Table 1b are the same as in Table 1a except for the elimination of transmission costs.

[1]Year six is the first year that surface water is projected to be required in this analysis

Table 1b - Calculation of Surface Water Costs per 1,000 Gallons at 100% of Capacity (Includes Storage and Treatment Only – Excludes Transmission)

CALCULATION OF SURFACE WATER COSTS PER 1,000 GALLONS AT 100% OF CAPACITY *(Storage and Treatment Only, Excludes Transmission)*				
				Amount (1)
Capacity of Surface Water Plant (in mgd)				26.17
Flows at 100% of Capacity				26.17
O&M at 100% of Capacity		Term (Yrs)	Rate	$9,082,540
Annual Debt Service on Capital Cost of (2):	$171,016,505	30	6.00%	12,424,163
Annual Revenue Requirement for Surface Water				$21,506,703
Annual Surface Water Flow (000 gallons) at	100%	of Capacity		9,552,050
Surface Water Cost per 1,000 Gallons				**$2.25**

(1) In Current Dollars
(2) Includes only Storage and Treatment only, all in Current Dollars (Excludes Transmission)

b. Blended Water Rate

An important assumption of the analysis is that the ultimate rate for water will be a blended groundwater/surface water rate based upon the cost of groundwater for water demands up to the allowed groundwater withdrawal limit and the cost of surface water for water demands above the allowed groundwater withdrawal limit. This is easily visualized if the utility implements surface water on its own. It simply recovers all of its costs, for both groundwater and surface water, from all of its customers in a uniform rate to all customers. The effect is that customers that were connected before surface water was required will have a somewhat higher rate than before and customers connected after surface water is required will have a lower rate than if surface water were implemented as an enterprise and all of its costs were recovered from only those customers receiving surface water.

> Note: Surface water as an enterprise was evaluated and determined to be not feasible without significant supplemental funding because 1) facilities must be sized to serve demands significantly higher than the demands in the first years after construction, therefore, 2) pure surface water rates would have to be *extremely high* to cover the cost of the non used facilities until the facilities were utilized near their capacity.

Some scenarios evaluated assumed that a number of utilities will be served by a water supply entity. In these scenarios, a blended groundwater/ surface water rate was also assumed as discussed in the following sub-section.

c. ***<u>Ownership, Funding and Operation of Additional Water Supply, Treatment and Transmission Facilities</u>***

<u>*Assumptions for Financial Impact Calculations*</u> - In the scenarios that assume that the utility will provide additional water supply, treatment and transmission facilities as a stand alone utility, a blended rate can be easily administered and the ownership, funding and operation of all water supply, treatment and transmission facilities will be the responsibility of the utility. However, in the scenarios that assume that a number of utilities will be served by a water supply entity, the need to administer a blended rate causes the determination of ownership, funding and operational responsibility for the groundwater and surface water supply, treatment and transmission facilities to be potentially challenging from a governance perspective. It could be accomplished by interlocal agreements with an existing utility serving as the surface water supplier or by creation of an entity that would provide all of the groundwater and surface water to its members/ customers. This would require that all parties reach agreement regarding ownership/leasing of existing groundwater facilities, operations and maintenance responsibilities, interconnects, etc.

A detailed evaluation and determination of the governance structure within which surface water could be implemented is beyond the scope of this analysis and it is assumed that a structure can be implemented that would allow for a blended rate, as assumed in this analysis. In any event, the governance structure must finally be decided upon by the local utilities and therefore, could not be determined until interested local utilities take the initiative to structure a governance framework within which alternative water can be provided. A discussion is presented in the next section of a potential governance and rate structure concept which would require minimal, if any changes to the current ownership and operation of local utilities, while distributing the costs of surface water to benefiting utilities through a blended groundwater/ surface water rate concept.

For the purposes of this analysis, the wholesale rate for the entity was calculated based upon 1) its costs to provide surface water to meet all incremental water usage in the County which is in excess of the maximum allowed groundwater withdrawal limit for the total county, divided by 2) the total water usage, both up to and in excess of the allowed groundwater withdrawal limit for the total County. The cost of purchased water for the local utility was calculated as this wholesale rate from the entity times the total water usage of the local utility.

This results in a blended rate since 1) the wholesale rate of the entity was calculated based upon its cost to provide surface water to meet incremental water usage above the maximum allowed groundwater withdrawal limit spread over total water usage in the County, 2) the local utility pays the wholesale rate based upon its total water sold, not just surface water purchased, and 3) the cost of purchased water based upon total water sold is included in the revenue requirements of the local utility and thus is included in its retail rate to all of its customers. This arrangement would require that interlocal agreements be established between the entity and each member/customer allowing for the wholesale rate to be 1) calculated based upon all water sold by the entity's members/customers and 2) collected based upon all water sold by each local utility member/customer.

Discussion of a Potential Governance and Rate Structure for Implementation - The assumptions stated above provide a basis for computing the impact of a blended retail water rate upon the monthly cost of water. However, these assumptions assume that each member utility would have the same incremental water demands from the surface water plant as does the typical utility that is the subject of the analysis.

This is a valid assumption to use to calculate the rate impact, but in reality, each member utility will be at a different place regarding its current groundwater capacity, consumptive use permit and growth, and consequently each utility will likely have different water demands that must be met with surface water. Therefore, implementation of a regional solution to provide surface water to local utilities will be enhanced if the governance and rate structure will:

1) Preserve the situation of each individual member utility with regard to its current groundwater capacity, availability, investment and all aspects of its current operation, and

2) Provide a means to recover the cost of the surface water facilities as fairly as possible from all who benefit from the facilities, including
   a. An element of cost recovery for surface water actually delivered to the local utilities, and
   b. An element of cost recovery for the availability of the surface water facilities to meet the future demands of its member utilities.

Appendix E presents a potential governance and rate structure concept that would address both of these requirements.

B. SCENARIOS EVALUATED

Three basic scenarios were evaluated during this analysis as follows:

Scenario 1 – Groundwater throughout the Projection Period – This scenario assumes that the utility could continue to use groundwater throughout the twenty-year projection period (the projection period). This is not a viable scenario based upon the District's current assessment of available groundwater withdrawals in East/Central Florida;

however, it is presented as a benchmark scenario for the comparative analysis with Scenarios 2 and 3.

Scenario 2 – Surface Water as a Stand Alone Utility – This scenario assumes that when the utility's allowed groundwater withdrawal limit is reached, the utility will have to begin to rely on surface water to meet its incremental demands, and it will fund, own and operate the required surface water facilities as a stand alone utility.

Scenario 3 – Surface Water Received from a Water Supply Entity Serving a Number of Utilities – This scenario is similar to Scenario 2 except that it is assumed that the surface water facilities will be owned, funded and operated by a water supply entity serving numerous local utilities (all of Seminole County in this analysis). This entity could be an existing local utility or a new entity. It is assumed that this water supply entity will have the ability through its governance structure and/or interlocal agreements to administer a blended groundwater/surface water rate based upon 1) the cost of groundwater for the demands of all utilities served up to the combined allowed groundwater withdrawal limit for those utilities, and 2) the cost of surface water for all of the served utilities demands above the combined allowed groundwater withdrawal limit. Evaluation of the specific form of the water supply entity is beyond the scope of this analysis; however, discussion of the governance options is included in Section IIA3c – Ownership, Funding and Operation of Water supply, Treatment and Transmission Facilities.

For each of the above described scenarios, required rate revenue increases were identified in each year of the projection period and the cost per 1,000 gallons of usage and the average monthly water cost per ERC of delivered potable water were calculated. The rate revenue increases were calculated on a just-in-time basis, that is rate revenue increases were identified in the year required. This is the only rate revenue adjustment plan evaluated for Scenario 1 because it is the groundwater scenario which serves a comparative benchmark for Scenarios 2 and 3. However, two sub-scenario rate revenue plans were evaluated for Scenarios 2 and 3 to mitigate "rate spikes" in the years that surface water capacity must be added. These sub-scenarios were 1) determination of equal annual percentage rate revenue increases that would completely mitigate the rate spikes, and 2) evaluation of moderate annual rate indexing, or percentage increases, to lessen the rate spikes.

C. <u>ASSUMPTIONS</u>

This section presents the assumptions included in the scenarios described in the previous section. There are a number of assumptions that apply to all scenarios and there are assumptions that are specific to each scenario. This section presents the assumptions that are common to all scenarios and the assumptions that are specific to each individual scenario are included in the presentation of scenario results in Section IIB – Detailed Scenario Analysis.

Table 2 presents the assumptions regarding the *typical* utility that are *applicable to all of the scenarios evaluated*. Table 3, following Table 2, presents the *assumptions applicable to the water supply entity assumed in Scenario 3*.

Table 2 – Assumptions Regarding the Typical Utility Applicable to All Scenarios

Typical Utility Assumption	*First Year Value*	*Adjustment*
Water Usage	7.8 mgd	Annual growth %
Maximum Day Water Usage per Equivalent Residential Connection (ERC)	350 gpd	NA
Average Day Water Usage per Equivalent Residential Connection (ERC)	233 gpd	NA
Number of Customers (ERCs)	33,333	Based upon annual growth
Groundwater Capacity	9.41 mgd	As required
Maximum Groundwater Withdrawal	9.41 mgd	NA
Annual Growth in ERCs	NA	834 ERCs
Annual Growth Percentage	NA	2.5% to 1.69%[2]
Annual Rate Revenues	$6,100,000	Annual growth % plus rate adjustment
Annual O&M Expenses	$3,990,000	Annual expense escalator plus impact of additional facilities
O&M Escalation Factor	NA	3.0 %
Unrestricted Reserves	$3,700,000	Based upon cash flow
Minimum Working Capital Reserve Balance	Equal to 3 months O&M Expenses	Based upon O&M expense
Existing Debt Service	$2,600,000	None
New Debt Service [3]	NA	Based upon debt funding required for additional facilities, when required Term: 30 Years Interest Rate: 6.0% [4]
Capital Improvement Program[5] (Misc. capital and R&R)	$2,000,000	Annual capital cost escalation factor
Capital Cost Escalation Factor	NA	3.0 %
Size of Initial Surface Water Plant	1.94 mgd	NA

[2] The growth rate varies because a constant 834 additional equivalent residential connections (ERCs) are assumed each year, therefore 834 ERCs are calculated as a percentage of a larger base number of ERCs each year.

[3] For both the stand alone utility and water supply entity scenarios, no supplemental funding was assumed from any governmental agency. To the extent that supplemental funding becomes available, the debt service cost impacts would be mitigated. However, it should be noted that in all scenarios, most of the capital costs of the required facilities is assumed to be funded with long term debt, the impact of which upon the rates is only about $0.07-$0.08 for every dollar of capital projects. Therefore, for every dollar of supplemental funding used to pay for capital costs of the required facilities, the rate impact will only be reduced by about $0.07-$0.08 due to the leveraging effect of the debt that would be avoided by use of the supplemental funding.

[4] Although current interest rates are somewhat lower than this assumption, the significant borrowing required for new water facilities is projected to occur in the 6th and 16th year of the projection period. Therefore, a more conservative interest rate assumption was used to allow for potential increases in the rate over time

[5] $2,000,000 is assumed for the year 1 CIP amount to represent a level of capital expenditure that would cover normal minor capital and renewal and replacement items. It is escalated throughout the projection period in recognition that inflationary pressures will cause the cost of capital projects to increase.

Typical Utility Assumption	*First Year Value*	*Adjustment*
Capital Costs – Supply & Treatment Initial Surface Water Plant in Year 6	$19,024,000	NA
Capital Costs – Transmission Initial Surface Water Plant in Year 6	$22,742,000	NA
Aqueous Ammonia Facilities[6] - Initial Surface Water Plant in Year 6	$70,000	NA
High Service Pumps - Initial Surface Water Plant in Year 6	$849,000	NA
Assumed Length of Transmission Line for Surface Water Facilities	NA	25 miles when additional facilities are required.
Funding of Additional Facilities	NA	Impact fees and unrestricted reserves to the extent possible, with the rest funded with conventional 30 year term revenue bonds
Interest Earnings Rate on Invested Funds	1.75%	Escalated .25% per year to 4.5% by year 13
Years of Growth Assumed in Additional Groundwater Capacity	NA	7 Years
Years of Growth Assumed in Additional Surface Water Capacity	NA	10 Years
Margin Reserve – Groundwater	NA	2 Years
Margin Reserve – Surface Water	NA	3 Years

Scenario 3 includes the assumption that a water supply entity will provide water to a number of utilities, thus realizing the cost benefits of the economies of scale, on a unit cost basis, of constructing and operating larger surface water facilities than would be required by the typical utility as a stand alone utility. Assumptions regarding the water supply entity included in Scenario 3 are presented in the Table 3:

[6] Aqueous ammonia facilities and high service pumps will be required in the local utility's distribution system to properly treat and transport the surface water within the local distribution system.

Table 3 – Assumptions Regarding the Water Supply Entity Applicable to Scenario 3 Only

Water Supply Entity Assumption	***Sixth Year Value (The First Year of Surface Water)***	***Annual Adjustment***
Water Usage (All water demand, whether met with groundwater or surface water)	Total Projected Water Demand in Seminole County in Year 6 78.08 mgd	Annual growth %
Maximum Day Water Usage per Equivalent Residential Connection (ERC)	350 gpd	NA
Average Day Water Usage per Equivalent Residential Connection (ERC)	233 gpd	NA
Annual Growth Rate in Total County Water Demand	NA	2.78 %[7]
Annual Rate Revenues	$24,669,000	Annual growth % plus rate adj.
Annual O&M Expenses	$1,600,000	Annual expense escalator plus impact of additional facilities
O&M Escalation Factor	NA	3.0 %
Existing Debt Service	$0	None
Size of Initial Surface Water Plant	26.17mgd	NA
Capital Costs – Supply & Treatment	$198,000,000	NA
Capital Costs – Transmission	$71,383,000	NA
New Debt Service	$21,143,000	Based upon debt funding required for additional facilities, when required. Term: 30 Years Interest Rate: 6.0 %
Unrestricted Reserves	NA	Based upon cash flow
Minimum Working Capital Reserve Balance	Equal to 3 months O&M Expenses	Based upon O&M expense
Capital Cost Escalation Factor	NA	3.0 %
Funding of Additional Facilities	NA	Impact fees and unrestricted reserves to the extent possible, with the rest funded with conventional 30 year term revenue bonds
Interest Earnings Rate on Invested	2.75 %	Escalated .25% per year to 4.5%

[7] The growth in total County demand was expressed as a constant percentage each year.

Water Supply Entity Assumption	*Sixth Year Value (The First Year of Surface Water)*	*Annual Adjustment*
Funds		by year 13
Assumed Length of Transmission Line for Surface Water Facilities	NA	25 miles when additional facilities are required.
Years of Growth Assumed in Additional Surface Water Capacity	NA	10 Years
Margin Reserve – Surface Water	NA	3 Years

II. RESULTS

This section presents the results of the analysis. A summary of the comparative analysis of scenarios is first presented, followed by a description of the detailed projections for each scenario evaluated and a discussion of the conclusions that can be drawn from the analysis.

A. COMPARATIVE ANALYSIS OF SCENARIO RESULTS

This section presents a comparative analysis of the results of each scenario evaluated. Scenario 1 will serve as the benchmark scenario in this comparative analysis because it represents the status quo assuming that groundwater were available throughout the projection period. However, based upon the District's groundwater modeling, groundwater will not be available to serve the incremental water demands of new growth at some point during the projection period. At that time groundwater can continue to be used as the source to serve water usage up to the maximum allowed groundwater withdrawal, but an alternative water source must be used to serve the incremental water usage demands of new growth above that maximum allowed groundwater withdrawal limit.

Scenario 2 evaluates the impact upon the cost of delivered water of a typical utility owning, funding and operating surface water facilities after projected water usage exceeds the maximum assumed groundwater withdrawal limit for the utility. The cost of delivered water is assumed to reflect a blended rate consisting of the cost to provide water usage up to the maximum groundwater withdrawal limit with groundwater facilities and the cost to provide incremental water usage demands above the maximum groundwater withdrawal limit with surface water facilities.

Scenario 3 is the same as Scenario 2 except that it assumes that surface water will be provided by a water supply entity, either an existing utility or a new entity, that will provide surface water to a number of local utilities (all of Seminole County in this analysis). This will allow realization of the economies of scale, on a unit cost basis, of a larger facility. However, this scenario will also require a blended rate including 1) the cost to provide water usage with groundwater facilities up to the combined maximum groundwater withdrawal limit of the utilities served by the entity, and 2) the cost to provide incremental water usage demands with surface water facilities, above the combined maximum groundwater withdrawal limit of the utilities served.

Three comparisons were made during this analysis. First, just-in-time rate adjustments were calculated and compared. Just-in-time rate adjustments reflect the required adjustments in rates in the year required. This approach to rate planning often results in "rate spikes", or large rate increase requirements in one year. Utilities often adopt a plan of regular annual rate adjustments in advance of projected rate spikes to avoid, or at least lessen these rate spikes.

The second comparison assumes such a regular plan of rate adjustments. It assumes equal annual percentage rate adjustments that will result in eliminating the rate spikes that appeared in the years that surface water facilities were required in the first comparison.

The third comparison also assumes a regular plan of rate adjustments, but instead of equal annual percentage increases sized to eliminate the rate spikes, it assumes adoption of more modest annual rate indexing, or percentage rate increases, and determines how much this approach will reduce the rate spikes in the years that surface water facilities are required.

1. Just-in-Time Rate Adjustments

Table 4 on the following page presents the comparative analysis of just-in-time rate adjustments for Scenarios 1, 2 and 3. This table shows the following:

- Observations for all scenarios in Table 4 – Just-in-time Rate Adjustments:
  - No rate increases are required for any scenario from year 1 through year 5,
  - In the years after year 5 in which no additional capacity is added, all scenarios require annual rate increases in the 1% to 2% range.

- Observations relative to Scenario 1, the groundwater scenario in Table 4 – Just-in Time Rate Adjustments:
  - For Scenario 1, small rate spikes of about 3% and 5% are required in years 7 and 14 respectively reflecting the increased cost of adding additional groundwater capacity in each of those years,
  - The cumulative percentage rate increase required for Scenario 1 is 35 % by year 20.
  - The average monthly water cost per ERC for Scenario 1 is $15.25 per month in year 1, increasing to $20.66 per month by year 20.

- Observations relative to Scenario 2, the surface water scenario as a stand alone utility in Table 4 – Just-in-Time Rate Adjustments:
  - For Scenario 2, large rate spikes of about 52% and 35% are required in years 6 and 16 respectively reflecting the increased cost of adding additional surface water capacity in each of those years.

(Continued after Table 4)

Table 4 – Cost Impact Summary: Just-in-Time Rate Adjustments

	Rate Revenue Increases																			
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15	Yr 16	Yr 17	Yr 18	Yr 19	Yr 20
Scenario 1 – Groundwater:																				
% Increase	0%	0%	0%	0%	0%	0.9%	3.2%	1.7%	1.7%	1.7%	1.8%	1.7%	1.8%	5.3%	1.8%	1.8%	1.8%	1.9%	1.9%	1.9%
Cumulative	0%	0%	0%	0%	0%	1%	4%	6%	8%	10%	11%	13%	15%	21%	24%	26%	28%	31%	33%	35%
Monthly Cost /ERC	$15.25	$15.25	$15.25	$15.25	$15.25	$15.38	$15.88	$16.14	$16.41	$16.69	$16.99	$17.27	$17.59	$18.52	$18.84	$19.18	$19.53	$19.90	$20.27	$20.66
Scenario 2 – Surface Water, Stand Alone Utility:																				
% Increase	0%	0%	0%	0%	0%	52.1%	0.5%	1.0%	1.1%	1.2%	1.2%	1.3%	1.3%	1.6%	1.6%	34.6%	0.2%	0.8%	0.9%	0.9%
Cumulative	0%	0%	0%	0%	0%	52%	53%	54%	56%	58%	60%	62%	64%	67%	70%	128%	129%	131%	133%	135%
Monthly Cost /ERC	$15.25	$15.25	$15.25	$15.25	$15.25	$23.20	$23.32	$23.54	$23.81	$24.09	$24.39	$24.71	$25.04	$25.44	$25.86	$34.81	$34.88	$35.17	$35.48	$35.81
Scenario 3 – Surface Water, Water Supply Entity:																				
% Increase	0%	0%	0%	0%	0%	41.7%	1.1%	1.3%	1.5%	1.8%	1.8%	1.9%	1.9%	2.1%	2.1%	30.7%	1.0%	1.2%	1.3%	1.3%
Cumulative	0%	0%	0%	0%	0%	42%	43%	45%	47%	50%	53%	55%	58%	62%	65%	116%	118%	121%	123%	126%
Monthly Cost /ERC	$15.25	$15.25	$15.25	$15.25	$15.25	$21.61	$21.84	$22.12	$22.46	$22.86	$23.26	$23.70	$24.15	$24.66	$25.17	$32.90	$33.23	$33.62	$34.05	$34.50

Note: [highlighted] = year when additional capacity is required.

- ! The cumulative percentage rate increase required for Scenario 2 is 135 % by year 20 compared to 35 % for Scenario 1.
- ! The average monthly water cost per ERC for Scenario 2 is $15.25 per month in year 1, increasing to $35.81 per month by year 20 which is 73 % higher than the year 20 cost of $20.66 per month for Scenario 1.

- ➢ Observations relative to Scenario 3, the surface water scenario with a water supply entity in Table 4 – Just-in-Time Rate Adjustments:
  - ! For Scenario 3, large rate spikes of about 42% and 31% are required in years 6 and 16 respectively reflecting the increased cost of adding additional surface water capacity in each of those years.
  - ! The rate spikes in Scenario 3 are not as large as in Scenario 2, reflecting the lower unit costs of surface water capacity resulting from economies of scale realized in the larger facilities of the water supply entity in Scenario 3 compared to the larger unit costs of surface water facilities for the stand alone utility assumption of Scenario 2.
  - ! The cumulative percentage rate increase required for Scenario 3 is 126% by year 20 compared to 35% for Scenario 1 and 135% for Scenario 2.
  - ! The average monthly water cost per ERC for Scenario 3 is $15.25 per month in year 1, increasing to $34.50 per month by year 20 which is 4% lower than the year 20 cost of $35.81 per month for Scenario 2 and 67% higher than the year 20 cost of $20.66 per month for Scenario 1.

2. <u>Equal Annual Percentage Rate Increases to Eliminate Rate Spikes Required to Fund Surface Water Facilities</u>

Table 5 on the following page presents the comparative analysis of equal annual percentage rate increases calculated to eliminate rate spikes for Scenarios 2 and 3 in the years when surface water facilities must be funded. Because the rate spikes in Scenario 1 are so small, Scenario 1 is shown as just-in-time rates in this comparison. This table shows the following:

- ➢ Observations for all scenarios in Table 5 – Equal Annual Percentage Rate Increases to Eliminate Rate Spikes:
  - ! In the years after year 5 in which no additional capacity is added, Scenario 1 requires annual rate increases in the 1% to 2% range, whereas, equal annual rate increases are calculated for Scenarios 2 and 3 respectively to eliminate the rate spikes in years 6 and 16 in Table 3.

(Continued after Table 5)

Table 5 – Cost Impact Summary: Equal Annual Rate Adjustments to Eliminate Rate Spikes in Scenarios 2 and 3

	Rate Revenue Increases																			
	Yr 1	**Yr 2**	**Yr 3**	**Yr 4**	**Yr 5**	**Yr 6**	**Yr 7**	**Yr 8**	**Yr 9**	**Yr 10**	**Yr 11**	**Yr 12**	**Yr 13**	**Yr 14**	**Yr 15**	**Yr 16**	**Yr 17**	**Yr 18**	**Yr 19**	**Yr 20**
Scenario 1 – Groundwater:																				
% Increase	0%	0%	0%	0%	0%	0.9%	3.2%	1.7%	1.7%	1.7%	1.8%	1.7%	1.8%	5.3%	1.8%	1.8%	1.8%	1.9%	1.9%	1.9%
Cumulative	0%	0%	0%	0%	0%	1%	4%	6%	8%	10%	11%	13%	15%	21%	24%	26%	28%	31%	33%	35%
Monthly Cost /ERC	$15.25	$15.25	$15.25	$15.25	$15.25	$15.38	$15.88	$16.14	$16.41	$16.69	$16.99	$17.27	$17.59	$18.52	$18.84	$19.18	$19.53	$19.90	$20.27	$20.66
Scenario 2 – Surface Water, Stand Alone Utility:																				
% Increase	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	2.9%	3.7%	3.7%	3.7%	3.7%
Cumulative	6%	13%	20%	27%	35%	43%	48%	53%	59%	65%	71%	77%	84%	91%	98%	104%	111%	119%	127%	135%
Monthly Cost /ERC	$16.18	$17.17	$18.21	$19.33	$20.50	$21.75	$22.56	$23.39	$24.26	$25.16	$26.09	$27.05	$28.05	$29.09	$30.17	$31.05	$32.20	$33.39	$34.62	$35.91
Scenario 3 – Surface Water, Water Supply Entity:																				
% Increase	5.3%	5.3%	5.3%	5.3%	5.3%	5.7%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	4.4%	3.5%	3.5%	3.5%	3.5%
Cumulative	5%	11%	17%	23%	29%	37%	42%	47%	52%	57%	62%	68%	74%	80%	86%	95%	102%	109%	116%	123%
Monthly Cost /ERC	$16.06	$16.91	$17.81	$18.75	$19.74	$20.86	$21.59	$22.35	$23.13	$23.94	$24.77	$25.64	$26.54	$27.47	$28.43	$29.69	$30.73	$31.80	$32.91	$34.07

Note: [shaded] = year when additional capacity is required.

- Observations relative to Scenario 1, the groundwater scenario in Table 5 – Equal Annual Percentage Rate Increases to Eliminate Rate Spikes:
  - Because the rate spikes in Scenario 1 are so small, about 3% and 5% in years 7 and 14 respectively Scenario 1 is shown as just-in-time rates in this comparison,
  - The cumulative percentage increase required for Scenario 1 is 35% by year 20.
  - The average monthly water cost per ERC for Scenario 1 is $15.25 per month in year 1, increasing to $20.66 per month by year 20.

- Observations relative to Scenario 2, the surface water scenario as a stand alone utility in Table 5 – Equal Annual Percentage Rate Increases to Eliminate Rate Spikes:
  - For Scenario 2, equal annual percentage rate increases of about 6.1% from year 1 through year 5 will eliminate the large rate spike in year 6, and equal annual percentage rate increases of about 3.7% from year 7 through year 15 will eliminate the large rate spike in year 16.
  - The cumulative percentage rate increase required for Scenario 2 is 135% by year 20 compared to 35% for Scenario 1.
  - The average monthly water cost per ERC for Scenario 2 is $16.18 per month in year 1, increasing to $35.91 per month by year 20 which is 74% higher than the year 20 cost of $20.66 per month for Scenario 1.

- Observations relative to Scenario 3, the surface water scenario with a water supply entity in Table 5 – Equal Annual Percentage Rate Increases to Eliminate Rate Spikes:
  - For Scenario 3, equal annual percentage rate increases of about 5.3% from year 1 through year 5 will eliminate the large rate spike in year 6, and equal annual percentage rate increases of about 3.5% from year 7 through year 15 will eliminate the large rate spike in year 16.
  - The equal annual percentage rate increases in Scenario 3 are not as large as in Scenario 2, reflecting the lower unit costs of surface water capacity resulting from economies of scale realized in the larger facilities of the water supply entity in Scenario 3 compared to the larger unit costs of surface water facilities for the stand alone utility assumption of Scenario 2.
  - The cumulative percentage rate increase required for Scenario 3 is 123% by year 20 compared to 35% for Scenario 1 and 135% for Scenario 2.
  - The average monthly water cost per ERC for Scenario 3 is $16.06 per month in year 1, increasing to $34.07 per month by year 20 which is 5% lower than the year 20 cost of $35.91 per month for Scenario 2 and 65% higher than the year 20 cost of $20.66 per month for Scenario 1.

3. Annual Rate Indexing to Lessen the Rate Spikes Required to Fund Surface Water Facilities

Table 6 on the following page presents the comparative analysis of annual rate indexing, or modest percentage rate increases in terms of the impact in lessening the rate spikes for Scenarios 2 and 3 in the years when surface water facilities must be funded. Because the rate spikes in Scenario 1 are so small, Scenario 1 is shown as just-in-time rates in this comparison. This table shows the following:

- Observations for all scenarios in Table 6 – Annual Rate Indexing Increases to Lessen Rate Spikes:
  - In the years after year 5 in which no additional capacity is added, Scenario 1 requires annual rate increases in the 1% to 2% range, whereas, annual rate increases for Scenarios 2 and 3 are set at inflationary levels to lessen the rate spikes in years 6 and 16.

- Observations relative to Scenario 1, the groundwater scenario in Table 6 – Annual Rate Indexing Increases to Lessen Rate Spikes:
  - Because the rate spikes in Scenario 1 are so small, about 3% and 5% in years 7 and 14 respectively Scenario 1 is shown as just-in-time rates in this comparison,
  - The cumulative percentage rate increase required for Scenario 1 is 35% by year 20.
  - The average monthly water cost per ERC for Scenario 1 is $15.25 per month in year 1, increasing to $20.66 per month by year 20.

- Observations relative to Scenario 2, the surface water scenario as a stand alone utility in Table 6 – Annual Rate Indexing Increases to Lessen Rate Spikes:
  - For Scenario 2, equal annual indexing percentage rate increases of about 2.7% from year 1 through year 5 will lessen the large rate spike in year 6 from about 52% to about 30%, and equal annual percentage rate increases of about 2.7% from year 7 through year 15 will lessen the large rate spike in year 16 from about 35% to about 13%.
  - The cumulative percentage rate increase required for Scenario 2 is 138% by year 20 compared to 35% for Scenario 1.
  - The average monthly water cost per ERC for Scenario 2 is $15.66 per month in year 1, increasing to $36.23 per month by year 20 which is 75% higher than the year 20 cost of $20.66 per month for Scenario 1.

(Continued after Table 6)

Table 6 – Cost Impact Summary: Annual Rate Indexing to Lessen Rate Spikes in Scenarios 2 and 3

	Rate Revenue Increases																			
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15	Yr 16	Yr 17	Yr 18	Yr 19	Yr 20
Scenario 1 – Groundwater:																				
% Increase	0%	0%	0%	0%	0%	0.9%	3.2%	1.7%	1.7%	1.7%	1.8%	1.7%	1.8%	5.3%	1.8%	1.8%	1.8%	1.9%	1.9%	1.9%
Cumulative	0%	0%	0%	0%	0%	1%	4%	6%	8%	10%	11%	13%	15%	21%	24%	26%	28%	31%	33%	35%
Monthly Cost /ERC	$15.25	$15.25	$15.25	$15.25	$15.25	$15.38	$15.88	$16.14	$16.41	$16.69	$16.99	$17.27	$17.59	$18.52	$18.84	$19.18	$19.53	$19.90	$20.27	$20.66
Scenario 2 – Surface Water, Stand Alone Utility:																				
% Increase	2.7%	2.7%	2.7%	2.7%	2.7%	29.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	13.3%	2.7%	2.7%	2.7%	2.7%
Cumulative	3%	6%	8%	11%	14%	48%	52%	56%	61%	65%	69%	74%	79%	84%	88%	114%	119%	125%	131%	138%
Monthly Cost /ERC	$15.66	$16.08	$16.52	$16.96	$17.42	$22.61	$23.22	$23.84	$24.49	$25.15	$25.83	$26.52	$27.24	$27.98	$28.73	$32.57	$33.45	$34.35	$35.28	$36.23
Scenario 3 – Surface Water, Water Supply Entity:																				
% Increase	2.7%	2.7%	2.7%	2.7%	2.7%	20.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	17.2%	2.7%	2.7%	2.7%	2.7%
Cumulative	3%	5%	8%	11%	14%	38%	42%	45%	49%	53%	58%	62%	66%	71%	75%	105%	111%	117%	123%	129%
Monthly Cost /ERC	$15.66	$16.08	$16.52	$16.96	$17.42	$21.04	$21.60	$22.19	$22.79	$23.40	$24.03	$24.68	$25.35	$26.03	$26.74	$31.33	$32.18	$33.05	$33.94	$34.85

Note: [highlighted] = year when additional capacity is required.

- Observations relative to Scenario 3, the surface water scenario with a water supply entity in Table 6 – Annual Rate Indexing Increases to Lessen Rate Spikes:
  - For Scenario 3, equal annual indexing percentage rate increases of about 2.7% from year 1 through year 5 will lessen the large rate spike in year 6 from about 42% to about 21%, and equal annual indexing percentage rate increases of about 2.7% from year 7 through year 15 will lessen the large rate spike in year 16 from about 31% to about 17%.
  - The cumulative percentage rate increase required for Scenario 3 is 129% by year 20 compared to 35% for Scenario 1 and 138% for Scenario 2.
  - The average monthly water cost per ERC for Scenario 3 is $15.66 per month in year 1, increasing to $34.85 per month by year 20 which is 4% lower than the year 20 cost of $ 36.23 per month for Scenario 2 and 69% higher than the year 20 cost of $20.66 per month for Scenario 1.

B. DETAILED SCENARIO ANALYSIS

A detailed analysis was conducted for each scenario evaluated. The analysis consisted of a 20 year projection of the financial results of utility operations based upon the assumptions for each scenario evaluated. The analysis was conducted using the dynamic model described in Section IIA3 – The Model.

Appendices A, B and C present the output schedules for the detailed analysis for Scenarios 1, 2 and 3 respectively including any assumptions that are unique to the scenario being evaluated. The output schedules for each scenario consist of the following:

- Projection of Revenues and Expenses for the Local Utility (All scenarios)
- Projection of Revenues and Expenses for the Water Supply Entity (Scenario 3 only)
- Calculation of Additional Capital and O&M Costs for Additional Capacity for the Utility (All scenarios)
- Calculation of Additional Capital and O&M Costs for Additional Capacity for the Water Supply Entity (Scenario 3 only)

C. AFFORDABILITY ANALYSIS

In order to examine the affordability of the water rates that would be necessary to fund alternative water facilities in East/Central Florida, we examined the affordability in Seminole, Orange and Lake Counties, as representative East/Central Florida Counties. Although there is not a published standard for affordability of drinking water, the U.S. Environmental Protection Agency (USEPA), under provisions of the Safe Drinking Water Act Amendments of 1996, published information to assist the states in formulating affordability criteria. This information is available at http://www.epa.gov/OGWDW/smallsys/afforddh.html#preface.

Measurement of Affordability - Based upon a review of the above referenced information, it is concluded that 1) the most commonly accepted measure of affordability of drinking water is the relationship of the cost of water per household to median household income and 2) a household affordability ratio, or index of affordability, can be established as the cost of water divided by the median household income. A number of studies are cited in the above referenced USEPA information that have established such ratios as thresholds for affordable drinking water. These thresholds of affordability generally range from 1% to 2%, that is if the cost of water is less than the threshold of from 1% to 2% of median household income, water is generally considered to be affordable.

The above referenced USEPA information includes selected state policies using affordability criteria. The most specific affordability policies cited were developed by the State of New York (New York). New York developed a table that established "Target Service Charges" below which water could be considered affordable, for ranges of Median Household Income. These affordability criteria developed by New York are shown in Table 7 below:

Table 7 – Affordability Thresholds

Median Annual Household Income	Affordability Threshold for Annual Water Service Charges	Affordability Threshold for Monthly Water Service Charges (1)	Affordability Threshold for Water Service Charges as a % of MMHI (1)
$10,000	$100	$8.33	1.00%
$15,000	$150	$12.50	1.00%
$20,000	$200	$16.67	1.00%
$25,000	$253	$21.08	1.01%
$30,000	$371	$30.92	1.24%
$35,000	$488	$40.67	1.39%
$40,000	$600	$50.00	1.50%
$45,000	$675	$56.25	1.50%
$50,000	$750	$62.50	1.50%
$55,000	$825	$68.75	1.50%
$60,000	$900	$75.00	1.50%

(1) These values were calculated from the table published in the USEPA information.

In order to evaluate the affordability of the impact of the cost of alternative water upon the cost of water in East/Central Florida, the above referenced table of affordability thresholds relative to median household income was used, with interpolations of median household income values in $1,000 increments. Because the level of treatment, and resultant cost of water, in New York is relatively low, one would expect the affordability threshold for such a State to be low. Therefore, it was felt that using a standard adopted by a State with relatively low water cost would lend a level of conservatism to the affordability analysis for high cost surface water in Florida.[8]

An analysis was conducted which determined the ratio of the cost of water per ERC in each year, in each scenario presented herein (assuming just-in-time rate adjustments), to the projected median household income in selected East/Central Florida counties. The analysis was conducted relative to projected median household income for Seminole, Orange and Lake Counties and for the average of all three counties. The analysis was conducted based upon the projected cost of water reflected in each scenario, each of which assumes that the current cost of water per ERC is $15.25. However, in order to evaluate affordability over a broad range of assumed water rates, the analysis was also conducted for an assumed current cost of water per ERC of $25.00, adjusted by the same annual percentages as the rates in each scenario (assuming just-in-time rate adjustments). Note: Discussions with a number of representatives from utilities in the East/Central Florida region indicated that the current cost of potable water is within a range of from about $15.00 to $25.00 per month per ERC for most utilities in the region.

The projected median household income data used in the analysis was derived from U.S. Census Bureau median household income data for Seminole, Orange and Lake Counties shown in Table 8 below.

Table 8 – Historical Median Household Income for Seminole, Orange and Lake Counties

Median Household Income						
	Seminole County		Orange County		Lake County	
Year	Median Household Income	Average Annual Rate of Increase	Median Household Income	Average Annual Rate of Increase	Median Household Income	Average Annual Rate of Increase
1979	$18,289	NA	$15,298	NA	$12,489	NA
1989	$35,637	6.90%	$30,252	7.06%	$23,395	6.48%
1999	$49,326	3.30%	$41,311	3.16%	$36,903	4.66%

Table 8 shows that all three counties had historical average increases in median household income from 1989 to 1999 of from 3.16% to 4.66%. However, in order to be conservative, the average median household income for the three counties was projected to increase at only 1.5% per year throughout the 20 year projection period.

[8] It is important to state that the New York affordability thresholds were used solely for the purposes of constructing a conservative affordability analysis and should not be construed as endorsing the New York thresholds for Florida. In fact, because of the relatively higher cost of the alternative water sources that will be required in East/Central Florida, it could be argued that higher affordability thresholds would be more appropriate for the East/Central area of Florida.

Tables 9 and 10 present the results of the affordability analysis based upon the average median household income of Seminole, Orange and Lake Counties for assumed current water costs per ERC of $15.25 and $25.00 respectively.

Table 9 – Analysis of the Cost of Water Compared to Average Median Household Income for Seminole, Orange and Lake Counties

Assuming a Current Monthly Cost of Water of $15.25 per ERC

	Rate Revenue Increases																			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Average of Seminole, Orange and Lake Counties																				
Median Monthly Household Income (MMHI) in (000s)																				
Annual	$44.6	$45.2	$45.8	$46.4	$47.0	$47.6	$48.2	$48.8	$49.4	$50.0	$50.6	$51.2	$51.8	$52.4	$53.1	$53.8	$54.5	$55.2	$55.9	$56.6
Monthly	$3.7	$3.8	$3.8	$3.9	$3.9	$4.0	$4.0	$4.1	$4.1	$4.2	$4.2	$4.3	$4.3	$4.4	$4.4	$4.5	$4.5	$4.6	$4.7	$4.7
Scenario 1 - Groundwater:																				
Mo. Cost per ERC	$15.25	$15.25	$15.25	$15.25	$15.25	$15.38	$15.88	$16.14	$16.41	$16.69	$16.99	$17.27	$17.59	$18.52	$18.84	$19.18	$19.53	$19.90	$20.27	$20.66
% of MMHI	0.41%	0.40%	0.40%	0.39%	0.39%	0.38%	0.40%	0.39%	0.40%	0.40%	0.40%	0.40%	0.41%	0.42%	0.43%	0.43%	0.43%	0.43%	0.43%	0.44%
Scenario 2 - Surface Water, Stand Alone Utility:																				
Mo. Cost per ERC	$15.25	$15.25	$15.25	$15.25	$15.25	$23.20	$23.32	$23.54	$23.81	$24.09	$24.39	$24.71	$25.04	$25.44	$25.86	$34.81	$34.88	$35.17	$35.48	$35.81
% of MMHI	0.41%	0.40%	0.40%	0.39%	0.39%	0.58%	0.58%	0.57%	0.58%	0.57%	0.58%	0.57%	0.58%	0.58%	0.59%	0.77%	0.78%	0.76%	0.75%	0.76%
Scenario 3 – Surface Water, Water Supply Entity:																				
Mo. Cost per ERC	$15.25	$15.25	$15.25	$15.25	$15.25	$21.61	$21.84	$22.12	$22.46	$22.86	$23.26	$23.70	$24.15	$24.66	$25.17	$32.90	$33.23	$33.62	$34.05	$34.50
% of MMHI	0.41%	0.40%	0.40%	0.39%	0.39%	0.54%	0.55%	0.54%	0.55%	0.54%	0.55%	0.55%	0.56%	0.56%	0.57%	0.73%	0.74%	0.73%	0.72%	0.73%
Note:	(highlighted) = year when additional capacity is required																			
ANALYSIS OF AFFORDABILITY:																				
Affordability Threshold																				
Mo Cost Per ERC	$55.00	$56.25	$56.25	$57.50	$58.75	$58.75	$60.00	$60.00	$61.25	$62.50	$62.50	$63.75	$63.75	$65.00	$66.25	$66.25	$67.50	$68.75	$68.75	$70.00
% of MMHI	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Maximum of Scenarios for Comparison to Affordability Benchmarks:																				
Mo. Cost per ERC	$15.25	$15.25	$15.25	$15.25	$15.25	$23.20	$23.32	$23.54	$23.81	$24.09	$24.39	$24.71	$25.04	$25.44	$25.86	$34.81	$34.88	$35.17	$35.48	$35.81
% of MMHI	0.41%	0.40%	0.40%	0.39%	0.39%	0.58%	0.58%	0.57%	0.58%	0.57%	0.58%	0.57%	0.58%	0.58%	0.59%	0.77%	0.78%	0.76%	0.75%	0.76%
Affordability Check	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

Table 10 – Analysis of the Cost of Water Compared to Average Median Household Income for Seminole, Orange and Lake Counties

Assuming a Current Monthly Cost of Water of $25.00 per ERC

	Rate Revenue Increases																			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Average of Seminole, Orange and Lake Counties																				
Median Monthly Household Income (MMHI) in (000s)																				
Annual	$44.6	$45.2	$45.8	$46.4	$47.0	$47.6	$48.2	$48.8	$49.4	$50.0	$50.6	$51.2	$51.8	$52.4	$53.1	$53.8	$54.5	$55.2	$55.9	$56.6
Monthly	$3.7	$3.8	$3.8	$3.9	$3.9	$4.0	$4.0	$4.1	$4.1	$4.2	$4.2	$4.3	$4.3	$4.4	$4.4	$4.5	$4.5	$4.6	$4.7	$4.7
Scenario 1 - Groundwater:																				
Mo. Cost per ERC	$25.00	$25.00	$25.00	$25.00	$25.00	$25.21	$26.03	$26.46	$26.90	$27.36	$27.85	$28.31	$28.84	$30.36	$30.89	$31.44	$32.02	$32.62	$33.23	$33.87
% of MMHI	0.68%	0.66%	0.66%	0.64%	0.64%	0.63%	0.65%	0.65%	0.66%	0.65%	0.66%	0.66%	0.67%	0.69%	0.70%	0.70%	0.71%	0.71%	0.71%	0.72%
Scenario 2 - Surface Water, Stand Alone Utility:																				
Mo. Cost per ERC	$25.00	$25.00	$25.00	$25.00	$25.00	$38.03	$38.23	$38.59	$39.03	$39.49	$39.98	$40.51	$41.05	$41.70	$42.39	$57.07	$57.18	$57.66	$58.16	$58.70
% of MMHI	0.68%	0.66%	0.66%	0.64%	0.64%	0.95%	0.96%	0.94%	0.95%	0.94%	0.95%	0.94%	0.95%	0.95%	0.96%	1.27%	1.27%	1.25%	1.24%	1.25%
Scenario 3 – Surface Water, Water Supply Entity:																				
Mo. Cost per ERC	$25.00	$25.00	$25.00	$25.00	$25.00	$35.43	$35.80	$36.26	$36.82	$37.48	$38.13	$38.85	$39.59	$40.43	$41.26	$53.93	$54.48	$55.11	$55.82	$56.56
% of MMHI	0.68%	0.66%	0.66%	0.64%	0.64%	0.89%	0.90%	0.88%	0.90%	0.89%	0.91%	0.90%	0.92%	0.92%	0.94%	1.20%	1.21%	1.20%	1.19%	1.20%
Note:	= year when additional capacity is required																			
ANALYSIS OF AFFORDABILITY:																				
Affordability Threshold																				
Mo Cost Per ERC	$55.00	$56.25	$56.25	$57.50	$58.75	$58.75	$60.00	$60.00	$61.25	$62.50	$62.50	$63.75	$63.75	$65.00	$66.25	$66.25	$67.50	$68.75	$68.75	$70.00
% of MMHI	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Maximum of Scenarios for Comparison to Affordability Benchmarks:																				
Mo. Cost per ERC	$25.00	$25.00	$25.00	$25.00	$25.00	$38.03	$38.23	$38.59	$39.03	$39.49	$39.98	$40.51	$41.05	$41.70	$42.39	$57.07	$57.18	$57.66	$58.16	$58.70
% of MMHI	0.68%	0.66%	0.66%	0.64%	0.64%	0.95%	0.96%	0.94%	0.95%	0.94%	0.95%	0.94%	0.95%	0.95%	0.96%	1.27%	1.27%	1.25%	1.24%	1.25%
Affordability Check	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

The results of this analysis (assuming the average median household income of all three counties) as reflected in Tables 9 and 10, show that:

1) Assuming a current cost of water of $15.25 per ERC and the scenario with the highest cost of water:
   - The cost of water compared to the median household income (the affordability index) is 0.41% in Year 1,
   - The affordability index reaches a maximum of .78 in Year 17,
   - Both affordability indices are well below the affordability threshold of 1.50% in each year of the projection period.

2) Assuming a current cost of water of $25.00 per ERC and the scenario with the highest cost of water:
   - The cost of water compared to the median household income (the affordability index) is 0.68% in Year 1,
   - The affordability index reaches a maximum of 1.27 in Years 16 and 17,
   - Both affordability indices are well below the affordability threshold of 1.50% in each year of the projection period.

The analysis, when evaluated for each individual county, shows that the cost of water, when adjusted to include the cost of alternative water facilities, results in affordability indices for each county as shown in Table 11 below:

Table 11 – Affordability Indices by County

Affordability Indices						
	Seminole County		Orange County		Lake County	
Year	Assumed Year 1 Water Cost of $15.25 per ERC	Assumed Year 1 Water Cost of $25.00 per ERC	Assumed Year 1 Water Cost of $15.25 per ERC	Assumed Year 1 Water Cost of $25.00 per ERC	Assumed Year 1 Water Cost of $15.25 per ERC	Assumed Year 1 Water Cost of $25.00 per ERC
Initial Affordability Index:						
Year 1	0.35%	0.58%	0.42%	0.69%	0.48%	0.78%
Highest Affordability Index:						
Year 16	0.67%	1.10%	0.81%	1.33%	0.89%	1.46%

In summary, the affordability analysis presented in this section shows that the projected cost of water, including the impact of the projected cost of alternative water facilities, compared to the projected median household income for Seminole, Orange and Lake Counties on a) an average county basis, and b) a county by county basis, is within generally accepted thresholds of affordability for all years of the projection period, with an assumed current monthly water cost of from $15.25 per ERC to $25.00 per ERC.

Perception of Affordability and Mitigation Strategies - The above analysis shows that the projected cost of water will remain affordable, even after absorbing the higher costs of surface water through a blended retail rate. However, the emergence of the need for large rate increases, or spikes, in years that new surface water facilities must be funded, may effect the perception of affordability by the public. This perception may make it problematic for local officials to adopt such large rate increases. Therefore the scenarios in this report that examined equal annual rate increases (to eliminate the rate spikes) and annual rate indexing (to lessen the rate spikes) may offer a solution regarding the perception of affordability.

Considerations Regarding Equitable Cost Recovery - An argument could be made that such plans with "advance rate increases" present concerns with respect to equitable cost recovery. It could be argued that under such plans, the customers in the years prior to the time when higher costs for surface water would actually be incurred, would be paying for the future cost of water in addition to the then current cost of water. Accordingly, it could be argued, they would be subsidizing the new customers that connect in the future.

Although the arguments presented in the previous paragraph are logical, one must also consider that any excess revenues generated in the early years of an "advance rate increase" plan would be available to pay for a portion of the capital costs of the surface water facilities when they are needed, thus down-sizing the required borrowing and resultant annual debt service that would be included in the rates. As long as the excess revenues derived from "advance rate increase" plans ultimately benefit of the system, it could be argued that any inequities inherent in such plans are substantially mitigated.

