

# **Public Comments on the 2006 Regional Water Supply Plan and District Responses**

## **Commodity Groups**

Florida Fruit & Vegetable Association

## **Consultants**

Integrated Water Solutions

## **Counties**

Manatee County

Sarasota County

## **Electric Utilities and Mining**

CF Industries

Lakeland Electric

## **Private Individuals**

Bill Harper

Joe Bourassa

Nancy Lopez

## **State Agencies**

Department of Environmental Protection

## **Water Supply Authorities / Water Districts**

Tampa Bay Water (Paula Dye)

Tampa Bay Water (Dave Bracciano)

Tampa Bay Water (Black and Veatch, September 2006)

Peace River/Manasota Regional Water Supply Authority

Englewood Water District

**SWFWMD Responses to Florida Fruit & Vegetable Association Comments on the July 2006 Draft RWSP**  
**Alan Peirce**  
**Florida Fruit & Vegetable Association**

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**General Comments:**

***Comment: The District has done an excellent job of projecting future water demand for the 10 County Planning Region and identifying potential sources to meet those demands over the next 20 years. You should also be commended for organizing this information into a logical and useable format. Recognizing the rapidly increasing demand for public supply quantities being faced in the region, it is comforting to know that potential sources have been identified to meet this growing demand, while providing for existing stress in the region.***

**Response:** The District appreciates your comments and will continue to strive to improve the Regional Water Supply Plan in future years.

***Comment: Agriculture's primary role in meeting future demands involves resource conservation, and growers welcome the opportunity to install more efficient irrigation systems and improve management strategies when they are economically feasible. While conservation is an extremely important element in meeting future demand, this document should probably recognize that successive advancements in water conservation generally become more and more expensive on a dollar per gallon basis, because the volumes available to be conserved decrease with each improvement in efficiency. In other words, the laws of diminishing returns apply.***

**Response:** Your point is well taken and staff will add language to make this clear. However, please keep in mind that the District's Cooperative Funding Program and FARMS program have a long history of providing funding to agricultural water users to help offset the cost of increasing the efficiency of irrigation systems.

**Specific Comments:**

**Chapter 4 "Demand Estimate Projections"**

***Comment: The projections for agricultural demand are based on the number of production acres that are expected to exist in the future. Because future acreage is dependent on numerous factors including, but are not limited to, land prices and availability, profitability, foreign competition, disease issues, and alternative land use opportunities, we believe the district should recognize that the projections are crude estimates of future demand. We also suggest that the district be prudent in planning for major declines in demand that may not materialize. As an example, the district currently projects a 45 percent decrease in agricultural demand in Desoto County primarily because of urbanization and land use changes that are occurring. While agricultural lands are being converted for residential use, agricultural intensification is also likely to occur and agricultural water demand may not decrease at a rate that is consistent with acreage. We are happy to see that the district will monitor actual changes in acreage and water use and adjust projections accordingly.***

**Response:** As you know, developing accurate water-use trends for agriculture over the next 20 years is an extremely challenging undertaking. The conclusion that a significant decline in agricultural acreage and water use will occur over the next 20 years was arrived at by agricultural water use experts who used the best available data. The data sources included the Institute of Food and Agricultural Sciences (IFAS), the Florida Department of Agriculture and Consumer Services (FDACS) Bureau of Plant Inspections (nurseries), and the Florida Agricultural Statistics Service (FASS).

In Table 4-11a, the decline in ground-water use resulting from such factors as urbanization of agricultural and to a much lesser extent, mining lands, through 2025 in the SWUCA is projected to be approximately 74 mgd. An additional 68 mgd of ground water will be made available through enhanced agricultural conservation and the retirement of permits associated with lands purchased for conservation, for a total of 142 mgd. It is important to understand that of this 142 mgd, the District is only counting on 50 mgd of it to meet the salt-water intrusion minimum aquifer level in the SWUCA. The remaining 92 mgd has not been allocated. Some of it may, under certain circumstances, be re-permitted, however, if declines in agricultural water use are not as high as projected, the District has not counted this 92 mgd as a critical component of the slate of sources necessary to meet the 2025 projected demand. The District believes this is a conservative approach that takes full account of your caution that agricultural water use may not decline as much as has been estimated.

**Comment:** *Dramatic reductions in citrus acreage in recent year are partially the result of the citrus canker eradication program and reduced profitability caused by depressed market prices that occurred in recent years. With the discontinuation of the federal eradication program and higher juice prices, downward trends are unlikely to continue at the rates seen in recent years.*

**Response:** Staff are aware of this and believe, as stated in the response to the previous comment, that the District's approach to utilizing quantities of ground water that become available as agricultural ground-water use declines, is cautious and conservative.