Also, public officials may ultimately decide that the greater good is served by the use of such "advance rate increase" plans to soften rate shock, much as the greater good is served by the use of price incentives to encourage preservation of water resources through inclining block water rates, which, it can be argued, also contain inherent inequities in cost recovery.

D. CONCLUSIONS

Based upon the analyses presented in this Technical Memorandum, several conclusions can be made. The major conclusions of this analysis, based upon the evaluation of the typical local utility as defined in this analysis, are as follows:

1. For the local utility evaluated in this analysis, by the time that the first additional surface water capacity must be implemented (in year 6), cumulative rate increases will be required in the range of from a high of about 52% (as a stand alone utility with just-in-time rate increases) to a low of about 37% (as a member/customer of a water supply entity with equal annual percentage rate increases), compared to a cumulative rate increase requirement of about 4% for additional groundwater (in year 7) if additional groundwater were available throughout the projection period.

2. By the time that the second additional surface water capacity must be implemented (in year 16), cumulative rate increases will be required in the range of from a high of about 128% (as a stand alone utility with just-in-time rate increases) to a low of about 95% (as a member/customer of a water supply entity with equal annual percentage rate increases), compared to a cumulative rate increase requirement of about 21% for additional groundwater (in year 14) if additional groundwater were available throughout the projection period.

3. By year 20, the impact of the cost of surface water as an alternative to groundwater will require cumulative rate increases of from a high of about 135% (as a stand alone utility with equal annual rate increases) to a low of about 123% (as a member/customer of a water supply entity with equal annual percentage rate increases), compared to the cumulative rate increase of about 35% projected if groundwater were available throughout the projection period.

4. The average cost per month per ERC for the typical utility evaluated is $15.25. Based upon the cumulative percentage increases discussed in conclusions 1 through 3, the average cost of water per month per ERC could increase to as much as:

    a) From a high of about $23.20 (as a stand alone utility with just-in-time rate increases) to a low of about $20.86 (as a member/customer of a water supply entity with equal annual percentage rate increases) in order to fund the first increment of required surface water capacity,

b) From a high of about $34.81 (as a stand alone utility with just-in-time rate increases) to a low of about $29.69 (as a member/customer of a water supply entity with equal annual percentage rate increases) in order to fund the second increment of required surface water capacity, and

c) From a high of about $36.23 (as a stand alone utility with annual rate indexing) to a low of about $34.07 (as a member/customer of a water supply entity with equal annual percentage rate increases) by year 20 of the projection period.

Some utilities may currently have a higher average monthly cost of water per ERC than the sample utility evaluated in this analysis and some may currently have lower average monthly cost per ERC. Although the absolute cost of blended groundwater/surface water will be higher and/or lower for such utilities respectively, the incremental cost due to surface water should be similar in magnitude to the incremental costs demonstrated in this analysis.

5. If the local utility evaluated in this analysis were to implement equal annual percentage rate revenue increases from year 1 through year 5 of from 6.1% (as a stand alone utility) to 5.3% (as a member/customer of a water supply entity), and from 3.7% (as a stand alone utility) to 3.5% (as a member/customer of a water supply entity) in years 7 through 15, the large rate spikes in years 6 and 16 would be eliminated.

6. If the local utility evaluated in this analysis were to implement moderate annual rate indexing percentage rate revenue increases of 2.7% from year 1 through 5 and from years 7 through 15, the large rate spikes in years 6 and 16 would be reduced considerably.

7. The affordability analysis presented in Section IIC – Affordability Analysis, shows that the projected cost of water, including the impact of the projected cost of alternative water facilities, compared to the projected median household income for Seminole, Orange and Lake Counties on a) an average county basis, and b) a county by county basis, is within generally accepted thresholds of affordability for all years of the projection period, with an assumed monthly water cost of from $15.25 per ERC to $25.00 per ERC.

8. In summary, it can be concluded from this analysis that providing additional water demands from surface water will be generally affordable, whether it is accomplished as a stand alone utility or as a part of a larger water supply entity. A larger water supply entity can provide surface water at a somewhat lower cost impact than can a stand alone utility. However, an even more compelling reason for local utilities to pursue a regional

approach to alternative water supply is the fact that there are a limited number of feasible sites for a surface water plant and related facilities in the East/Central Florida region and there are many local utilities.

Although the cost impact of surface water is generally affordable under both the stand alone utility and water supply entity scenarios, large rate increases (in the order of 40% to 50%) may be required when the surface water facilities must be funded. This may result in the perception that the cost of water is becoming unaffordable, even though the absolute cost of water, even after such rate increases, will still be well under generally accepted affordability thresholds.

This could be mitigated by the "advance rate increase" plans evaluated herein. Equal annual rate adjustments of from about 5% to 6% would substantially mitigate the rate spikes in the years that surface water must be funded and annual rate indexing in the 2.5% to 3.0% range would cut those rate spikes in half.

9. Therefore, the central conclusion that can be drawn from this analysis is not so much that the economics of a regional approach are substantially better than a stand alone utility approach, but rather that action is critical *now*, in the form of early annual rate adjustments (such as equal annual adjustments or indexing), to soften the severe rate shock that will otherwise come when the surface water facilities must be funded.

APPENDIX A

Scenario 1 – Groundwater
Just-in-Time Rates

Figure Number	Title	Included
1.	Pro Forma Projection of Results of Financial Performance of Sample Utility	Yes
2	Pro Forma Projection of Results of Financial Performance of Sample Entity	No
3	O&M and Capital Cost Projections for Additional Capacity – Utility	Yes
4	O&M and Capital Cost Projections for Additional Capacity – Entity	No

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

Pro Forma Projection of Results of Financial Performance of Sample Utility

Scenario 1 - Groundwater

Just In Time Rates

Annual Flow	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
ERCs - Beginning of Year	33,333	34,167	35,001	35,835	36,669	37,503	38,337	39,171	40,005	40,839
Growth in ERCs	834	834	834	834	834	834	834	834	834	834
ERCs - End of Year	34,167	35,001	35,835	36,669	37,503	38,337	39,171	40,005	40,839	41,673
Avg Daily Flow	233	233	233	233	233	233	233	233	233	233
Annual Flow (MGD) - Beginning of Year	7.78	7.97	8.17	8.36	8.56	8.75	8.95	9.14	9.33	9.53
Growth in Annual Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Annual Flow - End of Year	7.97	8.17	8.36	8.56	8.75	8.95	9.14	9.33	9.53	9.72
Annual Flow - 000s - Beginning of Year	2,838,861	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122
Annual Flow - 000s - Growth	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029
Annual Flow - 000s - End of Year	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
PRO FORMA - UTILITY										
Revenue:										
Water Rate Revenue	$6,100,000	$6,253,000	$6,406,000	$6,559,000	$6,712,000	$6,865,000	$7,078,000	$7,465,000	$7,750,000	$8,044,000
Growth	2.50%	2.44%	2.38%	2.33%	2.27%	2.22%	2.17%	2.13%	2.08%	2.04%
Add'l Rate Revenue From Growth	$153,000	$153,000	$153,000	$153,000	$153,000	$153,000	$154,000	$159,000	$161,000	$164,000
Water Rate Revenue Before Rate Increase	$6,253,000	$6,406,000	$6,559,000	$6,712,000	$6,865,000	$7,018,000	$7,232,000	$7,624,000	$7,911,000	$8,208,000
Rate Increase	0.00%	0.00%	0.00%	0.00%	0.00%	0.85%	3.22%	1.65%	1.68%	1.73%
Add'l Rate Revenue From Rate Increase In Prior Year	$0	$0	$0	$0	$0	$60,000	$233,000	$126,000	$133,000	$142,000
Water Rate Revenue	$6,253,000	$6,406,000	$6,559,000	$6,712,000	$6,865,000	$7,078,000	$7,465,000	$7,750,000	$8,044,000	$8,350,000
Other Operating Revenue	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000
Interest Earnings	$60,000	$50,000	$40,000	$30,000	$40,000	$50,000	$60,000	$70,000	$80,000	$90,000
Total Revenue	$6,923,000	$7,066,000	$7,209,000	$7,352,000	$7,515,000	$7,738,000	$8,135,000	$8,430,000	$8,734,000	$9,050,000
Expenses:										
Baseline Operating Expenses	$3,990,000	$4,110,000	$4,233,000	$4,360,000	$4,491,000	$4,626,000	$4,765,000	$4,908,000	$5,055,000	$5,207,000
Additional O&M From Additional Groundwater Capacity (1)	$0	$0	$0	$0	$0	$0	$19,000	$39,000	$59,000	$80,000
Additional O&M From Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From High Service Pumps (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Treatment For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Transmission For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchased Water Costs:										
Total Annual Flow (Purchased Water Rate Developed Based Upon Total Flow - Not Surface Water Flow Only)	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
Purchased Water Rate Per 1,000 Gallons	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Annual Purchased Water Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Expenses - Water	$3,990,000	$4,110,000	$4,233,000	$4,360,000	$4,491,000	$4,626,000	$4,784,000	$4,947,000	$5,114,000	$5,287,000
Net Income	**$2,933,000**	**$2,956,000**	**$2,976,000**	**$2,992,000**	**$3,024,000**	**$3,112,000**	**$3,351,000**	**$3,483,000**	**$3,620,000**	**$3,763,000**
Debt Service Coverage Test										
Net Income	$2,933,000	$2,956,000	$2,976,000	$2,992,000	$3,024,000	$3,112,000	$3,351,000	$3,483,000	$3,620,000	$3,763,000
Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,662,000	$2,744,000	$2,829,000	$3,046,000	$3,166,000	$3,291,000	$3,421,000
Coverage Ratio - Calculated	1.13	1.14	1.14	1.12	1.10	1.10	1.10	1.10	1.10	1.10
Coverage Ratio - Required	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
Working Capital Reserves Test										
Beginning Balance	$4,200,000	$3,390,000	$2,569,000	$1,733,000	$1,652,542	$1,767,258	$1,885,956	$2,137,664	$2,293,414	$2,455,237
Net Income	$2,933,000	$2,956,000	$2,976,000	$2,992,000	$3,024,000	$3,112,000	$3,351,000	$3,483,000	$3,620,000	$3,763,000
Balance Before Other Sources (Uses) of Funds	$7,133,000	$6,346,000	$5,545,000	$4,725,000	$4,676,542	$4,879,258	$5,236,956	$5,620,664	$5,913,414	$6,218,237
Other Sources (Uses) Of Funds										
Debt Service Reserve Proceeds	$0	$0	$0	$62,000	$82,000	$85,000	$217,000	$120,000	$125,000	$130,000
Capital Outlay	($143,000)	($147,000)	($151,000)	($156,000)	($161,000)	($166,000)	($171,000)	($176,000)	($181,000)	($186,000)
Debt Service At Beginning Of Forecast Period	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)
New Debt Service During Forecast Period	$0	$0	$0	($62,000)	($144,000)	($229,000)	($446,000)	($566,000)	($691,000)	($821,000)
Less: Required Reserves	($500,000)	($500,000)	($500,000)	($562,000)	($644,000)	($729,000)	($946,000)	($1,066,000)	($1,191,000)	($1,321,000)
Unrestricted Balance	$3,890,000	$3,099,000	$2,294,000	$1,407,000	$1,209,542	$1,240,258	$1,290,956	$1,332,664	$1,375,414	$1,420,237
Minimum Required Working Capital Reserves	*$998,000*	*$1,027,940*	*$1,058,778*	*$1,090,542*	*$1,123,258*	*$1,156,956*	*$1,191,664*	*$1,227,414*	*$1,264,237*	*$1,302,164*
Less: Funds Used To Pay Capital Projects	($1,000,000)	($1,030,000)	($1,061,000)	($316,458)	($86,284)	($83,302)	($99,291)	($105,250)	($111,178)	($118,073)
Ending Unrestricted Balance	$2,890,000	$2,069,000	$1,233,000	$1,090,542	$1,123,258	$1,156,956	$1,191,664	$1,227,414	$1,264,237	$1,302,164
Add Back: Restricted Reserves	$500,000	$500,000	$500,000	$562,000	$644,000	$729,000	$946,000	$1,066,000	$1,191,000	$1,321,000
Ending Balance	$3,390,000	$2,569,000	$1,733,000	$1,652,542	$1,767,258	$1,885,956	$2,137,664	$2,293,414	$2,455,237	$2,623,164
Calculation Of Retail Rate Per 1,000 Gallons										
Water Rate Revenue - Restated	$6,253,000	$6,406,000	$6,559,000	$6,712,000	$6,865,000	$7,078,000	$7,465,000	$7,750,000	$8,044,000	$8,350,000
Annual Flow (1,000 Gallons)	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
Retail Rate Per 1,000 Gallons	$2.15	$2.15	$2.15	$2.15	$2.15	$2.17	$2.24	$2.27	$2.31	$2.35
Calculation Of New Debt Service:										
Capital Projects										
Capital Improvements - Water - Miscellaneous & R&R	$2,000,000	$2,060,000	$2,122,000	$2,186,000	$2,252,000	$2,320,000	$2,390,000	$2,462,000	$2,536,000	$2,612,000
Capital Improvements - Water - Groundwater Supply and Treatment (1)	$0	$0	$0	$0	$0	$0	$3,169,000	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - High Service Pumps (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Projects	$2,000,000	$2,060,000	$2,122,000	$2,186,000	$2,252,000	$2,320,000	$5,559,000	$2,462,000	$2,536,000	$2,612,000
Water Impact Fee Funds Available For Capital Projects	$1,000,000	$1,030,000	$1,061,000	$1,093,000	$1,126,000	$1,160,000	$2,701,000	$833,000	$833,000	$833,000
Capital Projects Funded With Water Impact Fees	($1,000,000)	($1,030,000)	($1,061,000)	($1,093,000)	($1,126,000)	($1,160,000)	($2,701,000)	($833,000)	($833,000)	($833,000)
Remaining Capital Projects To Be Funded	$1,000,000	$1,030,000	$1,061,000	$1,093,000	$1,126,000	$1,160,000	$2,858,000	$1,629,000	$1,703,000	$1,779,000
Funds Available For Capital Projects	$2,892,000	$2,071,060	$1,235,222	$316,458	$86,284	$83,302	$99,291	$105,250	$111,178	$118,073
Funds Used For Capital Projects	($1,000,000)	($1,030,000)	($1,061,000)	($316,458)	($86,284)	($83,302)	($99,291)	($105,250)	($111,178)	($118,073)
Unfunded Capital Projects	$0	$0	$0	$776,542	$1,039,716	$1,076,698	$2,758,709	$1,523,750	$1,591,822	$1,660,927
Par Amount	$0	$0	$0	$851,542	$1,128,716	$1,169,698	$2,980,709	$1,648,750	$1,722,822	$1,787,927
Annual Debt Service										
Debt Service At Beginning Of Forecast Period	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000
New Debt Service During Forecast Period	$0	$0	$0	$62,000	$144,000	$229,000	$446,000	$566,000	$691,000	$821,000
Total Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,662,000	$2,744,000	$2,829,000	$3,046,000	$3,166,000	$3,291,000	$3,421,000

Annual Flow	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
ERCs - Beginning of Year	41,673	42,507	43,341	44,175	45,009	45,843	46,677	47,511	48,345	49,179
Growth in ERCs	834	834	834	834	834	834	834	834	834	834
ERCs - End of Year	42,507	43,341	44,175	45,009	45,843	46,677	47,511	48,345	49,179	50,013
Avg Daily Flow	233	233	233	233	233	233	233	233	233	233
Annual Flow (MGD) - Beginning of Year	9.72	9.92	10.11	10.31	10.50	10.70	10.89	11.09	11.28	11.48
Growth in Annual Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Annual Flow - End of Year	9.92	10.11	10.31	10.50	10.70	10.89	11.09	11.28	11.48	11.67
Annual Flow - 000s - Beginning of Year	3,549,151	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412
Annual Flow - 000s - Growth	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029
Annual Flow - 000s - End of Year	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
PRO FORMA - UTILITY										
Revenue:										
Water Rate Revenue	$8,350,000	$8,667,000	$8,986,000	$9,328,000	$10,003,000	$10,368,000	$10,745,000	$11,137,000	$11,544,000	$11,964,000
Growth	2.00%	1.96%	1.92%	1.89%	1.85%	1.82%	1.79%	1.75%	1.72%	1.69%
Add'l Rate Revenue From Growth	$167,000	$170,000	$173,000	$176,000	$185,000	$189,000	$192,000	$195,000	$199,000	$203,000
Water Rate Revenue Before Rate Increase	$8,517,000	$8,837,000	$9,159,000	$9,504,000	$10,188,000	$10,557,000	$10,937,000	$11,332,000	$11,743,000	$12,167,000
Rate Increase	1.76%	1.69%	1.85%	5.25%	1.77%	1.78%	1.83%	1.87%	1.88%	1.92%
Add'l Rate Revenue From Rate Increase In Prior Year	$150,000	$149,000	$169,000	$499,000	$180,000	$188,000	$200,000	$212,000	$221,000	$233,000
Water Rate Revenue	$8,667,000	$8,986,000	$9,328,000	$10,003,000	$10,368,000	$10,745,000	$11,137,000	$11,544,000	$11,964,000	$12,400,000
Other Operating Revenue	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000
Interest Earnings	$100,000	$120,000	$130,000	$150,000	$160,000	$170,000	$180,000	$190,000	$200,000	$210,000
Total Revenue	$9,377,000	$9,716,000	$10,068,000	$10,763,000	$11,138,000	$11,525,000	$11,927,000	$12,344,000	$12,774,000	$13,220,000
Expenses:										
Baseline Operating Expenses	$5,363,000	$5,524,000	$5,690,000	$5,861,000	$6,037,000	$6,218,000	$6,405,000	$6,597,000	$6,795,000	$6,999,000
Additional O&M From Additional Groundwater Capacity (1)	$101,000	$124,000	$148,000	$173,000	$199,000	$226,000	$254,000	$285,000	$316,000	$349,000
Additional O&M From Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From High Service Pumps (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Treatment For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Transmission For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchased Water Costs:										
Total Annual Flow (Purchased Water Rate Developed Based Upon Total Flow - Not Surface Water Flow Only)	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
Purchased Water Rate Per 1,000 Gallons	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Annual Purchased Water Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Expenses - Water	$5,464,000	$5,648,000	$5,838,000	$6,034,000	$6,236,000	$6,444,000	$6,659,000	$6,882,000	$7,111,000	$7,348,000
Net Income	**$3,913,000**	**$4,068,000**	**$4,230,000**	**$4,729,000**	**$4,902,000**	**$5,081,000**	**$5,268,000**	**$5,462,000**	**$5,663,000**	**$5,872,000**
Debt Service Coverage Test										
Net Income	$3,913,000	$4,068,000	$4,230,000	$4,729,000	$4,902,000	$5,081,000	$5,268,000	$5,462,000	$5,663,000	$5,872,000
Annual Debt Service	$3,556,000	$3,697,000	$3,843,000	$4,297,000	$4,454,000	$4,617,000	$4,787,000	$4,963,000	$5,146,000	$5,336,000
Coverage Ratio - Calculated	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Coverage Ratio - Required	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
Working Capital Reserves Test										
Beginning Balance	$2,623,164	$2,797,229	$2,978,465	$3,165,909	$3,662,597	$3,863,565	$4,071,851	$4,288,497	$4,512,542	$4,745,028
Net Income	$3,913,000	$4,068,000	$4,230,000	$4,729,000	$4,902,000	$5,081,000	$5,268,000	$5,462,000	$5,663,000	$5,872,000
Balance Before Other Sources (Uses) of Funds	$6,536,164	$6,865,229	$7,208,465	$7,894,909	$8,564,597	$8,944,565	$9,339,851	$9,750,497	$10,175,542	$10,617,028
Other Sources (Uses) Of Funds										
Debt Service Reserve Proceeds	$135,000	$141,000	$146,000	$454,000	$157,000	$163,000	$170,000	$176,000	$183,000	$190,000
Capital Outlay	($192,000)	($198,000)	($204,000)	($210,000)	($216,000)	($222,000)	($229,000)	($236,000)	($243,000)	($250,000)
Debt Service At Beginning Of Forecast Period	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)
New Debt Service During Forecast Period	($956,000)	($1,097,000)	($1,243,000)	($1,697,000)	($1,854,000)	($2,017,000)	($2,187,000)	($2,363,000)	($2,546,000)	($2,736,000)
Less: Required Reserves	($1,456,000)	($1,597,000)	($1,743,000)	($2,197,000)	($2,354,000)	($2,517,000)	($2,687,000)	($2,863,000)	($3,046,000)	($3,236,000)
Unrestricted Balance	$1,467,164	$1,514,229	$1,564,465	$1,644,909	$1,697,597	$1,751,565	$1,806,851	$1,864,497	$1,923,542	$1,985,028
Minimum Required Working Capital Reserves	*$1,341,229*	*$1,381,465*	*$1,422,909*	*$1,465,597*	*$1,509,565*	*$1,554,851*	*$1,601,497*	*$1,649,542*	*$1,699,028*	*$1,749,999*
Less: Funds Used To Pay Capital Projects	($125,935)	($132,763)	($141,556)	($179,313)	($188,032)	($196,713)	($205,354)	($214,955)	($224,514)	($235,029)
Ending Unrestricted Balance	$1,341,229	$1,381,465	$1,422,909	$1,465,597	$1,509,565	$1,554,851	$1,601,497	$1,649,542	$1,699,028	$1,749,999
Add Back: Restricted Reserves	$1,456,000	$1,597,000	$1,743,000	$2,197,000	$2,354,000	$2,517,000	$2,687,000	$2,863,000	$3,046,000	$3,236,000
Ending Balance	$2,797,229	$2,978,465	$3,165,909	$3,662,597	$3,863,565	$4,071,851	$4,288,497	$4,512,542	$4,745,028	$4,985,999
Calculation Of Retail Rate Per 1,000 Gallons										
Water Rate Revenue - Restated	$8,667,000	$8,986,000	$9,328,000	$10,003,000	$10,368,000	$10,745,000	$11,137,000	$11,544,000	$11,964,000	$12,400,000
Annual Flow (1,000 Gallons)	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
Retail Rate Per 1,000 Gallons	$2.39	$2.43	$2.48	$2.61	$2.66	$2.70	$2.75	$2.80	$2.86	$2.91
Calculation Of New Debt Service:										
Capital Projects										
Capital Improvements - Water - Miscellaneous & R&R	$2,690,000	$2,771,000	$2,854,000	$2,940,000	$3,028,000	$3,119,000	$3,213,000	$3,309,000	$3,408,000	$3,510,000
Capital Improvements - Water - Groundwater Supply and Treatment (1)	$0	$0	$0	$3,897,000	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - High Service Pumps (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Projects	$2,690,000	$2,771,000	$2,854,000	$6,837,000	$3,028,000	$3,119,000	$3,213,000	$3,309,000	$3,408,000	$3,510,000
Water Impact Fee Funds Available For Capital Projects	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000
Capital Projects Funded With Water Impact Fees	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)
Remaining Capital Projects To Be Funded	$1,857,000	$1,938,000	$2,021,000	$6,004,000	$2,195,000	$2,286,000	$2,380,000	$2,476,000	$2,575,000	$2,677,000
Funds Available For Capital Projects	$125,935	$132,763	$141,556	$179,313	$188,032	$196,713	$205,354	$214,955	$224,514	$235,029
Funds Used For Capital Projects	($125,935)	($132,763)	($141,556)	($179,313)	($188,032)	($196,713)	($205,354)	($214,955)	($224,514)	($235,029)
Unfunded Capital Projects	$1,731,065	$1,805,237	$1,879,444	$5,824,687	$2,006,968	$2,089,287	$2,174,646	$2,261,045	$2,350,486	$2,441,971
Par Amount	$1,864,065	$1,945,237	$2,015,444	$6,242,687	$2,155,968	$2,246,287	$2,339,646	$2,423,045	$2,521,486	$2,620,971
Annual Debt Service										
Debt Service At Beginning Of Forecast Period	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000
New Debt Service During Forecast Period	$956,000	$1,097,000	$1,243,000	$1,697,000	$1,854,000	$2,017,000	$2,187,000	$2,363,000	$2,546,000	$2,736,000
Total Annual Debt Service	$3,556,000	$3,697,000	$3,843,000	$4,297,000	$4,454,000	$4,617,000	$4,787,000	$4,963,000	$5,146,000	$5,336,000

Notes: (1) See Figure 3 for detail of costs.

SOURCE: BURTON & ASSOCIATES

C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE193.WK4

02/10/2003

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

O&M and Capital Cost Projections for Additional Capacity - Utility

Scenario 1 - Groundwater

Just In Time Rates

#	Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	Annual Flow (MGD) - Prior Year	NA	7.97	8.17	8.36	8.56	8.75	8.94	9.14	9.33	9.53
2	Annual Growth in Flow (MGD)	NA	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
3	Annual Flow (MGD) - Current Year	7.97	8.17	8.36	8.56	8.75	8.94	9.14	9.33	9.53	9.72
4	Margin Reserve Capacity (MGD)	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
5	Total Capacity Required (MGD)	8.36	8.56	8.75	8.94	9.14	9.33	9.53	9.72	9.92	10.11
6	Capacity (MGD) (1)	9.41	9.41	9.41	9.41	9.41	9.41	9.41	10.77	10.77	10.77
7	Additional Capacity Required (MGD)	0.00	0.00	0.00	0.00	0.00	0.00	1.36	0.00	0.00	0.00
8	Additional Flow Associated with New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78
10	Annual Flow (1,000 Gallons)	2,909,832	2,980,804	3,051,775	3,122,747	3,193,718	3,264,690	3,335,661	3,406,633	3,477,604	3,548,576
11	Additional Flow Associated with New Capacity (1,000 Gallons)	0	0	0	0	0	0	70,972	141,943	212,915	283,886
13	Cost Inflator	NA	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
15	**Additional Costs Associated with Expansion of Groundwater Capacity**										
16	O&M Costs										
17	Groundwater Source (Wellfield) Expansion Costs										
18	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$23,690	$24,401	$25,133	$25,887	$26,663	$27,463	$28,287	$29,136	$30,010	$30,910
19	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78
20	Factor - (Input from CH2MHill)	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163
21	Total Cost - (Line 18 times Line 19 to the power of Line 20)	$0	$0	$0	$0	$0	$0	$6,000	$12,000	$18,000	$25,000
23	Groundwater Treatment System Expansion Costs										
24	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$53,869	$55,485	$57,150	$58,864	$60,630	$62,449	$64,322	$66,252	$68,240	$70,287
25	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78
26	Factor - (Input from CH2MHill)	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536
27	Total Cost - (Line 24 times Line 25 to the power of Line 26)	$0	$0	$0	$0	$0	$0	$13,000	$27,000	$41,000	$55,000
29	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$19,000**	**$39,000**	**$59,000**	**$80,000**
31	Capital Costs										
32	Groundwater Source (Wellfield) Expansion Costs										
33	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$285,310	$293,869	$302,685	$311,766	$321,119	$330,752	$340,675	$350,895	$361,422	$372,265
34	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.00	1.36	0.00	0.00	0.00
35	Factor - (Input from CH2MHill)	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544
36	Total Cost - (Line 33 times Line 34 to the power of Line 35)	$0	$0	$0	$0	$0	$0	$472,000	$0	$0	$0
38	Groundwater Treatment System Expansion Costs										
39	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$1,717,010	$1,768,520	$1,821,576	$1,876,223	$1,932,510	$1,990,485	$2,050,200	$2,111,706	$2,175,057	$2,240,309
40	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.00	1.36	0.00	0.00	0.00
41	Factor - (Input from CH2MHill)	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893
42	Total Cost - (Line 39 times Line 40 to the power of Line 41)	$0	$0	$0	$0	$0	$0	$2,697,000	$0	$0	$0
44	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$3,169,000**	**$0**	**$0**	**$0**

#	Item	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	Annual Flow (MGD) - Prior Year	9.72	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47
2	Annual Growth in Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
3	Annual Flow (MGD) - Current Year	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47	11.67
4	Margin Reserve Capacity (MGD)	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
5	Total Capacity Required (MGD)	10.31	10.50	10.69	10.89	11.08	11.28	11.47	11.67	11.86	12.06
6	Capacity (MGD) (1)	10.77	10.77	10.77	10.77	12.13	12.13	12.13	12.13	12.13	12.13
7	Additional Capacity Required (MGD)	0.00	0.00	0.00	1.36	0.00	0.00	0.00	0.00	0.00	0.00
8	Additional Flow Associated with New Capacity (MGD)	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72
10	Annual Flow (1,000 Gallons)	3,619,547	3,690,519	3,761,490	3,832,462	3,903,433	3,974,405	4,045,376	4,116,348	4,187,319	4,258,291
11	Additional Flow Associated with New Capacity (1,000 Gallons)	354,858	425,829	496,801	567,772	638,744	709,715	780,687	851,658	922,630	993,601
13	Cost Inflator	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
15	**Additional Costs Associated with Expansion of Groundwater Capacity**										
16	O&M Costs										
17	Groundwater Source (Wellfield) Expansion Costs										
18	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$31,837	$32,793	$33,776	$34,790	$35,833	$36,908	$38,015	$39,156	$40,331	$41,541
19	Additional Flow From New Capacity (MGD)	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72
20	Factor - (Input from CH2MHill)	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163
21	Total Cost - (Line 18 times Line 19 to the power of Line 20)	$31,000	$38,000	$45,000	$52,000	$60,000	$68,000	$76,000	$85,000	$94,000	$104,000
23	Groundwater Treatment System Expansion Costs										
24	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$72,395	$74,567	$76,804	$79,108	$81,482	$83,926	$86,444	$89,037	$91,708	$94,460
25	Additional Flow From New Capacity (MGD)	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72
26	Factor - (Input from CH2MHill)	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536
27	Total Cost - (Line 24 times Line 25 to the power of Line 26)	$70,000	$86,000	$103,000	$121,000	$139,000	$158,000	$178,000	$200,000	$222,000	$245,000
29	**Total O&M Costs**	**$101,000**	**$124,000**	**$148,000**	**$173,000**	**$199,000**	**$226,000**	**$254,000**	**$285,000**	**$316,000**	**$349,000**
31	Capital Costs										
32	Groundwater Source (Wellfield) Expansion Costs										
33	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$383,433	$394,936	$406,784	$418,987	$431,557	$444,504	$457,839	$471,574	$485,721	$500,293
34	Additional Capacity (MGD)	0.00	0.00	0.00	1.36	0.00	0.00	0.00	0.00	0.00	0.00
35	Factor - (Input from CH2MHill)	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544
36	Total Cost - (Line 33 times Line 34 to the power of Line 35)	$0	$0	$0	$580,000	$0	$0	$0	$0	$0	$0
38	Groundwater Treatment System Expansion Costs										
39	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$2,307,518	$2,376,743	$2,448,046	$2,521,487	$2,597,132	$2,675,046	$2,755,297	$2,837,956	$2,923,095	$3,010,787
40	Additional Capacity (MGD)	0.00	0.00	0.00	1.36	0.00	0.00	0.00	0.00	0.00	0.00
41	Factor - (Input from CH2MHill)	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893
42	Total Cost - (Line 39 times Line 40 to the power of Line 41)	$0	$0	$0	$3,317,000	$0	$0	$0	$0	$0	$0
44	**Total Capital Costs**	**$0**	**$0**	**$0**	**$3,897,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Notes: (1) In order to simplify the analysis, it was assumed that the capacity at the beginning of the projection period is equal to the maximum groundwater withdrawal limit.

St. Johns River Water Management District
Analysis of Rate Impact to Sample Utility of Alternative Water Sources
O&M and Capital Cost Projections for Additional Capacity - Utility

Scenario 1 - Groundwater

Line	Add'l Costs Associated w/ Construction/Expansion of Surface Water Capacity	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
49	O&M Costs																				
50	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
51	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$360,088	$370,891	$382,017	$393,478	$405,282	$417,441	$429,964	$442,863	$456,149	$469,833	$483,928	$498,446	$513,399	$528,801	$544,665	$561,005	$577,836	$595,171	$613,026	$631,416
52	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
53	Factor - (Input from CH2MHill)	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884
54	Total Cost - (Line 51 times Line 52 to the power of Line 53)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
55																					
56	Surface Water System Costs (Transmission Line)																				
57	Length of Line 25 Miles																				
58	O&M Cost Component	$61,800	$63,654	$65,564	$67,531	$69,556	$71,643	$73,792	$76,006	$78,286	$80,635	$83,054	$85,546	$88,112	$90,755	$93,478	$96,282	$99,171	$102,146	$105,210	$108,367
59	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
60	Factor - (Input from CH2MHill)	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
61	Total Cost - (Line 58 times Line 59 to the power of Line 60)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
62																					
63	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
64	Variable O&M Cost Component	$2,431	$2,504	$2,579	$2,656	$2,736	$2,818	$2,903	$2,990	$3,079	$3,172	$3,267	$3,365	$3,466	$3,570	$3,677	$3,787	$3,901	$4,018	$4,138	$4,262
65	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
66	Constant O&M Component	25,132	25,886	26,663	27,462	28,286	29,135	30,009	30,909	31,836	32,792	33,775	34,789	35,832	36,907	38,014	39,155	40,329	41,539	42,786	44,069
67	Total Cost - (Line 64 times Line 65 plus Line 66)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
68																					
69	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
70	Variable O&M Cost Component	$22,794	$23,478	$24,182	$24,908	$25,655	$26,424	$27,217	$28,034	$28,875	$29,741	$30,633	$31,552	$32,499	$33,474	$34,478	$35,512	$36,578	$37,675	$38,805	$39,969
71	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
72	Constant O&M Component	3,214	3,310	3,409	3,512	3,617	3,725	3,837	3,952	4,071	4,193	4,319	4,448	4,582	4,719	4,861	5,007	5,157	5,312	5,471	5,635
73	Total Cost - (Line 70 times Line 71 plus Line 72)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
74																					
75	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
76																					
77	Capital Costs																				
78	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
79	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$9,010,440	$9,280,753	$9,559,176	$9,845,951	$10,141,330	$10,445,569	$10,758,937	$11,081,705	$11,414,156	$11,756,580	$12,109,278	$12,472,556	$12,846,733	$13,232,135	$13,629,099	$14,037,972	$14,459,111	$14,892,884	$15,339,671	$15,799,861
80	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
81	Factor - (Input from CH2MHill)	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016
82	Total Cost - (Line 79 times Line 80 to the power of Line 81)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
83																					
84	Surface Water System Costs (Transmission Line)																				
85	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$508,305	$523,554	$539,261	$555,439	$572,102	$589,265	$606,943	$625,151	$643,906	$663,223	$683,119	$703,613	$724,721	$746,463	$768,857	$791,923	$815,680	$840,151	$865,355	$891,316
86	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
87	Capacity Factor (MGD) - (Input from CH2MHill)	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400
88	Length of Line (Miles)	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
89	Length Factor - (Input from CH2MHill)	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440
90	Total Cost - (Line 85 times Line 86 to the power of Line 87 times Line 88 to the power of Line 89)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
91																					
92	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
93	Variable Capital Component - (Input from CH2MHill)	$2,575	$2,652	$2,732	$2,814	$2,898	$2,985	$3,075	$3,167	$3,262	$3,360	$3,461	$3,564	$3,671	$3,781	$3,895	$4,012	$4,132	$4,256	$4,384	$4,515
94	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
95	Constant Capital Component - (Input from CH2MHill)	55,105	56,758	58,461	60,215	62,021	63,882	65,798	67,772	69,805	71,900	74,057	76,278	78,567	80,924	83,351	85,852	88,427	91,080	93,813	96,627
96	Total Cost - (Line 93 times Line 94 plus Line 95)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
97																					
98	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
99	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$442,797	$456,081	$469,763	$483,856	$498,372	$513,323	$528,723	$544,584	$560,922	$577,750	$595,082	$612,935	$631,323	$650,262	$669,770	$689,863	$710,559	$731,876	$753,832	$776,447
100	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
101	Factor - (Input from CH2MHill)	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559
102	Total Cost - (Line 99 times Line 100 to the power of Line 101)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
103																					
104	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
105																					

Source: Burton & Associates 02/10/2003
C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE193.WK4

APPENDIX B

Scenario 2 – Surface Water
Just-in-Time Rates

Figure Number	Title	Included
1.	Pro Forma Projection of Results of Financial Performance of Sample Utility	Yes
2	Pro Forma Projection of Results of Financial Performance of Sample Entity	No
3	O&M and Capital Cost Projections for Additional Capacity – Utility	Yes
4	O&M and Capital Cost Projections for Additional Capacity – Entity	No

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

Pro Forma Projection of Results of Financial Performance of Sample Utility

Scenario 2 - Surface Water, Stand Alone Utility

Just In Time Rates

Annual Flow	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
ERCs - Beginning of Year	33,333	34,167	35,001	35,835	36,669	37,503	38,337	39,171	40,005	40,839
Growth in ERCs	834	834	834	834	834	834	834	834	834	834
ERCs - End of Year	34,167	35,001	35,835	36,669	37,503	38,337	39,171	40,005	40,839	41,673
Avg Daily Flow	233	233	233	233	233	233	233	233	233	233
Annual Flow (MGD) - Beginning of Year	7.78	7.97	8.17	8.36	8.56	8.75	8.95	9.14	9.33	9.53
Growth in Annual Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Annual Flow - End of Year	7.97	8.17	8.36	8.56	8.75	8.95	9.14	9.33	9.53	9.72
Annual Flow - 000s - Beginning of Year	2,838,861	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122
Annual Flow - 000s - Growth	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029
Annual Flow - 000s - End of Year	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
PRO FORMA - UTILITY										
Revenue:										
Water Rate Revenue	$6,100,000	$6,253,000	$6,406,000	$6,559,000	$6,712,000	$6,865,000	$10,677,000	$10,963,000	$11,306,000	$11,674,000
Growth	2.50%	2.44%	2.38%	2.33%	2.27%	2.22%	2.17%	2.13%	2.08%	2.04%
Add'l Rate Revenue From Growth	$153,000	$153,000	$153,000	$153,000	$153,000	$153,000	$232,000	$233,000	$236,000	$238,000
Water Rate Revenue Before Rate Increase	$6,253,000	$6,406,000	$6,559,000	$6,712,000	$6,865,000	$7,018,000	$10,909,000	$11,196,000	$11,542,000	$11,912,000
Rate Increase	0.00%	0.00%	0.00%	0.00%	0.00%	52.14%	0.50%	0.98%	1.14%	1.16%
Add'l Rate Revenue From Rate Increase In Prior Year	$0	$0	$0	$0	$0	$3,659,000	$54,000	$110,000	$132,000	$138,000
Water Rate Revenue	$6,253,000	$6,406,000	$6,559,000	$6,712,000	$6,865,000	$10,677,000	$10,963,000	$11,306,000	$11,674,000	$12,050,000
Other Operating Revenue	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000
Interest Earnings	$60,000	$50,000	$40,000	$30,000	$40,000	$90,000	$150,000	$170,000	$180,000	$200,000
Total Revenue	$6,923,000	$7,066,000	$7,209,000	$7,352,000	$7,515,000	$11,377,000	$11,723,000	$12,086,000	$12,464,000	$12,860,000
Expenses:										
Baseline Operating Expenses	$3,990,000	$4,110,000	$4,233,000	$4,360,000	$4,491,000	$4,626,000	$4,765,000	$4,908,000	$5,055,000	$5,207,000
Additional O&M From Additional Groundwater Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$30,000	$31,000	$33,000	$34,000	$36,000
Additional O&M From High Service Pumps (1)	$0	$0	$0	$0	$0	$9,000	$14,000	$20,000	$27,000	$33,000
Additional O&M From Treatment For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$83,000	$169,000	$260,000	$356,000	$457,000
Additional O&M From Transmission For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$15,000	$30,000	$45,000	$61,000	$78,000
Purchased Water Costs:										
Total Annual Flow (Purchased Water Rate Developed Based Upon Total Flow - Not Surface Water Flow Only)	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
Purchased Water Rate Per 1,000 Gallons	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Annual Purchased Water Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Expenses - Water	$3,990,000	$4,110,000	$4,233,000	$4,360,000	$4,491,000	$4,763,000	$5,009,000	$5,266,000	$5,533,000	$5,811,000
Net Income	**$2,933,000**	**$2,956,000**	**$2,976,000**	**$2,992,000**	**$3,024,000**	**$6,614,000**	**$6,714,000**	**$6,820,000**	**$6,931,000**	**$7,049,000**
Debt Service Coverage Test										
Net Income	$2,933,000	$2,956,000	$2,976,000	$2,992,000	$3,024,000	$6,614,000	$6,714,000	$6,820,000	$6,931,000	$7,049,000
Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,662,000	$2,744,000	$6,013,000	$6,104,000	$6,200,000	$6,301,000	$6,408,000
Coverage Ratio - Calculated	1.13	1.14	1.14	1.12	1.10	1.10	1.10	1.10	1.10	1.10
Coverage Ratio - Required	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
Working Capital Reserves Test										
Beginning Balance	$4,200,000	$3,390,000	$2,569,000	$1,733,000	$1,652,542	$1,767,258	$5,069,956	$5,195,664	$5,327,414	$5,465,237
Net Income	$2,933,000	$2,956,000	$2,976,000	$2,992,000	$3,024,000	$6,614,000	$6,714,000	$6,820,000	$6,931,000	$7,049,000
Balance Before Other Sources (Uses) of Funds	$7,133,000	$6,346,000	$5,545,000	$4,725,000	$4,676,542	$8,381,258	$11,783,956	$12,015,664	$12,258,414	$12,514,237
Other Sources (Uses) Of Funds										
Debt Service Reserve Proceeds	$0	$0	$0	$62,000	$82,000	$3,269,000	$91,000	$96,000	$101,000	$107,000
Capital Outlay	($143,000)	($147,000)	($151,000)	($156,000)	($161,000)	($166,000)	($171,000)	($176,000)	($181,000)	($186,000)
Debt Service At Beginning Of Forecast Period	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)
New Debt Service During Forecast Period	$0	$0	$0	($62,000)	($144,000)	($3,413,000)	($3,504,000)	($3,600,000)	($3,701,000)	($3,808,000)
Less: Required Reserves	($500,000)	($500,000)	($500,000)	($562,000)	($644,000)	($3,913,000)	($4,004,000)	($4,100,000)	($4,201,000)	($4,308,000)
Unrestricted Balance	$3,890,000	$3,099,000	$2,294,000	$1,407,000	$1,209,542	$1,558,258	$1,595,956	$1,635,664	$1,676,414	$1,719,237
Minimum Required Working Capital Reserves	*$998,000*	*$1,027,940*	*$1,058,778*	*$1,090,542*	*$1,123,258*	*$1,156,956*	*$1,191,664*	*$1,227,414*	*$1,264,237*	*$1,302,164*
Less: Funds Used To Pay Capital Projects	($1,000,000)	($1,030,000)	($1,061,000)	($316,458)	($86,284)	($401,302)	($404,291)	($408,250)	($412,178)	($417,073)
Ending Unrestricted Balance	$2,890,000	$2,069,000	$1,233,000	$1,090,542	$1,123,258	$1,156,956	$1,191,664	$1,227,414	$1,264,237	$1,302,164
Add Back: Restricted Reserves	$500,000	$500,000	$500,000	$562,000	$644,000	$3,913,000	$4,004,000	$4,100,000	$4,201,000	$4,308,000
Ending Balance	$3,390,000	$2,569,000	$1,733,000	$1,652,542	$1,767,258	$5,069,956	$5,195,664	$5,327,414	$5,465,237	$5,610,164
Calculation Of Retail Rate Per 1,000 Gallons										
Water Rate Revenue - Restated	$6,253,000	$6,406,000	$6,559,000	$6,712,000	$6,865,000	$10,677,000	$10,963,000	$11,306,000	$11,674,000	$12,050,000
Annual Flow (1,000 Gallons)	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
Retail Rate Per 1,000 Gallons	$2.15	$2.15	$2.15	$2.15	$2.15	$3.27	$3.29	$3.32	$3.36	$3.40
Calculation Of New Debt Service:										
Capital Projects										
Capital Improvements - Water - Miscellaneous & R&R	$2,000,000	$2,060,000	$2,122,000	$2,186,000	$2,252,000	$2,320,000	$2,390,000	$2,462,000	$2,536,000	$2,612,000
Capital Improvements - Water - Groundwater Supply and Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$19,024,000	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$22,742,000	$0	$0	$0	$0
Capital Improvements - Water - Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$70,000	$0	$0	$0	$0
Capital Improvements - Water - High Service Pumps (1)	$0	$0	$0	$0	$0	$849,000	$0	$0	$0	$0
Total Projects	$2,000,000	$2,060,000	$2,122,000	$2,186,000	$2,252,000	$45,005,000	$2,390,000	$2,462,000	$2,536,000	$2,612,000
Water Impact Fee Funds Available For Capital Projects	$1,000,000	$1,030,000	$1,061,000	$1,093,000	$1,126,000	$2,978,000	$833,000	$833,000	$833,000	$833,000
Capital Projects Funded With Water Impact Fees	($1,000,000)	($1,030,000)	($1,061,000)	($1,093,000)	($1,126,000)	($2,978,000)	($833,000)	($833,000)	($833,000)	($833,000)
Remaining Capital Projects To Be Funded	$1,000,000	$1,030,000	$1,061,000	$1,093,000	$1,126,000	$42,027,000	$1,557,000	$1,629,000	$1,703,000	$1,779,000
Funds Available For Capital Projects	$2,892,000	$2,071,060	$1,235,222	$316,458	$86,284	$401,302	$404,291	$408,250	$412,178	$417,073
Funds Used For Capital Projects	($1,000,000)	($1,030,000)	($1,061,000)	($316,458)	($86,284)	($401,302)	($404,291)	($408,250)	($412,178)	($417,073)
Unfunded Capital Projects	$0	$0	$0	$776,542	$1,039,716	$41,625,698	$1,152,709	$1,220,750	$1,290,822	$1,361,927
Par Amount	$0	$0	$0	$851,542	$1,128,716	$44,999,698	$1,252,709	$1,326,750	$1,392,822	$1,470,927
Annual Debt Service										
Debt Service At Beginning Of Forecast Period	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000
New Debt Service During Forecast Period	$0	$0	$0	$62,000	$144,000	$3,413,000	$3,504,000	$3,600,000	$3,701,000	$3,808,000
Total Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,662,000	$2,744,000	$6,013,000	$6,104,000	$6,200,000	$6,301,000	$6,408,000

Annual Flow	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
ERCs - Beginning of Year	41,673	42,507	43,341	44,175	45,009	45,843	46,677	47,511	48,345	49,179
Growth in ERCs	834	834	834	834	834	834	834	834	834	834
ERCs - End of Year	42,507	43,341	44,175	45,009	45,843	46,677	47,511	48,345	49,179	50,013
Avg Daily Flow	233	233	233	233	233	233	233	233	233	233
Annual Flow (MGD) - Beginning of Year	9.72	9.92	10.11	10.31	10.50	10.70	10.89	11.09	11.28	11.48
Growth in Annual Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Annual Flow - End of Year	9.92	10.11	10.31	10.50	10.70	10.89	11.09	11.28	11.48	11.67
Annual Flow - 000s - Beginning of Year	3,549,151	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412
Annual Flow - 000s - Growth	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029
Annual Flow - 000s - End of Year	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
PRO FORMA - UTILITY										
Revenue:										
Water Rate Revenue	$12,050,000	$12,444,000	$12,854,000	$13,275,000	$13,745,000	$14,227,000	$19,502,000	$19,888,000	$20,407,000	$20,941,000
Growth	2.00%	1.96%	1.92%	1.89%	1.85%	1.82%	1.79%	1.75%	1.72%	1.69%
Add'l Rate Revenue From Growth	$241,000	$244,000	$247,000	$250,000	$255,000	$259,000	$348,000	$349,000	$352,000	$355,000
Water Rate Revenue Before Rate Increase	$12,291,000	$12,688,000	$13,101,000	$13,525,000	$14,000,000	$14,486,000	$19,850,000	$20,237,000	$20,759,000	$21,296,000
Rate Increase	1.24%	1.31%	1.33%	1.63%	1.62%	34.63%	0.19%	0.84%	0.88%	0.94%
Add'l Rate Revenue From Rate Increase In Prior Year	$153,000	$166,000	$174,000	$220,000	$227,000	$5,016,000	$38,000	$170,000	$182,000	$201,000
Water Rate Revenue	$12,444,000	$12,854,000	$13,275,000	$13,745,000	$14,227,000	$19,502,000	$19,888,000	$20,407,000	$20,941,000	$21,497,000
Other Operating Revenue	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000
Interest Earnings	$220,000	$240,000	$270,000	$270,000	$280,000	$390,000	$500,000	$500,000	$510,000	$520,000
Total Revenue	$13,274,000	$13,704,000	$14,155,000	$14,625,000	$15,117,000	$20,502,000	$20,998,000	$21,517,000	$22,061,000	$22,627,000
Expenses:										
Baseline Operating Expenses	$5,363,000	$5,524,000	$5,690,000	$5,861,000	$6,037,000	$6,218,000	$6,405,000	$6,597,000	$6,795,000	$6,999,000
Additional O&M From Additional Groundwater Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Aqueous Ammonia System (1)	$38,000	$39,000	$41,000	$43,000	$45,000	$47,000	$49,000	$52,000	$54,000	$57,000
Additional O&M From High Service Pumps (1)	$40,000	$47,000	$55,000	$63,000	$72,000	$81,000	$91,000	$101,000	$111,000	$122,000
Additional O&M From Treatment For Additional Surface Water Capacity (1)	$564,000	$676,000	$795,000	$919,000	$1,051,000	$1,189,000	$1,335,000	$1,488,000	$1,650,000	$1,819,000
Additional O&M From Transmission For Additional Surface Water Capacity (1)	$96,000	$115,000	$135,000	$156,000	$178,000	$201,000	$225,000	$251,000	$278,000	$306,000
Purchased Water Costs:										
Total Annual Flow (Purchased Water Rate Developed Based Upon Total Flow - Not Surface Water Flow Only)	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
Purchased Water Rate Per 1,000 Gallons	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Annual Purchased Water Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Operating Expenses - Water	$6,101,000	$6,401,000	$6,716,000	$7,042,000	$7,383,000	$7,736,000	$8,105,000	$8,489,000	$8,888,000	$9,303,000
Net Income	**$7,173,000**	**$7,303,000**	**$7,439,000**	**$7,583,000**	**$7,734,000**	**$12,766,000**	**$12,893,000**	**$13,028,000**	**$13,173,000**	**$13,324,000**
Debt Service Coverage Test										
Net Income	$7,173,000	$7,303,000	$7,439,000	$7,583,000	$7,734,000	$12,766,000	$12,893,000	$13,028,000	$13,173,000	$13,324,000
Annual Debt Service	$6,521,000	$6,639,000	$6,763,000	$6,894,000	$7,031,000	$11,604,000	$11,720,000	$11,843,000	$11,973,000	$12,111,000
Coverage Ratio - Calculated	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Coverage Ratio - Required	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
Working Capital Reserves Test										
Beginning Balance	$5,610,164	$5,762,229	$5,920,465	$6,085,909	$6,259,597	$6,440,565	$11,058,851	$11,221,497	$11,392,542	$11,572,028
Net Income	$7,173,000	$7,303,000	$7,439,000	$7,583,000	$7,734,000	$12,766,000	$12,893,000	$13,028,000	$13,173,000	$13,324,000
Balance Before Other Sources (Uses) of Funds	$12,783,164	$13,065,229	$13,359,465	$13,668,909	$13,993,597	$19,206,565	$23,951,851	$24,249,497	$24,565,542	$24,896,028
Other Sources (Uses) Of Funds										
Debt Service Reserve Proceeds	$113,000	$118,000	$124,000	$131,000	$137,000	$4,573,000	$116,000	$123,000	$130,000	$138,000
Capital Outlay	($192,000)	($198,000)	($204,000)	($210,000)	($216,000)	($222,000)	($229,000)	($236,000)	($243,000)	($250,000)
Debt Service At Beginning Of Forecast Period	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)
New Debt Service During Forecast Period	($3,921,000)	($4,039,000)	($4,163,000)	($4,294,000)	($4,431,000)	($9,004,000)	($9,120,000)	($9,243,000)	($9,373,000)	($9,511,000)
Less: Required Reserves	($4,421,000)	($4,539,000)	($4,663,000)	($4,794,000)	($4,931,000)	($9,504,000)	($9,620,000)	($9,743,000)	($9,873,000)	($10,011,000)
Unrestricted Balance	$1,762,164	$1,807,229	$1,853,465	$1,901,909	$1,952,597	$2,449,565	$2,498,851	$2,550,497	$2,606,542	$2,662,028
Minimum Required Working Capital Reserves	*$1,341,229*	*$1,381,465*	*$1,422,909*	*$1,465,597*	*$1,509,565*	*$1,554,851*	*$1,601,497*	*$1,649,542*	*$1,699,028*	*$1,749,999*
Less: Funds Used To Pay Capital Projects	($420,935)	($425,763)	($430,556)	($436,313)	($443,032)	($894,713)	($897,354)	($900,955)	($907,514)	($912,029)
Ending Unrestricted Balance	$1,341,229	$1,381,465	$1,422,909	$1,465,597	$1,509,565	$1,554,851	$1,601,497	$1,649,542	$1,699,028	$1,749,999
Add Back: Restricted Reserves	$4,421,000	$4,539,000	$4,663,000	$4,794,000	$4,931,000	$9,504,000	$9,620,000	$9,743,000	$9,873,000	$10,011,000
Ending Balance	$5,762,229	$5,920,465	$6,085,909	$6,259,597	$6,440,565	$11,058,851	$11,221,497	$11,392,542	$11,572,028	$11,760,999
Calculation Of Retail Rate Per 1,000 Gallons										
Water Rate Revenue - Restated	$12,444,000	$12,854,000	$13,275,000	$13,745,000	$14,227,000	$19,502,000	$19,888,000	$20,407,000	$20,941,000	$21,497,000
Annual Flow (1,000 Gallons)	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
Retail Rate Per 1,000 Gallons	$3.44	$3.48	$3.53	$3.59	$3.64	$4.91	$4.92	$4.96	$5.00	$5.05
Calculation Of New Debt Service:										
Capital Projects										
Capital Improvements - Water - Miscellaneous & R&R	$2,690,000	$2,771,000	$2,854,000	$2,940,000	$3,028,000	$3,119,000	$3,213,000	$3,309,000	$3,408,000	$3,510,000
Capital Improvements - Water - Groundwater Supply and Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$25,567,000	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$30,563,000	$0	$0	$0	$0
Capital Improvements - Water - Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$94,000	$0	$0	$0	$0
Capital Improvements - Water - High Service Pumps (1)	$0	$0	$0	$0	$0	$1,140,000	$0	$0	$0	$0
Total Projects	$2,690,000	$2,771,000	$2,854,000	$2,940,000	$3,028,000	$60,483,000	$3,213,000	$3,309,000	$3,408,000	$3,510,000
Water Impact Fee Funds Available For Capital Projects	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000
Capital Projects Funded With Water Impact Fees	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)
Remaining Capital Projects To Be Funded	$1,857,000	$1,938,000	$2,021,000	$2,107,000	$2,195,000	$59,650,000	$2,380,000	$2,476,000	$2,575,000	$2,677,000
Funds Available For Capital Projects	$420,935	$425,763	$430,556	$436,313	$443,032	$894,713	$897,354	$900,955	$907,514	$912,029
Funds Used For Capital Projects	($420,935)	($425,763)	($430,556)	($436,313)	($443,032)	($894,713)	($897,354)	($900,955)	($907,514)	($912,029)
Unfunded Capital Projects	$1,436,065	$1,512,237	$1,590,444	$1,670,687	$1,751,968	$58,755,287	$1,482,646	$1,575,045	$1,667,486	$1,764,971
Par Amount	$1,552,065	$1,624,237	$1,710,444	$1,798,687	$1,886,968	$62,952,287	$1,592,646	$1,693,045	$1,794,486	$1,901,971
Annual Debt Service										
Debt Service At Beginning Of Forecast Period	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000
New Debt Service During Forecast Period	$3,921,000	$4,039,000	$4,163,000	$4,294,000	$4,431,000	$9,004,000	$9,120,000	$9,243,000	$9,373,000	$9,511,000
Total Annual Debt Service	$6,521,000	$6,639,000	$6,763,000	$6,894,000	$7,031,000	$11,604,000	$11,720,000	$11,843,000	$11,973,000	$12,111,000

Notes: (1) See Figure 3 for detail of costs.

SOURCE: BURTON & ASSOCIATES

C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

02/10/2003

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

O&M and Capital Cost Projections for Additional Capacity - Utility

Scenario 2 - Surface Water, Stand Alone Utility

Just In Time Rates

Line	Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	Annual Flow (MGD) - Prior Year	NA	7.97	8.17	8.36	8.56	8.75	8.94	9.14	9.33	9.53
2	Annual Growth in Flow (MGD)	NA	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
3	Annual Flow (MGD) - Current Year	7.97	8.17	8.36	8.56	8.75	8.94	9.14	9.33	9.53	9.72
4	Margin Reserve Capacity (MGD)	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
5	Total Capacity Required (MGD)	8.56	8.75	8.94	9.14	9.33	9.53	9.72	9.92	10.11	10.31
6	Capacity (MGD) (1)	9.41	9.41	9.41	9.41	9.41	9.41	11.35	11.35	11.35	11.35
7	Additional Capacity Required (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
8	Additional Flow Associated with New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97
9											
10	Annual Flow (1,000 Gallons)	2,909,832	2,980,804	3,051,775	3,122,747	3,193,718	3,264,690	3,335,661	3,406,633	3,477,604	3,548,576
11	Additional Flow Associated with New Capacity (1,000 Gallons)	0	0	0	0	0	70,972	141,943	212,915	283,886	354,858
12											
13	Cost Inflator	NA	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
14											
15	**Additional Costs Associated with Expansion of Groundwater Capacity**										
16	O&M Costs										
17	Groundwater Source (Wellfield) Expansion Costs										
18	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$23,690	$24,401	$25,133	$25,887	$26,663	$27,463	$28,287	$29,136	$30,010	$30,910
19	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Factor - (Input from CH2MHill)	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163
21	Total Cost - (Line 18 times Line 19 to the power of Line 20)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
22											
23	Groundwater Treatment System Expansion Costs										
24	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$53,869	$55,485	$57,150	$58,864	$60,630	$62,449	$64,322	$66,252	$68,240	$70,287
25	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26	Factor - (Input from CH2MHill)	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536
27	Total Cost - (Line 24 times Line 25 to the power of Line 26)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
28											
29	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
30											
31	Capital Costs										
32	Groundwater Source (Wellfield) Expansion Costs										
33	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$285,310	$293,869	$302,685	$311,766	$321,119	$330,752	$340,675	$350,895	$361,422	$372,265
34	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
35	Factor - (Input from CH2MHill)	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544
36	Total Cost - (Line 33 times Line 34 to the power of Line 35)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
37											
38	Groundwater Treatment System Expansion Costs										
39	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$1,717,010	$1,768,520	$1,821,576	$1,876,223	$1,932,510	$1,990,485	$2,050,200	$2,111,706	$2,175,057	$2,240,309
40	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
41	Factor - (Input from CH2MHill)	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893
42	Total Cost - (Line 39 times Line 40 to the power of Line 41)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
43											
44	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Line	Item	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	Annual Flow (MGD) - Prior Year	9.72	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47
2	Annual Growth in Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
3	Annual Flow (MGD) - Current Year	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47	11.67
4	Margin Reserve Capacity (MGD)	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
5	Total Capacity Required (MGD)	10.50	10.69	10.89	11.08	11.28	11.47	11.67	11.86	12.06	12.25
6	Capacity (MGD) (1)	11.35	11.35	11.35	11.35	11.35	11.35	13.30	13.30	13.30	13.30
7	Additional Capacity Required (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
8	Additional Flow Associated with New Capacity (MGD)	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
9											
10	Annual Flow (1,000 Gallons)	3,619,547	3,690,519	3,761,490	3,832,462	3,903,433	3,974,405	4,045,376	4,116,348	4,187,319	4,258,291
11	Additional Flow Associated with New Capacity (1,000 Gallons)	425,829	496,801	567,772	638,744	709,715	780,687	851,658	922,630	993,601	1,064,573
12											
13	Cost Inflator	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
14											
15	**Additional Costs Associated with Expansion of Groundwater Capacity**										
16	O&M Costs										
17	Groundwater Source (Wellfield) Expansion Costs										
18	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$31,837	$32,793	$33,776	$34,790	$35,833	$36,908	$38,015	$39,156	$40,331	$41,541
19	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Factor - (Input from CH2MHill)	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163
21	Total Cost - (Line 18 times Line 19 to the power of Line 20)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
22											
23	Groundwater Treatment System Expansion Costs										
24	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$72,395	$74,567	$76,804	$79,108	$81,482	$83,926	$86,444	$89,037	$91,708	$94,460
25	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26	Factor - (Input from CH2MHill)	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536
27	Total Cost - (Line 24 times Line 25 to the power of Line 26)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
28											
29	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
30											
31	Capital Costs										
32	Groundwater Source (Wellfield) Expansion Costs										
33	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$383,433	$394,936	$406,784	$418,987	$431,557	$444,504	$457,839	$471,574	$485,721	$500,293
34	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
35	Factor - (Input from CH2MHill)	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544
36	Total Cost - (Line 33 times Line 34 to the power of Line 35)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
37											
38	Groundwater Treatment System Expansion Costs										
39	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$2,307,518	$2,376,743	$2,448,046	$2,521,487	$2,597,132	$2,675,046	$2,755,297	$2,837,956	$2,923,095	$3,010,787
40	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
41	Factor - (Input from CH2MHill)	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893
42	Total Cost - (Line 39 times Line 40 to the power of Line 41)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
43											
44	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

47 Notes: (1) In order to simplify the analysis, it was assumed that the capacity at the beginning of the projection period is equal to the maximum groundwater withdrawal limit.

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Sources

O&M and Capital Cost Projections for Additional Capacity - Utility

Scenario 2 - Surface Water, Stand Alone Utility

Line	Add'l Costs Associated w/ Construction/Expansion of Surface Water Capacity	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
49	O&M Costs																				
50	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
51	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$360,088	$370,891	$382,017	$393,478	$405,282	$417,441	$429,964	$442,863	$456,149	$469,833	$483,928	$498,446	$513,399	$528,801	$544,665	$561,005	$577,836	$595,171	$613,026	$631,416
52	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
53	Factor - (Input from CH2MHill)	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884
54	Total Cost - (Line 51 times Line 52 to the power of Line 53)	$0	$0	$0	$0	$0	$83,000	$169,000	$260,000	$356,000	$457,000	$564,000	$676,000	$795,000	$919,000	$1,051,000	$1,189,000	$1,335,000	$1,488,000	$1,650,000	$1,819,000
55																					
56	Surface Water System Costs (Transmission Line)																				
57	Length of Line 25 Miles																				
58	O&M Cost Component	$61,800	$63,654	$65,564	$67,531	$69,556	$71,643	$73,792	$76,006	$78,286	$80,635	$83,054	$85,546	$88,112	$90,755	$93,478	$96,282	$99,171	$102,146	$105,210	$108,367
59	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
60	Factor - (Input from CH2MHill)	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
61	Total Cost - (Line 58 times Line 59 to the power of Line 60)	$0	$0	$0	$0	$0	$15,000	$30,000	$45,000	$61,000	$78,000	$96,000	$115,000	$135,000	$156,000	$178,000	$201,000	$225,000	$251,000	$278,000	$306,000
62																					
63	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
64	Variable O&M Cost Component	$2,431	$2,504	$2,579	$2,656	$2,736	$2,818	$2,903	$2,990	$3,079	$3,172	$3,267	$3,365	$3,466	$3,570	$3,677	$3,787	$3,901	$4,018	$4,138	$4,262
65	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
66	Constant O&M Component	25,132	25,886	26,663	27,462	28,286	29,135	30,009	30,909	31,836	32,792	33,775	34,789	35,832	36,907	38,014	39,155	40,329	41,539	42,786	44,069
67	Total Cost - (Line 64 times Line 65 plus Line 66)	$0	$0	$0	$0	$0	$30,000	$31,000	$33,000	$34,000	$36,000	$38,000	$39,000	$41,000	$43,000	$45,000	$47,000	$49,000	$52,000	$54,000	$57,000
68																					
69	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
70	Variable O&M Cost Component	$22,794	$23,478	$24,182	$24,908	$25,655	$26,424	$27,217	$28,034	$28,875	$29,741	$30,633	$31,552	$32,499	$33,474	$34,478	$35,512	$36,578	$37,675	$38,805	$39,969
71	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
72	Constant O&M Component	3,214	3,310	3,409	3,512	3,617	3,725	3,837	3,952	4,071	4,193	4,319	4,448	4,582	4,719	4,861	5,007	5,157	5,312	5,471	5,635
73	Total Cost - (Line 70 times Line 71 plus Line 72)	$0	$0	$0	$0	$0	$9,000	$14,000	$20,000	$27,000	$33,000	$40,000	$47,000	$55,000	$63,000	$72,000	$81,000	$91,000	$101,000	$111,000	$122,000
74																					
75	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$137,000**	**$244,000**	**$358,000**	**$478,000**	**$604,000**	**$738,000**	**$877,000**	**$1,026,000**	**$1,181,000**	**$1,346,000**	**$1,518,000**	**$1,700,000**	**$1,892,000**	**$2,093,000**	**$2,304,000**
76																					
77	Capital Costs																				
78	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
79	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$9,010,440	$9,280,753	$9,559,176	$9,845,951	$10,141,330	$10,445,569	$10,758,937	$11,081,705	$11,414,156	$11,756,580	$12,109,278	$12,472,556	$12,846,733	$13,232,135	$13,629,099	$14,037,972	$14,459,111	$14,892,884	$15,339,671	$15,799,861
80	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
81	Factor - (Input from CH2MHill)	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016
82	Total Cost - (Line 79 times Line 80 to the power of Line 81)	$0	$0	$0	$0	$0	$19,024,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$25,567,000	$0	$0	$0	$0
83																					
84	Surface Water System Costs (Transmission Line)																				
85	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$508,305	$523,554	$539,261	$555,439	$572,102	$589,265	$606,943	$625,151	$643,906	$663,223	$683,119	$703,613	$724,721	$746,463	$768,857	$791,923	$815,680	$840,151	$865,355	$891,316
86	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
87	Capacity Factor (MGD) - (Input from CH2MHill)	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400
88	Length of Line (Miles)	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
89	Length Factor - (Input from CH2MHill)	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440
90	Total Cost - (Line 85 times Line 86 to the power of Line 87 times Line 88 to the power of Line 89)	$0	$0	$0	$0	$0	$22,742,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30,563,000	$0	$0	$0	$0
91																					
92	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
93	Variable Capital Component - (Input from CH2MHill)	$2,575	$2,652	$2,732	$2,814	$2,898	$2,985	$3,075	$3,167	$3,262	$3,360	$3,461	$3,564	$3,671	$3,781	$3,895	$4,012	$4,132	$4,256	$4,384	$4,515
94	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
95	Constant Capital Component - (Input from CH2MHill)	55,105	56,758	58,461	60,215	62,021	63,882	65,798	67,772	69,805	71,900	74,057	76,278	78,567	80,924	83,351	85,852	88,427	91,080	93,813	96,627
96	Total Cost - (Line 93 times Line 94 plus Line 95)	$0	$0	$0	$0	$0	$70,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$94,000	$0	$0	$0	$0
97																					
98	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
99	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$442,797	$456,081	$469,763	$483,856	$498,372	$513,323	$528,723	$544,584	$560,922	$577,750	$595,082	$612,935	$631,323	$650,262	$669,770	$689,863	$710,559	$731,876	$753,832	$776,447
100	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
101	Factor - (Input from CH2MHill)	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559
102	Total Cost - (Line 99 times Line 100 to the power of Line 101)	$0	$0	$0	$0	$0	$849,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,140,000	$0	$0	$0	$0
103																					
104	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$42,685,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$57,364,000**	**$0**	**$0**	**$0**	**$0**
105																					

Source: Burton & Associates 02/10/2003

C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

APPENDIX B

Scenario 2 – Surface Water
Level Rates

Figure Number	Title	Included
1.	Pro Forma Projection of Results of Financial Performance of Sample Utility	Yes
2	Pro Forma Projection of Results of Financial Performance of Sample Entity	No
3	O&M and Capital Cost Projections for Additional Capacity – Utility	Yes
4	O&M and Capital Cost Projections for Additional Capacity – Entity	No

Figure 1

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

Pro Forma Projection of Results of Financial Performance of Sample Utility

Scenario 2 - Surface Water, Stand Alone Utility

Level Rates

#		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	Annual Flow										
2	ERCs - Beginning of Year	33,333	34,167	35,001	35,835	36,669	37,503	38,337	39,171	40,005	40,839
3	Growth in ERCs	834	834	834	834	834	834	834	834	834	834
4	ERCs - End of Year	34,167	35,001	35,835	36,669	37,503	38,337	39,171	40,005	40,839	41,673
5											
6	Avg Daily Flow	233	233	233	233	233	233	233	233	233	233
7											
8	Annual Flow (MGD) - Beginning of Year	7.78	7.97	8.17	8.36	8.56	8.75	8.95	9.14	9.33	9.53
9	Growth in Annual Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
10	Annual Flow - End of Year	7.97	8.17	8.36	8.56	8.75	8.95	9.14	9.33	9.53	9.72
11											
12	Annual Flow - 000s - Beginning of Year	2,838,861	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122
13	Annual Flow - 000s - Growth	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029
14	Annual Flow - 000s - End of Year	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
15											
16	**PRO FORMA - UTILITY**										
17	**Revenue:**										
18	Water Rate Revenue	$6,100,000	$6,634,000	$7,211,000	$7,833,000	$8,504,000	$9,228,000	$10,008,000	$10,604,000	$11,231,000	$11,889,000
19	Growth	2.50%	2.44%	2.38%	2.33%	2.27%	2.22%	2.17%	2.13%	2.08%	2.04%
20	Add'l Rate Revenue From Growth	$153,000	$162,000	$172,000	$182,000	$193,000	$205,000	$218,000	$226,000	$234,000	$243,000
21	Water Rate Revenue Before Rate Increase	$6,253,000	$6,796,000	$7,383,000	$8,015,000	$8,697,000	$9,433,000	$10,226,000	$10,830,000	$11,465,000	$12,132,000
22	Rate Increase	6.10%	6.10%	6.10%	6.10%	6.10%	6.09%	3.70%	3.70%	3.70%	3.70%
23	Add'l Rate Revenue From Rate Increase In Prior Year	$381,000	$415,000	$450,000	$489,000	$531,000	$575,000	$378,000	$401,000	$424,000	$449,000
24	Water Rate Revenue	$6,634,000	$7,211,000	$7,833,000	$8,504,000	$9,228,000	$10,008,000	$10,604,000	$11,231,000	$11,889,000	$12,581,000
25	Other Operating Revenue	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000
26	Interest Earnings	$60,000	$60,000	$80,000	$100,000	$150,000	$150,000	$130,000	$150,000	$160,000	$180,000
27	Total Revenue	$7,304,000	$7,881,000	$8,523,000	$9,214,000	$9,988,000	$10,768,000	$11,344,000	$11,991,000	$12,659,000	$13,371,000
28	**Expenses:**										
29	Baseline Operating Expenses	$3,990,000	$4,110,000	$4,233,000	$4,360,000	$4,491,000	$4,626,000	$4,765,000	$4,908,000	$5,055,000	$5,207,000
30	Additional O&M From Additional Groundwater Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
31	Additional O&M From Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$30,000	$31,000	$33,000	$34,000	$36,000
32	Additional O&M From High Service Pumps (1)	$0	$0	$0	$0	$0	$9,000	$14,000	$20,000	$27,000	$33,000
33	Additional O&M From Treatment For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$83,000	$169,000	$260,000	$356,000	$457,000
34	Additional O&M From Transmission For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$15,000	$30,000	$45,000	$61,000	$78,000
35	Purchased Water Costs:										
36	Total Annual Flow (Purchased Water Rate Developed Based Upon Total Flow - Not Surface Water Flow Only)	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
37	Purchased Water Rate Per 1,000 Gallons	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
38	Annual Purchased Water Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
39	Total Operating Expenses - Water	$3,990,000	$4,110,000	$4,233,000	$4,360,000	$4,491,000	$4,763,000	$5,009,000	$5,266,000	$5,533,000	$5,811,000
40	**Net Income**	**$3,314,000**	**$3,771,000**	**$4,290,000**	**$4,854,000**	**$5,497,000**	**$6,005,000**	**$6,335,000**	**$6,725,000**	**$7,126,000**	**$7,560,000**
41											
42	**Debt Service Coverage Test**										
43	Net Income	$3,314,000	$3,771,000	$4,290,000	$4,854,000	$5,497,000	$6,005,000	$6,335,000	$6,725,000	$7,126,000	$7,560,000
44	Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$5,462,000	$5,538,000	$5,593,000	$5,626,000	$5,632,000
45	Coverage Ratio - Calculated	1.27	1.45	1.65	1.87	2.11	1.10	1.14	1.20	1.27	1.34
46	*Coverage Ratio - Required*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
47											
48	**Working Capital Reserves Test**										
49	Beginning Balance	$4,200,000	$3,771,000	$3,766,000	$4,245,000	$5,252,000	$6,865,000	$4,518,956	$4,629,664	$4,720,414	$4,790,237
50	Net Income	$3,314,000	$3,771,000	$4,290,000	$4,854,000	$5,497,000	$6,005,000	$6,335,000	$6,725,000	$7,126,000	$7,560,000
51	Balance Before Other Sources (Uses) of Funds	$7,514,000	$7,542,000	$8,056,000	$9,099,000	$10,749,000	$12,870,000	$10,853,956	$11,354,664	$11,846,414	$12,350,237
52	Other Sources (Uses) Of Funds										
53	Debt Service Reserve Proceeds	$0	$0	$0	$0	$0	$2,862,000	$76,000	$55,000	$33,000	$6,000
54	Capital Outlay	($143,000)	($147,000)	($151,000)	($156,000)	($161,000)	($166,000)	($171,000)	($176,000)	($181,000)	($186,000)
55	Debt Service At Beginning Of Forecast Period	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)
56	New Debt Service During Forecast Period	$0	$0	$0	$0	$0	($2,862,000)	($2,938,000)	($2,993,000)	($3,026,000)	($3,032,000)
57	Less: Required Reserves	($500,000)	($500,000)	($500,000)	($500,000)	($500,000)	($3,362,000)	($3,438,000)	($3,493,000)	($3,526,000)	($3,532,000)
58	Unrestricted Balance	$4,271,000	$4,295,000	$4,805,000	$5,843,000	$7,488,000	$6,742,000	$1,782,956	$2,147,664	$2,546,414	$3,006,237
59	*Minimum Required Working Capital Reserves*	*$998,000*	*$1,027,940*	*$1,058,778*	*$1,090,542*	*$1,123,258*	*$1,156,956*	*$1,191,664*	*$1,227,414*	*$1,264,237*	*$1,302,164*
60	Less: Funds Used To Pay Capital Projects	($1,000,000)	($1,030,000)	($1,061,000)	($1,093,000)	($1,126,000)	($5,585,044)	($591,291)	($920,250)	($1,282,178)	($1,704,073)
61	Ending Unrestricted Balance	$3,271,000	$3,265,000	$3,744,000	$4,750,000	$6,362,000	$1,156,956	$1,191,664	$1,227,414	$1,264,237	$1,302,164
62	Add Back: Restricted Reserves	$500,000	$500,000	$500,000	$500,000	$500,000	$3,362,000	$3,438,000	$3,493,000	$3,526,000	$3,532,000
63	Ending Balance	$3,771,000	$3,765,000	$4,244,000	$5,250,000	$6,862,000	$4,518,956	$4,629,664	$4,720,414	$4,790,237	$4,834,164
64											
65											
66	Calculation Of Retail Rate Per 1,000 Gallons										
67	Water Rate Revenue - Restated	$6,634,000	$7,211,000	$7,833,000	$8,504,000	$9,228,000	$10,008,000	$10,604,000	$11,231,000	$11,889,000	$12,581,000
68	Annual Flow (1,000 Gallons)	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
69	Retail Rate Per 1,000 Gallons	$2.28	$2.42	$2.57	$2.72	$2.89	$3.07	$3.18	$3.30	$3.42	$3.54
70											
71	Calculation Of New Debt Service:										
72	Capital Projects										
73	Capital Improvements - Water - Miscellaneous & R&R	$2,000,000	$2,060,000	$2,122,000	$2,186,000	$2,252,000	$2,320,000	$2,390,000	$2,462,000	$2,536,000	$2,612,000
74	Capital Improvements - Water - Groundwater Supply and Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
75	Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$19,024,000	$0	$0	$0	$0
76	Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$22,742,000	$0	$0	$0	$0
77	Capital Improvements - Water - Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$70,000	$0	$0	$0	$0
78	Capital Improvements - Water - High Service Pumps (1)	$0	$0	$0	$0	$0	$849,000	$0	$0	$0	$0
79	Total Projects	$2,000,000	$2,060,000	$2,122,000	$2,186,000	$2,252,000	$45,005,000	$2,390,000	$2,462,000	$2,536,000	$2,612,000
80	Water Impact Fee Funds Available For Capital Projects	$1,000,000	$1,030,000	$1,061,000	$1,093,000	$1,126,000	$2,978,000	$833,000	$833,000	$833,000	$833,000
81	Capital Projects Funded With Water Impact Fees	($1,000,000)	($1,030,000)	($1,061,000)	($1,093,000)	($1,126,000)	($2,978,000)	($833,000)	($833,000)	($833,000)	($833,000)
82	Remaining Capital Projects To Be Funded	$1,000,000	$1,030,000	$1,061,000	$1,093,000	$1,126,000	$42,027,000	$1,557,000	$1,629,000	$1,703,000	$1,779,000
83	Funds Available For Capital Projects	$3,273,000	$3,267,060	$3,746,222	$4,752,458	$6,364,742	$5,585,044	$591,291	$920,250	$1,282,178	$1,704,073
84	Funds Used For Capital Projects	($1,000,000)	($1,030,000)	($1,061,000)	($1,093,000)	($1,126,000)	($5,585,044)	($591,291)	($920,250)	($1,282,178)	($1,704,073)
85	Unfunded Capital Projects	$0	$0	$0	$0	$0	$36,441,956	$965,709	$708,750	$420,822	$74,927
86	Par Amount	$0	$0	$0	$0	$0	$39,391,956	$1,044,709	$760,750	$456,822	$76,927
87											
88	Annual Debt Service										
89	Debt Service At Beginning Of Forecast Period	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000
90	New Debt Service During Forecast Period	$0	$0	$0	$0	$0	$2,862,000	$2,938,000	$2,993,000	$3,026,000	$3,032,000
91	Total Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$5,462,000	$5,538,000	$5,593,000	$5,626,000	$5,632,000

#		Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	Annual Flow										
2	ERCs - Beginning of Year	41,673	42,507	43,341	44,175	45,009	45,843	46,677	47,511	48,345	49,179
3	Growth in ERCs	834	834	834	834	834	834	834	834	834	834
4	ERCs - End of Year	42,507	43,341	44,175	45,009	45,843	46,677	47,511	48,345	49,179	50,013
5											
6	Avg Daily Flow	233	233	233	233	233	233	233	233	233	233
7											
8	Annual Flow (MGD) - Beginning of Year	9.72	9.92	10.11	10.31	10.50	10.70	10.89	11.09	11.28	11.48
9	Growth in Annual Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
10	Annual Flow - End of Year	9.92	10.11	10.31	10.50	10.70	10.89	11.09	11.28	11.48	11.67
11											
12	Annual Flow - 000s - Beginning of Year	3,549,151	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412
13	Annual Flow - 000s - Growth	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029
14	Annual Flow - 000s - End of Year	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
15											
16	**PRO FORMA - UTILITY**										
17	**Revenue:**										
18	Water Rate Revenue	$12,581,000	$13,308,000	$14,071,000	$14,873,000	$15,715,000	$16,598,000	$17,394,000	$18,360,000	$19,373,000	$20,436,000
19	Growth	2.00%	1.96%	1.92%	1.89%	1.85%	1.82%	1.79%	1.75%	1.72%	1.69%
20	Add'l Rate Revenue From Growth	$252,000	$261,000	$271,000	$281,000	$291,000	$302,000	$311,000	$322,000	$334,000	$346,000
21	Water Rate Revenue Before Rate Increase	$12,833,000	$13,569,000	$14,342,000	$15,154,000	$16,006,000	$16,900,000	$17,705,000	$18,682,000	$19,707,000	$20,782,000
22	Rate Increase	3.70%	3.70%	3.70%	3.70%	3.70%	2.92%	3.70%	3.70%	3.70%	3.70%
23	Add'l Rate Revenue From Rate Increase In Prior Year	$475,000	$502,000	$531,000	$561,000	$592,000	$494,000	$655,000	$691,000	$729,000	$769,000
24	Water Rate Revenue	$13,308,000	$14,071,000	$14,873,000	$15,715,000	$16,598,000	$17,394,000	$18,360,000	$19,373,000	$20,436,000	$21,551,000
25	Other Operating Revenue	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000
26	Interest Earnings	$200,000	$230,000	$290,000	$350,000	$440,000	$450,000	$410,000	$420,000	$420,000	$430,000
27	Total Revenue	$14,118,000	$14,911,000	$15,773,000	$16,675,000	$17,648,000	$18,454,000	$19,380,000	$20,403,000	$21,466,000	$22,591,000
28	**Expenses:**										
29	Baseline Operating Expenses	$5,363,000	$5,524,000	$5,690,000	$5,861,000	$6,037,000	$6,218,000	$6,405,000	$6,597,000	$6,795,000	$6,999,000
30	Additional O&M From Additional Groundwater Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
31	Additional O&M From Aqueous Ammonia System (1)	$38,000	$39,000	$41,000	$43,000	$45,000	$47,000	$49,000	$52,000	$54,000	$57,000
32	Additional O&M From High Service Pumps (1)	$40,000	$47,000	$55,000	$63,000	$72,000	$81,000	$91,000	$101,000	$111,000	$122,000
33	Additional O&M From Treatment For Additional Surface Water Capacity (1)	$564,000	$676,000	$795,000	$919,000	$1,051,000	$1,189,000	$1,335,000	$1,488,000	$1,650,000	$1,819,000
34	Additional O&M From Transmission For Additional Surface Water Capacity (1)	$96,000	$115,000	$135,000	$156,000	$178,000	$201,000	$225,000	$251,000	$278,000	$306,000
35	Purchased Water Costs:										
36	Total Annual Flow (Purchased Water Rate Developed Based Upon Total Flow - Not Surface Water Flow Only)	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
37	Purchased Water Rate Per 1,000 Gallons	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
38	Annual Purchased Water Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
39	Total Operating Expenses - Water	$6,101,000	$6,401,000	$6,716,000	$7,042,000	$7,383,000	$7,736,000	$8,105,000	$8,489,000	$8,888,000	$9,303,000
40	**Net Income**	**$8,017,000**	**$8,510,000**	**$9,057,000**	**$9,633,000**	**$10,265,000**	**$10,718,000**	**$11,275,000**	**$11,914,000**	**$12,578,000**	**$13,288,000**
41											
42	**Debt Service Coverage Test**										
43	Net Income	$8,017,000	$8,510,000	$9,057,000	$9,633,000	$10,265,000	$10,718,000	$11,275,000	$11,914,000	$12,578,000	$13,288,000
44	Annual Debt Service	$5,632,000	$5,632,000	$5,632,000	$5,632,000	$5,632,000	$9,752,000	$9,847,000	$9,905,000	$9,921,000	$9,921,000
45	Coverage Ratio - Calculated	1.42	1.51	1.61	1.71	1.82	1.10	1.15	1.20	1.27	1.34
46	*Coverage Ratio - Required*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
47											
48	**Working Capital Reserves Test**										
49	Beginning Balance	$4,834,164	$5,176,164	$5,925,164	$7,133,164	$8,825,164	$11,056,164	$9,206,851	$9,348,497	$9,454,542	$9,520,028
50	Net Income	$8,017,000	$8,510,000	$9,057,000	$9,633,000	$10,265,000	$10,718,000	$11,275,000	$11,914,000	$12,578,000	$13,288,000
51	Balance Before Other Sources (Uses) of Funds	$12,851,164	$13,686,164	$14,982,164	$16,766,164	$19,090,164	$21,774,164	$20,481,851	$21,262,497	$22,032,542	$22,808,028
52	Other Sources (Uses) Of Funds										
53	Debt Service Reserve Proceeds	$0	$0	$0	$0	$0	$4,120,000	$95,000	$58,000	$16,000	$0
54	Capital Outlay	($192,000)	($198,000)	($204,000)	($210,000)	($216,000)	($222,000)	($229,000)	($236,000)	($243,000)	($250,000)
55	Debt Service At Beginning Of Forecast Period	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)
56	New Debt Service During Forecast Period	($3,032,000)	($3,032,000)	($3,032,000)	($3,032,000)	($3,032,000)	($7,152,000)	($7,247,000)	($7,305,000)	($7,321,000)	($7,321,000)
57	Less: Required Reserves	($3,532,000)	($3,532,000)	($3,532,000)	($3,532,000)	($3,532,000)	($7,652,000)	($7,747,000)	($7,805,000)	($7,821,000)	($7,821,000)
58	Unrestricted Balance	$3,495,164	$4,324,164	$5,614,164	$7,392,164	$9,710,164	$8,268,164	$2,753,851	$3,374,497	$4,063,542	$4,816,028
59	*Minimum Required Working Capital Reserves*	*$1,341,229*	*$1,381,465*	*$1,422,909*	*$1,465,597*	*$1,509,565*	*$1,554,851*	*$1,601,497*	*$1,649,542*	*$1,699,028*	*$1,749,999*
60	Less: Funds Used To Pay Capital Projects	($1,857,000)	($1,938,000)	($2,021,000)	($2,107,000)	($2,195,000)	($6,713,312)	($1,152,354)	($1,724,955)	($2,364,514)	($2,677,000)
61	Ending Unrestricted Balance	$1,638,164	$2,386,164	$3,593,164	$5,285,164	$7,515,164	$1,554,851	$1,601,497	$1,649,542	$1,699,028	$2,139,028
62	Add Back: Restricted Reserves	$3,532,000	$3,532,000	$3,532,000	$3,532,000	$3,532,000	$7,652,000	$7,747,000	$7,805,000	$7,821,000	$7,821,000
63	Ending Balance	$5,170,164	$5,918,164	$7,125,164	$8,817,164	$11,047,164	$9,206,851	$9,348,497	$9,454,542	$9,520,028	$9,960,028
64											
65											
66	Calculation Of Retail Rate Per 1,000 Gallons										
67	Water Rate Revenue - Restated	$13,308,000	$14,071,000	$14,873,000	$15,715,000	$16,598,000	$17,394,000	$18,360,000	$19,373,000	$20,436,000	$21,551,000
68	Annual Flow (1,000 Gallons)	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
69	Retail Rate Per 1,000 Gallons	$3.68	$3.81	$3.95	$4.10	$4.25	$4.38	$4.54	$4.71	$4.88	$5.06
70											
71	Calculation Of New Debt Service:										
72	Capital Projects										
73	Capital Improvements - Water - Miscellaneous & R&R	$2,690,000	$2,771,000	$2,854,000	$2,940,000	$3,028,000	$3,119,000	$3,213,000	$3,309,000	$3,408,000	$3,510,000
74	Capital Improvements - Water - Groundwater Supply and Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
75	Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$25,567,000	$0	$0	$0	$0
76	Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$30,563,000	$0	$0	$0	$0
77	Capital Improvements - Water - Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$94,000	$0	$0	$0	$0
78	Capital Improvements - Water - High Service Pumps (1)	$0	$0	$0	$0	$0	$1,140,000	$0	$0	$0	$0
79	Total Projects	$2,690,000	$2,771,000	$2,854,000	$2,940,000	$3,028,000	$60,483,000	$3,213,000	$3,309,000	$3,408,000	$3,510,000
80	Water Impact Fee Funds Available For Capital Projects	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000
81	Capital Projects Funded With Water Impact Fees	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)
82	Remaining Capital Projects To Be Funded	$1,857,000	$1,938,000	$2,021,000	$2,107,000	$2,195,000	$59,650,000	$2,380,000	$2,476,000	$2,575,000	$2,677,000
83	Funds Available For Capital Projects	$2,153,935	$2,942,698	$4,191,254	$5,926,567	$8,200,599	$6,713,312	$1,152,354	$1,724,955	$2,364,514	$3,066,029
84	Funds Used For Capital Projects	($1,857,000)	($1,938,000)	($2,021,000)	($2,107,000)	($2,195,000)	($6,713,312)	($1,152,354)	($1,724,955)	($2,364,514)	($2,677,000)
85	Unfunded Capital Projects	$0	$0	$0	$0	$0	$52,936,688	$1,227,646	$751,045	$210,486	$0
86	Par Amount	$0	$0	$0	$0	$0	$56,708,688	$1,313,646	$800,045	$217,486	$0
87											
88	Annual Debt Service										
89	Debt Service At Beginning Of Forecast Period	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000
90	New Debt Service During Forecast Period	$3,032,000	$3,032,000	$3,032,000	$3,032,000	$3,032,000	$7,152,000	$7,247,000	$7,305,000	$7,321,000	$7,321,000
91	Total Annual Debt Service	$5,632,000	$5,632,000	$5,632,000	$5,632,000	$5,632,000	$9,752,000	$9,847,000	$9,905,000	$9,921,000	$9,921,000

Notes: (1) See Figure 3 for detail of costs.

SOURCE: BURTON & ASSOCIATES

C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

02/10/2003

Figure 3
Page 1 of 2

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

O&M and Capital Cost Projections for Additional Capacity - Utility

Scenario 2 - Surface Water, Stand Alone Utility

Level Rates

#	Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	Annual Flow (MGD) - Prior Year	NA	7.97	8.17	8.36	8.56	8.75	8.94	9.14	9.33	9.53
2	Annual Growth in Flow (MGD)	NA	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
3	Annual Flow (MGD) - Current Year	7.97	8.17	8.36	8.56	8.75	8.94	9.14	9.33	9.53	9.72
4	Margin Reserve Capacity (MGD)	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
5	Total Capacity Required (MGD)	8.56	8.75	8.94	9.14	9.33	9.53	9.72	9.92	10.11	10.31
6	Capacity (MGD) (1)	9.41	9.41	9.41	9.41	9.41	9.41	11.35	11.35	11.35	11.35
7	Additional Capacity Required (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
8	Additional Flow Associated with New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97
9											
10	Annual Flow (1,000 Gallons)	2,909,832	2,980,804	3,051,775	3,122,747	3,193,718	3,264,690	3,335,661	3,406,633	3,477,604	3,548,576
11	Additional Flow Associated with New Capacity (1,000 Gallons)	0	0	0	0	0	70,972	141,943	212,915	283,886	354,858
12											
13	Cost Inflator	NA	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
14											
15	**Additional Costs Associated with Expansion of Groundwater Capacity**										
16	O&M Costs										
17	Groundwater Source (Wellfield) Expansion Costs										
18	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$23,690	$24,401	$25,133	$25,887	$26,663	$27,463	$28,287	$29,136	$30,010	$30,910
19	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Factor - (Input from CH2MHill)	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163
21	Total Cost - (Line 18 times Line 19 to the power of Line 20)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
22											
23	Groundwater Treatment System Expansion Costs										
24	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$53,869	$55,485	$57,150	$58,864	$60,630	$62,449	$64,322	$66,252	$68,240	$70,287
25	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26	Factor - (Input from CH2MHill)	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536
27	Total Cost - (Line 24 times Line 25 to the power of Line 26)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
28											
29	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
30											
31	Capital Costs										
32	Groundwater Source (Wellfield) Expansion Costs										
33	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$285,310	$293,869	$302,685	$311,766	$321,119	$330,752	$340,675	$350,895	$361,422	$372,265
34	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
35	Factor - (Input from CH2MHill)	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544
36	Total Cost - (Line 33 times Line 34 to the power of Line 35)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
37											
38	Groundwater Treatment System Expansion Costs										
39	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$1,717,010	$1,768,520	$1,821,576	$1,876,223	$1,932,510	$1,990,485	$2,050,200	$2,111,706	$2,175,057	$2,240,309
40	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
41	Factor - (Input from CH2MHill)	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893
42	Total Cost - (Line 39 times Line 40 to the power of Line 41)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
43											
44	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

#	Item	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	Annual Flow (MGD) - Prior Year	9.72	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47
2	Annual Growth in Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
3	Annual Flow (MGD) - Current Year	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47	11.67
4	Margin Reserve Capacity (MGD)	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
5	Total Capacity Required (MGD)	10.50	10.69	10.89	11.08	11.28	11.47	11.67	11.86	12.06	12.25
6	Capacity (MGD) (1)	11.35	11.35	11.35	11.35	11.35	11.35	13.30	13.30	13.30	13.30
7	Additional Capacity Required (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
8	Additional Flow Associated with New Capacity (MGD)	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
9											
10	Annual Flow (1,000 Gallons)	3,619,547	3,690,519	3,761,490	3,832,462	3,903,433	3,974,405	4,045,376	4,116,348	4,187,319	4,258,291
11	Additional Flow Associated with New Capacity (1,000 Gallons)	425,829	496,801	567,772	638,744	709,715	780,687	851,658	922,630	993,601	1,064,573
12											
13	Cost Inflator	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
14											
15	**Additional Costs Associated with Expansion of Groundwater Capacity**										
16	O&M Costs										
17	Groundwater Source (Wellfield) Expansion Costs										
18	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$31,837	$32,793	$33,776	$34,790	$35,833	$36,908	$38,015	$39,156	$40,331	$41,541
19	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Factor - (Input from CH2MHill)	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163
21	Total Cost - (Line 18 times Line 19 to the power of Line 20)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
22											
23	Groundwater Treatment System Expansion Costs										
24	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$72,395	$74,567	$76,804	$79,108	$81,482	$83,926	$86,444	$89,037	$91,708	$94,460
25	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26	Factor - (Input from CH2MHill)	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536
27	Total Cost - (Line 24 times Line 25 to the power of Line 26)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
28											
29	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
30											
31	Capital Costs										
32	Groundwater Source (Wellfield) Expansion Costs										
33	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$383,433	$394,936	$406,784	$418,987	$431,557	$444,504	$457,839	$471,574	$485,721	$500,293
34	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
35	Factor - (Input from CH2MHill)	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544
36	Total Cost - (Line 33 times Line 34 to the power of Line 35)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
37											
38	Groundwater Treatment System Expansion Costs										
39	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$2,307,518	$2,376,743	$2,448,046	$2,521,487	$2,597,132	$2,675,046	$2,755,297	$2,837,956	$2,923,095	$3,010,787
40	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
41	Factor - (Input from CH2MHill)	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893
42	Total Cost - (Line 39 times Line 40 to the power of Line 41)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
43											
44	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

47 Notes: (1) In order to simplify the analysis, it was assumed that the capacity at the beginning of the projection period is equal to the maximum groundwater withdrawal limit.