**Comments:** *Tables 4-11 and 4-11b (pages 65-66). Having separate columns for "decreasing" and "increasing" numbers within each planning year, may not be necessary, and could be presented as a single column entitled "change in demand" with positive or negative values.*

**Response:** The reason why total demand cannot be determined by subtracting decreasing demand from increasing demand is explained as follows: Most of the 74 mgd in decreasing demand in the SWUCA results from decreasing ground-water withdrawals. Although a portion of the 74 mgd may be used to meet some of the 409 mgd increase in demand through 2025, it is not certain how much will be used. Whatever portion of the 74 mgd that is not used to meet some of the 409 mgd demand, will help meet the salt-water intrusion minimum aquifer level. For these reasons it is important to track declines in demand that result from reductions in ground-water withdrawals separate from increases in demand. Text will be added in the RWSP prior to table 4-11a to make certain this point is clear.

**Comment:** *The Appendices referenced in numerous places were not included in this draft.*

**Response:** The Appendices have now been posted on the District's web site at [watermatters.org](http://watermatters.org)

**Chapter 5, Section 7 (pages 106-111)**

***Comment: This section, which is included to explain how the district estimates potential savings from future agricultural water conservation efforts is difficult to understand, and should be clarified.***

**Response:** Since you were not specific as to which portions of this section were difficult to understand, it is not apparent where the problem areas are. Staff will take another look at the text to determine if there are places where it can be made more clear.

***Comment: The reasons for, and implications of, eliminating 14 of the 20 Model Farms used in the 2001 RWSP is also not fully explained.***

**Response:** Important changes were made in the SWUCA rules in 2003 that significantly reduced the quantity of water permitted for supplementary irrigation needs. Increased irrigation system efficiency and a reduction water use allocations resulted in a significant reduction in water allotments in water use permits. This rendered some of the model farms significantly less feasible, since less water was assumed to be able to be saved. In terms of information used, the District's consultant used various data sources including IFAS acreage, census data, the District's Regulatory database, and GIS-based land use data to identify the model farms that best represent agricultural water use in the Planning Region. As a result of the permitting rule changes and other information gathered, six model farms were selected.

***Comment: In the 2001 Plan, the model farms were used to estimate the costs associated with various conservation options on a dollar per thousand gallons basis. While this seems to be a good method for cost comparison, those figures have been eliminated from the 2006 draft. Based on the new language, it seems that the district now prefers to compare options on a cost per acres basis which may not always be an equitable method for comparing costs. It is also unclear whether or not this change will have implications regarding the selection of FARMS projects which are compared with the model farms example to determine cost effectiveness.***

**Response:** The consultants who developed this portion of the RWSP made the decision to use cost per acre because they believed it provided more information about the actual value of agricultural lands, and this would facilitate the process of determining the cost effectiveness of conservation options. This change will have no implications regarding selection of FARMS projects because the FARMS staff is still evaluating projects based on cost per thousand gallons.

SWFWMD Responses to Integrated Water Solutions Comments on the July 2006 Draft  
Regional Water Supply Plan  
Jim Guida, P.G., Vice President  
David Brown, P.G., Vice President  
Integrated Water Solutions

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**Comment:** *The table is unclear, and we suggest that titles be defined in a footnote. For example, does "Permitted Withdrawal" mean permitted annual Average (AA)? We also suggest that the "Permitted Withdrawal" quantities be verified against permitted WUP quantities, and that the "Available in Permit" quantities be verified accordingly. For example, permitted AA quantities for the City of Venice are 6.864 mgd, and Peak Monthly (PM) quantities are 8.240 mgd. The table lists "Permitted Withdrawal" for the City of Venice at 8.240 mgd, which corresponds to the PM quantity, and the "Available in Permit" quantities are calculated accordingly. Also, the "Treatment Capacity" for the City of Venice is listed as 4.0 mgd, but "5 Year Average Withdrawals" are listed a 4.84 mgd. This appears incongruous, as we would expect the treatment capacity to exceed the quantities withdrawn.*

**Response:** The heading in the table that you refer to will be changed from "Permitted Withdrawals" to "Annual Average Permitted Withdrawals" and all quantities will be verified. "Available in Permit" quantities will be adjusted accordingly. With respect to the City of Venice's treatment capacity, the capacity listed in the table represents a "finished water" capacity and was provided by the City. In discussing this issue further with the City, the actual amount of water the facility can take in and treat is 9.14 mgd. The table will be changed to reflect this quantity.