St. Johns River Water Management District
Analysis of Rate Impact to Sample Utility of Alternative Water Sources
O&M and Capital Cost Projections for Additional Capacity - Utility

Scenario 2 - Surface Water, Stand Alone Utility

Line	Add'l Costs Associated w/Construction/Expansion of Surface Water Capacity		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
49	O&M Costs																					
50	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																					
51	O&M Cost Component - (Input from CH2MHill, escalated for inflation)		$360,088	$370,891	$382,017	$393,478	$405,282	$417,441	$429,964	$442,863	$456,149	$469,833	$483,928	$498,446	$513,399	$528,801	$544,665	$561,005	$577,836	$595,171	$613,026	$631,416
52	Additional Flow From New Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
53	Factor - (Input from CH2MHill)		0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884
54	Total Cost - (Line 51 times Line 52 to the power of Line 53)		$0	$0	$0	$0	$0	$83,000	$169,000	$260,000	$356,000	$457,000	$564,000	$676,000	$795,000	$919,000	$1,051,000	$1,189,000	$1,335,000	$1,488,000	$1,650,000	$1,819,000
55																						
56	Surface Water System Costs (Transmission Line)																					
57	Length of Line	25 Miles																				
58	O&M Cost Component		$61,800	$63,654	$65,564	$67,531	$69,556	$71,643	$73,792	$76,006	$78,286	$80,635	$83,054	$85,546	$88,112	$90,755	$93,478	$96,282	$99,171	$102,146	$105,210	$108,367
59	Additional Flow From New Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
60	Factor - (Input from CH2MHill)		0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
61	Total Cost - (Line 58 times Line 59 to the power of Line 60)		$0	$0	$0	$0	$0	$15,000	$30,000	$45,000	$61,000	$78,000	$96,000	$115,000	$135,000	$156,000	$178,000	$201,000	$225,000	$251,000	$278,000	$306,000
62																						
63	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																					
64	Variable O&M Cost Component		$2,431	$2,504	$2,579	$2,656	$2,736	$2,818	$2,903	$2,990	$3,079	$3,172	$3,267	$3,365	$3,466	$3,570	$3,677	$3,787	$3,901	$4,018	$4,138	$4,262
65	Additional Flow From New Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
66	Constant O&M Component		25,132	25,886	26,663	27,462	28,286	29,135	30,009	30,909	31,836	32,792	33,775	34,789	35,832	36,907	38,014	39,155	40,329	41,539	42,786	44,069
67	Total Cost - (Line 64 times Line 65 plus Line 66)		$0	$0	$0	$0	$0	$30,000	$31,000	$33,000	$34,000	$36,000	$38,000	$39,000	$41,000	$43,000	$45,000	$47,000	$49,000	$52,000	$54,000	$57,000
68																						
69	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																					
70	Variable O&M Cost Component		$22,794	$23,478	$24,182	$24,908	$25,655	$26,424	$27,217	$28,034	$28,875	$29,741	$30,633	$31,552	$32,499	$33,474	$34,478	$35,512	$36,578	$37,675	$38,805	$39,969
71	Additional Flow From New Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
72	Constant O&M Component		3,214	3,310	3,409	3,512	3,617	3,725	3,837	3,952	4,071	4,193	4,319	4,448	4,582	4,719	4,861	5,007	5,157	5,312	5,471	5,635
73	Total Cost - (Line 70 times Line 71 plus Line 72)		$0	$0	$0	$0	$0	$9,000	$14,000	$20,000	$27,000	$33,000	$40,000	$47,000	$55,000	$63,000	$72,000	$81,000	$91,000	$101,000	$111,000	$122,000
74																						
75	**Total O&M Costs**		**$0**	**$0**	**$0**	**$0**	**$0**	**$137,000**	**$244,000**	**$358,000**	**$478,000**	**$604,000**	**$738,000**	**$877,000**	**$1,026,000**	**$1,181,000**	**$1,346,000**	**$1,518,000**	**$1,700,000**	**$1,892,000**	**$2,093,000**	**$2,304,000**
76																						
77	Capital Costs																					
78	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																					
79	Capital Cost Component - (Input from CH2MHill, escalated for inflation)		$9,010,440	$9,280,753	$9,559,176	$9,845,951	$10,141,330	$10,445,569	$10,758,937	$11,081,705	$11,414,156	$11,756,580	$12,109,278	$12,472,556	$12,846,733	$13,232,135	$13,629,099	$14,037,972	$14,459,111	$14,892,884	$15,339,671	$15,799,861
80	Additional Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
81	Factor - (Input from CH2MHill)		0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016
82	Total Cost - (Line 79 times Line 80 to the power of Line 81)		$0	$0	$0	$0	$0	$19,024,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$25,567,000	$0	$0	$0	$0
83																						
84	Surface Water System Costs (Transmission Line)																					
85	Capital Cost Component - (Input from CH2MHill, escalated for inflation)		$508,305	$523,554	$539,261	$555,439	$572,102	$589,265	$606,943	$625,151	$643,906	$663,223	$683,119	$703,613	$724,721	$746,463	$768,857	$791,923	$815,680	$840,151	$865,355	$891,316
86	Additional Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
87	Capacity Factor (MGD) - (Input from CH2MHill)		0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400
88	Length of Line (Miles)		25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
89	Length Factor - (Input from CH2MHill)		1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440
90	Total Cost - (Line 85 times Line 86 to the power of Line 87 times Line 88 to the power of Line 89)		$0	$0	$0	$0	$0	$22,742,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30,563,000	$0	$0	$0	$0
91																						
92	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																					
93	Variable Capital Component - (Input from CH2MHill)		$2,575	$2,652	$2,732	$2,814	$2,898	$2,985	$3,075	$3,167	$3,262	$3,360	$3,461	$3,564	$3,671	$3,781	$3,895	$4,012	$4,132	$4,256	$4,384	$4,515
94	Additional Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
95	Constant Capital Component - (Input from CH2MHill)		55,105	56,758	58,461	60,215	62,021	63,882	65,798	67,772	69,805	71,900	74,057	76,278	78,567	80,924	83,351	85,852	88,427	91,080	93,813	96,627
96	Total Cost - (Line 93 times Line 94 plus Line 95)		$0	$0	$0	$0	$0	$70,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$94,000	$0	$0	$0	$0
97																						
98	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																					
99	Capital Cost Component - (Input from CH2MHill, escalated for inflation)		$442,797	$456,081	$469,763	$483,856	$498,372	$513,323	$528,723	$544,584	$560,922	$577,750	$595,082	$612,935	$631,323	$650,262	$669,770	$689,863	$710,559	$731,876	$753,832	$776,447
100	Additional Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
101	Factor - (Input from CH2MHill)		0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559
102	Total Cost - (Line 99 times Line 100 to the power of Line 101)		$0	$0	$0	$0	$0	$849,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,140,000	$0	$0	$0	$0
103																						
104	**Total Capital Costs**		**$0**	**$0**	**$0**	**$0**	**$0**	**$42,685,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$57,364,000**	**$0**	**$0**	**$0**	**$0**
105																						

Source: Burton & Associates
C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

02/10/2003

APPENDIX B

Scenario 2 – Surface Water
Rate Indexing

Figure Number	Title	Included
1.	Pro Forma Projection of Results of Financial Performance of Sample Utility	Yes
2	Pro Forma Projection of Results of Financial Performance of Sample Entity	No
3	O&M and Capital Cost Projections for Additional Capacity – Utility	Yes
4	O&M and Capital Cost Projections for Additional Capacity – Entity	No

Figure 1

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

Pro Forma Projection of Results of Financial Performance of Sample Utility

Scenario 2 - Surface Water, Stand Alone Utility

Rate Indexing

#	Annual Flow	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
2	ERCs - Beginning of Year	33,333	34,167	35,001	35,835	36,669	37,503	38,337	39,171	40,005	40,839
3	Growth in ERCs	834	834	834	834	834	834	834	834	834	834
4	ERCs - End of Year	34,167	35,001	35,835	36,669	37,503	38,337	39,171	40,005	40,839	41,673
5											
6	Avg Daily Flow	233	233	233	233	233	233	233	233	233	233
7											
8	Annual Flow (MGD) - Beginning of Year	7.78	7.97	8.17	8.36	8.56	8.75	8.95	9.14	9.33	9.53
9	Growth in Annual Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
10	Annual Flow - End of Year	7.97	8.17	8.36	8.56	8.75	8.95	9.14	9.33	9.53	9.72
11											
12	Annual Flow - 000s - Beginning of Year	2,838,861	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122
13	Annual Flow - 000s - Growth	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029
14	Annual Flow - 000s - End of Year	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
15											
16	**PRO FORMA - UTILITY**										
17	**Revenue:**										
18	Water Rate Revenue	$6,100,000	$6,422,000	$6,757,000	$7,105,000	$7,466,000	$7,842,000	$10,400,000	$10,913,000	$11,446,000	$11,999,000
19	Growth	2.50%	2.44%	2.38%	2.33%	2.27%	2.22%	2.17%	2.13%	2.08%	2.04%
20	Add'l Rate Revenue From Growth	$153,000	$157,000	$161,000	$165,000	$170,000	$174,000	$226,000	$232,000	$238,000	$245,000
21	Water Rate Revenue Before Rate Increase	$6,253,000	$6,579,000	$6,918,000	$7,270,000	$7,636,000	$8,016,000	$10,626,000	$11,145,000	$11,684,000	$12,244,000
22	Rate Increase	2.70%	2.70%	2.70%	2.70%	2.70%	29.75%	2.70%	2.70%	2.70%	2.70%
23	Add'l Rate Revenue From Rate Increase In Prior Year	$169,000	$178,000	$187,000	$196,000	$206,000	$2,384,000	$287,000	$301,000	$315,000	$331,000
24	Water Rate Revenue	$6,422,000	$6,757,000	$7,105,000	$7,466,000	$7,842,000	$10,400,000	$10,913,000	$11,446,000	$11,999,000	$12,575,000
25	Other Operating Revenue	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000
26	Interest Earnings	$60,000	$50,000	$50,000	$60,000	$70,000	$100,000	$140,000	$160,000	$170,000	$190,000
27	Total Revenue	$7,092,000	$7,417,000	$7,765,000	$8,136,000	$8,522,000	$11,110,000	$11,663,000	$12,216,000	$12,779,000	$13,375,000
28	**Expenses:**										
29	Baseline Operating Expenses	$3,990,000	$4,110,000	$4,233,000	$4,360,000	$4,491,000	$4,626,000	$4,765,000	$4,908,000	$5,055,000	$5,207,000
30	Additional O&M From Additional Groundwater Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
31	Additional O&M From Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$30,000	$31,000	$33,000	$34,000	$36,000
32	Additional O&M From High Service Pumps (1)	$0	$0	$0	$0	$0	$9,000	$14,000	$20,000	$27,000	$33,000
33	Additional O&M From Treatment For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$83,000	$169,000	$260,000	$356,000	$457,000
34	Additional O&M From Transmission For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$15,000	$30,000	$45,000	$61,000	$78,000
35	Purchased Water Costs:										
36	Total Annual Flow (Purchased Water Rate Developed Based Upon Total Flow - Not Surface Water Flow Only)	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
37	Purchased Water Rate Per 1,000 Gallons	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
38	Annual Purchased Water Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
39	Total Operating Expenses - Water	$3,990,000	$4,110,000	$4,233,000	$4,360,000	$4,491,000	$4,763,000	$5,009,000	$5,266,000	$5,533,000	$5,811,000
40	**Net Income**	**$3,102,000**	**$3,307,000**	**$3,532,000**	**$3,776,000**	**$4,031,000**	**$6,347,000**	**$6,654,000**	**$6,950,000**	**$7,246,000**	**$7,564,000**
41											
42	**Debt Service Coverage Test**										
43	Net Income	$3,102,000	$3,307,000	$3,532,000	$3,776,000	$4,031,000	$6,347,000	$6,654,000	$6,950,000	$7,246,000	$7,564,000
44	Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$5,772,000	$5,847,000	$5,910,000	$5,959,000	$5,993,000
45	Coverage Ratio - Calculated	1.19	1.27	1.36	1.45	1.55	1.10	1.14	1.18	1.22	1.26
46	*Coverage Ratio - Required*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
47											
48	**Working Capital Reserves Test**										
49	Beginning Balance	$4,200,000	$3,559,000	$3,089,000	$2,809,000	$2,736,000	$2,881,000	$4,828,956	$4,938,664	$5,037,414	$5,123,237
50	Net Income	$3,102,000	$3,307,000	$3,532,000	$3,776,000	$4,031,000	$6,347,000	$6,654,000	$6,950,000	$7,246,000	$7,564,000
51	Balance Before Other Sources (Uses) of Funds	$7,302,000	$6,866,000	$6,621,000	$6,585,000	$6,767,000	$9,228,000	$11,482,956	$11,888,664	$12,283,414	$12,687,237
52	Other Sources (Uses) Of Funds										
53	Debt Service Reserve Proceeds	$0	$0	$0	$0	$0	$3,172,000	$75,000	$63,000	$49,000	$34,000
54	Capital Outlay	($143,000)	($147,000)	($151,000)	($156,000)	($161,000)	($166,000)	($171,000)	($176,000)	($181,000)	($186,000)
55	Debt Service At Beginning Of Forecast Period	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)
56	New Debt Service During Forecast Period	$0	$0	$0	$0	$0	($3,172,000)	($3,247,000)	($3,310,000)	($3,359,000)	($3,393,000)
57	Less: Required Reserves	($500,000)	($500,000)	($500,000)	($500,000)	($500,000)	($3,672,000)	($3,747,000)	($3,810,000)	($3,859,000)	($3,893,000)
58	Unrestricted Balance	$4,059,000	$3,619,000	$3,370,000	$3,329,000	$3,506,000	$2,790,000	$1,792,956	$2,055,664	$2,333,414	$2,649,237
59	*Minimum Required Working Capital Reserves*	*$998,000*	*$1,027,940*	*$1,058,778*	*$1,090,542*	*$1,123,258*	*$1,156,956*	*$1,191,664*	*$1,227,414*	*$1,264,237*	*$1,302,164*
60	Less: Funds Used To Pay Capital Projects	($1,000,000)	($1,030,000)	($1,061,000)	($1,093,000)	($1,126,000)	($1,633,044)	($601,291)	($828,250)	($1,069,178)	($1,347,073)
61	Ending Unrestricted Balance	$3,059,000	$2,589,000	$2,309,000	$2,236,000	$2,380,000	$1,156,956	$1,191,664	$1,227,414	$1,264,237	$1,302,164
62	Add Back: Restricted Reserves	$500,000	$500,000	$500,000	$500,000	$500,000	$3,672,000	$3,747,000	$3,810,000	$3,859,000	$3,893,000
63	Ending Balance	$3,559,000	$3,089,000	$2,809,000	$2,736,000	$2,880,000	$4,828,956	$4,938,664	$5,037,414	$5,123,237	$5,195,164
64											
65											
66	Calculation Of Retail Rate Per 1,000 Gallons										
67	Water Rate Revenue - Restated	$6,422,000	$6,757,000	$7,105,000	$7,466,000	$7,842,000	$10,400,000	$10,913,000	$11,446,000	$11,999,000	$12,575,000
68	Annual Flow (1,000 Gallons)	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
69	Retail Rate Per 1,000 Gallons	$2.21	$2.27	$2.33	$2.39	$2.46	$3.19	$3.27	$3.36	$3.45	$3.54
70											
71	Calculation Of New Debt Service:										
72	Capital Projects										
73	Capital Improvements - Water - Miscellaneous & R&R	$2,000,000	$2,060,000	$2,122,000	$2,186,000	$2,252,000	$2,320,000	$2,390,000	$2,462,000	$2,536,000	$2,612,000
74	Capital Improvements - Water - Groundwater Supply and Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
75	Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$19,024,000	$0	$0	$0	$0
76	Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$22,742,000	$0	$0	$0	$0
77	Capital Improvements - Water - Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$70,000	$0	$0	$0	$0
78	Capital Improvements - Water - High Service Pumps (1)	$0	$0	$0	$0	$0	$849,000	$0	$0	$0	$0
79	Total Projects	$2,000,000	$2,060,000	$2,122,000	$2,186,000	$2,252,000	$45,005,000	$2,390,000	$2,462,000	$2,536,000	$2,612,000
80	Water Impact Fee Funds Available For Capital Projects	$1,000,000	$1,030,000	$1,061,000	$1,093,000	$1,126,000	$2,978,000	$833,000	$833,000	$833,000	$833,000
81	Capital Projects Funded With Water Impact Fees	($1,000,000)	($1,030,000)	($1,061,000)	($1,093,000)	($1,126,000)	($2,978,000)	($833,000)	($833,000)	($833,000)	($833,000)
82	Remaining Capital Projects To Be Funded	$1,000,000	$1,030,000	$1,061,000	$1,093,000	$1,126,000	$42,027,000	$1,557,000	$1,629,000	$1,703,000	$1,779,000
83	Funds Available For Capital Projects	$3,061,000	$2,591,060	$2,311,222	$2,238,458	$2,382,742	$1,633,044	$601,291	$828,250	$1,069,178	$1,347,073
84	Funds Used For Capital Projects	($1,000,000)	($1,030,000)	($1,061,000)	($1,093,000)	($1,126,000)	($1,633,044)	($601,291)	($828,250)	($1,069,178)	($1,347,073)
85	Unfunded Capital Projects	$0	$0	$0	$0	$0	$40,393,956	$955,709	$800,750	$633,822	$431,927
86	Par Amount	$0	$0	$0	$0	$0	$43,667,956	$1,032,709	$863,750	$677,822	$467,927
87											
88	Annual Debt Service										
89	Debt Service At Beginning Of Forecast Period	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000
90	New Debt Service During Forecast Period	$0	$0	$0	$0	$0	$3,172,000	$3,247,000	$3,310,000	$3,359,000	$3,393,000
91	Total Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$5,772,000	$5,847,000	$5,910,000	$5,959,000	$5,993,000

#	Annual Flow	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
2	ERCs - Beginning of Year	41,673	42,507	43,341	44,175	45,009	45,843	46,677	47,511	48,345	49,179
3	Growth in ERCs	834	834	834	834	834	834	834	834	834	834
4	ERCs - End of Year	42,507	43,341	44,175	45,009	45,843	46,677	47,511	48,345	49,179	50,013
5											
6	Avg Daily Flow	233	233	233	233	233	233	233	233	233	233
7											
8	Annual Flow (MGD) - Beginning of Year	9.72	9.92	10.11	10.31	10.50	10.70	10.89	11.09	11.28	11.48
9	Growth in Annual Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
10	Annual Flow - End of Year	9.92	10.11	10.31	10.50	10.70	10.89	11.09	11.28	11.48	11.67
11											
12	Annual Flow - 000s - Beginning of Year	3,549,151	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412
13	Annual Flow - 000s - Growth	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029
14	Annual Flow - 000s - End of Year	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
15											
16	**PRO FORMA - UTILITY**										
17	**Revenue:**										
18	Water Rate Revenue	$12,575,000	$13,173,000	$13,794,000	$14,439,000	$15,108,000	$15,803,000	$18,238,000	$19,065,000	$19,923,000	$20,814,000
19	Growth	2.00%	1.96%	1.92%	1.89%	1.85%	1.82%	1.79%	1.75%	1.72%	1.69%
20	Add'l Rate Revenue From Growth	$252,000	$258,000	$265,000	$272,000	$280,000	$287,000	$326,000	$334,000	$344,000	$353,000
21	Water Rate Revenue Before Rate Increase	$12,827,000	$13,431,000	$14,059,000	$14,711,000	$15,388,000	$16,090,000	$18,564,000	$19,399,000	$20,267,000	$21,167,000
22	Rate Increase	2.70%	2.70%	2.70%	2.70%	2.70%	13.35%	2.70%	2.70%	2.70%	2.70%
23	Add'l Rate Revenue From Rate Increase In Prior Year	$346,000	$363,000	$380,000	$397,000	$415,000	$2,148,000	$501,000	$524,000	$547,000	$572,000
24	Water Rate Revenue	$13,173,000	$13,794,000	$14,439,000	$15,108,000	$15,803,000	$18,238,000	$19,065,000	$19,923,000	$20,814,000	$21,739,000
25	Other Operating Revenue	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000
26	Interest Earnings	$200,000	$220,000	$240,000	$260,000	$300,000	$380,000	$440,000	$450,000	$450,000	$460,000
27	Total Revenue	$13,983,000	$14,624,000	$15,289,000	$15,978,000	$16,713,000	$19,228,000	$20,115,000	$20,983,000	$21,874,000	$22,809,000
28	**Expenses:**										
29	Baseline Operating Expenses	$5,363,000	$5,524,000	$5,690,000	$5,861,000	$6,037,000	$6,218,000	$6,405,000	$6,597,000	$6,795,000	$6,999,000
30	Additional O&M From Additional Groundwater Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
31	Additional O&M From Aqueous Ammonia System (1)	$38,000	$39,000	$41,000	$43,000	$45,000	$47,000	$49,000	$52,000	$54,000	$57,000
32	Additional O&M From High Service Pumps (1)	$40,000	$47,000	$55,000	$63,000	$72,000	$81,000	$91,000	$101,000	$111,000	$122,000
33	Additional O&M From Treatment For Additional Surface Water Capacity (1)	$564,000	$676,000	$795,000	$919,000	$1,051,000	$1,189,000	$1,335,000	$1,488,000	$1,650,000	$1,819,000
34	Additional O&M From Transmission For Additional Surface Water Capacity (1)	$96,000	$115,000	$135,000	$156,000	$178,000	$201,000	$225,000	$251,000	$278,000	$306,000
35	Purchased Water Costs:										
36	Total Annual Flow (Purchased Water Rate Developed Based Upon Total Flow - Not Surface Water Flow Only)	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
37	Purchased Water Rate Per 1,000 Gallons	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
38	Annual Purchased Water Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
39	Total Operating Expenses - Water	$6,101,000	$6,401,000	$6,716,000	$7,042,000	$7,383,000	$7,736,000	$8,105,000	$8,489,000	$8,888,000	$9,303,000
40	**Net Income**	**$7,882,000**	**$8,223,000**	**$8,573,000**	**$8,936,000**	**$9,330,000**	**$11,492,000**	**$12,010,000**	**$12,494,000**	**$12,986,000**	**$13,506,000**
41											
42	**Debt Service Coverage Test**										
43	Net Income	$7,882,000	$8,223,000	$8,573,000	$8,936,000	$9,330,000	$11,492,000	$12,010,000	$12,494,000	$12,986,000	$13,506,000
44	Annual Debt Service	$6,010,000	$6,010,000	$6,010,000	$6,010,000	$6,010,000	$10,453,000	$10,545,000	$10,613,000	$10,654,000	$10,664,000
45	Coverage Ratio - Calculated	1.31	1.37	1.43	1.49	1.55	1.10	1.14	1.18	1.22	1.27
46	*Coverage Ratio - Required*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
47											
48	**Working Capital Reserves Test**										
49	Beginning Balance	$5,195,164	$5,251,229	$5,334,229	$5,678,229	$6,294,229	$7,212,229	$9,907,851	$10,046,497	$10,162,542	$10,253,028
50	Net Income	$7,882,000	$8,223,000	$8,573,000	$8,936,000	$9,330,000	$11,492,000	$12,010,000	$12,494,000	$12,986,000	$13,506,000
51	Balance Before Other Sources (Uses) of Funds	$13,077,164	$13,474,229	$13,907,229	$14,614,229	$15,624,229	$18,704,229	$21,917,851	$22,540,497	$23,148,542	$23,759,028
52	Other Sources (Uses) Of Funds										
53	Debt Service Reserve Proceeds	$17,000	$0	$0	$0	$0	$4,443,000	$92,000	$68,000	$41,000	$10,000
54	Capital Outlay	($192,000)	($198,000)	($204,000)	($210,000)	($216,000)	($222,000)	($229,000)	($236,000)	($243,000)	($250,000)
55	Debt Service At Beginning Of Forecast Period	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)
56	New Debt Service During Forecast Period	($3,410,000)	($3,410,000)	($3,410,000)	($3,410,000)	($3,410,000)	($7,853,000)	($7,945,000)	($8,013,000)	($8,054,000)	($8,064,000)
57	Less: Required Reserves	($3,910,000)	($3,910,000)	($3,910,000)	($3,910,000)	($3,910,000)	($8,353,000)	($8,445,000)	($8,513,000)	($8,554,000)	($8,564,000)
58	Unrestricted Balance	$2,982,164	$3,356,229	$3,783,229	$4,484,229	$5,488,229	$4,119,229	$2,790,851	$3,246,497	$3,738,542	$4,291,028
59	*Minimum Required Working Capital Reserves*	*$1,341,229*	*$1,381,465*	*$1,422,909*	*$1,465,597*	*$1,509,565*	*$1,554,851*	*$1,601,497*	*$1,649,542*	*$1,699,028*	*$1,749,999*
60	Less: Funds Used To Pay Capital Projects	($1,640,935)	($1,938,000)	($2,021,000)	($2,107,000)	($2,195,000)	($2,564,377)	($1,189,354)	($1,596,955)	($2,039,514)	($2,541,029)
61	Ending Unrestricted Balance	$1,341,229	$1,418,229	$1,762,229	$2,377,229	$3,293,229	$1,554,851	$1,601,497	$1,649,542	$1,699,028	$1,749,999
62	Add Back: Restricted Reserves	$3,910,000	$3,910,000	$3,910,000	$3,910,000	$3,910,000	$8,353,000	$8,445,000	$8,513,000	$8,554,000	$8,564,000
63	Ending Balance	$5,251,229	$5,328,229	$5,672,229	$6,287,229	$7,203,229	$9,907,851	$10,046,497	$10,162,542	$10,253,028	$10,313,999
64											
65											
66	Calculation Of Retail Rate Per 1,000 Gallons										
67	Water Rate Revenue - Restated	$13,173,000	$13,794,000	$14,439,000	$15,108,000	$15,803,000	$18,238,000	$19,065,000	$19,923,000	$20,814,000	$21,739,000
68	Annual Flow (1,000 Gallons)	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
69	Retail Rate Per 1,000 Gallons	$3.64	$3.74	$3.84	$3.94	$4.05	$4.59	$4.71	$4.84	$4.97	$5.10
70											
71	Calculation Of New Debt Service:										
72	Capital Projects										
73	Capital Improvements - Water - Miscellaneous & R&R	$2,690,000	$2,771,000	$2,854,000	$2,940,000	$3,028,000	$3,119,000	$3,213,000	$3,309,000	$3,408,000	$3,510,000
74	Capital Improvements - Water - Groundwater Supply and Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
75	Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$25,567,000	$0	$0	$0	$0
76	Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$30,563,000	$0	$0	$0	$0
77	Capital Improvements - Water - Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$94,000	$0	$0	$0	$0
78	Capital Improvements - Water - High Service Pumps (1)	$0	$0	$0	$0	$0	$1,140,000	$0	$0	$0	$0
79	Total Projects	$2,690,000	$2,771,000	$2,854,000	$2,940,000	$3,028,000	$60,483,000	$3,213,000	$3,309,000	$3,408,000	$3,510,000
80	Water Impact Fee Funds Available For Capital Projects	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000
81	Capital Projects Funded With Water Impact Fees	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)
82	Remaining Capital Projects To Be Funded	$1,857,000	$1,938,000	$2,021,000	$2,107,000	$2,195,000	$59,650,000	$2,380,000	$2,476,000	$2,575,000	$2,677,000
83	Funds Available For Capital Projects	$1,640,935	$1,974,763	$2,360,319	$3,018,632	$3,978,664	$2,564,377	$1,189,354	$1,596,955	$2,039,514	$2,541,029
84	Funds Used For Capital Projects	($1,640,935)	($1,938,000)	($2,021,000)	($2,107,000)	($2,195,000)	($2,564,377)	($1,189,354)	($1,596,955)	($2,039,514)	($2,541,029)
85	Unfunded Capital Projects	$216,065	$0	$0	$0	$0	$57,085,623	$1,190,646	$879,045	$535,486	$135,971
86	Par Amount	$231,065	$0	$0	$0	$0	$61,155,623	$1,271,646	$939,045	$560,486	$133,971
87											
88	Annual Debt Service										
89	Debt Service At Beginning Of Forecast Period	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000
90	New Debt Service During Forecast Period	$3,410,000	$3,410,000	$3,410,000	$3,410,000	$3,410,000	$7,853,000	$7,945,000	$8,013,000	$8,054,000	$8,064,000
91	Total Annual Debt Service	$6,010,000	$6,010,000	$6,010,000	$6,010,000	$6,010,000	$10,453,000	$10,545,000	$10,613,000	$10,654,000	$10,664,000

Notes: (1) See Figure 3 for detail of costs.

SOURCE: BURTON & ASSOCIATES

C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

02/10/2003

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

O&M and Capital Cost Projections for Additional Capacity - Utility

Scenario 2 - Surface Water, Stand Alone Utility

Rate Indexing

No.	Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	Annual Flow (MGD) - Prior Year	NA	7.97	8.17	8.36	8.56	8.75	8.94	9.14	9.33	9.53	9.72	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47
2	Annual Growth in Flow (MGD)	NA	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
3	Annual Flow (MGD) - Current Year	7.97	8.17	8.36	8.56	8.75	8.94	9.14	9.33	9.53	9.72	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47	11.67
4	Margin Reserve Capacity (MGD)	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
5	Total Capacity Required (MGD)	8.56	8.75	8.94	9.14	9.33	9.53	9.72	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47	11.67	11.86	12.06	12.25
6	Capacity (MGD) (1)	9.41	9.41	9.41	9.41	9.41	9.41	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35	13.30	13.30	13.30	13.30
7	Additional Capacity Required (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
8	Additional Flow Associated with New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
9																					
10	Annual Flow (1,000 Gallons)	2,909,832	2,980,804	3,051,775	3,122,747	3,193,718	3,264,690	3,335,661	3,406,633	3,477,604	3,548,576	3,619,547	3,690,519	3,761,490	3,832,462	3,903,433	3,974,405	4,045,376	4,116,348	4,187,319	4,258,291
11	Additional Flow Associated with New Capacity (1,000 Gallons)	0	0	0	0	0	70,972	141,943	212,915	283,886	354,858	425,829	496,801	567,772	638,744	709,715	780,687	851,658	922,630	993,601	1,064,573
12																					
13	Cost Inflator	NA	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
14																					
15	**Additional Costs Associated with Expansion of Groundwater Capacity**																				
16	O&M Costs																				
17	Groundwater Source (Wellfield) Expansion Costs																				
18	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$23,690	$24,401	$25,133	$25,887	$26,663	$27,463	$28,287	$29,136	$30,010	$30,910	$31,837	$32,793	$33,776	$34,790	$35,833	$36,908	$38,015	$39,156	$40,331	$41,541
19	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Factor - (Input from CH2MHill)	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163
21	Total Cost - (Line 18 times Line 19 to the power of Line 20)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
22																					
23	Groundwater Treatment System Expansion Costs																				
24	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$53,869	$55,485	$57,150	$58,864	$60,630	$62,449	$64,322	$66,252	$68,240	$70,287	$72,395	$74,567	$76,804	$79,108	$81,482	$83,926	$86,444	$89,037	$91,708	$94,460
25	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26	Factor - (Input from CH2MHill)	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536
27	Total Cost - (Line 24 times Line 25 to the power of Line 26)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
28																					
29	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
30																					
31	Capital Costs																				
32	Groundwater Source (Wellfield) Expansion Costs																				
33	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$285,310	$293,869	$302,685	$311,766	$321,119	$330,752	$340,675	$350,895	$361,422	$372,265	$383,433	$394,936	$406,784	$418,987	$431,557	$444,504	$457,839	$471,574	$485,721	$500,293
34	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
35	Factor - (Input from CH2MHill)	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544
36	Total Cost - (Line 33 times Line 34 to the power of Line 35)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
37																					
38	Groundwater Treatment System Expansion Costs																				
39	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$1,717,010	$1,768,520	$1,821,576	$1,876,223	$1,932,510	$1,990,485	$2,050,200	$2,111,706	$2,175,057	$2,240,309	$2,307,518	$2,376,743	$2,448,046	$2,521,487	$2,597,132	$2,675,046	$2,755,297	$2,837,956	$2,923,095	$3,010,787
40	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
41	Factor - (Input from CH2MHill)	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893
42	Total Cost - (Line 39 times Line 40 to the power of Line 41)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
43																					
44	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
45																					
46																					

47 Notes: (1) In order to simplify the analysis, it was assumed that the capacity at the beginning of the projection period is equal to the maximum groundwater withdrawal limit.

Figure 3
Page 2 of 2

St. Johns River Water Management District
Analysis of Rate Impact to Sample Utility of Alternative Water Sources
O&M and Capital Cost Projections for Additional Capacity - Utility

Scenario 2 - Surface Water, Stand Alone Utility

Line	Add'l Costs Associated w/ Construction/Expansion of Surface Water Capacity		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
49	O&M Costs																					
50	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																					
51	O&M Cost Component - (Input from CH2MHill, escalated for inflation)		$360,088	$370,891	$382,017	$393,478	$405,282	$417,441	$429,964	$442,863	$456,149	$469,833	$483,928	$498,446	$513,399	$528,801	$544,665	$561,005	$577,836	$595,171	$613,026	$631,416
52	Additional Flow From New Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
53	Factor - (Input from CH2MHill)		0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884
54	Total Cost - (Line 51 times Line 52 to the power of Line 53)		$0	$0	$0	$0	$0	$83,000	$169,000	$260,000	$356,000	$457,000	$564,000	$676,000	$795,000	$919,000	$1,051,000	$1,189,000	$1,335,000	$1,488,000	$1,650,000	$1,819,000
56	Surface Water System Costs (Transmission Line)																					
57	Length of Line	25 Miles																				
58	O&M Cost Component		$61,800	$63,654	$65,564	$67,531	$69,556	$71,643	$73,792	$76,006	$78,286	$80,635	$83,054	$85,546	$88,112	$90,755	$93,478	$96,282	$99,171	$102,146	$105,210	$108,367
59	Additional Flow From New Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
60	Factor - (Input from CH2MHill)		0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
61	Total Cost - (Line 58 times Line 59 to the power of Line 60)		$0	$0	$0	$0	$0	$15,000	$30,000	$45,000	$61,000	$78,000	$96,000	$115,000	$135,000	$156,000	$178,000	$201,000	$225,000	$251,000	$278,000	$306,000
63	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																					
64	Variable O&M Cost Component		$2,431	$2,504	$2,579	$2,656	$2,736	$2,818	$2,903	$2,990	$3,079	$3,172	$3,267	$3,365	$3,466	$3,570	$3,677	$3,787	$3,901	$4,018	$4,138	$4,262
65	Additional Flow From New Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
66	Constant O&M Component		25,132	25,886	26,663	27,462	28,286	29,135	30,009	30,909	31,836	32,792	33,775	34,789	35,832	36,907	38,014	39,155	40,329	41,539	42,786	44,069
67	Total Cost - (Line 64 times Line 65 plus Line 66)		$0	$0	$0	$0	$0	$30,000	$31,000	$33,000	$34,000	$36,000	$38,000	$39,000	$41,000	$43,000	$45,000	$47,000	$49,000	$52,000	$54,000	$57,000
69	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																					
70	Variable O&M Cost Component		$22,794	$23,478	$24,182	$24,908	$25,655	$26,424	$27,217	$28,034	$28,875	$29,741	$30,633	$31,552	$32,499	$33,474	$34,478	$35,512	$36,578	$37,675	$38,805	$39,969
71	Additional Flow From New Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
72	Constant O&M Component		3,214	3,310	3,409	3,512	3,617	3,725	3,837	3,952	4,071	4,193	4,319	4,448	4,582	4,719	4,861	5,007	5,157	5,312	5,471	5,635
73	Total Cost - (Line 70 times Line 71 plus Line 72)		$0	$0	$0	$0	$0	$9,000	$14,000	$20,000	$27,000	$33,000	$40,000	$47,000	$55,000	$63,000	$72,000	$81,000	$91,000	$101,000	$111,000	$122,000
75	**Total O&M Costs**		**$0**	**$0**	**$0**	**$0**	**$0**	**$137,000**	**$244,000**	**$358,000**	**$478,000**	**$604,000**	**$738,000**	**$877,000**	**$1,026,000**	**$1,181,000**	**$1,346,000**	**$1,518,000**	**$1,700,000**	**$1,892,000**	**$2,093,000**	**$2,304,000**
77	Capital Costs																					
78	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																					
79	Capital Cost Component - (Input from CH2MHill, escalated for inflation)		$9,010,440	$9,280,753	$9,559,176	$9,845,951	$10,141,330	$10,445,569	$10,758,937	$11,081,705	$11,414,156	$11,756,580	$12,109,278	$12,472,556	$12,846,733	$13,232,135	$13,629,099	$14,037,972	$14,459,111	$14,892,884	$15,339,671	$15,799,861
80	Additional Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
81	Factor - (Input from CH2MHill)		0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016
82	Total Cost - (Line 79 times Line 80 to the power of Line 81)		$0	$0	$0	$0	$0	$19,024,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$25,567,000	$0	$0	$0	$0
84	Surface Water System Costs (Transmission Line)																					
85	Capital Cost Component - (Input from CH2MHill, escalated for inflation)		$508,305	$523,554	$539,261	$555,439	$572,102	$589,265	$606,943	$625,151	$643,906	$663,223	$683,119	$703,613	$724,721	$746,463	$768,857	$791,923	$815,680	$840,151	$865,355	$891,316
86	Additional Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
87	Capacity Factor (MGD) - (Input from CH2MHill)		0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400
88	Length of Line (Miles)		25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
89	Length Factor - (Input from CH2MHill)		1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440
90	Total Cost - (Line 85 times Line 86 to the power of Line 87 times Line 88 to the power of Line 89)		$0	$0	$0	$0	$0	$22,742,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30,563,000	$0	$0	$0	$0
92	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																					
93	Variable Capital Component - (Input from CH2MHill)		$2,575	$2,652	$2,732	$2,814	$2,898	$2,985	$3,075	$3,167	$3,262	$3,360	$3,461	$3,564	$3,671	$3,781	$3,895	$4,012	$4,132	$4,256	$4,384	$4,515
94	Additional Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
95	Constant Capital Component - (Input from CH2MHill)		55,105	56,758	58,461	60,215	62,021	63,882	65,798	67,772	69,805	71,900	74,057	76,278	78,567	80,924	83,351	85,852	88,427	91,080	93,813	96,627
96	Total Cost - (Line 93 times Line 94 plus Line 95)		$0	$0	$0	$0	$0	$70,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$94,000	$0	$0	$0	$0
98	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																					
99	Capital Cost Component - (Input from CH2MHill, escalated for inflation)		$442,797	$456,081	$469,763	$483,856	$498,372	$513,323	$528,723	$544,584	$560,922	$577,750	$595,082	$612,935	$631,323	$650,262	$669,770	$689,863	$710,559	$731,876	$753,832	$776,447
100	Additional Capacity (MGD)		0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
101	Factor - (Input from CH2MHill)		0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559
102	Total Cost - (Line 99 times Line 100 to the power of Line 101)		$0	$0	$0	$0	$0	$849,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,140,000	$0	$0	$0	$0
104	**Total Capital Costs**		**$0**	**$0**	**$0**	**$0**	**$0**	**$42,685,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$57,364,000**	**$0**	**$0**	**$0**	**$0**

Source: Burton & Associates
C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

02/10/2003

APPENDIX C

Scenario 3 – Surface Water
Just-in-Time Rates

Figure Number	Title	Included
1.	Pro Forma Projection of Results of Financial Performance of Sample Utility	Yes
2	Pro Forma Projection of Results of Financial Performance of Sample Entity	Yes
3	O&M and Capital Cost Projections for Additional Capacity – Utility	Yes
4	O&M and Capital Cost Projections for Additional Capacity – Entity	Yes

Figure 1

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

Pro Forma Projection of Results of Financial Performance of Sample Utility

Scenario 3 - Surface Water, Water Supply Entity

Just In Time Rates

Annual Flow	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
ERCs - Beginning of Year	33,333	34,167	35,001	35,835	36,669	37,503	38,337	39,171	40,005	40,839	41,673	42,507	43,341	44,175	45,009	45,843	46,677	47,511	48,345	49,179
Growth in ERCs	834	834	834	834	834	834	834	834	834	834	834	834	834	834	834	834	834	834	834	834
ERCs - End of Year	34,167	35,001	35,835	36,669	37,503	38,337	39,171	40,005	40,839	41,673	42,507	43,341	44,175	45,009	45,843	46,677	47,511	48,345	49,179	50,013
Avg Daily Flow	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233
Annual Flow (MGD) - Beginning of Year	7.78	7.97	8.17	8.36	8.56	8.75	8.95	9.14	9.33	9.53	9.72	9.92	10.11	10.31	10.50	10.70	10.89	11.09	11.28	11.48
Growth in Annual Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Annual Flow - End of Year	7.97	8.17	8.36	8.56	8.75	8.95	9.14	9.33	9.53	9.72	9.92	10.11	10.31	10.50	10.70	10.89	11.09	11.28	11.48	11.67
Annual Flow - 000s - Beginning of Year	2,838,861	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412
Annual Flow - 000s - Growth	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029
Annual Flow - 000s - End of Year	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
PRO FORMA - UTILITY																				
Revenue:																				
Water Rate Revenue	$6,100,000	$6,253,000	$6,406,000	$6,559,000	$6,712,000	$6,865,000	$9,943,000	$10,270,000	$10,622,000	$11,011,000	$11,433,000	$11,867,000	$12,329,000	$12,805,000	$13,321,000	$13,852,000	$18,434,000	$18,951,000	$19,512,000	$20,097,000
Growth	2.50%	2.44%	2.38%	2.33%	2.27%	2.22%	2.17%	2.13%	2.08%	2.04%	2.00%	1.96%	1.92%	1.89%	1.85%	1.82%	1.79%	1.75%	1.72%	1.69%
Add'l Rate Revenue From Growth	$153,000	$153,000	$153,000	$153,000	$153,000	$153,000	$216,000	$219,000	$221,000	$225,000	$229,000	$233,000	$237,000	$242,000	$247,000	$252,000	$329,000	$332,000	$336,000	$341,000
Water Rate Revenue Before Rate Increase	$6,253,000	$6,406,000	$6,559,000	$6,712,000	$6,865,000	$7,018,000	$10,159,000	$10,489,000	$10,843,000	$11,236,000	$11,662,000	$12,100,000	$12,566,000	$13,047,000	$13,568,000	$14,104,000	$18,763,000	$19,283,000	$19,848,000	$20,438,000
Rate Increase	0.00%	0.00%	0.00%	0.00%	0.00%	41.68%	1.09%	1.27%	1.55%	1.75%	1.76%	1.89%	1.90%	2.10%	2.09%	30.70%	1.00%	1.19%	1.25%	1.34%
Add'l Rate Revenue From Rate Increase In Prior Year	$0	$0	$0	$0	$0	$2,925,000	$111,000	$133,000	$168,000	$197,000	$205,000	$229,000	$239,000	$274,000	$284,000	$4,330,000	$188,000	$229,000	$249,000	$274,000
Water Rate Revenue	$6,253,000	$6,406,000	$6,559,000	$6,712,000	$6,865,000	$9,943,000	$10,270,000	$10,622,000	$11,011,000	$11,433,000	$11,867,000	$12,329,000	$12,805,000	$13,321,000	$13,852,000	$18,434,000	$18,951,000	$19,512,000	$20,097,000	$20,712,000
Other Operating Revenue	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000
Interest Earnings	$60,000	$50,000	$40,000	$30,000	$40,000	$50,000	$50,000	$60,000	$70,000	$80,000	$100,000	$110,000	$130,000	$130,000	$140,000	$150,000	$170,000	$180,000	$190,000	$200,000
Total Revenue	$6,923,000	$7,066,000	$7,209,000	$7,352,000	$7,515,000	$10,603,000	$10,930,000	$11,292,000	$11,691,000	$12,123,000	$12,577,000	$13,049,000	$13,545,000	$14,061,000	$14,602,000	$19,194,000	$19,731,000	$20,302,000	$20,897,000	$21,522,000
Expenses:																				
Baseline Operating Expenses	$3,990,000	$4,110,000	$4,233,000	$4,360,000	$4,491,000	$4,626,000	$4,765,000	$4,908,000	$5,055,000	$5,207,000	$5,363,000	$5,524,000	$5,690,000	$5,861,000	$6,037,000	$6,218,000	$6,405,000	$6,597,000	$6,795,000	$6,999,000
Additional O&M From Additional Groundwater Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$30,000	$31,000	$33,000	$34,000	$36,000	$38,000	$39,000	$41,000	$43,000	$45,000	$47,000	$49,000	$52,000	$54,000	$57,000
Additional O&M From High Service Pumps (1)	$0	$0	$0	$0	$0	$9,000	$14,000	$20,000	$27,000	$33,000	$40,000	$47,000	$55,000	$63,000	$72,000	$81,000	$91,000	$101,000	$111,000	$122,000
Additional O&M From Treatment For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Transmission For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchased Water Costs:																				
Total Annual Flow (Purchased Water Rate Developed Based Upon Total Flow - Not Surface Water Flow Only)	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
Purchased Water Rate Per 1,000 Gallons	$0.00	$0.00	$0.00	$0.00	$0.00	$0.87	$0.87	$0.89	$0.90	$0.92	$0.94	$0.96	$0.99	$1.01	$1.04	$2.06	$2.06	$2.06	$2.07	$2.08
Annual Purchased Water Cost	$0	$0	$0	$0	$0	$2,826,000	$2,912,000	$3,025,000	$3,145,000	$3,274,000	$3,411,000	$3,558,000	$3,715,000	$3,881,000	$4,059,000	$8,175,000	$8,319,000	$8,488,000	$8,669,000	$8,863,000
Total Operating Expenses - Water	$3,990,000	$4,110,000	$4,233,000	$4,360,000	$4,491,000	$7,491,000	$7,722,000	$7,986,000	$8,261,000	$8,550,000	$8,852,000	$9,168,000	$9,501,000	$9,848,000	$10,213,000	$14,521,000	$14,864,000	$15,238,000	$15,629,000	$16,041,000
Net Income	**$2,933,000**	**$2,956,000**	**$2,976,000**	**$2,992,000**	**$3,024,000**	**$3,112,000**	**$3,208,000**	**$3,306,000**	**$3,430,000**	**$3,573,000**	**$3,725,000**	**$3,881,000**	**$4,044,000**	**$4,213,000**	**$4,389,000**	**$4,673,000**	**$4,867,000**	**$5,064,000**	**$5,268,000**	**$5,481,000**
Debt Service Coverage Test																				
Net Income	$2,933,000	$2,956,000	$2,976,000	$2,992,000	$3,024,000	$3,112,000	$3,208,000	$3,306,000	$3,430,000	$3,573,000	$3,725,000	$3,881,000	$4,044,000	$4,213,000	$4,389,000	$4,673,000	$4,867,000	$5,064,000	$5,268,000	$5,481,000
Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,662,000	$2,744,000	$2,829,000	$2,916,000	$3,006,000	$3,118,000	$3,249,000	$3,386,000	$3,529,000	$3,677,000	$3,831,000	$3,992,000	$4,254,000	$4,427,000	$4,606,000	$4,792,000	$4,986,000
Coverage Ratio - Calculated	1.13	1.14	1.14	1.12	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Coverage Ratio - Required	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
Working Capital Reserves Test																				
Beginning Balance	$4,200,000	$3,390,000	$2,569,000	$1,733,000	$1,652,542	$1,767,258	$1,885,956	$2,007,664	$2,133,414	$2,282,237	$2,451,164	$2,627,229	$2,810,465	$2,999,909	$3,196,597	$3,401,565	$3,708,851	$3,928,497	$4,155,542	$4,391,028
Net Income	$2,933,000	$2,956,000	$2,976,000	$2,992,000	$3,024,000	$3,112,000	$3,208,000	$3,306,000	$3,430,000	$3,573,000	$3,725,000	$3,881,000	$4,044,000	$4,213,000	$4,389,000	$4,673,000	$4,867,000	$5,064,000	$5,268,000	$5,481,000
Balance Before Other Sources (Uses) of Funds	$7,133,000	$6,346,000	$5,545,000	$4,725,000	$4,676,542	$4,879,258	$5,093,956	$5,313,664	$5,563,414	$5,855,237	$6,176,164	$6,508,229	$6,854,465	$7,212,909	$7,585,597	$8,074,565	$8,575,851	$8,992,497	$9,423,542	$9,872,028
Other Sources (Uses) Of Funds																				
Debt Service Reserve Proceeds	$0	$0	$0	$62,000	$82,000	$85,000	$87,000	$90,000	$112,000	$131,000	$137,000	$143,000	$148,000	$154,000	$161,000	$262,000	$173,000	$179,000	$186,000	$194,000
Capital Outlay	($143,000)	($147,000)	($151,000)	($156,000)	($161,000)	($166,000)	($171,000)	($176,000)	($181,000)	($186,000)	($192,000)	($198,000)	($204,000)	($210,000)	($216,000)	($222,000)	($229,000)	($236,000)	($243,000)	($250,000)
Debt Service At Beginning Of Forecast Period	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)
New Debt Service During Forecast Period	$0	$0	$0	($62,000)	($144,000)	($229,000)	($316,000)	($406,000)	($518,000)	($649,000)	($786,000)	($929,000)	($1,077,000)	($1,231,000)	($1,392,000)	($1,654,000)	($1,827,000)	($2,006,000)	($2,192,000)	($2,386,000)
Less: Required Reserves	($500,000)	($500,000)	($500,000)	($562,000)	($644,000)	($729,000)	($816,000)	($906,000)	($1,018,000)	($1,149,000)	($1,286,000)	($1,429,000)	($1,577,000)	($1,731,000)	($1,892,000)	($2,154,000)	($2,327,000)	($2,506,000)	($2,692,000)	($2,886,000)
Unrestricted Balance	$3,890,000	$3,099,000	$2,294,000	$1,407,000	$1,209,542	$1,240,258	$1,277,956	$1,315,664	$1,358,414	$1,402,237	$1,449,164	$1,495,229	$1,544,465	$1,594,909	$1,646,597	$1,706,565	$1,765,851	$1,823,497	$1,882,542	$1,944,028
Minimum Required Working Capital Reserves	*$998,000*	*$1,027,940*	*$1,058,778*	*$1,090,542*	*$1,123,258*	*$1,156,956*	*$1,191,664*	*$1,227,414*	*$1,264,237*	*$1,302,164*	*$1,341,229*	*$1,381,465*	*$1,422,909*	*$1,465,597*	*$1,509,565*	*$1,554,851*	*$1,601,497*	*$1,649,542*	*$1,699,028*	*$1,749,999*
Less: Funds Used To Pay Capital Projects	($1,000,000)	($1,030,000)	($1,061,000)	($316,458)	($86,284)	($83,302)	($86,291)	($88,250)	($94,178)	($100,073)	($107,935)	($113,763)	($121,556)	($129,313)	($137,032)	($151,713)	($164,354)	($173,955)	($183,514)	($194,029)
Ending Unrestricted Balance	$2,890,000	$2,069,000	$1,233,000	$1,090,542	$1,123,258	$1,156,956	$1,191,664	$1,227,414	$1,264,237	$1,302,164	$1,341,229	$1,381,465	$1,422,909	$1,465,597	$1,509,565	$1,554,851	$1,601,497	$1,649,542	$1,699,028	$1,749,999
Add Back: Restricted Reserves	$500,000	$500,000	$500,000	$562,000	$644,000	$729,000	$816,000	$906,000	$1,018,000	$1,149,000	$1,286,000	$1,429,000	$1,577,000	$1,731,000	$1,892,000	$2,154,000	$2,327,000	$2,506,000	$2,692,000	$2,886,000
Ending Balance	$3,390,000	$2,569,000	$1,733,000	$1,652,542	$1,767,258	$1,885,956	$2,007,664	$2,133,414	$2,282,237	$2,451,164	$2,627,229	$2,810,465	$2,999,909	$3,196,597	$3,401,565	$3,708,851	$3,928,497	$4,155,542	$4,391,028	$4,635,999
Calculation Of Retail Rate Per 1,000 Gallons																				
Water Rate Revenue - Restated	$6,253,000	$6,406,000	$6,559,000	$6,712,000	$6,865,000	$9,943,000	$10,270,000	$10,622,000	$11,011,000	$11,433,000	$11,867,000	$12,329,000	$12,805,000	$13,321,000	$13,852,000	$18,434,000	$18,951,000	$19,512,000	$20,097,000	$20,712,000
Annual Flow (1,000 Gallons)	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
Retail Rate Per 1,000 Gallons	$2.15	$2.15	$2.15	$2.15	$2.15	$3.05	$3.08	$3.12	$3.17	$3.22	$3.28	$3.34	$3.40	$3.48	$3.55	$4.64	$4.68	$4.74	$4.80	$4.86
Calculation Of New Debt Service:																				
Capital Projects																				
Capital Improvements - Water - Miscellaneous & R&R	$2,000,000	$2,060,000	$2,122,000	$2,186,000	$2,252,000	$2,320,000	$2,390,000	$2,462,000	$2,536,000	$2,612,000	$2,690,000	$2,771,000	$2,854,000	$2,940,000	$3,028,000	$3,119,000	$3,213,000	$3,309,000	$3,408,000	$3,510,000
Capital Improvements - Water - Groundwater Supply and Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$70,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$94,000	$0	$0	$0	$0
Capital Improvements - Water - High Service Pumps (1)	$0	$0	$0	$0	$0	$849,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,140,000	$0	$0	$0	$0
Total Projects	$2,000,000	$2,060,000	$2,122,000	$2,186,000	$2,252,000	$3,239,000	$2,390,000	$2,462,000	$2,536,000	$2,612,000	$2,690,000	$2,771,000	$2,854,000	$2,940,000	$3,028,000	$4,353,000	$3,213,000	$3,309,000	$3,408,000	$3,510,000
Water Impact Fee Funds Available For Capital Projects	$1,000,000	$1,030,000	$1,061,000	$1,093,000	$1,126,000	$2,079,000	$1,195,000	$1,231,000	$1,012,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000
Capital Projects Funded With Water Impact Fees	($1,000,000)	($1,030,000)	($1,061,000)	($1,093,000)	($1,126,000)	($2,079,000)	($1,195,000)	($1,231,000)	($1,012,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)
Remaining Capital Projects To Be Funded	$1,000,000	$1,030,000	$1,061,000	$1,093,000	$1,126,000	$1,160,000	$1,195,000	$1,231,000	$1,524,000	$1,779,000	$1,857,000	$1,938,000	$2,021,000	$2,107,000	$2,195,000	$3,520,000	$2,380,000	$2,476,000	$2,575,000	$2,677,000
Funds Available For Capital Projects	$2,892,000	$2,071,060	$1,235,222	$316,458	$86,284	$83,302	$86,291	$88,250	$94,178	$100,073	$107,935	$113,763	$121,556	$129,313	$137,032	$151,713	$164,354	$173,955	$183,514	$194,029
Funds Used For Capital Projects	($1,000,000)	($1,030,000)	($1,061,000)	($316,458)	($86,284)	($83,302)	($86,291)	($88,250)	($94,178)	($100,073)	($107,935)	($113,763)	($121,556)	($129,313)	($137,032)	($151,713)	($164,354)	($173,955)	($183,514)	($194,029)
Unfunded Capital Projects	$0	$0	$0	$776,542	$1,039,716	$1,076,698	$1,108,709	$1,142,750	$1,429,822	$1,678,927	$1,749,065	$1,824,237	$1,899,444	$1,977,687	$2,057,968	$3,368,287	$2,215,646	$2,302,045	$2,391,486	$2,482,971
Par Amount	$0	$0	$0	$851,542	$1,128,716	$1,169,658	$1,203,562	$1,241,182	$1,544,514	$1,806,115	$1,883,795	$1,965,636	$2,037,259	$2,123,179	$2,211,116	$3,611,940	$2,382,903	$2,465,817	$2,563,145	$2,664,394
Annual Debt Service																				
Debt Service At Beginning Of Forecast Period	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000
New Debt Service During Forecast Period	$0	$0	$0	$62,000	$144,000	$229,000	$316,000	$406,000	$518,000	$649,000	$786,000	$929,000	$1,077,000	$1,231,000	$1,392,000	$1,654,000	$1,827,000	$2,006,000	$2,192,000	$2,386,000
Total Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,662,000	$2,744,000	$2,829,000	$2,916,000	$3,006,000	$3,118,000	$3,249,000	$3,386,000	$3,529,000	$3,677,000	$3,831,000	$3,992,000	$4,254,000	$4,427,000	$4,606,000	$4,792,000	$4,986,000

Notes: (1) See Figure 3 for detail of costs.

SOURCE: BURTON & ASSOCIATES

C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

Figure 2

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

Pro Forma Projection of Results of Financial Performance of Entity

Scenario 3 - Surface Water, Water Supply Entity

Just In Time Rates

#		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	Annual Flow																				
2	Annual Flow (MGD) - Beginning of Year	NA	68.09	69.98	71.92	73.92	75.97	78.08	80.25	82.48	84.77	87.12	89.54	92.02	94.57	97.19	99.89	102.66	105.51	108.44	111.45
3	Growth in Annual Flow (MGD)	NA	1.89	1.94	2.00	2.05	2.11	2.17	2.23	2.29	2.35	2.42	2.48	2.55	2.62	2.70	2.77	2.85	2.93	3.01	3.09
4	Annual Flow - End of Year	68.09	69.98	71.92	73.92	75.97	78.08	80.25	82.48	84.77	87.12	89.54	92.02	94.57	97.19	99.89	102.66	105.51	108.44	111.45	114.54
5																					
6	Annual Flow - 000s - Beginning of Year	0	24,852,850	25,542,700	26,250,800	26,980,800	27,729,050	28,499,200	29,291,250	30,105,200	30,941,050	31,798,800	32,682,100	33,587,300	34,518,050	35,474,350	36,459,850	37,470,900	38,511,150	39,580,600	40,679,250
7	Annual Flow - 000s - Growth	0	689,850	708,100	730,000	748,250	770,150	792,050	813,950	835,850	857,750	883,300	905,200	930,750	956,300	985,500	1,011,050	1,040,250	1,069,450	1,098,650	1,127,850
8	Annual Flow - 000s - End of Year	24,852,850	25,542,700	26,250,800	26,980,800	27,729,050	28,499,200	29,291,250	30,105,200	30,941,050	31,798,800	32,682,100	33,587,300	34,518,050	35,474,350	36,459,850	37,470,900	38,511,150	39,580,600	40,679,250	41,807,100
9																					
10	**PRO FORMA - ENTITY**																				
11	**Revenue:**																				
12	Gallons Sold	24,852,850	25,542,700	26,250,800	26,980,800	27,729,050	28,499,200	29,291,250	30,105,200	30,941,050	31,798,800	32,682,100	33,587,300	34,518,050	35,474,350	36,459,850	37,470,900	38,511,150	39,580,600	40,679,250	41,807,100
13	Purchased Water Rate	$0.00	$0.00	$0.00	$0.00	$0.00	$0.87	$0.87	$0.89	$0.90	$0.92	$0.94	$0.96	$0.99	$1.01	$1.04	$2.06	$2.06	$2.06	$2.07	$2.08
14	Water Rate Revenue	$0	$0	$0	$0	$0	$24,669,304	$25,569,693	$26,727,604	$27,979,052	$29,331,053	$30,796,625	$32,375,784	$34,080,547	$35,918,934	$37,904,962	$77,052,208	$79,178,577	$81,594,648	$84,195,440	$86,989,977
15	Other Operating Revenue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
16	Interest Earnings	$0	$0	$0	$0	$0	$189,000	$396,000	$433,000	$470,000	$507,000	$544,000	$581,000	$618,000	$655,000	$692,000	$874,000	$1,086,000	$1,182,000	$1,278,000	$1,374,000
17	Total Revenue	$0	$0	$0	$0	$0	$24,858,304	$25,965,693	$27,160,604	$28,449,052	$29,838,053	$31,340,625	$32,956,784	$34,698,547	$36,573,934	$38,596,962	$77,926,208	$80,264,577	$82,776,648	$85,473,440	$88,363,977
18	**Expenses:**																				
19	Administration Costs	$0	$0	$0	$0	$0	$579,637	$597,026	$614,937	$633,385	$652,387	$671,958	$692,117	$712,880	$734,267	$756,295	$778,984	$802,353	$826,424	$851,217	$876,753
20	Additional O&M From Treatment For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$873,000	$1,809,000	$2,821,000	$3,914,000	$5,094,000	$6,371,000	$7,747,000	$9,231,000	$10,830,000	$12,557,000	$14,414,000	$16,412,000	$18,561,000	$20,868,000	$23,343,000
21	Additional O&M From Transmission For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$148,000	$302,000	$467,000	$644,000	$834,000	$1,040,000	$1,260,000	$1,497,000	$1,752,000	$2,026,000	$2,321,000	$2,638,000	$2,977,000	$3,342,000	$3,732,000
22	Total Operating Expenses - Water	$0	$0	$0	$0	$0	$1,600,637	$2,708,026	$3,902,937	$5,191,385	$6,580,387	$8,082,958	$9,699,117	$11,440,880	$13,316,267	$15,339,295	$17,513,984	$19,852,353	$22,364,424	$25,061,217	$27,951,753
23	**Net Income**	**$0**	**$0**	**$0**	**$0**	**$0**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$60,412,224**	**$60,412,224**	**$60,412,224**	**$60,412,224**	**$60,412,224**
24																					
25	**Debt Service Coverage Test**																				
26	Net Income	$0	$0	$0	$0	$0	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$60,412,224	$60,412,224	$60,412,224	$60,412,224	$60,412,224
27	Annual Debt Service	$0	$0	$0	$0	$0	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$54,920,203	$54,920,203	$54,920,203	$54,920,203	$54,920,203
28	Coverage Ratio - Calculated	NA	NA	NA	NA	NA	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
29	*Coverage Ratio - Required*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
30																					
31	**Working Capital Reserves Test**																				
32	Beginning Balance	$0	$0	$0	$0	$0	$0	$21,543,493	$23,657,826	$25,772,159	$27,886,493	$30,000,826	$32,115,159	$34,229,493	$36,343,826	$38,458,159	$40,572,493	$59,298,699	$64,790,720	$70,282,740	$75,774,760
33	Net Income	$0	$0	$0	$0	$0	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$60,412,224	$60,412,224	$60,412,224	$60,412,224	$60,412,224
34	Balance Before Other Sources (Uses) of Funds	$0	$0	$0	$0	$0	$23,257,667	$44,801,159	$46,915,493	$49,029,826	$51,144,159	$53,258,493	$55,372,826	$57,487,160	$59,601,493	$61,715,826	$100,984,717	$119,710,923	$125,202,944	$130,694,964	$136,186,984
35	Other Sources (Uses) of Funds																				
36	Debt Service Reserve Proceeds	$0	$0	$0	$0	$0	$21,143,333	$0	$0	$0	$0	$0	$0	$0	$0	$0	$33,776,870	$0	$0	$0	$0
37	Capital Outlay	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
38	Debt Service At Beginning Of Forecast Period	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
39	New Debt Service During Forecast Period	$0	$0	$0	$0	$0	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($54,920,203)	($54,920,203)	($54,920,203)	($54,920,203)	($54,920,203)
40	Less: Required Reserves	$0	$0	$0	$0	$0	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($54,920,203)	($54,920,203)	($54,920,203)	($54,920,203)	($54,920,203)
41	Unrestricted Balance	$0	$0	$0	$0	$0	$2,114,333	$2,514,493	$4,628,826	$6,743,159	$8,857,493	$10,971,826	$13,086,159	$15,200,493	$17,314,826	$19,429,159	$24,921,180	$9,870,516	$15,362,537	$20,854,557	$26,346,577
42	*Minimum Required Working Capital Reserves*	*$0*	*$0*	*$0*	*$0*	*$0*	*$400,159*	*$677,007*	*$975,734*	*$1,297,846*	*$1,645,097*	*$2,020,740*	*$2,424,779*	*$2,860,220*	*$3,329,067*	*$3,834,824*	*$4,378,496*	*$4,963,088*	*$5,591,106*	*$6,265,304*	*$6,987,938*
43	Less: Funds Used To Pay Capital Projects	$0	$0	$0	$0	$0	($1,714,174)	$0	$0	$0	$0	$0	$0	$0	$0	$0	($20,542,684)	$0	$0	$0	$0
44	Ending Unrestricted Balance	$0	$0	$0	$0	$0	$400,159	$2,514,493	$4,628,826	$6,743,159	$8,857,493	$10,971,826	$13,086,159	$15,200,493	$17,314,826	$19,429,159	$4,378,496	$9,870,516	$15,362,537	$20,854,557	$26,346,577
45	Add Back: Restricted Reserves	$0	$0	$0	$0	$0	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$54,920,203	$54,920,203	$54,920,203	$54,920,203	$54,920,203
46	Ending Balance	$0	$0	$0	$0	$0	$21,543,493	$23,657,826	$25,772,159	$27,886,493	$30,000,826	$32,115,159	$34,229,493	$36,343,826	$38,458,159	$40,572,493	$59,298,699	$64,790,720	$70,282,740	$75,774,760	$81,266,781
47																					
48																					
49	Calculation Of Bulk Rate Per 1,000 Gallons																				
50	Water Rate Revenue - Restated	$0	$0	$0	$0	$0	$24,669,304	$25,569,693	$26,727,604	$27,979,052	$29,331,053	$30,796,625	$32,375,784	$34,080,547	$35,918,934	$37,904,962	$77,052,208	$79,178,577	$81,594,648	$84,195,440	$86,989,977
51	Annual Flow (1,000 Gallons)	24,852,850	25,542,700	26,250,800	26,980,800	27,729,050	28,499,200	29,291,250	30,105,200	30,941,050	31,798,800	32,682,100	33,587,300	34,518,050	35,474,350	36,459,850	37,470,900	38,511,150	39,580,600	40,679,250	41,807,100
52	Retail Rate Per 1,000 Gallons	$0.00	$0.00	$0.00	$0.00	$0.00	$0.87	$0.87	$0.89	$0.90	$0.92	$0.94	$0.96	$0.99	$1.01	$1.04	$2.06	$2.06	$2.06	$2.07	$2.08
53																					
54	Calculation Of New Debt Service:																				
55	Capital Projects																				
56	Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$198,255,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$340,435,000	$0	$0	$0	$0
57	Capital Improvements - Water - Alternative Supply - Transmission /Pumping (1)	$0	$0	$0	$0	$0	$71,383,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$108,121,000	$0	$0	$0	$0
58	Total Projects	$0	$0	$0	$0	$0	$269,638,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$448,556,000	$0	$0	$0	$0
59	Water Impact Fee Funds Available For Capital Projects	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
60	Capital Projects Funded With Water Impact Fees	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
61	Remaining Capital Projects To Be Funded	$0	$0	$0	$0	$0	$269,638,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$448,556,000	$0	$0	$0	$0
62	Funds Available For Capital Projects	$0	$0	$0	$0	$0	$1,714,174	$1,837,486	$3,653,092	$5,445,313	$7,212,396	$8,951,086	$10,661,380	$12,340,273	$13,985,759	$15,594,336	$20,542,684	$4,907,428	$9,771,431	$14,589,253	$19,358,639
63	Funds Used For Capital Projects	$0	$0	$0	$0	$0	($1,714,174)	$0	$0	$0	$0	$0	$0	$0	$0	$0	($20,542,684)	$0	$0	$0	$0
64	Unfunded Capital Projects	$0	$0	$0	$0	$0	$267,923,826	$0	$0	$0	$0	$0	$0	$0	$0	$0	$428,013,316	$0	$0	$0	$0
65	Par Amount	$0	$0	$0	$0	$0	$291,034,415	$0	$0	$0	$0	$0	$0	$0	$0	$0	$464,932,913	$0	$0	$0	$0
66																					
67	Annual Debt Service																				
68	Debt Service At Beginning Of Forecast Period	$0	$0	$0	$0	$0	$0	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$54,920,203	$54,920,203	$54,920,203	$54,920,203
69	New Debt Service During Forecast Period	$0	$0	$0	$0	$0	$21,143,333	$0	$0	$0	$0	$0	$0	$0	$0	$0	$33,776,870	$0	$0	$0	$0
70	Total Annual Debt Service	$0	$0	$0	$0	$0	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$54,920,203	$54,920,203	$54,920,203	$54,920,203	$54,920,203

Notes: (1) See Figure 4 for detail of costs.

SOURCE: BURTON & ASSOCIATES

C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

02/10/2003

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

O&M and Capital Cost Projections for Additional Capacity - Utility

Scenario 3 - Surface Water, Water Supply Entity

Just In Time Rates

Line	Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	Annual Flow (MGD) - Prior Year	NA	7.97	8.17	8.36	8.56	8.75	8.94	9.14	9.33	9.53	9.72	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47
2	Annual Growth in Flow (MGD)	NA	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
3	Annual Flow (MGD) - Current Year	7.97	8.17	8.36	8.56	8.75	8.94	9.14	9.33	9.53	9.72	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47	11.67
4	Margin Reserve Capacity (MGD)	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
5	Total Capacity Required (MGD)	8.56	8.75	8.94	9.14	9.33	9.53	9.72	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47	11.67	11.86	12.06	12.25
6	Capacity (MGD) (1)	9.41	9.41	9.41	9.41	9.41	9.41	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35	13.30	13.30	13.30	13.30
7	Additional Capacity Required (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
8	Additional Flow Associated with New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
10	Annual Flow (1,000 Gallons)	2,909,832	2,980,804	3,051,775	3,122,747	3,193,718	3,264,690	3,335,661	3,406,633	3,477,604	3,548,576	3,619,547	3,690,519	3,761,490	3,832,462	3,903,433	3,974,405	4,045,376	4,116,348	4,187,319	4,258,291
11	Additional Flow Associated with New Capacity (1,000 Gallons)	0	0	0	0	0	70,972	141,943	212,915	283,886	354,858	425,829	496,801	567,772	638,744	709,715	780,687	851,658	922,630	993,601	1,064,573
13	Cost Inflator	NA	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
15	**Additional Costs Associated with Expansion of Groundwater Capacity**																				
16	O&M Costs																				
17	Groundwater Source (Wellfield) Expansion Costs																				
18	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$23,690	$24,401	$25,133	$25,887	$26,663	$27,463	$28,287	$29,136	$30,010	$30,910	$31,837	$32,793	$33,776	$34,790	$35,833	$36,908	$38,015	$39,156	$40,331	$41,541
19	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Factor - (Input from CH2MHill)	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163
21	Total Cost - (Line 18 times Line 19 to the power of Line 20)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
23	Groundwater Treatment System Expansion Costs																				
24	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$53,869	$55,485	$57,150	$58,864	$60,630	$62,449	$64,322	$66,252	$68,240	$70,287	$72,395	$74,567	$76,804	$79,108	$81,482	$83,926	$86,444	$89,037	$91,708	$94,460
25	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26	Factor - (Input from CH2MHill)	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536
27	Total Cost - (Line 24 times Line 25 to the power of Line 26)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
29	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
31	Capital Costs																				
32	Groundwater Source (Wellfield) Expansion Costs																				
33	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$285,310	$293,869	$302,685	$311,766	$321,119	$330,752	$340,675	$350,895	$361,422	$372,265	$383,433	$394,936	$406,784	$418,987	$431,557	$444,504	$457,839	$471,574	$485,721	$500,293
34	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
35	Factor - (Input from CH2MHill)	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544
36	Total Cost - (Line 33 times Line 34 to the power of Line 35)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
38	Groundwater Treatment System Expansion Costs																				
39	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$1,717,010	$1,768,520	$1,821,576	$1,876,223	$1,932,510	$1,990,485	$2,050,200	$2,111,706	$2,175,057	$2,240,309	$2,307,518	$2,376,743	$2,448,046	$2,521,487	$2,597,132	$2,675,046	$2,755,297	$2,837,956	$2,923,095	$3,010,787
40	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
41	Factor - (Input from CH2MHill)	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893
42	Total Cost - (Line 39 times Line 40 to the power of Line 41)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
44	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

47 Notes: (1) In order to simplify the analysis, it was assumed that the capacity at the beginning of the projection period is equal to the maximum groundwater withdrawal limit.

Figure 3
Page 2 of 2

St. Johns River Water Management District
Analysis of Rate Impact to Sample Utility of Alternative Water Sources
O&M and Capital Cost Projections for Additional Capacity - Utility

Scenario 3 - Surface Water, Water Supply Entity

Line	Add'l Costs Associated w/ Construction/Expansion of Surface Water Capacity	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
49	O&M Costs																				
50	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
51	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$360,088	$370,891	$382,017	$393,478	$405,282	$417,441	$429,964	$442,863	$456,149	$469,833	$483,928	$498,446	$513,399	$528,801	$544,665	$561,005	$577,836	$595,171	$613,026	$631,416
52	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
53	Factor - (Input from CH2MHill)	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884
54	Total Cost - (Line 51 times Line 52 to the power of Line 53)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
55																					
56	Surface Water System Costs (Transmission Line)																				
57	Length of Line 25 Miles																				
58	O&M Cost Component	$61,800	$63,654	$65,564	$67,531	$69,556	$71,643	$73,792	$76,006	$78,286	$80,635	$83,054	$85,546	$88,112	$90,755	$93,478	$96,282	$99,171	$102,146	$105,210	$108,367
59	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
60	Factor - (Input from CH2MHill)	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
61	Total Cost - (Line 58 times Line 59 to the power of Line 60)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
62																					
63	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
64	Variable O&M Cost Component	$2,431	$2,504	$2,579	$2,656	$2,736	$2,818	$2,903	$2,990	$3,079	$3,172	$3,267	$3,365	$3,466	$3,570	$3,677	$3,787	$3,901	$4,018	$4,138	$4,262
65	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
66	Constant O&M Component	25,132	25,886	26,663	27,462	28,286	29,135	30,009	30,909	31,836	32,792	33,775	34,789	35,832	36,907	38,014	39,155	40,329	41,539	42,786	44,069
67	Total Cost - (Line 64 times Line 65 plus Line 66)	$0	$0	$0	$0	$0	$30,000	$31,000	$33,000	$34,000	$36,000	$38,000	$39,000	$41,000	$43,000	$45,000	$47,000	$49,000	$52,000	$54,000	$57,000
68																					
69	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
70	Variable O&M Cost Component	$22,794	$23,478	$24,182	$24,908	$25,655	$26,424	$27,217	$28,034	$28,875	$29,741	$30,633	$31,552	$32,499	$33,474	$34,478	$35,512	$36,578	$37,675	$38,805	$39,969
71	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
72	Constant O&M Component	3,214	3,310	3,409	3,512	3,617	3,725	3,837	3,952	4,071	4,193	4,319	4,448	4,582	4,719	4,861	5,007	5,157	5,312	5,471	5,635
73	Total Cost - (Line 70 times Line 71 plus Line 72)	$0	$0	$0	$0	$0	$9,000	$14,000	$20,000	$27,000	$33,000	$40,000	$47,000	$55,000	$63,000	$72,000	$81,000	$91,000	$101,000	$111,000	$122,000
74																					
75	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$39,000**	**$45,000**	**$53,000**	**$61,000**	**$69,000**	**$78,000**	**$86,000**	**$96,000**	**$106,000**	**$117,000**	**$128,000**	**$140,000**	**$153,000**	**$165,000**	**$179,000**
76																					
77	Capital Costs																				
78	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
79	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$9,010,440	$9,280,753	$9,559,176	$9,845,951	$10,141,330	$10,445,569	$10,758,937	$11,081,705	$11,414,156	$11,756,580	$12,109,278	$12,472,556	$12,846,733	$13,232,135	$13,629,099	$14,037,972	$14,459,111	$14,892,884	$15,339,671	$15,799,861
80	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
81	Factor - (Input from CH2MHill)	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016
82	Total Cost - (Line 79 times Line 80 to the power of Line 81)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
83																					
84	Surface Water System Costs (Transmission Line)																				
85	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$508,305	$523,554	$539,261	$555,439	$572,102	$589,265	$606,943	$625,151	$643,906	$663,223	$683,119	$703,613	$724,721	$746,463	$768,857	$791,923	$815,680	$840,151	$865,355	$891,316
86	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
87	Capacity Factor (MGD) - (Input from CH2MHill)	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400
88	Length of Line (Miles)	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
89	Length Factor - (Input from CH2MHill)	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440
90	Total Cost - (Line 85 times Line 86 to the power of Line 87 times Line 88 to the power of Line 89)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
91																					
92	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
93	Variable Capital Component - (Input from CH2MHill)	$2,575	$2,652	$2,732	$2,814	$2,898	$2,985	$3,075	$3,167	$3,262	$3,360	$3,461	$3,564	$3,671	$3,781	$3,895	$4,012	$4,132	$4,256	$4,384	$4,515
94	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
95	Constant Capital Component - (Input from CH2MHill)	55,105	56,758	58,461	60,215	62,021	63,882	65,798	67,772	69,805	71,900	74,057	76,278	78,567	80,924	83,351	85,852	88,427	91,080	93,813	96,627
96	Total Cost - (Line 93 times Line 94 plus Line 95)	$0	$0	$0	$0	$0	$70,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$94,000	$0	$0	$0	$0
97																					
98	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
99	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$442,797	$456,081	$469,763	$483,856	$498,372	$513,323	$528,723	$544,584	$560,922	$577,750	$595,082	$612,935	$631,323	$650,262	$669,770	$689,863	$710,559	$731,876	$753,832	$776,447
100	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
101	Factor - (Input from CH2MHill)	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559
102	Total Cost - (Line 99 times Line 100 to the power of Line 101)	$0	$0	$0	$0	$0	$849,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,140,000	$0	$0	$0	$0
103																					
104	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$919,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,234,000**	**$0**	**$0**	**$0**	**$0**
105																					

Source: Burton & Associates
C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

02/10/2003

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

O&M and Capital Cost Projections for Additional Capacity - Entity

Scenario 3 - Surface Water, Water Supply Entity

Just In Time Rates

Line		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
2	Annual Flow (MGD) - Prior Year	NA	68.09	69.98	71.92	73.92	75.97	78.08	80.25	82.48	84.77	87.12	89.54	92.02	94.57	97.19	99.89	102.66	105.51	108.44	111.45
3	Annual Growth in Flow (MGD)	NA	1.89	1.94	2.00	2.05	2.11	2.17	2.23	2.29	2.35	2.42	2.48	2.55	2.62	2.70	2.77	2.85	2.93	3.01	3.09
4	Annual Flow (MGD) - Current Year	68.09	69.98	71.92	73.92	75.97	78.08	80.25	82.48	84.77	87.12	89.54	92.02	94.57	97.19	99.89	102.66	105.51	108.44	111.45	114.54
5	Margin Reserve Capacity (MGD)	NA	NA	NA	NA	NA	6.51	6.69	6.87	7.06	7.25	7.45	7.65	7.87	8.09	8.32	8.55	8.79	9.03	9.28	9.53
6	Total Capacity Required (MGD)	68.09	69.98	71.92	73.92	75.97	84.59	86.94	89.35	91.83	94.37	96.99	99.67	102.44	105.28	108.21	111.21	114.30	117.47	120.73	124.07
7	Capacity - Groundwater (1)	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00
8	Capacity - Surface Water	0.00	0.00	0.00	0.00	0.00	26.17	26.17	26.17	26.17	26.17	26.17	26.17	26.17	26.17	26.17	60.51	60.51	60.51	60.51	60.51
9	Total Capacity (MGD)	83.00	83.00	83.00	83.00	83.00	109.17	109.17	109.17	109.17	109.17	109.17	109.17	109.17	109.17	109.17	143.51	143.51	143.51	143.51	143.51
10	Additional Capacity Required (MGD)	0.00	0.00	0.00	0.00	0.00	26.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.34	0.00	0.00	0.00	0.00
11	Additional Flow Associated with New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	2.11	4.28	6.51	8.80	11.15	13.57	16.05	18.60	21.22	23.92	26.69	29.54	32.47	35.48	38.57
12																					
13	Annual Flow (1,000 Gallons)	24,852,850	25,542,700	26,250,800	26,980,800	27,729,050	28,499,200	29,291,250	30,105,200	30,941,050	31,798,800	32,682,100	33,587,300	34,518,050	35,474,350	36,459,850	37,470,900	38,511,150	39,580,600	40,679,250	41,807,100
14	Additional Flow Associated with New Capacity (1,000 Gallons)	0	0	0	0	0	770,150	1,562,200	2,376,150	3,212,000	4,069,750	4,953,050	5,858,250	6,789,000	7,745,300	8,730,800	9,741,850	10,782,100	11,851,550	12,950,200	14,078,050
15																					
16	**Additional Costs Associated with Construction/Expansion of Surface Water Capacity**																				
17	O&M Costs																				
18	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
19	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$360,088	$370,891	$382,017	$393,478	$405,282	$417,441	$429,964	$442,863	$456,149	$469,833	$483,928	$498,446	$513,399	$528,801	$544,665	$561,005	$577,836	$595,171	$613,026	$631,416
20	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	2.11	4.28	6.51	8.80	11.15	13.57	16.05	18.60	21.22	23.92	26.69	29.54	32.47	35.48	38.57
21	Factor - (Input from CH2MHill)	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884
22	Total Cost - (Line 19 times Line 20 to the power of Line 21)	$0	$0	$0	$0	$0	$873,000	$1,809,000	$2,821,000	$3,914,000	$5,094,000	$6,371,000	$7,747,000	$9,231,000	$10,830,000	$12,557,000	$14,414,000	$16,412,000	$18,561,000	$20,868,000	$23,343,000
23																					
24	Surface Water System Costs (Transmission Line)																				
25	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$61,800	$63,654	$65,564	$67,531	$69,556	$71,643	$73,792	$76,006	$78,286	$80,635	$83,054	$85,546	$88,112	$90,755	$93,478	$96,282	$99,171	$102,146	$105,210	$108,367
26	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	2.11	4.28	6.51	8.80	11.15	13.57	16.05	18.60	21.22	23.92	26.69	29.54	32.47	35.48	38.57
27	Factor - (Input from CH2MHill)	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
28	Total Cost - (Line 25 times Line 26 to the power of Line 27)	$0	$0	$0	$0	$0	$148,000	$302,000	$467,000	$644,000	$834,000	$1,040,000	$1,260,000	$1,497,000	$1,752,000	$2,026,000	$2,321,000	$2,638,000	$2,977,000	$3,342,000	$3,732,000
29																					
30	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
31	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
32	Additional Flow From New Capacity (MGD)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
33	Factor - (Input from CH2MHill)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
34	Total Cost - (Line 31 times Line 32 to the power of Line 33)																				
35																					
36	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
37	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
38	Additional Flow From New Capacity (MGD)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
39	Factor - (Input from CH2MHill)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
40	Total Cost - (Line 37 times Line 38 to the power of Line 39)																				
41																					
42	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,021,000**	**$2,111,000**	**$3,288,000**	**$4,558,000**	**$5,928,000**	**$7,411,000**	**$9,007,000**	**$10,728,000**	**$12,582,000**	**$14,583,000**	**$16,735,000**	**$19,050,000**	**$21,538,000**	**$24,210,000**	**$27,075,000**
43																					
44	Capital Costs																				
45	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
46	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$9,010,440	$9,280,753	$9,559,176	$9,845,951	$10,141,330	$10,445,569	$10,758,937	$11,081,705	$11,414,156	$11,756,580	$12,109,278	$12,472,556	$12,846,733	$13,232,135	$13,629,099	$14,037,972	$14,459,111	$14,892,884	$15,339,671	$15,799,861
47	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	26.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.34	0.00	0.00	0.00	0.00
48	Factor - (Input from CH2MHill)	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016
49	Total Cost - (Line 46 times Line 47 to the power of Line 48)	$0	$0	$0	$0	$0	$198,255,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$340,435,000	$0	$0	$0	$0
50																					
51	Surface Water System Costs (Transmission Line)																				
52	Length of Line																				
53	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$508,305	$523,554	$539,261	$555,439	$572,102	$589,265	$606,943	$625,151	$643,906	$663,223	$683,119	$703,613	$724,721	$746,463	$768,857	$791,923	$815,680	$840,151	$865,355	$891,316
54	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	26.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.34	0.00	0.00	0.00	0.00
55	MGD Factor - (Input from CH2MHill)	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400
56	Length of Line (Miles)	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
57	Length Factor - (Input from CH2MHill)	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440
58	Total Cost - (Line 53 times Line 54 to the power of Line 55 times Line 56 to the power of Line 57)	$0	$0	$0	$0	$0	$71,383,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$108,121,000	$0	$0	$0	$0
59																					
60	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
61	Variable O&M Cost Component	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
62	Additional Flow From New Capacity (MGD)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
63	Constant O&M Component	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
64	Total Cost - (Line 61 times Line 62 plus Line 63)																				
65																					
66	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
67	Variable O&M Cost Component	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
68	Additional Flow From New Capacity (MGD)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
69	Constant O&M Component	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
70	Total Cost - (Line 67 times Line 68 plus Line 69)																				
71																					
72	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$269,638,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$448,556,000**	**$0**	**$0**	**$0**	**$0**
73																					

Notes: (1) Imputed total for all local utilities based upon current total county flow.

Source: Burton & Associates
C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

02/10/2003

APPENDIX C

Scenario 3 – Surface Water
Level Rates

Figure Number	Title	Included
1.	Pro Forma Projection of Results of Financial Performance of Sample Utility	Yes
2	Pro Forma Projection of Results of Financial Performance of Sample Entity	Yes
3	O&M and Capital Cost Projections for Additional Capacity – Utility	Yes
4	O&M and Capital Cost Projections for Additional Capacity – Entity	Yes

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

Pro Forma Projection of Results of Financial Performance of Sample Utility

Scenario 3 - Surface Water, Water Supply Entity

Level Rates

Annual Flow	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
ERCs - Beginning of Year	33,333	34,167	35,001	35,835	36,669	37,503	38,337	39,171	40,005	40,839
Growth in ERCs	834	834	834	834	834	834	834	834	834	834
ERCs - End of Year	34,167	35,001	35,835	36,669	37,503	38,337	39,171	40,005	40,839	41,673
Avg Daily Flow	233	233	233	233	233	233	233	233	233	233
Annual Flow (MGD) - Beginning of Year	7.78	7.97	8.17	8.36	8.56	8.75	8.95	9.14	9.33	9.53
Growth in Annual Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Annual Flow - End of Year	7.97	8.17	8.36	8.56	8.75	8.95	9.14	9.33	9.53	9.72
Annual Flow - 000s - Beginning of Year	2,838,861	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122
Annual Flow - 000s - Growth	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029
Annual Flow - 000s - End of Year	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
PRO FORMA - UTILITY										
Revenue:										
Water Rate Revenue	$6,100,000	$6,584,000	$7,102,000	$7,656,000	$8,249,000	$8,883,000	$9,594,000	$10,146,000	$10,725,000	$11,331,000
Growth	2.50%	2.44%	2.38%	2.33%	2.27%	2.22%	2.17%	2.13%	2.08%	2.04%
Add'l Rate Revenue From Growth	$153,000	$161,000	$169,000	$178,000	$187,000	$197,000	$209,000	$216,000	$223,000	$231,000
Water Rate Revenue Before Rate Increase	$6,253,000	$6,745,000	$7,271,000	$7,834,000	$8,436,000	$9,080,000	$9,803,000	$10,362,000	$10,948,000	$11,562,000
Rate Increase	5.30%	5.30%	5.30%	5.30%	5.30%	5.66%	3.50%	3.50%	3.50%	3.50%
Add'l Rate Revenue From Rate Increase In Prior Year	$331,000	$357,000	$385,000	$415,000	$447,000	$514,000	$343,000	$363,000	$383,000	$405,000
Water Rate Revenue	$6,584,000	$7,102,000	$7,656,000	$8,249,000	$8,883,000	$9,594,000	$10,146,000	$10,725,000	$11,331,000	$11,967,000
Other Operating Revenue	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000
Interest Earnings	$60,000	$60,000	$70,000	$90,000	$130,000	$140,000	$130,000	$120,000	$110,000	$100,000
Total Revenue	$7,254,000	$7,772,000	$8,336,000	$8,949,000	$9,623,000	$10,344,000	$10,886,000	$11,455,000	$12,051,000	$12,677,000
Expenses:										
Baseline Operating Expenses	$3,990,000	$4,110,000	$4,233,000	$4,360,000	$4,491,000	$4,626,000	$4,765,000	$4,908,000	$5,055,000	$5,207,000
Additional O&M From Additional Groundwater Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$30,000	$31,000	$33,000	$34,000	$36,000
Additional O&M From High Service Pumps (1)	$0	$0	$0	$0	$0	$9,000	$14,000	$20,000	$27,000	$33,000
Additional O&M From Treatment For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Transmission For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchased Water Costs:										
Total Annual Flow (Purchased Water Rate Developed Based Upon Total Flow - Not Surface Water Flow Only)	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
Purchased Water Rate Per 1,000 Gallons	$0.00	$0.00	$0.00	$0.00	$0.00	$0.87	$0.87	$0.89	$0.90	$0.92
Annual Purchased Water Cost	$0	$0	$0	$0	$0	$2,826,000	$2,912,000	$3,025,000	$3,145,000	$3,274,000
Total Operating Expenses - Water	$3,990,000	$4,110,000	$4,233,000	$4,360,000	$4,491,000	$7,491,000	$7,722,000	$7,986,000	$8,261,000	$8,550,000
Net Income	**$3,264,000**	**$3,662,000**	**$4,103,000**	**$4,589,000**	**$5,132,000**	**$2,853,000**	**$3,164,000**	**$3,469,000**	**$3,790,000**	**$4,127,000**
Debt Service Coverage Test										
Net Income	$3,264,000	$3,662,000	$4,103,000	$4,589,000	$5,132,000	$2,853,000	$3,164,000	$3,469,000	$3,790,000	$4,127,000
Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000
Coverage Ratio - Calculated	1.26	1.41	1.58	1.77	1.97	1.10	1.22	1.33	1.46	1.59
Coverage Ratio - Required	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
Working Capital Reserves Test										
Beginning Balance	$4,200,000	$3,721,000	$3,608,000	$3,901,000	$4,644,000	$5,894,000	$4,828,039	$4,033,186	$3,503,754	$2,998,062
Net Income	$3,264,000	$3,662,000	$4,103,000	$4,589,000	$5,132,000	$2,853,000	$3,164,000	$3,469,000	$3,790,000	$4,127,000
Balance Before Other Sources (Uses) of Funds	$7,464,000	$7,383,000	$7,711,000	$8,490,000	$9,776,000	$8,747,000	$7,992,039	$7,502,186	$7,293,754	$7,125,062
Other Sources (Uses) Of Funds										
Debt Service Reserve Proceeds	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Outlay	($143,000)	($147,000)	($151,000)	($156,000)	($161,000)	($166,000)	($171,000)	($176,000)	($181,000)	($186,000)
Debt Service At Beginning Of Forecast Period	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)
New Debt Service During Forecast Period	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Less: Required Reserves	($500,000)	($500,000)	($500,000)	($500,000)	($500,000)	($500,000)	($500,000)	($500,000)	($500,000)	($500,000)
Unrestricted Balance	$4,221,000	$4,136,000	$4,460,000	$5,234,000	$6,515,000	$5,481,000	$4,721,039	$4,226,186	$4,012,754	$3,839,062
Minimum Required Working Capital Reserves	*$998,000*	*$1,027,940*	*$1,058,778*	*$1,090,542*	*$1,123,258*	*$1,156,956*	*$1,191,664*	*$1,227,414*	*$1,264,237*	*$1,302,164*
Less: Funds Used To Pay Capital Projects	($1,000,000)	($1,030,000)	($1,061,000)	($1,093,000)	($1,126,000)	($1,160,000)	($1,195,000)	($1,231,000)	($1,524,000)	($1,779,000)
Ending Unrestricted Balance	$3,221,000	$3,106,000	$3,399,000	$4,141,000	$5,389,000	$4,321,000	$3,526,039	$2,995,186	$2,488,754	$2,060,062
Add Back: Restricted Reserves	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000
Ending Balance	$3,721,000	$3,606,000	$3,899,000	$4,641,000	$5,889,000	$4,821,000	$4,026,039	$3,495,186	$2,988,754	$2,560,062
Calculation Of Retail Rate Per 1,000 Gallons										
Water Rate Revenue - Restated	$6,584,000	$7,102,000	$7,656,000	$8,249,000	$8,883,000	$9,594,000	$10,146,000	$10,725,000	$11,331,000	$11,967,000
Annual Flow (1,000 Gallons)	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
Retail Rate Per 1,000 Gallons	$2.26	$2.38	$2.51	$2.64	$2.78	$2.94	$3.04	$3.15	$3.26	$3.37
Calculation Of New Debt Service:										
Capital Projects										
Capital Improvements - Water - Miscellaneous & R&R	$2,000,000	$2,060,000	$2,122,000	$2,186,000	$2,252,000	$2,320,000	$2,390,000	$2,462,000	$2,536,000	$2,612,000
Capital Improvements - Water - Groundwater Supply and Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$70,000	$0	$0	$0	$0
Capital Improvements - Water - High Service Pumps (1)	$0	$0	$0	$0	$0	$849,000	$0	$0	$0	$0
Total Projects	$2,000,000	$2,060,000	$2,122,000	$2,186,000	$2,252,000	$3,239,000	$2,390,000	$2,462,000	$2,536,000	$2,612,000
Water Impact Fee Funds Available For Capital Projects	$1,000,000	$1,030,000	$1,061,000	$1,093,000	$1,126,000	$2,079,000	$1,195,000	$1,231,000	$1,012,000	$833,000
Capital Projects Funded With Water Impact Fees	($1,000,000)	($1,030,000)	($1,061,000)	($1,093,000)	($1,126,000)	($2,079,000)	($1,195,000)	($1,231,000)	($1,012,000)	($833,000)
Remaining Capital Projects To Be Funded	$1,000,000	$1,030,000	$1,061,000	$1,093,000	$1,126,000	$1,160,000	$1,195,000	$1,231,000	$1,524,000	$1,779,000
Funds Available For Capital Projects	$3,223,000	$3,108,060	$3,401,222	$4,143,458	$5,391,742	$4,324,044	$3,529,375	$2,998,772	$2,748,517	$2,536,898
Funds Used For Capital Projects	($1,000,000)	($1,030,000)	($1,061,000)	($1,093,000)	($1,126,000)	($1,160,000)	($1,195,000)	($1,231,000)	($1,524,000)	($1,779,000)
Unfunded Capital Projects	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Par Amount	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Debt Service										
Debt Service At Beginning Of Forecast Period	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000
New Debt Service During Forecast Period	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000

Annual Flow	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
ERCs - Beginning of Year	41,673	42,507	43,341	44,175	45,009	45,843	46,677	47,511	48,345	49,179
Growth in ERCs	834	834	834	834	834	834	834	834	834	834
ERCs - End of Year	42,507	43,341	44,175	45,009	45,843	46,677	47,511	48,345	49,179	50,013
Avg Daily Flow	233	233	233	233	233	233	233	233	233	233
Annual Flow (MGD) - Beginning of Year	9.72	9.92	10.11	10.31	10.50	10.70	10.89	11.09	11.28	11.48
Growth in Annual Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Annual Flow - End of Year	9.92	10.11	10.31	10.50	10.70	10.89	11.09	11.28	11.48	11.67
Annual Flow - 000s - Beginning of Year	3,549,151	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412
Annual Flow - 000s - Growth	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029
Annual Flow - 000s - End of Year	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
PRO FORMA - UTILITY										
Revenue:										
Water Rate Revenue	$11,967,000	$12,633,000	$13,332,000	$14,064,000	$14,831,000	$15,635,000	$16,623,000	$17,512,000	$18,443,000	$19,418,000
Growth	2.00%	1.96%	1.92%	1.89%	1.85%	1.82%	1.79%	1.75%	1.72%	1.69%
Add'l Rate Revenue From Growth	$239,000	$248,000	$256,000	$265,000	$275,000	$284,000	$297,000	$307,000	$318,000	$329,000
Water Rate Revenue Before Rate Increase	$12,206,000	$12,881,000	$13,588,000	$14,329,000	$15,106,000	$15,919,000	$16,920,000	$17,819,000	$18,761,000	$19,747,000
Rate Increase	3.50%	3.50%	3.50%	3.50%	3.50%	4.42%	3.50%	3.50%	3.50%	3.50%
Add'l Rate Revenue From Rate Increase In Prior Year	$427,000	$451,000	$476,000	$502,000	$529,000	$704,000	$592,000	$624,000	$657,000	$691,000
Water Rate Revenue	$12,633,000	$13,332,000	$14,064,000	$14,831,000	$15,635,000	$16,623,000	$17,512,000	$18,443,000	$19,418,000	$20,438,000
Other Operating Revenue	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000
Interest Earnings	$90,000	$100,000	$120,000	$150,000	$200,000	$160,000	$90,000	$100,000	$110,000	$120,000
Total Revenue	$13,333,000	$14,042,000	$14,794,000	$15,591,000	$16,445,000	$17,393,000	$18,212,000	$19,153,000	$20,138,000	$21,168,000
Expenses:										
Baseline Operating Expenses	$5,363,000	$5,524,000	$5,690,000	$5,861,000	$6,037,000	$6,218,000	$6,405,000	$6,597,000	$6,795,000	$6,999,000
Additional O&M From Additional Groundwater Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Aqueous Ammonia System (1)	$38,000	$39,000	$41,000	$43,000	$45,000	$47,000	$49,000	$52,000	$54,000	$57,000
Additional O&M From High Service Pumps (1)	$40,000	$47,000	$55,000	$63,000	$72,000	$81,000	$91,000	$101,000	$111,000	$122,000
Additional O&M From Treatment For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Transmission For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchased Water Costs:										
Total Annual Flow (Purchased Water Rate Developed Based Upon Total Flow - Not Surface Water Flow Only)	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
Purchased Water Rate Per 1,000 Gallons	$0.94	$0.96	$0.99	$1.01	$1.04	$2.06	$2.06	$2.06	$2.07	$2.08
Annual Purchased Water Cost	$3,411,000	$3,558,000	$3,715,000	$3,881,000	$4,059,000	$8,175,000	$8,319,000	$8,488,000	$8,669,000	$8,863,000
Total Operating Expenses - Water	$8,852,000	$9,168,000	$9,501,000	$9,848,000	$10,213,000	$14,521,000	$14,864,000	$15,238,000	$15,629,000	$16,041,000
Net Income	**$4,481,000**	**$4,874,000**	**$5,293,000**	**$5,743,000**	**$6,232,000**	**$2,872,000**	**$3,348,000**	**$3,915,000**	**$4,509,000**	**$5,127,000**
Debt Service Coverage Test										
Net Income	$4,481,000	$4,874,000	$5,293,000	$5,743,000	$6,232,000	$2,872,000	$3,348,000	$3,915,000	$4,509,000	$5,127,000
Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,632,000	$2,794,000	$2,931,000	$3,038,000	$3,111,000
Coverage Ratio - Calculated	1.72	1.87	2.04	2.21	2.40	1.09	1.20	1.34	1.48	1.65
Coverage Ratio - Required	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
Working Capital Reserves Test										
Beginning Balance	$2,570,874	$2,416,143	$2,567,744	$3,051,929	$3,895,437	$5,135,289	$2,086,851	$2,295,497	$2,480,542	$2,637,028
Net Income	$4,481,000	$4,874,000	$5,293,000	$5,743,000	$6,232,000	$2,872,000	$3,348,000	$3,915,000	$4,509,000	$5,127,000
Balance Before Other Sources (Uses) of Funds	$7,051,874	$7,290,143	$7,860,744	$8,794,929	$10,127,437	$8,007,289	$5,434,851	$6,210,497	$6,989,542	$7,764,028
Other Sources (Uses) Of Funds										
Debt Service Reserve Proceeds	$0	$0	$0	$0	$0	$32,000	$162,000	$137,000	$107,000	$73,000
Capital Outlay	($192,000)	($198,000)	($204,000)	($210,000)	($216,000)	($222,000)	($229,000)	($236,000)	($243,000)	($250,000)
Debt Service At Beginning Of Forecast Period	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)
New Debt Service During Forecast Period	$0	$0	$0	$0	$0	($32,000)	($194,000)	($331,000)	($438,000)	($511,000)
Less: Required Reserves	($500,000)	($500,000)	($500,000)	($500,000)	($500,000)	($532,000)	($694,000)	($831,000)	($938,000)	($1,011,000)
Unrestricted Balance	$3,759,874	$3,992,143	$4,556,744	$5,484,929	$6,811,437	$4,653,289	$1,879,851	$2,349,497	$2,877,542	$3,465,028
Minimum Required Working Capital Reserves	*$1,341,229*	*$1,381,465*	*$1,422,909*	*$1,465,597*	*$1,509,565*	*$1,554,851*	*$1,601,497*	*$1,649,542*	*$1,699,028*	*$1,749,999*
Less: Funds Used To Pay Capital Projects	($1,857,000)	($1,938,000)	($2,021,000)	($2,107,000)	($2,195,000)	($3,098,437)	($278,354)	($699,955)	($1,178,514)	($1,715,029)
Ending Unrestricted Balance	$1,902,874	$2,054,143	$2,535,744	$3,377,929	$4,616,437	$1,554,851	$1,601,497	$1,649,542	$1,699,028	$1,749,999
Add Back: Restricted Reserves	$500,000	$500,000	$500,000	$500,000	$500,000	$532,000	$694,000	$831,000	$938,000	$1,011,000
Ending Balance	$2,402,874	$2,554,143	$3,035,744	$3,877,929	$5,116,437	$2,086,851	$2,295,497	$2,480,542	$2,637,028	$2,760,999
Calculation Of Retail Rate Per 1,000 Gallons										
Water Rate Revenue - Restated	$12,633,000	$13,332,000	$14,064,000	$14,831,000	$15,635,000	$16,623,000	$17,512,000	$18,443,000	$19,418,000	$20,438,000
Annual Flow (1,000 Gallons)	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
Retail Rate Per 1,000 Gallons	$3.49	$3.61	$3.74	$3.87	$4.00	$4.18	$4.33	$4.48	$4.64	$4.80
Calculation Of New Debt Service:										
Capital Projects										
Capital Improvements - Water - Miscellaneous & R&R	$2,690,000	$2,771,000	$2,854,000	$2,940,000	$3,028,000	$3,119,000	$3,213,000	$3,309,000	$3,408,000	$3,510,000
Capital Improvements - Water - Groundwater Supply and Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$94,000	$0	$0	$0	$0
Capital Improvements - Water - High Service Pumps (1)	$0	$0	$0	$0	$0	$1,140,000	$0	$0	$0	$0
Total Projects	$2,690,000	$2,771,000	$2,854,000	$2,940,000	$3,028,000	$4,353,000	$3,213,000	$3,309,000	$3,408,000	$3,510,000
Water Impact Fee Funds Available For Capital Projects	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000
Capital Projects Funded With Water Impact Fees	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)
Remaining Capital Projects To Be Funded	$1,857,000	$1,938,000	$2,021,000	$2,107,000	$2,195,000	$3,520,000	$2,380,000	$2,476,000	$2,575,000	$2,677,000
Funds Available For Capital Projects	$2,418,645	$2,610,678	$3,133,835	$4,019,333	$5,301,873	$3,098,437	$278,354	$699,955	$1,178,514	$1,715,029
Funds Used For Capital Projects	($1,857,000)	($1,938,000)	($2,021,000)	($2,107,000)	($2,195,000)	($3,098,437)	($278,354)	($699,955)	($1,178,514)	($1,715,029)
Unfunded Capital Projects	$0	$0	$0	$0	$0	$421,563	$2,101,646	$1,776,045	$1,396,486	$961,971
Par Amount	$0	$0	$0	$0	$0	$437,216	$2,233,903	$1,885,817	$1,469,145	$1,000,394
Annual Debt Service										
Debt Service At Beginning Of Forecast Period	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000
New Debt Service During Forecast Period	$0	$0	$0	$0	$0	$32,000	$194,000	$331,000	$438,000	$511,000
Total Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,632,000	$2,794,000	$2,931,000	$3,038,000	$3,111,000

Notes: (1) See Figure 3 for detail of costs.