**Page 95, Section 4.0 – Summary of Brackish Groundwater Availability**

**Comment:** *A. Paragraph 1 – States that it "may be possible to obtain a WUP for brackish groundwater withdrawals" in the NTB area. The same is implied for brackish groundwater from the IAS. However, unlike the NTB area comment, no statement is provided regarding the possibility of obtaining a WUP for such IAS withdrawals in SWUCA. We believe it is important to identify that it may also be possible to obtain a WUP for IAS withdrawals in SWUCA, particularly for non-technical members of the public and policy-makers who might otherwise infer from these statements that brackish groundwater is only permissible in the NTB area. We suggest this could be resolved by slightly modifying the last sentence in the first paragraph of this section to state: "...it may be possible to obtain a water use permit for brackish groundwater withdrawals in the SWUCA and NTB areas."*

**Response:** Staff agrees with your comment and the paragraph has been modified accordingly.

**Comment:** *B. Paragraph 2 – States that "the additional quantity of brackish groundwater that is potentially available in the Planning Region is the permitted but unused quantities at existing facilities and quantities from three proposed sites in the NTB area." The paragraph further states "the total amount of potential supply from brackish groundwater desalination in the entire Planning Region is approximately 23 mgd."*

*This statement does not distinguish between groundwater obtained from the IAS and UFAS, and does not appear to be accurate, particularly for IAS groundwater. The statement implies that no new quantities of brackish groundwater are available within*

**SWUCA, regardless of the location of the groundwater source or the specific aquifer such groundwater is obtained from. Other portions of the draft RWSP, and the SWUCA Recovery Plan, clearly state that groundwater withdrawals from the IAS have the ability to be tapped for future water supply development within SWUCA. Further, Section 2.0 (Page 90) recognizes that new withdrawals from the UFAS outside the MIA can be granted if it is demonstrated that the withdrawals have no effect upon groundwater levels in the UFAS in the MIA, or if a net benefit is provided.**

**We respectfully suggest this paragraph be modified to recognize the total amount of potential supply from brackish groundwater desalination in the entire planning region is not necessarily limited to only the above-referenced quantities and sources. We believe narrowing the potential sources and quantities of brackish groundwater in the entire Planning Region in such a way may unnecessarily preclude some entities from being able to effectively implement a conjunctive use strategy (i.e. surface water and groundwater) that could otherwise further the SWUCA Recovery Strategy and meet District WUP criteria.**

**Response:** The District recognizes that additional quantities of brackish groundwater may be available within the Planning Region. The calculations were done in an effort to put into perspective amounts of water potentially available for withdrawal. The paragraph will be rewritten as follows.

For planning purposes, the minimum amount of additional brackish ground water that is available in the Planning Region was estimated by combining permitted but unused quantities at existing facilities and quantities from three proposed sites in the NTB area. A review of permitted quantities and current use from the 12 active facilities permitted by the District indicates there is an estimated 13.7 mgd of permitted but unused potable supply from brackish ground water. Combining this quantity with the development of 11.5 mgd from three potential projects in the NTB area, yields a minimum amount of 25 mgd potential additional supply from brackish ground-water desalination in the Planning Region. Although additional quantities of brackish ground water are potentially available, the actual availability will be determined when water use permits are submitted by entities seeking to develop brackish ground-water facilities.

**Page 97, Section 2.1 Paragraph 3 – Surficial Aquifer Fresh Groundwater**

**Comment: A. Though entitled "Surficial Aquifer," Section 2.1 provides combined estimates of potentially available quantities from both the surficial aquifer system (SAS) and the IAS. We acknowledge the difficulty in estimating the quantities of water regionally available from the SAS and IAS. However, we do not believe this challenge makes it necessary to combine discussion of the potential yields from these aquifers into one. Rather, we believe combining the discussion of the SAS and IAS in one section decreases the clarity of these sections of the report.**

**We respectfully request the District consider not merging the discussion of the SAS and the IAS. As an alternative, we suggest the District address each aquifer system separately, and discuss their respective aquifer characteristics based upon potential yield. For example, we suggest the SAS discussion address the yield characteristics of the SAS based upon areas that contain shell beds versus those that do not. For the IAS discussion, we suggest the yield characteristics be broken down in accordance with the established PZ-1, PZ-2 and PZ-3 nomenclature, and also include the known general water quality characteristics of each. This would clarify the text, and allow those interested in**

***developing one or more of these aquifers to more clearly grasp the nature of these aquifer systems and their potential usefulness in meeting their water supply needs.***

**Response:** The SAS and IAS sources were combined due to the inherent difficulty in forecasting where these sources would be located and how much water they could provide. Due to the localized nature of development, District staff combined expected demand to be met from these two aquifers. There currently is insufficient information available to accurately define future IAS withdrawals on a per unit (PZ 1, PZ 2, or PZ 3) basis.