SOURCE: BURTON & ASSOCIATES

C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

02/10/2003

Figure 2

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

Pro Forma Projection of Results of Financial Performance of Entity

Scenario 3 - Surface Water, Water Supply Entity

Level Rates

#	Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1	Annual Flow										
2	Annual Flow (MGD) - Beginning of Year	NA	68.09	69.98	71.92	73.92	75.97	78.08	80.25	82.48	84.77
3	Growth in Annual Flow (MGD)	NA	1.89	1.94	2.00	2.05	2.11	2.17	2.23	2.29	2.35
4	Annual Flow - End of Year	68.09	69.98	71.92	73.92	75.97	78.08	80.25	82.48	84.77	87.12
5											
6	Annual Flow - 000s - Beginning of Year	0	24,852,850	25,542,700	26,250,800	26,980,800	27,729,050	28,499,200	29,291,250	30,105,200	30,941,050
7	Annual Flow - 000s - Growth	0	689,850	708,100	730,000	748,250	770,150	792,050	813,950	835,850	857,750
8	Annual Flow - 000s - End of Year	24,852,850	25,542,700	26,250,800	26,980,800	27,729,050	28,499,200	29,291,250	30,105,200	30,941,050	31,798,800
9											
10	**PRO FORMA - ENTITY**										
11	**Revenue:**										
12	Gallons Sold	24,852,850	25,542,700	26,250,800	26,980,800	27,729,050	28,499,200	29,291,250	30,105,200	30,941,050	31,798,800
13	Purchased Water Rate	$0.00	$0.00	$0.00	$0.00	$0.00	$0.87	$0.87	$0.89	$0.90	$0.92
14	Water Rate Revenue	$0	$0	$0	$0	$0	$24,669,304	$25,569,693	$26,727,604	$27,979,052	$29,331,053
15	Other Operating Revenue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
16	Interest Earnings	$0	$0	$0	$0	$0	$189,000	$396,000	$433,000	$470,000	$507,000
17	Total Revenue	$0	$0	$0	$0	$0	$24,858,304	$25,965,693	$27,160,604	$28,449,052	$29,838,053
18	**Expenses:**										
19	Administration Costs	$0	$0	$0	$0	$0	$579,637	$597,026	$614,937	$633,385	$652,387
20	Additional O&M From Treatment For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$873,000	$1,809,000	$2,821,000	$3,914,000	$5,094,000
21	Additional O&M From Transmission For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$148,000	$302,000	$467,000	$644,000	$834,000
22	Total Operating Expenses - Water	$0	$0	$0	$0	$0	$1,600,637	$2,708,026	$3,902,937	$5,191,385	$6,580,387
23	**Net Income**	**$0**	**$0**	**$0**	**$0**	**$0**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**
24											
25	**Debt Service Coverage Test**										
26	Net Income	$0	$0	$0	$0	$0	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667
27	Annual Debt Service	$0	$0	$0	$0	$0	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333
28	Coverage Ratio - Calculated	NA	NA	NA	NA	NA	1.10	1.10	1.10	1.10	1.10
29	*Coverage Ratio - Required*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
30											
31	**Working Capital Reserves Test**										
32	Beginning Balance	$0	$0	$0	$0	$0	$0	$21,543,493	$23,657,826	$25,772,159	$27,886,493
33	Net Income	$0	$0	$0	$0	$0	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667
34	Balance Before Other Sources (Uses) of Funds	$0	$0	$0	$0	$0	$23,257,667	$44,801,159	$46,915,493	$49,029,826	$51,144,159
35	Other Sources (Uses) of Funds										
36	Debt Service Reserve Proceeds	$0	$0	$0	$0	$0	$21,143,333	$0	$0	$0	$0
37	Capital Outlay	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
38	Debt Service At Beginning Of Forecast Period	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
39	New Debt Service During Forecast Period	$0	$0	$0	$0	$0	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)
40	Less: Required Reserves	$0	$0	$0	$0	$0	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)
41	Unrestricted Balance	$0	$0	$0	$0	$0	$2,114,333	$2,514,493	$4,628,826	$6,743,159	$8,857,493
42	*Minimum Required Working Capital Reserves*	*$0*	*$0*	*$0*	*$0*	*$0*	*$400,159*	*$677,007*	*$975,734*	*$1,297,846*	*$1,645,097*
43	Less: Funds Used To Pay Capital Projects	$0	$0	$0	$0	$0	($1,714,174)	$0	$0	$0	$0
44	Ending Unrestricted Balance	$0	$0	$0	$0	$0	$400,159	$2,514,493	$4,628,826	$6,743,159	$8,857,493
45	Add Back: Restricted Reserves	$0	$0	$0	$0	$0	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333
46	Ending Balance	$0	$0	$0	$0	$0	$21,543,493	$23,657,826	$25,772,159	$27,886,493	$30,000,826
47											
48											
49	Calculation Of Bulk Rate Per 1,000 Gallons										
50	Water Rate Revenue - Restated	$0	$0	$0	$0	$0	$24,669,304	$25,569,693	$26,727,604	$27,979,052	$29,331,053
51	Annual Flow (1,000 Gallons)	24,852,850	25,542,700	26,250,800	26,980,800	27,729,050	28,499,200	29,291,250	30,105,200	30,941,050	31,798,800
52	Retail Rate Per 1,000 Gallons	$0.00	$0.00	$0.00	$0.00	$0.00	$0.87	$0.87	$0.89	$0.90	$0.92
53											
54	Calculation Of New Debt Service:										
55	Capital Projects										
56	Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$198,255,000	$0	$0	$0	$0
57	Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$71,383,000	$0	$0	$0	$0
58	Total Projects	$0	$0	$0	$0	$0	$269,638,000	$0	$0	$0	$0
59	Water Impact Fee Funds Available For Capital Projects	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
60	Capital Projects Funded With Water Impact Fees	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
61	Remaining Capital Projects To Be Funded	$0	$0	$0	$0	$0	$269,638,000	$0	$0	$0	$0
62	Funds Available For Capital Projects	$0	$0	$0	$0	$0	$1,714,174	$1,837,486	$3,653,092	$5,445,313	$7,212,396
63	Funds Used For Capital Projects	$0	$0	$0	$0	$0	($1,714,174)	$0	$0	$0	$0
64	Unfunded Capital Projects	$0	$0	$0	$0	$0	$267,923,826	$0	$0	$0	$0
65	Par Amount	$0	$0	$0	$0	$0	$291,034,415	$0	$0	$0	$0
66											
67	Annual Debt Service										
68	Debt Service At Beginning Of Forecast Period	$0	$0	$0	$0	$0	$0	$21,143,333	$21,143,333	$21,143,333	$21,143,333
69	New Debt Service During Forecast Period	$0	$0	$0	$0	$0	$21,143,333	$0	$0	$0	$0
70	Total Annual Debt Service	$0	$0	$0	$0	$0	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333

#	Item	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	Annual Flow										
2	Annual Flow (MGD) - Beginning of Year	87.12	89.54	92.02	94.57	97.19	99.89	102.66	105.51	108.44	111.45
3	Growth in Annual Flow (MGD)	2.42	2.48	2.55	2.62	2.70	2.77	2.85	2.93	3.01	3.09
4	Annual Flow - End of Year	89.54	92.02	94.57	97.19	99.89	102.66	105.51	108.44	111.45	114.54
5											
6	Annual Flow - 000s - Beginning of Year	31,798,800	32,682,100	33,587,300	34,518,050	35,474,350	36,459,850	37,470,900	38,511,150	39,580,600	40,679,250
7	Annual Flow - 000s - Growth	883,300	905,200	930,750	956,300	985,500	1,011,050	1,040,250	1,069,450	1,098,650	1,127,850
8	Annual Flow - 000s - End of Year	32,682,100	33,587,300	34,518,050	35,474,350	36,459,850	37,470,900	38,511,150	39,580,600	40,679,250	41,807,100
9											
10	**PRO FORMA - ENTITY**										
11	**Revenue:**										
12	Gallons Sold	32,682,100	33,587,300	34,518,050	35,474,350	36,459,850	37,470,900	38,511,150	39,580,600	40,679,250	41,807,100
13	Purchased Water Rate	$0.94	$0.96	$0.99	$1.01	$1.04	$2.06	$2.06	$2.06	$2.07	$2.08
14	Water Rate Revenue	$30,796,625	$32,375,784	$34,080,547	$35,918,934	$37,904,962	$77,052,208	$79,178,577	$81,594,648	$84,195,440	$86,989,977
15	Other Operating Revenue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
16	Interest Earnings	$544,000	$581,000	$618,000	$655,000	$692,000	$874,000	$1,086,000	$1,182,000	$1,278,000	$1,374,000
17	Total Revenue	$31,340,625	$32,956,784	$34,698,547	$36,573,934	$38,596,962	$77,926,208	$80,264,577	$82,776,648	$85,473,440	$88,363,977
18	**Expenses:**										
19	Administration Costs	$671,958	$692,117	$712,880	$734,267	$756,295	$778,984	$802,353	$826,424	$851,217	$876,753
20	Additional O&M From Treatment For Additional Surface Water Capacity (1)	$6,371,000	$7,747,000	$9,231,000	$10,830,000	$12,557,000	$14,414,000	$16,412,000	$18,561,000	$20,868,000	$23,343,000
21	Additional O&M From Transmission For Additional Surface Water Capacity (1)	$1,040,000	$1,260,000	$1,497,000	$1,752,000	$2,026,000	$2,321,000	$2,638,000	$2,977,000	$3,342,000	$3,732,000
22	Total Operating Expenses - Water	$8,082,958	$9,699,117	$11,440,880	$13,316,267	$15,339,295	$17,513,984	$19,852,353	$22,364,424	$25,061,217	$27,951,753
23	**Net Income**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$60,412,224**	**$60,412,224**	**$60,412,224**	**$60,412,224**	**$60,412,224**
24											
25	**Debt Service Coverage Test**										
26	Net Income	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$60,412,224	$60,412,224	$60,412,224	$60,412,224	$60,412,224
27	Annual Debt Service	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$54,920,203	$54,920,203	$54,920,203	$54,920,203	$54,920,203
28	Coverage Ratio - Calculated	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
29	*Coverage Ratio - Required*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
30											
31	**Working Capital Reserves Test**										
32	Beginning Balance	$30,000,826	$32,115,159	$34,229,493	$36,343,826	$38,458,159	$40,572,493	$59,298,699	$64,790,720	$70,282,740	$75,774,760
33	Net Income	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$60,412,224	$60,412,224	$60,412,224	$60,412,224	$60,412,224
34	Balance Before Other Sources (Uses) of Funds	$53,258,493	$55,372,826	$57,487,160	$59,601,493	$61,715,826	$100,984,717	$119,710,923	$125,202,944	$130,694,964	$136,186,984
35	Other Sources (Uses) of Funds										
36	Debt Service Reserve Proceeds	$0	$0	$0	$0	$0	$33,776,870	$0	$0	$0	$0
37	Capital Outlay	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
38	Debt Service At Beginning Of Forecast Period	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
39	New Debt Service During Forecast Period	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($54,920,203)	($54,920,203)	($54,920,203)	($54,920,203)	($54,920,203)
40	Less: Required Reserves	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($54,920,203)	($54,920,203)	($54,920,203)	($54,920,203)	($54,920,203)
41	Unrestricted Balance	$10,971,826	$13,086,159	$15,200,493	$17,314,826	$19,429,159	$24,921,180	$9,870,516	$15,362,537	$20,854,557	$26,346,577
42	*Minimum Required Working Capital Reserves*	*$2,020,740*	*$2,424,779*	*$2,860,220*	*$3,329,067*	*$3,834,824*	*$4,378,496*	*$4,963,088*	*$5,591,106*	*$6,265,304*	*$6,987,938*
43	Less: Funds Used To Pay Capital Projects	$0	$0	$0	$0	$0	($20,542,684)	$0	$0	$0	$0
44	Ending Unrestricted Balance	$10,971,826	$13,086,159	$15,200,493	$17,314,826	$19,429,159	$4,378,496	$9,870,516	$15,362,537	$20,854,557	$26,346,577
45	Add Back: Restricted Reserves	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$54,920,203	$54,920,203	$54,920,203	$54,920,203	$54,920,203
46	Ending Balance	$32,115,159	$34,229,493	$36,343,826	$38,458,159	$40,572,493	$59,298,699	$64,790,720	$70,282,740	$75,774,760	$81,266,781
47											
48											
49	Calculation Of Bulk Rate Per 1,000 Gallons										
50	Water Rate Revenue - Restated	$30,796,625	$32,375,784	$34,080,547	$35,918,934	$37,904,962	$77,052,208	$79,178,577	$81,594,648	$84,195,440	$86,989,977
51	Annual Flow (1,000 Gallons)	32,682,100	33,587,300	34,518,050	35,474,350	36,459,850	37,470,900	38,511,150	39,580,600	40,679,250	41,807,100
52	Retail Rate Per 1,000 Gallons	$0.94	$0.96	$0.99	$1.01	$1.04	$2.06	$2.06	$2.06	$2.07	$2.08
53											
54	Calculation Of New Debt Service:										
55	Capital Projects										
56	Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$340,435,000	$0	$0	$0	$0
57	Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$108,121,000	$0	$0	$0	$0
58	Total Projects	$0	$0	$0	$0	$0	$448,556,000	$0	$0	$0	$0
59	Water Impact Fee Funds Available For Capital Projects	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
60	Capital Projects Funded With Water Impact Fees	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
61	Remaining Capital Projects To Be Funded	$0	$0	$0	$0	$0	$448,556,000	$0	$0	$0	$0
62	Funds Available For Capital Projects	$8,951,086	$10,661,380	$12,340,273	$13,985,759	$15,594,336	$20,542,684	$4,907,428	$9,771,431	$14,589,253	$19,358,639
63	Funds Used For Capital Projects	$0	$0	$0	$0	$0	($20,542,684)	$0	$0	$0	$0
64	Unfunded Capital Projects	$0	$0	$0	$0	$0	$428,013,316	$0	$0	$0	$0
65	Par Amount	$0	$0	$0	$0	$0	$464,932,913	$0	$0	$0	$0
66											
67	Annual Debt Service										
68	Debt Service At Beginning Of Forecast Period	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$54,920,203	$54,920,203	$54,920,203	$54,920,203
69	New Debt Service During Forecast Period	$0	$0	$0	$0	$0	$33,776,870	$0	$0	$0	$0
70	Total Annual Debt Service	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$54,920,203	$54,920,203	$54,920,203	$54,920,203	$54,920,203

Notes: (1) See Figure 4 for detail of costs.

SOURCE: BURTON & ASSOCIATES

02/10/2003

C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

O&M and Capital Cost Projections for Additional Capacity - Utility

Scenario 3 - Surface Water, Water Supply Entity

Level Rates

Line	Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	Annual Flow (MGD) - Prior Year	NA	7.97	8.17	8.36	8.56	8.75	8.94	9.14	9.33	9.53	9.72	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47
2	Annual Growth in Flow (MGD)	NA	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
3	Annual Flow (MGD) - Current Year	7.97	8.17	8.36	8.56	8.75	8.94	9.14	9.33	9.53	9.72	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47	11.67
4	Margin Reserve Capacity (MGD)	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
5	Total Capacity Required (MGD)	8.56	8.75	8.94	9.14	9.33	9.53	9.72	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47	11.67	11.86	12.06	12.25
6	Capacity (MGD) (1)	9.41	9.41	9.41	9.41	9.41	9.41	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35	13.30	13.30	13.30	13.30
7	Additional Capacity Required (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
8	Additional Flow Associated with New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
9																					
10	Annual Flow (1,000 Gallons)	2,909,832	2,980,804	3,051,775	3,122,747	3,193,718	3,264,690	3,335,661	3,406,633	3,477,604	3,548,576	3,619,547	3,690,519	3,761,490	3,832,462	3,903,433	3,974,405	4,045,376	4,116,348	4,187,319	4,258,291
11	Additional Flow Associated with New Capacity (1,000 Gallons)	0	0	0	0	0	70,972	141,943	212,915	283,886	354,858	425,829	496,801	567,772	638,744	709,715	780,687	851,658	922,630	993,601	1,064,573
12																					
13	Cost Inflator	NA	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
14																					
15	**Additional Costs Associated with Expansion of Groundwater Capacity**																				
16	O&M Costs																				
17	Groundwater Source (Wellfield) Expansion Costs																				
18	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$23,690	$24,401	$25,133	$25,887	$26,663	$27,463	$28,287	$29,136	$30,010	$30,910	$31,837	$32,793	$33,776	$34,790	$35,833	$36,908	$38,015	$39,156	$40,331	$41,541
19	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Factor - (Input from CH2MHill)	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163
21	Total Cost - (Line 18 times Line 19 to the power of Line 20)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
22																					
23	Groundwater Treatment System Expansion Costs																				
24	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$53,869	$55,485	$57,150	$58,864	$60,630	$62,449	$64,322	$66,252	$68,240	$70,287	$72,395	$74,567	$76,804	$79,108	$81,482	$83,926	$86,444	$89,037	$91,708	$94,460
25	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26	Factor - (Input from CH2MHill)	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536
27	Total Cost - (Line 24 times Line 25 to the power of Line 26)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
28																					
29	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
30																					
31	Capital Costs																				
32	Groundwater Source (Wellfield) Expansion Costs																				
33	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$285,310	$293,869	$302,685	$311,766	$321,119	$330,752	$340,675	$350,895	$361,422	$372,265	$383,433	$394,936	$406,784	$418,987	$431,557	$444,504	$457,839	$471,574	$485,721	$500,293
34	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
35	Factor - (Input from CH2MHill)	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544
36	Total Cost - (Line 33 times Line 34 to the power of Line 35)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
37																					
38	Groundwater Treatment System Expansion Costs																				
39	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$1,717,010	$1,768,520	$1,821,576	$1,876,223	$1,932,510	$1,990,485	$2,050,200	$2,111,706	$2,175,057	$2,240,309	$2,307,518	$2,376,743	$2,448,046	$2,521,487	$2,597,132	$2,675,046	$2,755,297	$2,837,956	$2,923,095	$3,010,787
40	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
41	Factor - (Input from CH2MHill)	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893
42	Total Cost - (Line 39 times Line 40 to the power of Line 41)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
43																					
44	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
45																					
46																					
47	Notes: (1) In order to simplify the analysis, it was assumed that the capacity at the beginning of the projection period is equal to the maximum groundwater withdrawal limit.																				

St. Johns River Water Management District
Analysis of Rate Impact to Sample Utility of Alternative Water Sources
O&M and Capital Cost Projections for Additional Capacity - Utility

Scenario 3 - Surface Water, Water Supply Entity

Line	Add'l Costs Associated w/ Construction/Expansion of Surface Water Capacity	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
49	O&M Costs																				
50	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
51	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$360,088	$370,891	$382,017	$393,478	$405,282	$417,441	$429,964	$442,863	$456,149	$469,833	$483,928	$498,446	$513,399	$528,801	$544,665	$561,005	$577,836	$595,171	$613,026	$631,416
52	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
53	Factor - (Input from CH2MHill)	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884
54	Total Cost - (Line 51 times Line 52 to the power of Line 53)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
56	Surface Water System Costs (Transmission Line)																				
57	Length of Line	25 Miles																			
58	O&M Cost Component	$61,800	$63,654	$65,564	$67,531	$69,556	$71,643	$73,792	$76,006	$78,286	$80,635	$83,054	$85,546	$88,112	$90,755	$93,478	$96,282	$99,171	$102,146	$105,210	$108,367
59	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
60	Factor - (Input from CH2MHill)	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
61	Total Cost - (Line 58 times Line 59 to the power of Line 60)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
63	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
64	Variable O&M Cost Component	$2,431	$2,504	$2,579	$2,656	$2,736	$2,818	$2,903	$2,990	$3,079	$3,172	$3,267	$3,365	$3,466	$3,570	$3,677	$3,787	$3,901	$4,018	$4,138	$4,262
65	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
66	Constant O&M Component	25,132	25,886	26,663	27,462	28,286	29,135	30,009	30,909	31,836	32,792	33,775	34,789	35,832	36,907	38,014	39,155	40,329	41,539	42,786	44,069
67	Total Cost - (Line 64 times Line 65 plus Line 66)	$0	$0	$0	$0	$0	$30,000	$31,000	$33,000	$34,000	$36,000	$38,000	$39,000	$41,000	$43,000	$45,000	$47,000	$49,000	$52,000	$54,000	$57,000
69	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
70	Variable O&M Cost Component	$22,794	$23,478	$24,182	$24,908	$25,655	$26,424	$27,217	$28,034	$28,875	$29,741	$30,633	$31,552	$32,499	$33,474	$34,478	$35,512	$36,578	$37,675	$38,805	$39,969
71	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
72	Constant O&M Component	3,214	3,310	3,409	3,512	3,617	3,725	3,837	3,952	4,071	4,193	4,319	4,448	4,582	4,719	4,861	5,007	5,157	5,312	5,471	5,635
73	Total Cost - (Line 70 times Line 71 plus Line 72)	$0	$0	$0	$0	$0	$9,000	$14,000	$20,000	$27,000	$33,000	$40,000	$47,000	$55,000	$63,000	$72,000	$81,000	$91,000	$101,000	$111,000	$122,000
75	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$39,000**	**$45,000**	**$53,000**	**$61,000**	**$69,000**	**$78,000**	**$86,000**	**$96,000**	**$106,000**	**$117,000**	**$128,000**	**$140,000**	**$153,000**	**$165,000**	**$179,000**
77	Capital Costs																				
78	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
79	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$9,010,440	$9,280,753	$9,559,176	$9,845,951	$10,141,330	$10,445,569	$10,758,937	$11,081,705	$11,414,156	$11,756,580	$12,109,278	$12,472,556	$12,846,733	$13,232,135	$13,629,099	$14,037,972	$14,459,111	$14,892,884	$15,339,671	$15,799,861
80	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
81	Factor - (Input from CH2MHill)	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016
82	Total Cost - (Line 79 times Line 80 to the power of Line 81)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
84	Surface Water System Costs (Transmission Line)																				
85	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$508,305	$523,554	$539,261	$555,439	$572,102	$589,265	$606,943	$625,151	$643,906	$663,223	$683,119	$703,613	$724,721	$746,463	$768,857	$791,923	$815,680	$840,151	$865,355	$891,316
86	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
87	Capacity Factor (MGD) - (Input from CH2MHill)	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400
88	Length of Line (Miles)	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
89	Length Factor - (Input from CH2MHill)	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440
90	Total Cost - (Line 85 times Line 86 to the power of Line 87 times Line 88 to the power of Line 89)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
92	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
93	Variable Capital Component - (Input from CH2MHill)	$2,575	$2,652	$2,732	$2,814	$2,898	$2,985	$3,075	$3,167	$3,262	$3,360	$3,461	$3,564	$3,671	$3,781	$3,895	$4,012	$4,132	$4,256	$4,384	$4,515
94	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
95	Constant Capital Component - (Input from CH2MHill)	55,105	56,758	58,461	60,215	62,021	63,882	65,798	67,772	69,805	71,900	74,057	76,278	78,567	80,924	83,351	85,852	88,427	91,080	93,813	96,627
96	Total Cost - (Line 93 times Line 94 plus Line 95)	$0	$0	$0	$0	$0	$70,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$94,000	$0	$0	$0	$0
98	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
99	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$442,797	$456,081	$469,763	$483,856	$498,372	$513,323	$528,723	$544,584	$560,922	$577,750	$595,082	$612,935	$631,323	$650,262	$669,770	$689,863	$710,559	$731,876	$753,832	$776,447
100	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
101	Factor - (Input from CH2MHill)	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559
102	Total Cost - (Line 99 times Line 100 to the power of Line 101)	$0	$0	$0	$0	$0	$849,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,140,000	$0	$0	$0	$0
104	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$919,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,234,000**	**$0**	**$0**	**$0**	**$0**

Source: Burton & Associates
C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

02/10/2003

Figure 4

St. Johns River Water Management District
Analysis of Rate Impact to Sample Utility of Alternative Water Source
O&M and Capital Cost Projections for Additional Capacity - Entity

Scenario 3 - Surface Water, Water Supply Entity

Line	Level Rates	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
2	Annual Flow (MGD) - Prior Year	NA	68.09	69.98	71.92	73.92	75.97	78.08	80.25	82.48	84.77	87.12	89.54	92.02	94.57	97.19	99.89	102.66	105.51	108.44	111.45
3	Annual Growth in Flow (MGD)	NA	1.89	1.94	2.00	2.05	2.11	2.17	2.23	2.29	2.35	2.42	2.48	2.55	2.62	2.70	2.77	2.85	2.93	3.01	3.09
4	Annual Flow (MGD) - Current Year	68.09	69.98	71.92	73.92	75.97	78.08	80.25	82.48	84.77	87.12	89.54	92.02	94.57	97.19	99.89	102.66	105.51	108.44	111.45	114.54
5	Margin Reserve Capacity (MGD)	NA	NA	NA	NA	NA	6.51	6.69	6.87	7.06	7.25	7.45	7.65	7.87	8.09	8.32	8.55	8.79	9.03	9.28	9.53
6	Total Capacity Required (MGD)	68.09	69.98	71.92	73.92	75.97	84.59	86.94	89.35	91.83	94.37	96.99	99.67	102.44	105.28	108.21	111.21	114.30	117.47	120.73	124.07
7	Capacity - Groundwater (1)	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00
8	Capacity - Surface Water	0.00	0.00	0.00	0.00	0.00	26.17	26.17	26.17	26.17	26.17	26.17	26.17	26.17	26.17	26.17	60.51	60.51	60.51	60.51	60.51
9	Total Capacity (MGD)	83.00	83.00	83.00	83.00	83.00	109.17	109.17	109.17	109.17	109.17	109.17	109.17	109.17	109.17	109.17	143.51	143.51	143.51	143.51	143.51
10	Additional Capacity Required (MGD)	0.00	0.00	0.00	0.00	0.00	26.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.34	0.00	0.00	0.00	0.00
11	Additional Flow Associated with New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	2.11	4.28	6.51	8.80	11.15	13.57	16.05	18.60	21.22	23.92	26.69	29.54	32.47	35.48	38.57
12																					
13	Annual Flow (1,000 Gallons)	24,852,850	25,542,700	26,250,800	26,980,800	27,729,050	28,499,200	29,291,250	30,105,200	30,941,050	31,798,800	32,682,100	33,587,300	34,518,050	35,474,350	36,459,850	37,470,900	38,511,150	39,580,600	40,679,250	41,807,100
14	Additional Flow Associated with New Capacity (1,000 Gallons)	0	0	0	0	0	770,150	1,562,200	2,376,150	3,212,000	4,069,750	4,953,050	5,858,250	6,789,000	7,745,300	8,730,800	9,741,850	10,782,100	11,851,550	12,950,200	14,078,050
15																					
16	**Additional Costs Associated with Construction/Expansion of Surface Water Capacity**																				
17	O&M Costs																				
18	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
19	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$360,088	$370,891	$382,017	$393,478	$405,282	$417,441	$429,964	$442,863	$456,149	$469,833	$483,928	$498,446	$513,399	$528,801	$544,665	$561,005	$577,836	$595,171	$613,026	$631,416
20	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	2.11	4.28	6.51	8.80	11.15	13.57	16.05	18.60	21.22	23.92	26.69	29.54	32.47	35.48	38.57
21	Factor - (Input from CH2MHill)	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884
22	Total Cost - (Line 19 times Line 20 to the power of Line 21)	$0	$0	$0	$0	$0	$873,000	$1,809,000	$2,821,000	$3,914,000	$5,094,000	$6,371,000	$7,747,000	$9,231,000	$10,830,000	$12,557,000	$14,414,000	$16,412,000	$18,561,000	$20,868,000	$23,343,000
23																					
24	Surface Water System Costs (Transmission Line)																				
25	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$61,800	$63,654	$65,564	$67,531	$69,556	$71,643	$73,792	$76,006	$78,286	$80,635	$83,054	$85,546	$88,112	$90,755	$93,478	$96,282	$99,171	$102,146	$105,210	$108,367
26	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	2.11	4.28	6.51	8.80	11.15	13.57	16.05	18.60	21.22	23.92	26.69	29.54	32.47	35.48	38.57
27	Factor - (Input from CH2MHill)	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
28	Total Cost - (Line 25 times Line 26 to the power of Line 27)	$0	$0	$0	$0	$0	$148,000	$302,000	$467,000	$644,000	$834,000	$1,040,000	$1,260,000	$1,497,000	$1,752,000	$2,026,000	$2,321,000	$2,638,000	$2,977,000	$3,342,000	$3,732,000
29																					
30	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
31	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
32	Additional Flow From New Capacity (MGD)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
33	Factor - (Input from CH2MHill)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
34	Total Cost - (Line 31 times Line 32 to the power of Line 33)																				
35																					
36	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
37	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
38	Additional Flow From New Capacity (MGD)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
39	Factor - (Input from CH2MHill)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
40	Total Cost - (Line 37 times Line 38 to the power of Line 39)																				
41																					
42	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,021,000**	**$2,111,000**	**$3,288,000**	**$4,558,000**	**$5,928,000**	**$7,411,000**	**$9,007,000**	**$10,728,000**	**$12,582,000**	**$14,583,000**	**$16,735,000**	**$19,050,000**	**$21,538,000**	**$24,210,000**	**$27,075,000**
43																					
44	Capital Costs																				
45	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
46	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$9,010,440	$9,280,753	$9,559,176	$9,845,951	$10,141,330	$10,445,569	$10,758,937	$11,081,705	$11,414,156	$11,756,580	$12,109,278	$12,472,556	$12,846,733	$13,232,135	$13,629,099	$14,037,972	$14,459,111	$14,892,884	$15,339,671	$15,799,861
47	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	26.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.34	0.00	0.00	0.00	0.00
48	Factor - (Input from CH2MHill)	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016
49	Total Cost - (Line 46 times Line 47 to the power of Line 48)	$0	$0	$0	$0	$0	$198,255,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$340,435,000	$0	$0	$0	$0
50																					
51	Surface Water System Costs (Transmission Line)																				
52	Length of Line																				
53	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$508,305	$523,554	$539,261	$555,439	$572,102	$589,265	$606,943	$625,151	$643,906	$663,223	$683,119	$703,613	$724,721	$746,463	$768,857	$791,923	$815,680	$840,151	$865,355	$891,316
54	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	26.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.34	0.00	0.00	0.00	0.00
55	MGD Factor - (Input from CH2MHill)	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400
56	Length of Line (Miles)	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
57	Length Factor - (Input from CH2MHill)	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440
58	Total Cost - (Line 53 times Line 54 to the power of Line 55 times Line 56 to the power of Line 57)	$0	$0	$0	$0	$0	$71,383,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$108,121,000	$0	$0	$0	$0
59																					
60	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
61	Variable O&M Cost Component	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
62	Additional Flow From New Capacity (MGD)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
63	Constant O&M Component	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
64	Total Cost - (Line 61 times Line 62 plus Line 63)																				
65																					
66	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
67	Variable O&M Cost Component	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
68	Additional Flow From New Capacity (MGD)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
69	Constant O&M Component	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
70	Total Cost - (Line 67 times Line 68 plus Line 69)																				
71																					
72	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$269,638,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$448,556,000**	**$0**	**$0**	**$0**	**$0**
73																					

Notes: (1) Imputed total for all local utilities based upon current total county flow.

Source: Burton & Associates
C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

02/10/2003

APPENDIX C

Scenario 3 – Surface Water
Rate Indexing

Figure Number	Title	Included
1.	Pro Forma Projection of Results of Financial Performance of Sample Utility	Yes
2	Pro Forma Projection of Results of Financial Performance of Sample Entity	Yes
3	O&M and Capital Cost Projections for Additional Capacity – Utility	Yes
4	O&M and Capital Cost Projections for Additional Capacity – Entity	Yes

Figure 1

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

Pro Forma Projection of Results of Financial Performance of Sample Utility

Scenario 3 - Surface Water, Water Supply Entity

Rate Indexing

Annual Flow	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
ERCs - Beginning of Year	33,333	34,167	35,001	35,835	36,669	37,503	38,337	39,171	40,005	40,839
Growth in ERCs	834	834	834	834	834	834	834	834	834	834
ERCs - End of Year	34,167	35,001	35,835	36,669	37,503	38,337	39,171	40,005	40,839	41,673
Avg Daily Flow	233	233	233	233	233	233	233	233	233	233
Annual Flow (MGD) - Beginning of Year	7.78	7.97	8.17	8.36	8.56	8.75	8.95	9.14	9.33	9.53
Growth in Annual Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Annual Flow - End of Year	7.97	8.17	8.36	8.56	8.75	8.95	9.14	9.33	9.53	9.72
Annual Flow - 000s - Beginning of Year	2,838,861	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122
Annual Flow - 000s - Growth	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029
Annual Flow - 000s - End of Year	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
PRO FORMA - UTILITY										
Revenue:										
Water Rate Revenue	$6,100,000	$6,422,000	$6,757,000	$7,105,000	$7,466,000	$7,842,000	$9,679,000	$10,156,000	$10,652,000	$11,168,000
Growth	2.50%	2.44%	2.38%	2.33%	2.27%	2.22%	2.17%	2.13%	2.08%	2.04%
Add'l Rate Revenue From Growth	$153,000	$157,000	$161,000	$165,000	$170,000	$174,000	$210,000	$216,000	$222,000	$228,000
Water Rate Revenue Before Rate Increase	$6,253,000	$6,579,000	$6,918,000	$7,270,000	$7,636,000	$8,016,000	$9,889,000	$10,372,000	$10,874,000	$11,396,000
Rate Increase	2.70%	2.70%	2.70%	2.70%	2.70%	20.74%	2.70%	2.70%	2.70%	2.70%
Add'l Rate Revenue From Rate Increase In Prior Year	$169,000	$178,000	$187,000	$196,000	$206,000	$1,663,000	$267,000	$280,000	$294,000	$308,000
Water Rate Revenue	$6,422,000	$6,757,000	$7,105,000	$7,466,000	$7,842,000	$9,679,000	$10,156,000	$10,652,000	$11,168,000	$11,704,000
Other Operating Revenue	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000
Interest Earnings	$60,000	$50,000	$50,000	$60,000	$70,000	$60,000	$50,000	$50,000	$60,000	$70,000
Total Revenue	$7,092,000	$7,417,000	$7,765,000	$8,136,000	$8,522,000	$10,349,000	$10,816,000	$11,312,000	$11,838,000	$12,384,000
Expenses:										
Baseline Operating Expenses	$3,990,000	$4,110,000	$4,233,000	$4,360,000	$4,491,000	$4,626,000	$4,765,000	$4,908,000	$5,055,000	$5,207,000
Additional O&M From Additional Groundwater Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$30,000	$31,000	$33,000	$34,000	$36,000
Additional O&M From High Service Pumps (1)	$0	$0	$0	$0	$0	$9,000	$14,000	$20,000	$27,000	$33,000
Additional O&M From Treatment For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Transmission For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchased Water Costs:										
Total Annual Flow (Purchased Water Rate Developed Based Upon Total Flow - Not Surface Water Flow Only)	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
Purchased Water Rate Per 1,000 Gallons	$0.00	$0.00	$0.00	$0.00	$0.00	$0.87	$0.87	$0.89	$0.90	$0.92
Annual Purchased Water Cost	$0	$0	$0	$0	$0	$2,826,000	$2,912,000	$3,025,000	$3,145,000	$3,274,000
Total Operating Expenses - Water	$3,990,000	$4,110,000	$4,233,000	$4,360,000	$4,491,000	$7,491,000	$7,722,000	$7,986,000	$8,261,000	$8,550,000
Net Income	**$3,102,000**	**$3,307,000**	**$3,532,000**	**$3,776,000**	**$4,031,000**	**$2,858,000**	**$3,094,000**	**$3,326,000**	**$3,577,000**	**$3,834,000**
Debt Service Coverage Test										
Net Income	$3,102,000	$3,307,000	$3,532,000	$3,776,000	$4,031,000	$2,858,000	$3,094,000	$3,326,000	$3,577,000	$3,834,000
Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,664,000	$2,730,000	$2,806,000	$2,889,000
Coverage Ratio - Calculated	1.19	1.27	1.36	1.45	1.55	1.10	1.16	1.22	1.27	1.33
Coverage Ratio - Required	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
Working Capital Reserves Test										
Beginning Balance	$4,200,000	$3,559,000	$3,089,000	$2,809,000	$2,736,000	$2,881,000	$1,815,039	$1,755,664	$1,857,414	$1,970,237
Net Income	$3,102,000	$3,307,000	$3,532,000	$3,776,000	$4,031,000	$2,858,000	$3,094,000	$3,326,000	$3,577,000	$3,834,000
Balance Before Other Sources (Uses) of Funds	$7,302,000	$6,866,000	$6,621,000	$6,585,000	$6,767,000	$5,739,000	$4,909,039	$5,081,664	$5,434,414	$5,804,237
Other Sources (Uses) Of Funds										
Debt Service Reserve Proceeds	$0	$0	$0	$0	$0	$0	$64,000	$66,000	$76,000	$83,000
Capital Outlay	($143,000)	($147,000)	($151,000)	($156,000)	($161,000)	($166,000)	($171,000)	($176,000)	($181,000)	($186,000)
Debt Service At Beginning Of Forecast Period	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)
New Debt Service During Forecast Period	$0	$0	$0	$0	$0	$0	($64,000)	($130,000)	($206,000)	($289,000)
Less: Required Reserves	($500,000)	($500,000)	($500,000)	($500,000)	($500,000)	($500,000)	($564,000)	($630,000)	($706,000)	($789,000)
Unrestricted Balance	$4,059,000	$3,619,000	$3,370,000	$3,329,000	$3,506,000	$2,473,000	$1,574,039	$1,611,664	$1,817,414	$2,023,237
Minimum Required Working Capital Reserves	*$998,000*	*$1,027,940*	*$1,058,778*	*$1,090,542*	*$1,123,258*	*$1,156,956*	*$1,191,664*	*$1,227,414*	*$1,264,237*	*$1,302,164*
Less: Funds Used To Pay Capital Projects	($1,000,000)	($1,030,000)	($1,061,000)	($1,093,000)	($1,126,000)	($1,160,000)	($382,375)	($384,250)	($553,178)	($721,073)
Ending Unrestricted Balance	$3,059,000	$2,589,000	$2,309,000	$2,236,000	$2,380,000	$1,313,000	$1,191,664	$1,227,414	$1,264,237	$1,302,164
Add Back: Restricted Reserves	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$564,000	$630,000	$706,000	$789,000
Ending Balance	$3,559,000	$3,089,000	$2,809,000	$2,736,000	$2,880,000	$1,813,000	$1,755,664	$1,857,414	$1,970,237	$2,091,164
Calculation Of Retail Rate Per 1,000 Gallons										
Water Rate Revenue - Restated	$6,422,000	$6,757,000	$7,105,000	$7,466,000	$7,842,000	$9,679,000	$10,156,000	$10,652,000	$11,168,000	$11,704,000
Annual Flow (1,000 Gallons)	2,909,890	2,980,919	3,051,948	3,122,977	3,194,006	3,265,035	3,336,064	3,407,093	3,478,122	3,549,151
Retail Rate Per 1,000 Gallons	$2.21	$2.27	$2.33	$2.39	$2.46	$2.96	$3.04	$3.13	$3.21	$3.30
Calculation Of New Debt Service:										
Capital Projects										
Capital Improvements - Water - Miscellaneous & R&R	$2,000,000	$2,060,000	$2,122,000	$2,186,000	$2,252,000	$2,320,000	$2,390,000	$2,462,000	$2,536,000	$2,612,000
Capital Improvements - Water - Groundwater Supply and Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$70,000	$0	$0	$0	$0
Capital Improvements - Water - High Service Pumps (1)	$0	$0	$0	$0	$0	$849,000	$0	$0	$0	$0
Total Projects	$2,000,000	$2,060,000	$2,122,000	$2,186,000	$2,252,000	$3,239,000	$2,390,000	$2,462,000	$2,536,000	$2,612,000
Water Impact Fee Funds Available For Capital Projects	$1,000,000	$1,030,000	$1,061,000	$1,093,000	$1,126,000	$2,079,000	$1,195,000	$1,231,000	$1,012,000	$833,000
Capital Projects Funded With Water Impact Fees	($1,000,000)	($1,030,000)	($1,061,000)	($1,093,000)	($1,126,000)	($2,079,000)	($1,195,000)	($1,231,000)	($1,012,000)	($833,000)
Remaining Capital Projects To Be Funded	$1,000,000	$1,030,000	$1,061,000	$1,093,000	$1,126,000	$1,160,000	$1,195,000	$1,231,000	$1,524,000	$1,779,000
Funds Available For Capital Projects	$3,061,000	$2,591,060	$2,311,222	$2,238,458	$2,382,742	$1,316,044	$382,375	$384,250	$553,178	$721,073
Funds Used For Capital Projects	($1,000,000)	($1,030,000)	($1,061,000)	($1,093,000)	($1,126,000)	($1,160,000)	($382,375)	($384,250)	($553,178)	($721,073)
Unfunded Capital Projects	$0	$0	$0	$0	$0	$0	$812,625	$846,750	$970,822	$1,057,927
Par Amount	$0	$0	$0	$0	$0	$0	$877,478	$913,182	$1,048,514	$1,143,115
Annual Debt Service										
Debt Service At Beginning Of Forecast Period	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000
New Debt Service During Forecast Period	$0	$0	$0	$0	$0	$0	$64,000	$130,000	$206,000	$289,000
Total Annual Debt Service	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,664,000	$2,730,000	$2,806,000	$2,889,000

Annual Flow	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
ERCs - Beginning of Year	41,673	42,507	43,341	44,175	45,009	45,843	46,677	47,511	48,345	49,179
Growth in ERCs	834	834	834	834	834	834	834	834	834	834
ERCs - End of Year	42,507	43,341	44,175	45,009	45,843	46,677	47,511	48,345	49,179	50,013
Avg Daily Flow	233	233	233	233	233	233	233	233	233	233
Annual Flow (MGD) - Beginning of Year	9.72	9.92	10.11	10.31	10.50	10.70	10.89	11.09	11.28	11.48
Growth in Annual Flow (MGD)	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Annual Flow - End of Year	9.92	10.11	10.31	10.50	10.70	10.89	11.09	11.28	11.48	11.67
Annual Flow - 000s - Beginning of Year	3,549,151	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412
Annual Flow - 000s - Growth	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029	71,029
Annual Flow - 000s - End of Year	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
PRO FORMA - UTILITY										
Revenue:										
Water Rate Revenue	$11,704,000	$12,260,000	$12,838,000	$13,438,000	$14,062,000	$14,709,000	$17,550,000	$18,345,000	$19,171,000	$20,029,000
Growth	2.00%	1.96%	1.92%	1.89%	1.85%	1.82%	1.79%	1.75%	1.72%	1.69%
Add'l Rate Revenue From Growth	$234,000	$240,000	$247,000	$254,000	$260,000	$267,000	$313,000	$322,000	$331,000	$339,000
Water Rate Revenue Before Rate Increase	$11,938,000	$12,500,000	$13,085,000	$13,692,000	$14,322,000	$14,976,000	$17,863,000	$18,667,000	$19,502,000	$20,368,000
Rate Increase	2.70%	2.70%	2.70%	2.70%	2.70%	17.18%	2.70%	2.70%	2.70%	2.70%
Add'l Rate Revenue From Rate Increase In Prior Year	$322,000	$338,000	$353,000	$370,000	$387,000	$2,574,000	$482,000	$504,000	$527,000	$550,000
Water Rate Revenue	$12,260,000	$12,838,000	$13,438,000	$14,062,000	$14,709,000	$17,550,000	$18,345,000	$19,171,000	$20,029,000	$20,918,000
Other Operating Revenue	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000	$610,000
Interest Earnings	$80,000	$90,000	$100,000	$110,000	$110,000	$120,000	$130,000	$140,000	$150,000	$150,000
Total Revenue	$12,950,000	$13,538,000	$14,148,000	$14,782,000	$15,429,000	$18,280,000	$19,085,000	$19,921,000	$20,789,000	$21,678,000
Expenses:										
Baseline Operating Expenses	$5,363,000	$5,524,000	$5,690,000	$5,861,000	$6,037,000	$6,218,000	$6,405,000	$6,597,000	$6,795,000	$6,999,000
Additional O&M From Additional Groundwater Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Aqueous Ammonia System (1)	$38,000	$39,000	$41,000	$43,000	$45,000	$47,000	$49,000	$52,000	$54,000	$57,000
Additional O&M From High Service Pumps (1)	$40,000	$47,000	$55,000	$63,000	$72,000	$81,000	$91,000	$101,000	$111,000	$122,000
Additional O&M From Treatment For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional O&M From Transmission For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Purchased Water Costs:										
Total Annual Flow (Purchased Water Rate Developed Based Upon Total Flow - Not Surface Water Flow Only)	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
Purchased Water Rate Per 1,000 Gallons	$0.94	$0.96	$0.99	$1.01	$1.04	$2.06	$2.06	$2.06	$2.07	$2.08
Annual Purchased Water Cost	$3,411,000	$3,558,000	$3,715,000	$3,881,000	$4,059,000	$8,175,000	$8,319,000	$8,488,000	$8,669,000	$8,863,000
Total Operating Expenses - Water	$8,852,000	$9,168,000	$9,501,000	$9,848,000	$10,213,000	$14,521,000	$14,864,000	$15,238,000	$15,629,000	$16,041,000
Net Income	**$4,098,000**	**$4,370,000**	**$4,647,000**	**$4,934,000**	**$5,216,000**	**$3,759,000**	**$4,221,000**	**$4,683,000**	**$5,160,000**	**$5,637,000**
Debt Service Coverage Test										
Net Income	$4,098,000	$4,370,000	$4,647,000	$4,934,000	$5,216,000	$3,759,000	$4,221,000	$4,683,000	$5,160,000	$5,637,000
Annual Debt Service	$2,964,000	$3,029,000	$3,084,000	$3,127,000	$3,158,000	$3,427,000	$3,583,000	$3,722,000	$3,842,000	$3,941,000
Coverage Ratio - Calculated	1.38	1.44	1.51	1.58	1.65	1.10	1.18	1.26	1.34	1.43
Coverage Ratio - Required	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
Working Capital Reserves Test										
Beginning Balance	$2,091,164	$2,205,229	$2,310,465	$2,406,909	$2,492,597	$2,567,565	$2,881,851	$3,084,497	$3,271,542	$3,441,028
Net Income	$4,098,000	$4,370,000	$4,647,000	$4,934,000	$5,216,000	$3,759,000	$4,221,000	$4,683,000	$5,160,000	$5,637,000
Balance Before Other Sources (Uses) of Funds	$6,189,164	$6,575,229	$6,957,465	$7,340,909	$7,708,597	$6,326,565	$7,102,851	$7,767,497	$8,431,542	$9,078,028
Other Sources (Uses) Of Funds										
Debt Service Reserve Proceeds	$75,000	$65,000	$55,000	$43,000	$31,000	$269,000	$156,000	$139,000	$120,000	$99,000
Capital Outlay	($192,000)	($198,000)	($204,000)	($210,000)	($216,000)	($222,000)	($229,000)	($236,000)	($243,000)	($250,000)
Debt Service At Beginning Of Forecast Period	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)	($2,600,000)
New Debt Service During Forecast Period	($364,000)	($429,000)	($484,000)	($527,000)	($558,000)	($827,000)	($983,000)	($1,122,000)	($1,242,000)	($1,341,000)
Less: Required Reserves	($864,000)	($929,000)	($984,000)	($1,027,000)	($1,058,000)	($1,327,000)	($1,483,000)	($1,622,000)	($1,742,000)	($1,841,000)
Unrestricted Balance	$2,244,164	$2,484,229	$2,740,465	$3,019,909	$3,307,597	$1,619,565	$1,963,851	$2,326,497	$2,724,542	$3,145,028
Minimum Required Working Capital Reserves	*$1,341,229*	*$1,381,465*	*$1,422,909*	*$1,465,597*	*$1,509,565*	*$1,554,851*	*$1,601,497*	*$1,649,542*	*$1,699,028*	*$1,749,999*
Less: Funds Used To Pay Capital Projects	($902,935)	($1,102,763)	($1,317,556)	($1,554,313)	($1,798,032)	($64,713)	($362,354)	($676,955)	($1,025,514)	($1,395,029)
Ending Unrestricted Balance	$1,341,229	$1,381,465	$1,422,909	$1,465,597	$1,509,565	$1,554,851	$1,601,497	$1,649,542	$1,699,028	$1,749,999
Add Back: Restricted Reserves	$864,000	$929,000	$984,000	$1,027,000	$1,058,000	$1,327,000	$1,483,000	$1,622,000	$1,742,000	$1,841,000
Ending Balance	$2,205,229	$2,310,465	$2,406,909	$2,492,597	$2,567,565	$2,881,851	$3,084,497	$3,271,542	$3,441,028	$3,590,999
Calculation Of Retail Rate Per 1,000 Gallons										
Water Rate Revenue - Restated	$12,260,000	$12,838,000	$13,438,000	$14,062,000	$14,709,000	$17,550,000	$18,345,000	$19,171,000	$20,029,000	$20,918,000
Annual Flow (1,000 Gallons)	3,620,180	3,691,209	3,762,238	3,833,267	3,904,296	3,975,325	4,046,354	4,117,383	4,188,412	4,259,441
Retail Rate Per 1,000 Gallons	$3.39	$3.48	$3.57	$3.67	$3.77	$4.41	$4.53	$4.66	$4.78	$4.91
Calculation Of New Debt Service:										
Capital Projects										
Capital Improvements - Water - Miscellaneous & R&R	$2,690,000	$2,771,000	$2,854,000	$2,940,000	$3,028,000	$3,119,000	$3,213,000	$3,309,000	$3,408,000	$3,510,000
Capital Improvements - Water - Groundwater Supply and Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Improvements - Water - Aqueous Ammonia System (1)	$0	$0	$0	$0	$0	$94,000	$0	$0	$0	$0
Capital Improvements - Water - High Service Pumps (1)	$0	$0	$0	$0	$0	$1,140,000	$0	$0	$0	$0
Total Projects	$2,690,000	$2,771,000	$2,854,000	$2,940,000	$3,028,000	$4,353,000	$3,213,000	$3,309,000	$3,408,000	$3,510,000
Water Impact Fee Funds Available For Capital Projects	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000	$833,000
Capital Projects Funded With Water Impact Fees	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)	($833,000)
Remaining Capital Projects To Be Funded	$1,857,000	$1,938,000	$2,021,000	$2,107,000	$2,195,000	$3,520,000	$2,380,000	$2,476,000	$2,575,000	$2,677,000
Funds Available For Capital Projects	$902,935	$1,102,763	$1,317,556	$1,554,313	$1,798,032	$64,713	$362,354	$676,955	$1,025,514	$1,395,029
Funds Used For Capital Projects	($902,935)	($1,102,763)	($1,317,556)	($1,554,313)	($1,798,032)	($64,713)	($362,354)	($676,955)	($1,025,514)	($1,395,029)
Unfunded Capital Projects	$954,065	$835,237	$703,444	$552,687	$396,968	$3,455,287	$2,017,646	$1,799,045	$1,549,486	$1,281,971
Par Amount	$1,029,795	$897,636	$753,259	$588,179	$426,116	$3,697,940	$2,152,903	$1,913,817	$1,650,145	$1,365,394
Annual Debt Service										
Debt Service At Beginning Of Forecast Period	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000
New Debt Service During Forecast Period	$364,000	$429,000	$484,000	$527,000	$558,000	$827,000	$983,000	$1,122,000	$1,242,000	$1,341,000
Total Annual Debt Service	$2,964,000	$3,029,000	$3,084,000	$3,127,000	$3,158,000	$3,427,000	$3,583,000	$3,722,000	$3,842,000	$3,941,000

Notes: (1) See Figure 3 for detail of costs.

SOURCE: BURTON & ASSOCIATES

C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

02/10/2003

Figure 2

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

Pro Forma Projection of Results of Financial Performance of Entity

Scenario 3 - Surface Water, Water Supply Entity

Rate Indexing

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Annual Flow																				
Annual Flow (MGD) - Beginning of Year	NA	68.09	69.98	71.92	73.92	75.97	78.08	80.25	82.48	84.77	87.12	89.54	92.02	94.57	97.19	99.89	102.66	105.51	108.44	111.45
Growth in Annual Flow (MGD)	NA	1.89	1.94	2.00	2.05	2.11	2.17	2.23	2.29	2.35	2.42	2.48	2.55	2.62	2.70	2.77	2.85	2.93	3.01	3.09
Annual Flow - End of Year	68.09	69.98	71.92	73.92	75.97	78.08	80.25	82.48	84.77	87.12	89.54	92.02	94.57	97.19	99.89	102.66	105.51	108.44	111.45	114.54
Annual Flow - 000s - Beginning of Year	0	24,852,850	25,542,700	26,250,800	26,980,800	27,729,050	28,499,200	29,291,250	30,105,200	30,941,050	31,798,800	32,682,100	33,587,300	34,518,050	35,474,350	36,459,850	37,470,900	38,511,150	39,580,600	40,679,250
Annual Flow - 000s - Growth	0	689,850	708,100	730,000	748,250	770,150	792,050	813,950	835,850	857,750	883,300	905,200	930,750	956,300	985,500	1,011,050	1,040,250	1,069,450	1,098,650	1,127,850
Annual Flow - 000s - End of Year	24,852,850	25,542,700	26,250,800	26,980,800	27,729,050	28,499,200	29,291,250	30,105,200	30,941,050	31,798,800	32,682,100	33,587,300	34,518,050	35,474,350	36,459,850	37,470,900	38,511,150	39,580,600	40,679,250	41,807,100
PRO FORMA - ENTITY																				
Revenue:																				
Gallons Sold	24,852,850	25,542,700	26,250,800	26,980,800	27,729,050	28,499,200	29,291,250	30,105,200	30,941,050	31,798,800	32,682,100	33,587,300	34,518,050	35,474,350	36,459,850	37,470,900	38,511,150	39,580,600	40,679,250	41,807,100
Purchased Water Rate	$0.00	$0.00	$0.00	$0.00	$0.00	$0.87	$0.87	$0.89	$0.90	$0.92	$0.94	$0.96	$0.99	$1.01	$1.04	$2.06	$2.06	$2.06	$2.07	$2.08
Water Rate Revenue	$0	$0	$0	$0	$0	$24,669,304	$25,569,693	$26,727,604	$27,979,052	$29,331,053	$30,796,625	$32,375,784	$34,080,547	$35,918,934	$37,904,962	$77,052,208	$79,178,577	$81,594,648	$84,195,440	$86,989,977
Other Operating Revenue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest Earnings	$0	$0	$0	$0	$0	$189,000	$396,000	$433,000	$470,000	$507,000	$544,000	$581,000	$618,000	$655,000	$692,000	$874,000	$1,086,000	$1,182,000	$1,278,000	$1,374,000
Total Revenue	$0	$0	$0	$0	$0	$24,858,304	$25,965,693	$27,160,604	$28,449,052	$29,838,053	$31,340,625	$32,956,784	$34,698,547	$36,573,934	$38,596,962	$77,926,208	$80,264,577	$82,776,648	$85,473,440	$88,363,977
Expenses:																				
Administration Costs	$0	$0	$0	$0	$0	$579,637	$597,026	$614,937	$633,385	$652,387	$671,958	$692,117	$712,880	$734,267	$756,295	$778,984	$802,353	$826,424	$851,217	$876,753
Additional O&M From Treatment For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$873,000	$1,809,000	$2,821,000	$3,914,000	$5,094,000	$6,371,000	$7,747,000	$9,231,000	$10,830,000	$12,557,000	$14,414,000	$16,412,000	$18,561,000	$20,868,000	$23,343,000
Additional O&M From Transmission For Additional Surface Water Capacity (1)	$0	$0	$0	$0	$0	$148,000	$302,000	$467,000	$644,000	$834,000	$1,040,000	$1,260,000	$1,497,000	$1,752,000	$2,026,000	$2,321,000	$2,638,000	$2,977,000	$3,342,000	$3,732,000
Total Operating Expenses - Water	$0	$0	$0	$0	$0	$1,600,637	$2,708,026	$3,902,937	$5,191,385	$6,580,387	$8,082,958	$9,699,117	$11,440,880	$13,316,267	$15,339,295	$17,513,984	$19,852,353	$22,364,424	$25,061,217	$27,951,753
Net Income	**$0**	**$0**	**$0**	**$0**	**$0**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$23,257,667**	**$60,412,224**	**$60,412,224**	**$60,412,224**	**$60,412,224**	**$60,412,224**
Debt Service Coverage Test																				
Net Income	$0	$0	$0	$0	$0	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$60,412,224	$60,412,224	$60,412,224	$60,412,224	$60,412,224
Annual Debt Service	$0	$0	$0	$0	$0	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$54,920,203	$54,920,203	$54,920,203	$54,920,203	$54,920,203
Coverage Ratio - Calculated	NA	NA	NA	NA	NA	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Coverage Ratio - Required	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
Working Capital Reserves Test																				
Beginning Balance	$0	$0	$0	$0	$0	$0	$21,543,493	$23,657,826	$25,772,159	$27,886,493	$30,000,826	$32,115,159	$34,229,493	$36,343,826	$38,458,159	$40,572,493	$59,298,699	$64,790,720	$70,282,740	$75,774,760
Net Income	$0	$0	$0	$0	$0	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$23,257,667	$60,412,224	$60,412,224	$60,412,224	$60,412,224	$60,412,224
Balance Before Other Sources (Uses) of Funds	$0	$0	$0	$0	$0	$23,257,667	$44,801,159	$46,915,493	$49,029,826	$51,144,159	$53,258,493	$55,372,826	$57,487,160	$59,601,493	$61,715,826	$100,984,717	$119,710,923	$125,202,944	$130,694,964	$136,186,984
Other Sources (Uses) of Funds																				
Debt Service Reserve Proceeds	$0	$0	$0	$0	$0	$21,143,333	$0	$0	$0	$0	$0	$0	$0	$0	$0	$33,776,870	$0	$0	$0	$0
Capital Outlay	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt Service At Beginning Of Forecast Period	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
New Debt Service During Forecast Period	$0	$0	$0	$0	$0	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($54,920,203)	($54,920,203)	($54,920,203)	($54,920,203)	($54,920,203)
Less: Required Reserves	$0	$0	$0	$0	$0	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($21,143,333)	($54,920,203)	($54,920,203)	($54,920,203)	($54,920,203)	($54,920,203)
Unrestricted Balance	$0	$0	$0	$0	$0	$2,114,333	$2,514,493	$4,628,826	$6,743,159	$8,857,493	$10,971,826	$13,086,159	$15,200,493	$17,314,826	$19,429,159	$24,921,180	$9,870,516	$15,362,537	$20,854,557	$26,346,577
Minimum Required Working Capital Reserves	*$0*	*$0*	*$0*	*$0*	*$0*	*$400,159*	*$677,007*	*$975,734*	*$1,297,846*	*$1,645,097*	*$2,020,740*	*$2,424,779*	*$2,860,220*	*$3,329,067*	*$3,834,824*	*$4,378,496*	*$4,963,088*	*$5,591,106*	*$6,265,304*	*$6,987,938*
Less: Funds Used To Pay Capital Projects	$0	$0	$0	$0	$0	($1,714,174)	$0	$0	$0	$0	$0	$0	$0	$0	$0	($20,542,684)	$0	$0	$0	$0
Ending Unrestricted Balance	$0	$0	$0	$0	$0	$400,159	$2,514,493	$4,628,826	$6,743,159	$8,857,493	$10,971,826	$13,086,159	$15,200,493	$17,314,826	$19,429,159	$4,378,496	$9,870,516	$15,362,537	$20,854,557	$26,346,577
Add Back: Restricted Reserves	$0	$0	$0	$0	$0	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$54,920,203	$54,920,203	$54,920,203	$54,920,203	$54,920,203
Ending Balance	$0	$0	$0	$0	$0	$21,543,493	$23,657,826	$25,772,159	$27,886,493	$30,000,826	$32,115,159	$34,229,493	$36,343,826	$38,458,159	$40,572,493	$59,298,699	$64,790,720	$70,282,740	$75,774,760	$81,266,781
Calculation Of Bulk Rate Per 1,000 Gallons																				
Water Rate Revenue - Restated	$0	$0	$0	$0	$0	$24,669,304	$25,569,693	$26,727,604	$27,979,052	$29,331,053	$30,796,625	$32,375,784	$34,080,547	$35,918,934	$37,904,962	$77,052,208	$79,178,577	$81,594,648	$84,195,440	$86,989,977
Annual Flow (1,000 Gallons)	24,852,850	25,542,700	26,250,800	26,980,800	27,729,050	28,499,200	29,291,250	30,105,200	30,941,050	31,798,800	32,682,100	33,587,300	34,518,050	35,474,350	36,459,850	37,470,900	38,511,150	39,580,600	40,679,250	41,807,100
Retail Rate Per 1,000 Gallons	$0.00	$0.00	$0.00	$0.00	$0.00	$0.87	$0.87	$0.89	$0.90	$0.92	$0.94	$0.96	$0.99	$1.01	$1.04	$2.06	$2.06	$2.06	$2.07	$2.08
Calculation Of New Debt Service:																				
Capital Projects																				
Capital Improvements - Water - Alternative Supply - Treatment (1)	$0	$0	$0	$0	$0	$198,255,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$340,435,000	$0	$0	$0	$0
Capital Improvements - Water - Alternative Supply - Transmission / Pumping (1)	$0	$0	$0	$0	$0	$71,383,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$108,121,000	$0	$0	$0	$0
Total Projects	$0	$0	$0	$0	$0	$269,638,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$448,556,000	$0	$0	$0	$0
Water Impact Fee Funds Available For Capital Projects	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Projects Funded With Water Impact Fees	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Remaining Capital Projects To Be Funded	$0	$0	$0	$0	$0	$269,638,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$448,556,000	$0	$0	$0	$0
Funds Available For Capital Projects	$0	$0	$0	$0	$0	$1,714,174	$1,837,486	$3,653,092	$5,445,313	$7,212,396	$8,951,086	$10,661,380	$12,340,273	$13,985,759	$15,594,336	$20,542,684	$4,907,428	$9,771,431	$14,589,253	$19,358,639
Funds Used For Capital Projects	$0	$0	$0	$0	$0	($1,714,174)	$0	$0	$0	$0	$0	$0	$0	$0	$0	($20,542,684)	$0	$0	$0	$0
Unfunded Capital Projects	$0	$0	$0	$0	$0	$267,923,826	$0	$0	$0	$0	$0	$0	$0	$0	$0	$428,013,316	$0	$0	$0	$0
Par Amount	$0	$0	$0	$0	$0	$291,034,415	$0	$0	$0	$0	$0	$0	$0	$0	$0	$464,932,913	$0	$0	$0	$0
Annual Debt Service																				
Debt Service At Beginning Of Forecast Period	$0	$0	$0	$0	$0	$0	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$54,920,203	$54,920,203	$54,920,203	$54,920,203
New Debt Service During Forecast Period	$0	$0	$0	$0	$0	$21,143,333	$0	$0	$0	$0	$0	$0	$0	$0	$0	$33,776,870	$0	$0	$0	$0
Total Annual Debt Service	$0	$0	$0	$0	$0	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$21,143,333	$54,920,203	$54,920,203	$54,920,203	$54,920,203	$54,920,203

Notes: (1) See Figure 4 for detail of costs.

SOURCE: BURTON & ASSOCIATES

02/10/2003

C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

O&M and Capital Cost Projections for Additional Capacity - Utility

Scenario 3 - Surface Water, Water Supply Entity

Rate Indexing

Line	Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
1	Annual Flow (MGD) - Prior Year	NA	7.97	8.17	8.36	8.56	8.75	8.94	9.14	9.33	9.53	9.72	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47
2	Annual Growth in Flow (MGD)	NA	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
3	Annual Flow (MGD) - Current Year	7.97	8.17	8.36	8.56	8.75	8.94	9.14	9.33	9.53	9.72	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47	11.67
4	Margin Reserve Capacity (MGD)	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
5	Total Capacity Required (MGD)	8.56	8.75	8.94	9.14	9.33	9.53	9.72	9.92	10.11	10.31	10.50	10.69	10.89	11.08	11.28	11.47	11.67	11.86	12.06	12.25
6	Capacity (MGD) (1)	9.41	9.41	9.41	9.41	9.41	9.41	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35	13.30	13.30	13.30	13.30
7	Additional Capacity Required (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
8	Additional Flow Associated with New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
9																					
10	Annual Flow (1,000 Gallons)	2,909,832	2,980,804	3,051,775	3,122,747	3,193,718	3,264,690	3,335,661	3,406,633	3,477,604	3,548,576	3,619,547	3,690,519	3,761,490	3,832,462	3,903,433	3,974,405	4,045,376	4,116,348	4,187,319	4,258,291
11	Additional Flow Associated with New Capacity (1,000 Gallons)	0	0	0	0	0	70,972	141,943	212,915	283,886	354,858	425,829	496,801	567,772	638,744	709,715	780,687	851,658	922,630	993,601	1,064,573
12																					
13	Cost Inflator	NA	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
14																					
15	**Additional Costs Associated with Expansion of Groundwater Capacity**																				
16	O&M Costs																				
17	Groundwater Source (Wellfield) Expansion Costs																				
18	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$23,690	$24,401	$25,133	$25,887	$26,663	$27,463	$28,287	$29,136	$30,010	$30,910	$31,837	$32,793	$33,776	$34,790	$35,833	$36,908	$38,015	$39,156	$40,331	$41,541
19	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20	Factor - (Input from CH2MHill)	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163	0.9163
21	Total Cost - (Line 18 times Line 19 to the power of Line 20)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
22																					
23	Groundwater Treatment System Expansion Costs																				
24	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$53,869	$55,485	$57,150	$58,864	$60,630	$62,449	$64,322	$66,252	$68,240	$70,287	$72,395	$74,567	$76,804	$79,108	$81,482	$83,926	$86,444	$89,037	$91,708	$94,460
25	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26	Factor - (Input from CH2MHill)	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536	0.9536
27	Total Cost - (Line 24 times Line 25 to the power of Line 26)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
28																					
29	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
30																					
31	Capital Costs																				
32	Groundwater Source (Wellfield) Expansion Costs																				
33	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$285,310	$293,869	$302,685	$311,766	$321,119	$330,752	$340,675	$350,895	$361,422	$372,265	$383,433	$394,936	$406,784	$418,987	$431,557	$444,504	$457,839	$471,574	$485,721	$500,293
34	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
35	Factor - (Input from CH2MHill)	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544	1.0544
36	Total Cost - (Line 33 times Line 34 to the power of Line 35)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
37																					
38	Groundwater Treatment System Expansion Costs																				
39	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$1,717,010	$1,768,520	$1,821,576	$1,876,223	$1,932,510	$1,990,485	$2,050,200	$2,111,706	$2,175,057	$2,240,309	$2,307,518	$2,376,743	$2,448,046	$2,521,487	$2,597,132	$2,675,046	$2,755,297	$2,837,956	$2,923,095	$3,010,787
40	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
41	Factor - (Input from CH2MHill)	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893	0.8893
42	Total Cost - (Line 39 times Line 40 to the power of Line 41)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
43																					
44	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

47 Notes: (1) In order to simplify the analysis, it was assumed that the capacity at the beginning of the projection period is equal to the maximum groundwater withdrawal limit.

St. Johns River Water Management District
Analysis of Rate Impact to Sample Utility of Alternative Water Sources
O&M and Capital Cost Projections for Additional Capacity - Utility

Scenario 3 - Surface Water, Water Supply Entity

Line	Add'l Costs Associated w/ Construction/Expansion of Surface Water Capacity	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
49	O&M Costs																				
50	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
51	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$360,088	$370,891	$382,017	$393,478	$405,282	$417,441	$429,964	$442,863	$456,149	$469,833	$483,928	$498,446	$513,399	$528,801	$544,665	$561,005	$577,836	$595,171	$613,026	$631,416
52	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
53	Factor - (Input from CH2MHill)	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884
54	Total Cost - (Line 51 times Line 52 to the power of Line 53)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
55																					
56	Surface Water System Costs (Transmission Line)																				
57	Length of Line 25 Miles																				
58	O&M Cost Component	$61,800	$63,654	$65,564	$67,531	$69,556	$71,643	$73,792	$76,006	$78,286	$80,635	$83,054	$85,546	$88,112	$90,755	$93,478	$96,282	$99,171	$102,146	$105,210	$108,367
59	Additional Flow From New Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
60	Factor - (Input from CH2MHill)	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
61	Total Cost - (Line 58 times Line 59 to the power of Line 60)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
62																					
63	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
64	Variable O&M Cost Component	$2,431	$2,504	$2,579	$2,656	$2,736	$2,818	$2,903	$2,990	$3,079	$3,172	$3,267	$3,365	$3,466	$3,570	$3,677	$3,787	$3,901	$4,018	$4,138	$4,262
65	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
66	Constant O&M Component	25,132	25,886	26,663	27,462	28,286	29,135	30,009	30,909	31,836	32,792	33,775	34,789	35,832	36,907	38,014	39,155	40,329	41,539	42,786	44,069
67	Total Cost - (Line 64 times Line 65 plus Line 66)	$0	$0	$0	$0	$0	$30,000	$31,000	$33,000	$34,000	$36,000	$38,000	$39,000	$41,000	$43,000	$45,000	$47,000	$49,000	$52,000	$54,000	$57,000
68																					
69	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
70	Variable O&M Cost Component	$22,794	$23,478	$24,182	$24,908	$25,655	$26,424	$27,217	$28,034	$28,875	$29,741	$30,633	$31,552	$32,499	$33,474	$34,478	$35,512	$36,578	$37,675	$38,805	$39,969
71	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	0.19	0.39	0.58	0.78	0.97	1.17	1.36	1.56	1.75	1.94	2.14	2.33	2.53	2.72	2.92
72	Constant O&M Component	3,214	3,310	3,409	3,512	3,617	3,725	3,837	3,952	4,071	4,193	4,319	4,448	4,582	4,719	4,861	5,007	5,157	5,312	5,471	5,635
73	Total Cost - (Line 70 times Line 71 plus Line 72)	$0	$0	$0	$0	$0	$9,000	$14,000	$20,000	$27,000	$33,000	$40,000	$47,000	$55,000	$63,000	$72,000	$81,000	$91,000	$101,000	$111,000	$122,000
74																					
75	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$39,000**	**$45,000**	**$53,000**	**$61,000**	**$69,000**	**$78,000**	**$86,000**	**$96,000**	**$106,000**	**$117,000**	**$128,000**	**$140,000**	**$153,000**	**$165,000**	**$179,000**
76																					
77	Capital Costs																				
78	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
79	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$9,010,440	$9,280,753	$9,559,176	$9,845,951	$10,141,330	$10,445,569	$10,758,937	$11,081,705	$11,414,156	$11,756,580	$12,109,278	$12,472,556	$12,846,733	$13,232,135	$13,629,099	$14,037,972	$14,459,111	$14,892,884	$15,339,671	$15,799,861
80	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
81	Factor - (Input from CH2MHill)	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016
82	Total Cost - (Line 79 times Line 80 to the power of Line 81)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
83																					
84	Surface Water System Costs (Transmission Line)																				
85	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$508,305	$523,554	$539,261	$555,439	$572,102	$589,265	$606,943	$625,151	$643,906	$663,223	$683,119	$703,613	$724,721	$746,463	$768,857	$791,923	$815,680	$840,151	$865,355	$891,316
86	Additional Capacity (MGD)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
87	Capacity Factor (MGD) - (Input from CH2MHill)	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400
88	Length of Line (Miles)	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
89	Length Factor - (Input from CH2MHill)	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440
90	Total Cost - (Line 85 times Line 86 to the power of Line 87 times Line 88 to the power of Line 89)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
91																					
92	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
93	Variable Capital Component - (Input from CH2MHill)	$2,575	$2,652	$2,732	$2,814	$2,898	$2,985	$3,075	$3,167	$3,262	$3,360	$3,461	$3,564	$3,671	$3,781	$3,895	$4,012	$4,132	$4,256	$4,384	$4,515
94	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
95	Constant Capital Component - (Input from CH2MHill)	55,105	56,758	58,461	60,215	62,021	63,882	65,798	67,772	69,805	71,900	74,057	76,278	78,567	80,924	83,351	85,852	88,427	91,080	93,813	96,627
96	Total Cost - (Line 93 times Line 94 plus Line 95)	$0	$0	$0	$0	$0	$70,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$94,000	$0	$0	$0	$0
97																					
98	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
99	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$442,797	$456,081	$469,763	$483,856	$498,372	$513,323	$528,723	$544,584	$560,922	$577,750	$595,082	$612,935	$631,323	$650,262	$669,770	$689,863	$710,559	$731,876	$753,832	$776,447
100	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00
101	Factor - (Input from CH2MHill)	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559	0.7559
102	Total Cost - (Line 99 times Line 100 to the power of Line 101)	$0	$0	$0	$0	$0	$849,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,140,000	$0	$0	$0	$0
103																					
104	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$919,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,234,000**	**$0**	**$0**	**$0**	**$0**
105																					

Source: Burton & Associates
C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

02/10/2003

Figure 4

St. Johns River Water Management District

Analysis of Rate Impact to Sample Utility of Alternative Water Source

O&M and Capital Cost Projections for Additional Capacity - Entity

Scenario 3 - Surface Water, Water Supply Entity

#	Rate Indexing	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
2	Annual Flow (MGD) - Prior Year	NA	68.09	69.98	71.92	73.92	75.97	78.08	80.25	82.48	84.77	87.12	89.54	92.02	94.57	97.19	99.89	102.66	105.51	108.44	111.45
3	Annual Growth in Flow (MGD)	NA	1.89	1.94	2.00	2.05	2.11	2.17	2.23	2.29	2.35	2.42	2.48	2.55	2.62	2.70	2.77	2.85	2.93	3.01	3.09
4	Annual Flow (MGD) - Current Year	68.09	69.98	71.92	73.92	75.97	78.08	80.25	82.48	84.77	87.12	89.54	92.02	94.57	97.19	99.89	102.66	105.51	108.44	111.45	114.54
5	Margin Reserve Capacity (MGD)	NA	NA	NA	NA	NA	6.51	6.69	6.87	7.06	7.25	7.45	7.65	7.87	8.09	8.32	8.55	8.79	9.03	9.28	9.53
6	Total Capacity Required (MGD)	68.09	69.98	71.92	73.92	75.97	84.59	86.94	89.35	91.83	94.37	96.99	99.67	102.44	105.28	108.21	111.21	114.30	117.47	120.73	124.07
7	Capacity - Groundwater (1)	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00	83.00
8	Capacity - Surface Water	0.00	0.00	0.00	0.00	0.00	26.17	26.17	26.17	26.17	26.17	26.17	26.17	26.17	26.17	26.17	60.51	60.51	60.51	60.51	60.51
9	Total Capacity (MGD)	83.00	83.00	83.00	83.00	83.00	109.17	109.17	109.17	109.17	109.17	109.17	109.17	109.17	109.17	109.17	143.51	143.51	143.51	143.51	143.51
10	Additional Capacity Required (MGD)	0.00	0.00	0.00	0.00	0.00	26.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.34	0.00	0.00	0.00	0.00
11	Additional Flow Associated with New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	2.11	4.28	6.51	8.80	11.15	13.57	16.05	18.60	21.22	23.92	26.69	29.54	32.47	35.48	38.57
12																					
13	Annual Flow (1,000 Gallons)	24,852,850	25,542,700	26,250,800	26,980,800	27,729,050	28,499,200	29,291,250	30,105,200	30,941,050	31,798,800	32,682,100	33,587,300	34,518,050	35,474,350	36,459,850	37,470,900	38,511,150	39,580,600	40,679,250	41,807,100
14	Additional Flow Associated with New Capacity (1,000 Gallons)	0	0	0	0	0	770,150	1,562,200	2,376,150	3,212,000	4,069,750	4,953,050	5,858,250	6,789,000	7,745,300	8,730,800	9,741,850	10,782,100	11,851,550	12,950,200	14,078,050
15																					
16	**Additional Costs Associated with Construction/Expansion of Surface Water Capacity**																				
17	O&M Costs																				
18	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
19	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$360,088	$370,891	$382,017	$393,478	$405,282	$417,441	$429,964	$442,863	$456,149	$469,833	$483,928	$498,446	$513,399	$528,801	$544,665	$561,005	$577,836	$595,171	$613,026	$631,416
20	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	2.11	4.28	6.51	8.80	11.15	13.57	16.05	18.60	21.22	23.92	26.69	29.54	32.47	35.48	38.57
21	Factor - (Input from CH2MHill)	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884	0.9884
22	Total Cost - (Line 19 times Line 20 to the power of Line 21)	$0	$0	$0	$0	$0	$873,000	$1,809,000	$2,821,000	$3,914,000	$5,094,000	$6,371,000	$7,747,000	$9,231,000	$10,830,000	$12,557,000	$14,414,000	$16,412,000	$18,561,000	$20,868,000	$23,343,000
23																					
24	Surface Water System Costs (Transmission Line)																				
25	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	$61,800	$63,654	$65,564	$67,531	$69,556	$71,643	$73,792	$76,006	$78,286	$80,635	$83,054	$85,546	$88,112	$90,755	$93,478	$96,282	$99,171	$102,146	$105,210	$108,367
26	Additional Flow From New Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	2.11	4.28	6.51	8.80	11.15	13.57	16.05	18.60	21.22	23.92	26.69	29.54	32.47	35.48	38.57
27	Factor - (Input from CH2MHill)	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
28	Total Cost - (Line 25 times Line 26 to the power of Line 27)	$0	$0	$0	$0	$0	$148,000	$302,000	$467,000	$644,000	$834,000	$1,040,000	$1,260,000	$1,497,000	$1,752,000	$2,026,000	$2,321,000	$2,638,000	$2,977,000	$3,342,000	$3,732,000
29																					
30	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
31	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
32	Additional Flow From New Capacity (MGD)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
33	Factor - (Input from CH2MHill)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
34	Total Cost - (Line 31 times Line 32 to the power of Line 33)																				
35																					
36	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
37	O&M Cost Component - (Input from CH2MHill, escalated for inflation)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
38	Additional Flow From New Capacity (MGD)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
39	Factor - (Input from CH2MHill)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
40	Total Cost - (Line 37 times Line 38 to the power of Line 39)																				
41																					
42	**Total O&M Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,021,000**	**$2,111,000**	**$3,288,000**	**$4,558,000**	**$5,928,000**	**$7,411,000**	**$9,007,000**	**$10,728,000**	**$12,582,000**	**$14,583,000**	**$16,735,000**	**$19,050,000**	**$21,538,000**	**$24,210,000**	**$27,075,000**
43																					
44	Capital Costs																				
45	Surface Water System Costs (complete regional, surface water supply and treatment system - not including Transmission Line)																				
46	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$9,010,440	$9,280,753	$9,559,176	$9,845,951	$10,141,330	$10,445,569	$10,758,937	$11,081,705	$11,414,156	$11,756,580	$12,109,278	$12,472,556	$12,846,733	$13,232,135	$13,629,099	$14,037,972	$14,459,111	$14,892,884	$15,339,671	$15,799,861
47	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	26.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.34	0.00	0.00	0.00	0.00
48	Factor - (Input from CH2MHill)	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016	0.9016
49	Total Cost - (Line 46 times Line 47 to the power of Line 48)	$0	$0	$0	$0	$0	$198,255,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$340,435,000	$0	$0	$0	$0
50																					
51	Surface Water System Costs (Transmission Line)																				
52	Length of Line																				
53	Capital Cost Component - (Input from CH2MHill, escalated for inflation)	$508,305	$523,554	$539,261	$555,439	$572,102	$589,265	$606,943	$625,151	$643,906	$663,223	$683,119	$703,613	$724,721	$746,463	$768,857	$791,923	$815,680	$840,151	$865,355	$891,316
54	Additional Capacity (MGD)	0.00	0.00	0.00	0.00	0.00	26.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.34	0.00	0.00	0.00	0.00
55	MGD Factor - (Input from CH2MHill)	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400	0.4400
56	Length of Line (Miles)	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
57	Length Factor - (Input from CH2MHill)	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440	1.0440
58	Total Cost - (Line 53 times Line 54 to the power of Line 55 times Line 56 to the power of Line 57)	$0	$0	$0	$0	$0	$71,383,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$108,121,000	$0	$0	$0	$0
59																					
60	Aqueous Ammonia Feed System - necessary at the utility level to provide appropriate disinfection when blending groundwater and surface water																				
61	Variable O&M Cost Component	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
62	Additional Flow From New Capacity (MGD)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
63	Constant O&M Component	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
64	Total Cost - (Line 61 times Line 62 plus Line 63)																				
65																					
66	High Service Pumping Facilities - necessary at the utility level when connecting alternative water supply at point of connection to the water distribution system																				
67	Variable O&M Cost Component	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
68	Additional Flow From New Capacity (MGD)	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
69	Constant O&M Component	THIS COST IS ASSOCIATED WITH THE UTILITY - NOT THE ENTITY BECAUSE THE UTILITY WOULD PURCHASE WATER FROM ENTITY AND THEN BE RESPONSIBLE TO TREAT AND PUMP TO UTILITY SPECS																			
70	Total Cost - (Line 67 times Line 68 plus Line 69)																				
71																					
72	**Total Capital Costs**	**$0**	**$0**	**$0**	**$0**	**$0**	**$269,638,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$448,556,000**	**$0**	**$0**	**$0**	**$0**
73																					

Notes: (1) Imputed total for all local utilities based upon current total county flow.

Source: Burton & Associates

C:\DATA\123\SJRWMD\BVPROJ\PEERRVW\BASE194.WK4

02/10/2003

APPENDIX D
Basis of Capital and Operations and Maintenance Cost Estimates

This Appendix presents a discussion of the basis of the capital and operations and maintenance cost estimates derived by use of the algorithms in this Study. This Appendix was provided by CH2MHill.

All capital and operations and maintenance (O&M) cost estimates developed in this report are conceptual planning level cost estimates. They provide general estimates of costs associated with water supply development options, but actual project costs for utility specific applications will vary.

General Criteria

The cost estimates developed in this report follow, as closely as practical, the conceptual costing criteria and methods developed and used in the SJRWMD Water 2020 process, culminating in the April 2000 *District Water Supply Plan*. The cost basis has however been updated to January 2002 cost [Engineering News Record Construction Cost Index (ENRCCI) = 6462)]. All costs reported in the *District Water Supply Plan* were based on March 1996 dollars (ENRCCI = 5537).

All other major Water 2020 cost estimating criteria are retained. This includes the assumption that water supply systems will be designed for a peaking factor of 1.5. That is, the maximum delivery capacity of the water supply system is equal to 150 percent of the average day delivery rate. The following definitions apply.

ADF = average daily flow (production) of water supply system, in mgd

MDF = maximum daily flow of water supply system, in mgd

MDF = 1.5*ADF

Capital costs include construction costs, non construction capital cost, and land and land acquisition costs where applicable. Non construction capital costs are estimated as 45 percent of the construction cost of the major water supply system components. This value includes a 20 percent construction cost contingency, as well as a 25 percent allowance for other initial expenses such as planning, design, permitting, services during construction, etc.

Expansion of Existing Groundwater Systems

Development of estimated costs for expansion of existing east central Florida groundwater supply systems requires establishment of several assumptions dealing with wellfield expansion and with treatment requirements. Wellfield expansion components included in the estimated costs are:

- Production Wells
- Wellfield Equipment
- Wellfield Piping
- Land (for each individual well site)

Groundwater treatment expansion criteria are based on minimum required treatment. Groundwater development in east central Florida has traditionally included aeration and disinfection. Lime softening is provided by some utilities. However, this level of treatment is optional and not required to meet drinking water standards. Also, because it is assumed that the cost will be for expansion of existing treatment plants, expansion cost components are limited to expansion of the treatment process and do not include additional land, additional buildings, laboratories, site work etc. Treatment components considered in the groundwater supply expansion costs are:

- Aeration
- Ozone Treatment
- Residual Disinfection
- High Service Pumping
- Ground Storage Tanks

Utilities may incorporate ozone treatment into future groundwater treatment system expansions and upgrades. However, only expansion costs and not upgrade costs are included here because the existing treatment plant upgrade costs would be incurred regardless of the additional source of supply developed.

New Surface Water Systems

New surface water systems will be considerably more expensive than the expansion of existing groundwater systems. The cost of surface water supply development is based on cost estimates reported in the November 1999 Technical Memorandum (TM) *Conceptual Surface Water Treatment Systems: St. Johns River near Lake Monroe*. This TM presents conceptual planning level construction, capital and O&M cost estimates for two regional surface water treatment systems, with ADF capacities of 40 and 150 mgd respectively. Elements included in these conceptual cost estimates are:

- River Diversion Structure, Pumping Station and Raw Water Pipeline.
- Raw Water Off-line Storage Reservoir (5 day supply)
- Raw Water Pumps and Reservoir Intake
- Complete Surface Water Treatment Plant, including:
  - Ballasted Sand Enhanced Sedimentation
  - Deep Bed Filters
  - Bulk Chemical Storage
  - Reverse Osmosis Treatment
  - Ozone Treatment
  - GAC Filtration
  - Chlorine / Ammonia Feed
  - Chlorine Contact
  - Residuals Handling
  - Concentrate Outfall
  - Operations Building
  - Site Work / Roads and Parking
  - Transfer Pumps
  - Ground Storage Tanks
  - High Service Pumps
- Finished Water ASR System

Finished Water Transport

Finished water transport cost were addressed in the August 1997 TM B.1.l *Surface Water: Planning Level Cost Estimates*. Transport system costs are a function of transport length and flow rate, and a distinction is made between systems needing a dedicated booster pumping station (long system) and those that do not require a pumping facility (short systems). Short systems apply to transport distances of 5 miles or less and long systems apply to transport distances greater than 5 miles.

Components included in short transport systems are:

- Pipeline
- Right of Way Easements

Components included in the long transport systems are:

- Pipeline
- Right of Way Easements
- Booster Pumping Station
- Residual Disinfection
- Ground Storage Tanks

Final Blending and Pumping

When a new surface water supply is blended with an existing groundwater supply, prior to distribution, additional costs associated with disinfection method compatibility and re-pumping could be incurred. The applicability of these costs will depend in large part on the characteristics of the existing groundwater supply system and may not be required or may prove to be redundant with previously established treatment and transport costs. However, these potential additional costs are included here in order to provide a conservative analysis of the potential water rate impacts of adding treated surface water to an existing groundwater supply system.

Final blending and pumping costs components included are:

- Aqueous Ammonia Feed System (to convert an existing chlorine disinfection system to a chloramines disinfection system)
- High Service Pumps (for re-pumping after final blending)

Appendix E
Potential Governance and Rate Structure Concept

The assumptions used in this study and stated in Section II.A.3.b and c provide a basis for computing the impact of a blended retail water rate upon the monthly cost of water. However, these assumptions assume that each member utility would have the same incremental water demands from the surface water plant as does the typical utility which is the subject of the analysis.

This is a valid assumption to use to calculate the rate impact, but in reality, each member utility will be at a different place regarding its current groundwater capacity, consumptive use permit and growth, and consequently each utility will likely have different water demands that must be met with surface water. Therefore, implementation of a regional solution to provide surface water to local utilities will be enhanced if the governance and rate structure will:

1) Preserve the situation of each individual member utility with regard to its current groundwater capacity, availability, investment and all aspects of its current operation, and

2) Provide a means to recover the cost of the surface water facilities as fairly as possible from all who benefit from the facilities, including

    a. An element of cost recovery for surface water actually delivered to the local utilities, and

    b. An element of cost recovery for the availability of the surface water facilities to meet the future demands of its member utilities.

This Appendix presents a potential governance and rate structure concept that would address both of these requirements.

Potential Governance and Rate Structure Concept – A governance and rate structure concept that would meet the above mentioned criteria to enhance implementation of a regional solution to provide surface water to local utilities could include the following provisions:

1. Each member utility would maintain ownership and control of its utility system, including all groundwater source of supply and treatment facilities.

2. To the extent that a member utility has available groundwater capacity and a valid consumptive use permit for additional groundwater withdrawals, it could use groundwater up to its current capacity or groundwater withdrawal limit, whichever is reached first.

3. When a member utility can no longer use groundwater to meet additional water demands from growth, it would purchase surface water for its additional needs from the new water supply entity.

4. Until such time as the surface water plant is "base loaded" (producing at 80% of capacity), the new water supply entity would charge member utilities for delivered surface water at a rate imputed to be equivalent to the costs for groundwater, or a *groundwater equivalent rate*.

5. To the extent that the new water supply entity's costs exceed its revenues from direct water sales at the above described rate (which will be the case under this plan), the unrecovered costs represent the cost of unused capacity, or in rate parlance "non used and useful" capacity.

6. Those who benefit from this non used and useful capacity are the member utilities to the extent that the plant will be available to meet their additional water demands as they emerge.

7. Therefore, a reasonable approach to recovery of this cost of non used and useful capacity would be to spread it proportionately among the member utilities based upon their projected requirements for surface water from the plant.

8. In order to accomplish this, each member utility would be allocated a portion of the surface water capacity as a reserved capacity.

9. A reasonable way to spread the cost of non used and useful capacity proportionately among the member utilities would be to divide the non used and useful costs (costs not recovered in direct water sales) by the total capacity, in million gallons per day (mgd), allocated to member utilities as reserved capacity in order to determine a surface water availability charge per mgd of reserved capacity.

10. This surface water availability charge per mgd of reserved capacity would be charged to all member utilities based upon their respective reserved capacities.

11. At some time in the future, when the surface water plant reaches a base loaded capacity, it may be possible to establish a true surface water rate for delivered water and eliminate, or at least minimize, the surface water availability charge.

The advantages of such a governance and rate structure scenario are:

- The utility that needs additional water now, would purchase it from the surface water supply entity and pay an equivalent groundwater rate, which would represent about the same cost per unit for that additional water as the cost per unit of the utility that can continue to provide its additional water needs from its own groundwater source for some period of time.

- Utilities that receive different quantities of surface water from the new water supply entity would incur a direct purchased water cost proportionate to their usage.

- The utilities that would benefit by the availability of surface water would pay proportionately for that benefit, based upon their respective reserved capacities, through the surface water availability charge.

- There would be little or no subsidy of surface water costs from utility to utility because 1) each utility would pay the same rate for actual surface water purchased, and 2) the revenues from these purchased water sales will be excluded from the surface water availability charge[9]. Therefore, the surface water availability charge would be limited to the costs to provide the non used and useful capacity for each utility's future needs.

- As water demands increase over time, the amount of actual water sold will increase and the surface water availability charge will decrease. When the facility becomes base loaded, about 80% of capacity, the allocation of cost into the usage rate and availability charge could be reevaluated and adjusted relative to the total costs of service. After such a reevaluation and adjustment, these two rate components could be composed to represent a proper allocation of costs of the base loaded surface water facility to usage and availability on a going forward basis.

[9] Including transport costs in the basic rate and in the surface water availability charge could produce some subsidies if some utilities require significantly longer transmission lines than others. This could be solved by separating out the transmission component with a different transport rate and/or availability charge for each utility, or for groups of utilities with similar transport requirements.

The disadvantages of such a governance and rate structure are:

- Development of an “equivalent groundwater rate” would require assumptions as to the imputed costs included in such a rate, and those assumptions could be arguable.

- The surface water availability charge would have to be adjusted annually to reflect the increasing wholesale water sales revenue that would be an offset against costs in the calculation of the surface water availability charge.

- The total capacity of the surface water facilities would have to be allocated as reserved capacity to each member utility for this plan to be implemented. This may not be a problem, but there could be competing interests among the utilities as to how this capacity should be allocated.

Appendix F
Summary of Peer Review Process
For Burton & Associates Paper Titled
Financial Impact of Alternative Water Supply

TAURANT CONSULTING, INC.

July 24, 2003

Ms. Barbara Vergara, P.G.
Director, Division of Water Supply Management
St. Johns River Water Management District
P.O. Box 1429
Palatka, FL 32178-1429

RE: Peer Review of Burton & Associates (B&A) Paper "Financial Impact of Alternative Water Supply"

Dear Ms. Vergara:

As part of my contract responsibilities with the District you tasked me to manage completion of the peer review of the subject paper. The peer review resulted in clarification of

- underlying assumptions,
- cost bases for surface water treatment facilities components, and
- expression of the unblended cost to purchase water.

The reviewers also validated the underlying principals and methodologies that B&A employed. The following is my summary of the process and the outcome.

- A first draft was provided to three separate outside reviewers in early March 2003. Each of the three reviewers provided independent comments back through the District to B&A in late March 2003.
- After review of comments by B&A, I scheduled several teleconferences to resolve issues raised by the reviewers and provide B&A guidance on document completion.
- In late June 2003 B&A provided a revised final draft for peer review. All three contract peer reviewers reviewed that revised final draft and each of them provided a letter, attached, stating that their review comments were adequately addressed in the current version.

P.O. BOX 916295 E-MAIL: TAURANT@CFL.RR.COM PHONE: (407) 884-8800
LONGWOOD, FL 32791-6295 FAX: (407) 884-7195

I recommend that the revised draft, dated June 26, 2003, be accepted as the final draft and provided to your editors for review and publication. Further, I recommend that this summary, together with the listed attachments, be included as an appendix to the final document.

Sincerely,

Jerry M. Salsano, P.E.
Taurant Consulting

Attachments:

1. Example peer review purchase order letter, March 4, 2003
2. Example peer review statement of work
3. Hazen And Sawyer, P.C. first review letter, March 20, 2003
4. Hazen And Sawyer, P.C. second review letter, May 22, 2003
5. Hazen And Sawyer, P.C. approval letter, July 9, 2003
6. Guastella Associates, Inc. first review letter, March 21, 2003
7. Guastella Associates, Inc. approval letter, July 21, 2003
8. Rick Giardina & Associates, Inc. first review memorandum, March 26, 2003
9. Rick Giardina & Associates, Inc. second review memorandum, May 22, 2003
10. Rick Giardina & Associates, Inc. approval letter, July 17, 2003
11. Taurant summary of April 2, 2003 coordinating teleconference

St. Johns River
Water Management District
Kirby B. Green III, Executive Director • John R. Wehle, Assistant Executive Director

Post Office Box 1429 • Palatka, FL 32178-1429 • (386) 329-4500

March 4, 2003

Mr. Rick Giardina
Rick Giardina & Associates, Inc.
13741 East Rice Place
Suite 100
Aurora, CO 80015

Re: Purchase Order number PO34524 – Peer Review of *Financial Impact of Alternative Water Supply* by Burton & Associates

Dear Mr. Giardina:

The District has issued purchase order number PO34524 to Rick Giardina & Associates, in the not-to-exceed amount of $7,196, for your services in the peer review of the referenced document. Enclosed is the Statement of Work for this effort. As indicated in the Statement of Work, the District desires to complete the peer review process in two months. Although the Statement of Work indicates a start date of March 3, 2003, the actual start of work is planned for March 7, 2003.

A copy of the document to be reviewed is also enclosed. Please contact me if you need a paper copy of this document in addition to the electronic copy. Also, please contact me to discuss any questions and concerns. I look forward to working with you on this project.

Sincerely,

Barbara A. Vergara

Barbara A. Vergara, P.G., Director
Division of Water Supply Management

C: Carol Taylor

STATEMENT OF WORK
Peer Review of
Financial Impact of Alternative Water Supply
by Burton & Associates

Rick Giardina & Associates, Inc.

Introduction/Background

The St. Johns River Water Management District (DISTRICT) has evaluated the potential impacts of proposed water use through 2020 on the water resources of DISTRICT and published the results in the *Water Supply Assessment 1998* (WSA). The WSA identified areas in which water resource problems have become critical or are projected to become critical by at least 2020 and as early as 2006. These areas, referred to as Priority Water Resource Caution Areas (PWRCAs), include all or portions of Orange, Osceola, Seminole, Volusia, Lake, St. Johns, Flagler, and Brevard counties and may extend to new areas pending the outcome of the new evaluation. Alternative water supply sources will be needed to meet projected demand in these areas. Alternative water supply sources generally cost more to develop and operate than fresh ground water that has traditionally been the primary water supply source in the DISTRICT.

On completion of the WSA, the DISTRICT began work on the District Water Supply Plan 2000 (DWSP), which identified potential alternative water supply sources, and strategies that could be used to prevent the projected water problems from occurring. Various investigations are now underway to determine the technical, environmental, and economic feasibility of the alternative water supply and water resource strategies identified in the DWSP. These investigations include a study of the "Financial Impact of Alternative Water Supply" by Burton & Associates, Inc., a study of the changes in water utility charge rates that would be required in order to pay for the increased cost of alternative water supplies.

Because of the potentially significant impact the projects associated with DWSP related studies may have on affected utilities in the DISTRICT, they have been and will be subjected to intense scrutiny. For this reason the DISTRICT retains the services of preeminent consultants in the fields of regulatory compliance, water quality, water treatment, water resources, rates, plant and utility operations, management issues and strategic planning to peer review its water supply and resource development studies. The "Financial Impact of Alternative Water Supply" by Burton & Associates, Inc., is of particularly significance and, therefore, must undergo thorough peer review to assure accuracy and credibility.

Objectives

Peer review will be used to assure the highest quality of work products from consultants. This is necessary because of far reaching impacts the report outcomes may have. The reports to be reviewed will be used to make decisions involving multi-million dollar water supply and resource projects and therefore will be under intense public scrutiny and subject to possible legal challenges. DISTRICT needs to have the best available information in order to make the best possible water management decisions and to defend those decisions in the event of a legal challenge.

Scope of Work

This purchase order will provide for peer review of Draft Technical Memorandum – Financial Impact of Alternative Water Supply, prepared by Burton & Associates, Inc. by Rick Giardina & Associates, Inc. (CONSULTANT).

Task Identification

1. CONSULTANT shall perform review of document titled Draft Technical Memorandum – Financial Impact of Alternative Water Supply as supplied by DISTRICT. This review shall be adequate to allow for an assessment of the suitability of the project approach/methodology, the accuracy of the results of application of the approach/methodology, and the reasonableness and correctness of the conclusions. The CONSULTANT'S assessment shall be reasonably comprehensive.
2. CONSULTANT shall prepare a first draft comprehensive written summary of his review comments and shall forward this summary to DISTRICT's Project Manager, Barbara A. Vergara, P.G., Director, Division of Water Supply Management, via Email at <bvergara @sjrwmd.com> within two weeks of receipt of document from DISTRICT.
3. DISTRICT will provide comments received from CONSULTANT to Burton & Associates for review and consideration by Burton & Associates, and for discussion with CONSULTANT. This process may require Emails, FAXs, and teleconferences between DISTRICT, CONSULTANT, other peer reviewers, and Burton & Associates. In addition, this process may include no more than one meeting between DISTRICT, CONSULTANT, other peer reviewers, and Burton & Associates to be held in the Orlando, Florida area.
4. Based on discussions with CONSULTANT, other peer reviewers, and DISTRICT, Burton & Associates will revise its document. The revised document will be forwarded to CONSULTANT for final review and comment. This review shall again be adequate to allow for an assessment of the suitability of the project approach/methodology, the accuracy of the results of application of the approach/methodology, and the reasonableness and correctness of the conclusions.
5. Based on the review of the revised document, CONSULTANT shall prepare a final comprehensive written summary of his review comments and shall forward this summary to DISTRICT's Project Manager via Email.

Timeframes and Deliverables

The first draft of the comprehensive written summary of CONSULTANT's review comments shall be forwarded to DISTRICT's Project Manager within two weeks of receipt of document from DISTRICT.

The schedule for completion of the remainder of the tasks described in this Statement of Work shall be decided upon based on conversations between CONSULTANT, DISTRICT, other peer reviewers, and Burton & Associates. DISTRICT intends to make this schedule as convenient as possible for all involved parties but will make every effort to complete the tasks within two months of the date of receipt of document by CONSULTANT from DISTRICT. Deadlines shall be provided in writing by DISTRICT'S Project Manager at the time of assignment.

All work performed under this contract shall begin March 3, 2003, and shall be completed by September 30, 2003. Work schedules and deadlines for review of specific documents shall be provided in writing by DISTRICT Project Manager.

All deliverables shall be submitted in machine readable form, in format consistent with DISTRICT's standard software products. DISTRICT's standard office automation products include the Microsoft® Office Suite 2000 (WORD, EXCEL, ACCESS, and POWERPOINT). Reports and other deliverables shall be clear, concise, thorough, and grammatically correct; and shall be in a form agreed to by CONSULTANT and DISTRICT's Project Manager. Final reports and all associated materials shall become property of the DISTRICT.

Budget/Cost Schedule

CONSULTANT shall invoice the DISTRICT monthly based on hourly rate. DISTRICT agrees to compensate the CONSULTANT at the hourly rate of $257. Hourly rate shall include all expenses associated with the project. The project is to be completed at a not-to-exceed cost of $7,196.

All work will performed at CONSULTANT's place of business, unless otherwise requested by DISTRICT's Project Manager.

HAZEN AND SAWYER
Environmental Engineers & Scientists

Hazen and Sawyer, P.C.
4000 Hollywood Boulevard
750N, North Tower
Hollywood, FL 33021
954 987-0066
Fax: 954 987-2949

March 20, 2003

Ms. Barbara Vergara
Director
Division of Water Supply Management
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
Post Office Box 1429
Palatka, Florida 32178-1429

Peer Review of *Financial Impact of Alternative Water Supply* by Burton & Associates

Dear Ms. Vergara:

As you requested, this letter summarizes my review of the St. Johns River Water Management District Report titled, "Financial Impact of Alternative Water Supply – Draft" prepared by Burton & Associates. I reviewed the report with respect to approach, methodology, values and results. I spent most of my time reviewing the model spreadsheets provided in the appendices. Because I did not have the computer model, I did not check all the calculations. I did examine the data and methods used to calculate Scenario 1, 2, and 3 water rates in Year 20 and found them to be accurate. I evaluated the costs for surface water and the costs per 1,000 gallons for surface and ground water. I evaluated the financial model approach and the assumptions used.

Overall, the approach, methodology and results are sound. The choice of a "model" utility is always difficult but the authors provided a good justification of the model utility used. They did a good job explaining how the results would change if the assumptions used to characterize the model utility changed. The three scenarios were relevant and well designed. All of the financial assumptions, except perhaps the surface water system capital costs, seem reasonable. The determination of when to add capacity also seems reasonable.

Specific comments and recommendations are summarized as follows.

Capital Cost of Surface Water Supply. The financial report does not discuss the design or present itemized costs of the surface water system. Without knowing more than what is in this report, the capital cost of the surface water system seems high for only 3.88 mgd of capacity. A summary of the surface water costs is provided in Table 1 below. The cost of surface water per 1,000 gallons of surface water capacity is $4.62 in Year 1 dollars, which is high relative to costs typically associated with alternative water sources. About one-half of this cost is due to the transmission system, which is built in Year 6 and in Year 16 in Scenario 2. Referring to Scenario 2 – Just In Time Rates, Figure 3, both the capital cost of treatment and of transmission seem high to me. I am curious to know why so much money is needed for the transmission system in both years 6 and 16 and what aspects of the design of this surface water system are relatively expensive. I would recommend that the document discuss the salient aspects of the surface water system including a description and the major cost components.

Table 1
Cost of Surface Water per 1,000 Gallons
Financial Impact of Alternative Water Supply Technical Memorandum - Draft for SJRWMD

Item	**Scenario 2 – Utility-Provided Surface Water**	**Scenario 3 – Regional Supply Authority Provides Surface Water**
Capacity of surface water in Year 20, mgd	3.88	3.88
Amount Used From Surface Water in Year 20, mgd	2.84	2.84
Total Water Use in Year 20, 1000 gallons	11.67	11.48
Annual O&M cost in year 20 due to expansion	$2,304,000	$9,042,000
Debt Service in year 20 due to expansion	$9,511,000	$2,386,000
Total Cost of Surface water	$11,815,000	$11,428,000
Unit Costs in Year 20 Dollars:		
Cost of Surface water per 1,000 gallons of surface water capacity	**$8.34**	**$8.07**
Cost of Surface water per 1,000 gallons of surface water use	**$11.40**	**$11.02**
Cost of Surface water per 1,000 gallons of total groundwater and surface water use	**$2.77**	**$2.73**
Unit Costs in Year 1 Dollars:		
Cost of Surface water per 1,000 gallons of surface water capacity	**$4.62**	**$4.47**
Cost of Surface water per 1,000 gallons of surface water use	**$6.31**	**$6.10**
Cost of Surface water per 1,000 gallons of total groundwater and surface water use	**$1.54**	**$1.51**

Issue Regarding How Surface Water Entity Charges Customers in Scenario 3. I do not think it is necessary to spend so much time talking about how the surface water entity would charge its customers. Even if the entity charged per 1,000 gallons of surface water delivered, the purchasing utility would still blend this rate in with all the other costs. The result, no matter how you look at it, would be a blended rate. It is OK to use the author's assumption if it is needed to simplify the modeling. Just describe it once and move on. I would, instead, spend more time describing the surface water system.

Affordability Criteria. The authors do a nice job explaining the 1.5 percent affordability criterion. One could also justify a two percent criterion.

Executive Summary. Of course, an executive summary would be nice. I'm sure the authors intend to include one. In this summary I would reproduce Tables 3, 4, 5, 8 and 9 only for four or five years, say Year 1, Year 6, Year 16, and Year 20, for example. This will make it easier for readers to follow the conclusions.

This concludes my summary review of the “Financial Impact of Alternative Water Supply – Draft” prepared by Burton & Associates. I am happy to answer any questions you may have regarding these comments.

Very truly yours,

HAZEN AND SAWYER, P.C.

Grace M. Johns, Ph.D.
Senior Associate

HAZEN AND SAWYER
Environmental Engineers & Scientists

Hazen and Sawyer, P.C.
4000 Hollywood Boulevard
750N, North Tower
Hollywood, FL 33021
954 987-0066
Fax: 954 987-2949

May 22, 2003

Ms. Barbara Vergara
Director
Division of Water Supply Management
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
Post Office Box 1429
Palatka, Florida 32178-1429

Peer Review of Revised *Financial Impact of Alternative Water Supply* by Burton & Associates

Dear Ms. Vergara:

As you requested, this letter summarizes my review of the revised St. Johns River Water Management District Report titled, "Financial Impact of Alternative Water Supply – Draft" prepared by Burton & Associates submitted to me on May 9, 2003. I reviewed the report with respect to my comments provided to you on March 20, 2003.

The revised draft addresses most of my comments satisfactorily. My only editorial comments regard the table titled, "Calculation of Surface Water Cost per 1,000 Gallons at 80% of capacity". Under the title I would put "Capacity of the Surface Water Plant is 26.17 mgd". Also, the line in the table that says "Annual Surface Water Flow (000s)", I would put (000 gallons) instead of just (000).

As a final comment, I still don't understand why the surface water capital costs are so high. I am not questioning the validity of the costs. I'm just recommending that the report discuss specific issues related to the design of the surface water systems under Scenario 2 (stand-alone utility) and Scenario 3 (regional utility). Appendix D only talks about the items that went into costing out a 40 and 150 mgd facility. There is no mention of the basic design information used to cost out a 26 mgd facility and a 3.88 mgd facility(ies) such as information on the length and number of the transmission pipelines and the distance from the existing system to the new water source. I leave it up to you to decide whether to add one or more paragraphs in the body of the report under the section "Basis of Capital and Operations and Maintenance Cost Estimates". The paragraphs would describe, for each of Scenarios 2 and 3, what is being built and why, the number and length of the transmission pipelines, the capacity of the surface water systems and any other relevant information so the reader may understand the cost estimates.

For example, under Scenario 2, the utility needs only 3.88 mgd of water but must spend $85 million in capital costs to obtain that water. Here I am referring to APPENDIX B, Scenario 2 – Surface Water, Just-in-Time Rates, Figure 3, page 2 of 2, Scenario 2 – Surface Water Stand Alone Utility in year 6 and year 16. Line 104, "total capital costs" has $42.7 in year 6 and $57.4 million in year 16 (which is $42.7 million in year 6 dollars) for a total cost of $85 million in year 6 dollars. Line 80 indicates that 1.94 mgd of capacity will be built in year 6 and again in year 16 for a total of 3.88 mgd. As a result, the capital cost is 32 percent of the total capital cost of the 26 mgd facility ($267 million in year 6 dollars) while the 3.88 mgd is only 15 percent of the 26 mgd. If this is just pure economies-of-scale, I wish the report would say so. This implies a capital cost of $4.38 per 1,000 gallons in year 6 dollars, which was obtained by annualizing the $85 million at 6 percent annual interest over 30 years and dividing the result by the quantity 3.88 times 365 times 1,000. Today's value of the $4.38 is $3.78. This does not include the O&M cost per 1,000 gallons. This is relatively expensive water even for an alternative water source.

In looking at the capital cost itemization in APPENDIX B, Figure 3, referred to above, it appears that the transmission pipeline is why it costs so much. So the body of the report should explain the features of the pipelines such as number, size and length. Perhaps the report could explain what the stand-alone utility is building and what the regional utility is building that is different from what the stand-alone utility is building.

This concludes my summary review of the revised "Financial Impact of Alternative Water Supply – Draft" prepared by Burton & Associates. I am happy to answer any questions you may have regarding these comments.

Very truly yours,

HAZEN AND SAWYER, P.C.

Grace Johns

Grace M. Johns, Ph.D.
Senior Associate

HAZEN AND SAWYER
Environmental Engineers & Scientists

Hazen and Sawyer, P.C.
4000 Hollywood Boulevard
750N, North Tower
Hollywood, FL 33021
954 987-0066
Fax: 954 987-2949

July 9, 2003

Ms. Barbara Vergara
Director
Division of Water Supply Management
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
Post Office Box 1429
Palatka, Florida 32178-1429

Peer Review of Revised *Financial Impact of Alternative Water Supply* by Burton & Associates

Dear Ms. Vergara:

As you requested, this letter summarizes my review of the revised St. Johns River Water Management District Report titled, "Financial Impact of Alternative Water Supply – Technical Memorandum – Draft" dated June 26, 2003 prepared by Burton & Associates submitted to me on June 26, 2003. I reviewed the report with respect to my comments provided to you on May 22, 2003.

The revised draft addresses my comments satisfactorily. I appreciate the opportunity to assist the District with this assignment and I commend the study authors for their hard work on this important study.

Very truly yours,

HAZEN AND SAWYER, P.C.

Grace Johns

Grace M. Johns, Ph.D.
Senior Associate

Hwd:H&S Final Approval letter.doc

GUASTELLA ASSOCIATES, INC.

UTILITY MANAGEMENT • VALUATION • RATE CONSULTANTS

100 BOYLSTON STREET, SUITE 800
BOSTON, MA 02116
TEL: (617) 423-3030
FAX: (617) 423-2929

March 21, 2003

Barbara A. Vergara, Director
Division of Water Supply Management
St. Johns River Water Management District
P.O. Box 1429
Palatka, FL 32178-1429

RE: Peer Review of Financial Impact of Alternative Water Supply by Burton & Associates

Dear Ms. Vergara:

In accordance with the above referenced assignment, I am submitting this letter-report containing a first draft of a summary of my review comments. As directed, the purpose of my review of Burton's report ("Report") is to allow for an assessment of the suitability of the approach/methodology, the accuracy of the results and the reasonableness and correctness of the conclusions. I am also guided by the District's stated objectives to have the best available information in order to make the best possible water management decisions and to defend these decisions in the event of a legal challenge.

I have carefully reviewed the Report and find that its text enables an understanding of the approach/ methodology, analysis and results. I have also examined the assumptions and tested, on a sample basis, the calculations provided within the Report. Burton relies on information provided by CH2M Hill as to the use of surface water and related capital and operating costs. This source of information is beyond the scope of my review and I have, therefore, accepted that information as reasonable and sufficiently accurate for the purpose of Burton's analysis.

Approach/ Methodology

Burton's approach/methodology establishes a dynamic model with which to estimate the impact when a *typical* moderately sized, governmentally-owned, local utility develops surface water supplies to meet water demands that exceed existing ground water supplies. I agree with this approach. Water utilities invariably have numerous characteristics (size, age, density, facilities, financial structures, etc.) that are too different to enable the establishment of a comparability equation. Burton properly recognizes that his model will measure the "order of magnitude" of the impact of the cost of alternative water supplies, but the impact on individual utilities will vary.

The use of a governmental water utility is reasonable because such utilities have the ability to attract capital at a lower cost than investor-owned utilities, and they are tax-exempt. For a "regional approach" it would not make economic sense to have an investor-owned utility develop alternative surface supplies—unless a form of privatization were adopted that, in effect, would essentially be the same as a governmentally owned utility.

The use of surface water as the alternative supply is apparently not only more feasible in terms of availability, but it is also more costly than ground water supplies. Thus, the cost impact is greater and reflects a safer projection in terms of the potential impact.

Analysis

Burtons's model is applied under three scenarios:

Scenario 1- a stand alone utility that will be able to meet future demands with ground water supplies—provided only as a benchmark for comparative purposes.

Scenario 2 - also a stand alone utility but one that develops alternative surface water supplies.

Scenario 3 - a utility developing alternative surface water supplies that would be sufficient to meet future demands of multiple utilities. This analysis provides a reasonable range of the cost impact of alternative surface water supplies — for the model. It is important to keep in mind that, as the Report notes, the impact on individual utilities (particularly Scenario 3) would vary.

The calculations within the model are comprehensive in terms of accounting for existing and projected sources of revenue, expenses and capital costs. There are a few considerations (not concerns) that I would suggest with respect to the calculations. The interest rate on debt financing of 6% seems a bit high at this point in time. The possibility of government funding programs to significantly reduce the effective interest rate should be considered, if not already considered. The connection fees appear to be based on capital expenditures, without consideration to impact fees for "past debt service"—a mechanism I will discuss later as an option to the alternative rate proposals. There is also a minor technical adjustment appropriate in the calculation of revenues related to growth because the "half-year convention" was not used, but it does not have a significant impact on the long-term projections.

Wholesale Rate

The wholesale rate is applicable under Scenario 3, which anticipates the sale of alternative surface water supplies to multiple utilities. It is calculated by dividing the total costs related to surface water supplies by the total water sold by the participating utilities to their respective individual customers. This calculation produces a lower wholesale rate because the surface water supply costs are divided not only by the quantity of surface water sold to the participating utilities but also the ground water sold by the utilities to their customers. Although the wholesale rate is lower than if surface water supply costs were divided by only surface water sales, there is full cost recovery because it is applied to larger quantities of water (both ground water and surface water). This produces accurate results under the model in Scenario 3, but in my opinion raises a serious concern under likely circumstances in which the participating utilities use different portions of ground water and purchased surface water. My concern does not pertain to the relative affordability issue, but to an issue of equitable cost recovery — a potential basis for legal action.

More specifically, if I correctly understand the calculations and implementation of the wholesale rate as contained in the Report, two participating utilities that hypothetically sell the same quantity of water to their respective customers, would pay the same amount for surface water even if one utility's surface water requirement is only 10% of its total and the other 90%. This concern may be an issue that the Report assumes would be addressed in interlocal agreements, but it is not explicitly stated as such.

Affordability

The Report provides a comprehensive analysis of the resultant rates and rate increases for each Scenario, as well as a measure of affordability for each. As expected, the addition of new capital and operating costs would produce significant rate increases or "spikes" at the time of implementation. The Report proposes two options: equalizing rate increases and rate indexing. With or without mitigating the rate increases, the new rates would be affordable in terms of water costs per household income, using a study developed by the state of New York.

With respect to the affordability, the cost of water per customer in Florida is likely higher than in New York for a number of reasons. Thus, the report is conservative with respect to affordability. The need to mitigate the magnitude of the rate increases seems less critical in terms of actual affordability (public relations aside). On the other hand, equalizing rate increases or rate indexing may present another concern with respect to equitable cost recovery — again a potential cause for legal action. Under both the equalizing and indexing options, compared to the "just in time" rates, the customers in the years prior to the time when higher costs for surface water would actually be incurred, would be paying for the future cost of water in addition to the then current actual cost of serving them. Accordingly, they would be subsidizing the new customers that connect in the future.

I would suggest that this issue be considered as a topic for discussion in the Report. There are other steps that might be considered to mitigate rate spikes, such as financing options. There are also rate options such as the establishment of impact fees to recover, in addition to capital expenditures, proportionate shares of past debt service in order to place new customers on an equal footing with existing customers.

Conclusion

I find that the Report provides a reasonable analysis of the impact of the costs associated with alternative surface water supplies, as well as the issue of affordability. I also agree with the Report in that it cannot address each circumstance that will be encountered when actual plans are implemented to meet water demands in the future. I would, however, suggest that the two issues I discuss above, namely, the determination of wholesale rates and the mitigation of rate spikes, be addressed in the report. Although they will likely not change the conclusion as to affordability, they will provide recognition of the concern regarding the equitable recovery of costs among participating utilities and between existing and future customers.

Respectfully submitted,

GUASTELLA ASSOCIATES, INC.

John F. Guastella
President

GUASTELLA ASSOCIATES, INC.
UTILITY MANAGEMENT • VALUATION • RATE CONSULTANTS

100 BOYLSTON ST. SUITE 800
BOSTON, MA 02116
TEL: (617) 423-3030
FAX: (617) 423-2929

July 21, 2003

Barbara A. Vergara, Director
Division of Water Supply Management
St. Johns River Water Management District
P.O. Box 1429
Palatka, FL 32178-1429

RE: Peer Review of Financial Impact of Alternative Water Supply
by Burton & Associates

Dear Ms. Vergara:

By letter dated March 21, 2003 I submitted a first draft of a summary of my review comments of the report by Burton & Associates entitled "Financial Impact of Alternative Water Supply." On the basis of a subsequent conference call among you, Mr. Burton and myself, and my review of Mr. Burton's adjusted report that he submitted under transmittal letter dated June 26, 2003, I find that the significant comments in my first draft review have been adequately addressed.

The report is comprehensive and does an excellent job in carrying out its assigned purpose. I very much appreciated the opportunity to provide this review.

Respectfully submitted,

GUASTELLA ASSOCIATES, INC.

John F. Guastella
President

Rick Giardina & Associates, Inc.

■ ***Draft Technical Memorandum***

March 26, 2003

To: Barbara A. Vergara, P.G., Director
Division of Water Supply Management
St. Johns River Water Management District

From: Rick Giardina, President

Re: Draft Peer Review on *Financial Impact of Alternative Water Supply – Technical Memorandum*

This memorandum contains a draft of the peer review completed for the above mentioned technical memorandum as requested by the St. Johns River Water Management District (the District) under purchase order number PO34524, Task 2.

I look forward to receiving comments as described under Task 3 of our scope of work, and to contributing to the conclusion of this peer review in a timely manner. Please contact me or Joel Theis if you have any questions about the following comments and observations.

INTRODUCTION

Rick Giardina & Associates, Inc. (RGA) was commissioned to evaluate the draft technical memorandum, the *Financial Impact of Alternative Water Supply,* prepared by Burton & Associates, Inc. (Burton) for the District. This peer review involved the following assessments:

1. Project Approach
   RGA's task is to make an assessment of whether the approach to the project is acceptable and consistent with industry practices.

2. Methods and Applications
   RGA's task is to make an assessment of whether the methods used in the study are appropriate and correctly applied.

3. Accuracy and Correctness of Conclusions
   RGA's task is to make an assessment of whether the reported results are accurate and conclusions drawn from the results are supported by the study.

1. Project Approach

The approach to this study involves identifying three scenarios for supplying water to customers of a typical municipal water utility. The three scenarios appropriately include the use of a benchmark scenario intended to represent current day water supply costs. The other two scenarios are alternative water supply approaches compared against the benchmark scenario. This section of this peer review addresses the following topics:

Report Sections Addressed in this Section
I. A. Background
B. Objective and Scope
C. Study Procedures

A. Background – Review and Observations

The study approach is suitable for demonstrating one selected alternative approach to supplying potable water. Given the focus by the District on seeking water supply sources to supplement the ground water supplies, and the limited surface water sources in the region, the approach appears to fit the study objective of evaluating a single water supply alternative under two operational conditions. Based on Burton's memorandum, the reader can draw the conclusion that there may be several other water supply alternatives under consideration. It is also clear, and this is a very important point, that this study is only meant to demonstrate the "**order of magnitude**" in cost for an alternative potable water source.

As a matter of adding clarity to the study, it would be **helpful to know why the St. Johns River was chosen as the alternative supply source**, and what other alternatives could be considered, but are not included in this study. Not being familiar with the utility service area, it is not clear to me if other viable options exist.

B. Objective and Scope – Review and Observations

The two alternatives to the base case or "Status Quo" Scenario 1, are appropriate choices for comparison: a generic municipal utility and a regional utility are two logical operational configurations. However, the assumptions regarding operations are only delineated enough for the reader to understand these entities in general terms. This does suffice for the "order of magnitude" objective in this study, and reinforces the message that this study is not intended for anything other than a high level screening of surface water as a general alternative. Stated somewhat differently, this study does not yield the definitive answer regarding future water supply options; further study would be required to reach that answer.

1. **This study lends itself to the use of a computer model such as the one described and used by CH2M Hill in this study.** One concern in using such a model is the choice of a 20-year planning period. **Although 20 years may be the appropriate time period, some explanation of the rationale would be helpful**. For instance, are the economies of scale and financial timing considerations addressed equally as well in the 20-year time period as in a 30-year or 50-year time period? **Our experience tells us that for long-term water resource projects a longer study period may be more appropriate**.

Using the Cash-Needs approach to defining revenue requirements or costs is appropriate under these assumptions. The general assumptions serve the objective for this "**order of magnitude" approach.**

C. Study Procedures – Review and Observations

Although perhaps not relevant to the results and conclusions, this section of the report could use more explanation of the decision-making aspects embedded in the model algorithms. Some of this information is included in Section II of the report, but would be helpful if instead it were included in this section.

2. Methods and Applications

The methods and applications of the methods are assessed in this section. In particular, the modeling approach and the assumptions included in the evaluation are discussed in this section.

<u>Report Sections Addressed in this Section</u>

II. A. Overview of the Analysis
B. Scenarios Evaluated
C. Assumptions

A. Overview of the Analysis – Review and Observations

<u>Scenarios</u>
No additional comments.

<u>Typical Utility</u>
One questions whether there is such a "typical utility" as defined in this study. As Burton indicates… "the cost of delivered potable water for local utilities is dependent upon the timing, sizing and cost of the alternative water supply, treatment and transmission facilities (alternative water facilities) required." Once again, the framework or process for this study

is appropriate for a general "**order of magnitude**" analysis in which there is an inability to address the specific characteristics of actual utilities. However, it raises the question of whether most utilities in the region have similar characteristics, e.g., periods until their water supply is fully utilized. It would be useful to see how a regional utility entity would be sized for actual water demand by the municipalities in East/Central Florida. Are the characteristics of the existing utilities so different that the results of this study would have limited benefit or application? It might be useful to add a table or appendix that summarizes the significant characteristics of existing utilities in the service area. The reader would then be provided with a "real world" point of reference for comparing the results indicated for a typical local utility.

<u>Modeling Approach</u>
The use of a long-term engineering cost simulation model for the purpose of estimating supply, treatment, and delivery costs fits this study well.

Although reasons are provided for using the blended rate approach, it would be useful for the entities using this report as an evaluation source to see the estimated marginal, or incremental cost of developing the surface water supply resource. Burton points out that they are aware of the differences in operational characteristics and cost impacts that would occur with specific utilities; thus, providing a cost per unit for the surface water operations on a stand-alone basis could be useful in understanding the influence of this alternative on a particular water utility.

B. Scenarios Evaluated – Review and Observations

One concern about the assumptions in Scenario 1, the "Status Quo" case, is that it is quickly discarded as a viable scenario. Given that it is not viable, the reader is left to assume that there is an alternative that should be used as the "base case" that perhaps has not been defined. In short, this begs the question of "What is the current long-term plan for the region?". One common approach to defining the base case is to resort to the last long-term plan, or develop a plan that demonstrates the costs under current planning documents. Again, since the "Status Quo" is using groundwater, the "order of magnitude" objective in this study is served by comparing the other two scenarios to this "Status Quo" case. For clarification purposes, it seems incorrect to label this as the "base case" because it is not a viable alternative.

C. Assumptions – Review and Observations

As previously noted, several of the assumptions require further discussion and explanation. Other questions include:

1. Why is the CIP $2 million per year, escalating to $3.5 million? What is the basis for this? Is it based on a percentage of installed capital assets?

2. How big of an influence on rates would 20-year bonds have versus 30-year bonds? It may be useful to illustrate the sensitivity this assumption might have on the results.

3. Why is the interest rate on earnings 1.75% for the single utility and 2.75% for the regional entity? In order to keep the analysis from being influenced by extraneous elements, these should be the same for an "order of magnitude" approach.

4. The regional entity (Scenario 3) delivers 78 mgd and the single entity (Scenario 2) 7.8 mgd, but the revenue requirements are $24.7 million and $6.1 million, respectively. This does not seem consistent with the rate increases and what one would expect in terms of the magnitude in resource and delivery capacity relative to the associated revenue requirements. In short, more explanation on why these assumptions are in the model would help in understanding the implications of the analysis.

5. It would be easier to understand this study if the cost assumptions were summarized in a table format so each scenario could be easily compared. For example, the following assumptions extracted from Tables 1 and 2 are not sufficiently explained and therefore do not provide the reader with a clear understanding of the analysis and consequently the results.

   Scenario 2, Starting Debt = $2.6 million, New Debt = NA
   Annual Growth = 2.5% to 1.69%
   Scenario 3, Starting Debt = $0, New Debt = $21.1 million
   Annual Growth = 2.78%

3. Accuracy and Correctness of Results and Conclusions

This section of the peer review addresses the accuracy and correctness of the study. The rational and connection between the approach and the results is also addressed. The topics discussed in this section include the following:

<u>Report Sections Addressed in this Section</u>

III. A. Comparative Analysis of Scenario Results
B. Detailed Scenario Analysis
C. Affordability Analysis
D. Conclusions

To make the assessments on these topics, RGA reviewed the values and assumptions in the tables provided for the cost model in addition to the above sections of the report.

A. Comparative Analysis of Scenario Results – Review and Observations

In comparing Scenario 2 and Scenario 3 rate increases, there is less than 1% lower annual increases for Scenario 3. This raises the question or rather, brings the reader to a conclusion that there is not a significant difference in these scenarios. For instance, in practice, administrative and institutional costs may negate this difference or potentially reverse the relationship depending upon the operational and administrative configuration of the two utility entities assumed under these scenarios. It is also possible that the rate increases could diverge in greater favor of a regional utility.

Based on the results, it would be reasonable to conclude that the outcomes for Scenarios 2 and 3 are not significantly different. Furthermore, it is not clear how the economies of scale associated with Scenario 3 would occur other than the ability to spread new water supply costs over more water users when the new facilities come on line. It would be helpful to understand the influence of the economies of scale on the outcome so that the reader can make a more reasoned judgment on whether the costs are significantly different in Scenarios 2 and 3. Are there economies associated with treatment plants and other capital projects, capital financing/borrowing costs, etc.?

It is also unclear why the cumulative rate increases in these two scenarios are different, or should be different, between the indexing approach and the smoothing of "rate spikes" approach. It seems appropriate to keep the scenario 2 and 3 rates consistent between these two rate spike mitigation approaches. For instance, the cumulative rate increase for Scenario 2 is 133% in Table 3 and 127% in Table 4. If this is the result of financing cost differences, than this should be indicated in the text, otherwise, there is no clear reason why these two scenarios should have different price increases.

Although Burton states that an incremental approach was used, the incremental cost of supplying the water is not provided in the results because of the blending of new and existing water supply costs. However, this does not mean that the blended rate basis is not valid. It would be useful to know the actual incremental cost per equivalent residential connection (ERC) for the purpose of adding clarity to the blended rate annual increases. Providing a cost per unit for the surface water operations on a stand-alone basis could be useful in understanding the influence of this alternative on a particular water utility.

B. Detailed Scenario Analysis – Review and Observations

Comments for this section are included in the previous comparative analysis section.

C. Affordability Analysis – Review and Observations

The affordability analysis is adequate and consistent with industry practices. The approach and results indicate that surface water (Scenarios 2 and 3) is an affordable alternative.

D. Conclusions – Review and Observations

Based on the results of the study, the following conclusions can be made:

1. The blending of surface water with ground water in East/Central Florida will likely increase the price of water service, but not to a level that would be considered excessive or unaffordable based on EPA affordability guidelines.

2. Further analysis is required to identify the cost impacts to local utilities of supplementing existing groundwater sources with surface water sources. The current study provides evidence that water rates could be increased by 2% more per year than rates would increase under the current groundwater scenario. At this time, the formation of a regional utility entity for the development of surface water to supplement groundwater appears to be a lower cost alternative. However, it needs to be investigated further to identify specific administrative cost savings and economies of scale that could not be attained by a single municipal utility.

Rick Giardina & Associates, Inc.

■ *Memorandum*

May 22, 2003

To: Barbara A. Vergara, P.G., Director, Division of Water Supply Management

From: Rick Giardina, President, RGA

Re: Peer Review on *Financial Impact of Alternative Water Supply – Technical Memorandum*

This memorandum contains RGA's final comments regarding the peer review we performed on the above mentioned technical memorandum. This work was authorized and completed under purchase order number PO34524, Task 5.

Please contact me or Joel Theis if you have any questions about these final comments.

INTRODUCTION

Rick Giardina & Associates, Inc. (RGA) was commissioned to evaluate the technical memorandum, the *Financial Impact of Alternative Water Supply,* prepared by Burton & Associates, Inc. (Burton) for St. Johns River Water Management District (the District). This peer review involves the following assessments:

1. Project Approach
   RGA's task is to assess whether the approach to the project is acceptable and consistent with industry practices.

2. Methods and Applications
   RGA's task is to make an assessment of whether of the methods used in the study are appropriate and correctly applied.

3. Accuracy and Correctness of Conclusions
   RGA's task is to assess whether the reported results are accurate and conclusions drawn from the results are supported by the study.

3300 So. Parker Road • Suite 305 • Aurora • Colorado • 80014 • Phone 303/369-3535 • Fax 303/369-3540

1. Project Approach

The approach to this study involves identifying three scenarios for supplying water to customers of a typical municipal water utility. The three scenarios appropriately include the use of a benchmark scenario intended to represent current day water supply costs. The other two scenarios are alternative water supply approaches compared against the benchmark scenario. This section of this peer review addresses the following topics:

<u>Report Sections Addressed in this Section</u>
I. A. Background
   B. Objective and Scope
   C. Study Procedures

A. Background – Review and Observations

The study approach is well suited for evaluating the surface water supply alternative for supplementing the ground water supplies. Modifications to the memorandum regarding the background and purpose of the study added clarity and addressed previous comments.

B. Objective and Scope – Review and Observations

The two alternatives to the base case, Scenario 1, are appropriate choices for comparison given the background and objective of the study.

This study lends itself the use of a computer model such as the one described and used by Burton in this study. Explanations of the assumptions in the model provide support for the approach taken, and clarifications to the memorandum have helped in the understanding, scope, and objective of the study.

C. Study Procedures – Review and Observations
This section of the report is adequate given changes made throughout Section II.

2. Methods and Applications

The methods and applications of the methods are assessed in this section. In particular, the modeling approach and the assumptions included in the evaluation are discussed in this section.

Report Sections Addressed in this Section

II. A. Overview of the Analysis
B. Scenarios Evaluated
C. Assumptions

A. Overview of the Analysis – Review and Observations

Scenarios
No additional comments.

Typical Utility
The explanation of the typical utility used in this study provides a basis for the reader to understand the context in which it is used, and therefore addresses previously made comments.

Modeling Approach
The use of a long-term engineering cost simulation model for estimating supply, treatment, and delivery costs fits this study well.

The addition of the table indicating the cost of surface water clearly addresses previous comments. Explanations added in this section provide the reader with a clearer, and adequate level of information for understanding the modeling approach.

B. Scenarios Evaluated – Review and Observations
Scenarios have been adequately explained for the reader to gain an understanding of the context in which the study was performed.

C. Assumptions – Review and Observations

The addition of the footnotes to the tables provides additional clarity, and address previous questions by RGA regarding the assumptions.

3. Accuracy and Correctness of Results and Conclusions

This section of this peer review addresses the accuracy and correctness of the study. The rationale used for correlating the approach to the results is also addressed. The topics discussed in this section include the following:

Report Sections Addressed in this Section

III. A. Comparative Analysis of Scenario Results
  B. Detailed Scenario Analysis
  C. Affordability Analysis
  D. Conclusions

To make the assessments on these topics, RGA reviewed the calculations and assumptions in the tables provided for the cost model in addition to the above sections of the report.

A. Comparative Analysis of Scenario Results – Review and Observations
The comparisons provide the reader with sufficient information to follow the results of the analysis using the tables provided. This section seems adequate to provide the reader with the necessary information on the results. Previous comments and questions have been adequately addressed.

B. Detailed Scenario Analysis – Review and Observations
No comments or concerns remain on this section. The explanations of the assumptions provide sufficient detail for someone familiar with water utility planning approaches to follow the detailed analysis.

C. Affordability Analysis – Review and Observations

The affordability analysis is adequate and contains rationale sufficient for studies of this type.

D. Conclusions – Review and Observations

The points made in this section are consistent with the discussion of the results, and address previous comments and questions by RGA. The point made regarding the need to consider rate increases earlier rather than later is well supported by the study. Reducing the magnitude of large rate increases is also an important consideration in utility management, and should be a priority for planners concerned about the adequacy of a water system in meeting future demand.

Rick Giardina & Associates, Inc.

Utility Rate and
Financial Consultants

Specializing in:
- Cost of Service Studies
- Impact Fee Studies
- Financial Feasibility Analysis
- Litigation Support
- Privatization Studies
- Mergers and Acquisitions
- Management and Organizational Reviews

July 17, 2003 *Via Facsimile Only*

Ms. Barbara Vergara, P.G.
Director
Division of Water Supply Management
St. Johns River Water Management District
P.O. Box 1429
Palatka, Florida 32178-1429

Dear Ms. Vergara:

This letter summarizes our review of the revised St. Johns River Water Management District Report titled, "Financial Impact of Alternative Water Supply – Technical Memorandum – Draft" dated June 26, 2003 as prepared by Burton & Associates and forwarded to RGA on July 10, 2003. We have reviewed the report with respect to our comments provided to you in the memorandum dated May 22, 2003. The revised draft appropriately addresses the questions and comments as contained in our May 22nd memorandum.

We have enjoyed this opportunity to assist the District by participating in this "peer" review and appreciate the professional nature within which this critical review was completed. Any questions regarding our role in this study should be directed to me.

Sincerely,

Richard D. Giardina
President

3300 S. Parker Road
Suite 305
Aurora, Colorado 80014

Phone 303 369-3535
Fax 303 369-3540

Taurant Consulting, Inc.

Meeting Summary

DATE: April 2, 2003

FROM: Jerry M. Salsano

TO: Barbara Vergara (via email only)

CC: Mike Burton, Rick Giardina (via email only)

SUBJ: Peer Review Conference Call, 10:30 a.m. April 2, 2003

Purpose

Discuss and concur or resolve peer review comments provided to Burton and Associates by Rick Giardina & Associates, Inc.

Action Items

Person	Action Item(s)
Burton	Eliminate the term "order of magnitude from the paper.
Burton	We all concurred that a paragraph should be devoted to addressing why the St. Johns River was chosen as the alternative supply source, and what other alternatives could be considered, but are not included in this study.
Burton	Include the two reasons why confined to 20-year period. District planning horizon. I did not capture the second.
Burton	Take Ron Wycoff paper, add the actual algorithms and include that as an appendix.
Burton	Although reasons are provided for using the blended rate approach, it would be useful for the entities using this report as an evaluation source to see the estimated marginal, or incremental cost of developing the surface water supply resource. We agreed that this issue may be adequately addressed by including a table similar to that provided in the Hazen and Sawyer review.
Burton	Add some issues analyses that set the stage for any reader that is not as familiar with the situation.
Burton	Joel suggested, and I agree, that Mike should explain each of these items (1-5) from Paragraph 2 C. Assumptions – Review and Observations, in an appendix.
Burton	Rick: Include in the summary and in the Executive Summary, an explanation of why the differences scenarios 2 and 3 are not as great as you would intuitively expect.

P.O. BOX 916295 E-MAIL: TAURANT@CFL.RR.COM PHONE: (407) 884-8800
LONGWOOD, FL 32791-6295 FAX: (407) 884-7195

Participant List			
Name	**Affiliation**	**Telephone**	**E-Mail**
Mike Burton	Burton & Associates	904-247-0787	mburton@burtonandassociates.com
Jonathan Varnes	Burton & Associates	904-247-0787	jvarnes@burtonandassociates.com
Rick Giardina	Rick Giardina & Associates	303-699-2690	rgiardina@rgiardinaassoc.com
Joel Theis	Rick Giardina & Associates	303-699-2690	jtheis@rgiardinaassoc.com
Jerry M. Salsano	Taurant Consulting, Inc.	407-884-8800	jsalsano@cfl.rr.com

Meeting Summary

I explained that Mike had reviewed Rick's comments and that we would use the teleconference as an opportunity to discuss each of those comments.

The following is a brief summary of discussion items, outcomes and action items. It is arranged according to the format of Giardina's March 26, 2003 letter to Burton. **NOTE: This is not intended to be an exhaustive list of all items discussed. Time and typing speed precluded capturing all items. It is meant to supplement what notes Mike may have taken.**

Paragraph 1 A. Background – Review and Observations

This was the first introduction of the phrase "order of magnitude" as it related to the costs for an alternative potable water source. We noted that Giardina used the term because it had been coined in Burton's draft document. I raised my concerns that the term had a certain negative connotation as it relates to the accuracy of calculated numbers and projections. We discussed at length and Mike and Rick both agreed that we need a better term. As it is used in the description of the analyses I suggested "relative comparison" or "illustrative". As it is used to describe the accuracy of certain results, I suggested "approximate".

Mike and Rick agreed to work out a word change.

Rick observed that as a matter of adding clarity to the study, it would be helpful to know why the St. Johns River was chosen as the alternative supply source, and what other alternatives could be considered, but are not included in this study. Not being familiar with the utility service area, it was not clear to him if other viable options exist.

We all concurred with this observation and agreed that a paragraph should be devoted to addressing this issue.

Paragraph 1 B. Objective and Scope – Review and Observations

Rick commented on the issue of a 20-year look rather than the tradition 30-year look driven by bond duration. He also observed that in Colorado they are starting to see 20-year utility bonds.

Rick suggested that Mike include the two reasons why confined to 20-year period.

- **District planning horizon.**
- **??? Did not capture the second.**

Paragraph 1 C. Study Procedures – Review and Observations

Rick observed that although perhaps not relevant to the results and conclusions, this section of the report could use more explanation of the decision-making aspects embedded in the model algorithms. Some of this information is included in Section II of the report, but would be helpful if instead it were included in this section. We also noted that Hazen and Sawyer included this same observation.

We agreed that Mike would take the first cut that Ron Wycoff did explaining the factors, have him add the actual algorithms to that paper and include that as an appendix.

Paragraph 2 A. Methods and Applications - Overview of the Analysis – Review and Observations

Modeling Approach

Rick commented that the use of a long-term engineering cost simulation model for the purpose of estimating supply, treatment and delivery costs fits this study well.

Although reasons are provided for using the blended rate approach, it would be useful for the entities using this report as an evaluation source to see the estimated marginal, or incremental cost of developing the surface water supply resource.

We agreed that this issue might be adequately addressed by including a table similar to that provided in the Hazen and Sawyer review.

Paragraph 2 B. Scenarios Evaluated – Review and Observations

Rick commented on one concern about the assumptions in Scenario 1, the "Status Quo" case, is that it is quickly discarded as a viable scenario. Given that it is not viable, the reader is left to assume that there is an alternative that should be used as the "base case" that perhaps has not been defined. In short, this begs the question of "What is the current long-term plan for the region?" One common approach to defining the base case is to resort to the last long-term plan, or develop a plan that demonstrates the costs under current planning documents. Again, since the "Status Quo" is using groundwater, the "order of magnitude" objective in this study is served by comparing the other two scenarios to this "Status Quo" case. For clarification purposes, it seems incorrect to label this as the "base case" because it is not a viable alternative.

We explained to Joel that the readers' understood that the base case WAS the base case because its what they want to do.

Joel suggested that Mike add some issues analysis that sets the stage for any reader that is not as familiar with the situation.

Paragraph 2 C. Assumptions – Review and Observations

1. Why is the CIP $2 million per year, escalating to $3.5 million? What is the basis for this? Is it based on a percentage of installed capital assets?
2. How big of an influence on rates would 20-year bonds have versus 30-year bonds? It may be useful to illustrate the sensitivity this assumption might have on the results.
3. Why is the interest rate on earnings 1.75% for the single utility and 2.75% for the regional entity? In order to keep the analysis from being influenced by extraneous elements, these should be the same for an "order of magnitude" approach.
4. The regional entity (Scenario 3) delivers 78 mgd and the single entity (Scenario 2) 7.8 mgd, but the revenue requirements are $24.7 million and $6.1 million, respectively. This does not seem consistent with the rate increases and what one would expect in terms of the magnitude in resource and delivery capacity relative to the associated revenue requirements. In short, more explanation on why these assumptions are in the model would help in understanding the implications of the analysis.
5. It would be easier to understand this study if the cost assumptions were summarized in a table format so each scenario could be easily compared. For example, the following assumptions extracted from Tables 1 and 2 are not sufficiently explained and therefore do not provide the reader with a clear understanding of the analysis and consequently the results. **Good Point**

Joel suggested, and I agree, that Mike should explain each of these items (1-5) in an appendix.

Paragraph 3 A. Comparative Analysis of Scenario Results – Review and Observations

Rick observed that in comparing Scenario 2 and Scenario 3 rate increases, there is less than 1% lower annual increases for Scenario 3. This raises the question or rather, brings the reader to a conclusion that there is not a significant difference in these scenarios. For instance, in practice, administrative and institutional costs may negate this difference or potentially reverse the relationship depending upon the operational and administrative configuration of the two utility entities assumed under these scenarios. It is also possible that the rate increases could diverge in greater favor of a regional utility.

Since we started these analyses, I had always questioned the relatively small differences between the "go-it-alone" and the "combined-effort". Alternatives.

There was much discussion about the fact that the differences between scenarios 2 and 3 are not dramatic. What was dramatic and turns out to be the key element of the paper is that there is a dramatic difference between scenario 1 and scenarios 2 and 3. **The central message, then, is not, "Its better to partner than to go it alone." The central message becomes, "Its better to get a jump on your rate adjustments early by indexing. That way you can soften the severe rate shock impacts that would otherwise occur and you can afford alternative resources.**

Other General Comments

Rick commented that the larger utility could perhaps get a better rate than the smaller utility, but that Mike is using 6% for each or that state programs might provide reduced funding costs.

Mike explained that local conditions did not afford that advantage.

Rick: Include in the summary and in the Executive Summary, an explanation of why the differences scenarios 2 and 3 are not as great as you would intuitively expect.

Summary

We agreed that the goal was a letter from each peer reviewer that would be included as appendices and would each state that any issues addressed in the peer review process were adequately address in the final version, unless of course there are unresolved issues. If that is the case, the appendices should also include a list of the unresolved issues with the dissenting views presented.

When discussion was finished I explained that Mike will make document changes in response to all sets of comments and discussions and we will send out the revised version hopefully within 2 weeks for his second review.

Meeting ended at 12:30 p.m.