The 34 mgd identified in the RWSP as being available from the IAS and surficial aquifer system (SAS) was determined by identifying the types of demands that are projected to occur through 2025 that could be met using relatively low yielding wells supplied by the SAS or upper portion of the IAS. The types of demands that were identified included domestic self-supply, recreation, and outdoor lawn watering associated with public supply uses. The District recognizes that additional water from the SAS and IAS, beyond the 34 mgd indicated in the RWSP, is potentially available over portions of the SWUCA. However, the determination that the SAS and IAS can supply 34 mgd for users whose demands can be supplied by relatively low yielding wells, provides a conservative minimum amount of water that could be developed from these two systems.

***Comment B. Paragraph 3 of Section 2.1 also states the combined estimates of potential yield from the SAS and IAS were "largely based on identifying the types of demands that could reasonably be met with these aquifers." This language is unclear, and could lead to the impression the District has identified the safe yield of these aquifer systems, although the District acknowledges elsewhere in the RWSP that it has not determined safe yield for these aquifer systems. We suggest the above-referenced language be reworded to address this issue.***

**Response:** The District will add additional language to clarify the expected yield from the SAS and IAS and add that the 34 mgd does not represent the "safe yield" of these systems. The response to the previous comment should help to clarify the District's position.

**Page 98. Section 2.2. SWUCA – Intermediate Aquifer Fresh Groundwater**

***Comment: Though entitled "IAS," this section continues to discuss the SAS and IAS in combination. As stated above, we believe the content of this section could be clarified appreciably through a separate discussion of the SAS and IAS. The second paragraph is somewhat difficult to follow, as it states the quantity of water potentially available from these combined aquifers (i.e. the SAS and IAS in their entirety) has been estimated at 34.0 mgd. The paragraph acknowledges the higher capacities of shell beds in the SAS (where they exist), and the lower portion of the IAS (i.e. PZ-3), and thus their greater significance in providing water supply to larger scale water users. However, the 34.0 mgd value provided for these combined aquifer systems in their entirety was apparently derived from an estimated 30.0 mgd from the SAS and the Upper IAS, and 4 mgd from shell beds that will supply certain already planned FARMS projects. It appears the 34.0 mgd value does not include any quantities from PZ-3 of the IAS (i.e. the lower IAS), nor does it recognize the greater quantities that are likely available from the highly productive shell units (above and beyond those associated with currently planned FARMS projects.)***

***We respectfully request that it be clarified in the final RWSP that the 34.0 mgd value contained within the RWSP does not represent the total quantity available from the combined SAS and IAS in their entirety, and that this value does not include an estimate of potentially significant quantities from the more productive PZ-3 and shell units that are available for meeting the demands of larger water users.***

**Response:** The District will add additional language to clarify the expected total yield from the SAS and IAS could be higher than the 34 mgd and that it does not represent the “safe yield” of these systems. As stated in response to 3B, there may certainly be greater quantities derived from the SAS and IAS, but supportive information is limited. District staff has conservatively-estimated a minimum amount that could be developed from these sources based on best available information.

**Page 100. Second Paragraph**

***Comment: This paragraph again references the 34.0 mgd value as the estimated quantity that can be supplied by the SAS and IAS in their entirety. We again request that it be clarified that the 34.0 mgd value for these aquifers is not a safe yield value, and that it may be possible to obtain greater quantities than those stated, especially from PZ-3 of the IAS and the highly productive shell units.***

**Response:** Staff agrees with your comment and will clarify the text regarding this issue.

**Page 118. Section 3**

***Comment: This section discusses certain WUP-related considerations under Chapter 373, FS. Will the District Governing Board be identifying the need for a multi-jurisdictional water supply entity or regional water supply authority to develop any of the specific alternative water supply projects in the RWSP, or will it do so in some other form (e.g. a District rule)? We believe it would be helpful for these projects and entities to be identified explicitly in the RWSP. It would be valuable for entities that are planning to develop such water sources to be aware of the Governing Board's preference as to who should develop a particular source, in what cases the public interest presumption will apply, and the related implications upon the WUP application approval process. If not addressed in the RWSP, how and when will members of the public be made aware of the District's position on these issues?***

**Response:** Staff has now modified the text to identify the most appropriate entity or entities for implementing each of the water supply options in Chapter 6.

**Page 160. PRMRWSA Planning Area Brackish Groundwater**

***Comment: A. This section identifies a conceptual one (1) mgd brackish groundwater desalination option in Charlotte County to demonstrate the cost of developing this source in the southern portion of the Planning Region, and indicates that costs associated with this site may be generally applicable to regional brackish groundwater sites from southern Sarasota to central Charlotte counties. Table 6-9, List of Brackish Groundwater Projects, also identifies a five (5) mgd brackish groundwater RO facility in Charlotte County.***



***Despite these projects only referencing Charlotte County, it also appears that if a brackish groundwater desalination source is proposed to be developed within Sarasota or DeSoto Counties, and the project does not adversely affect an MFL water body, that the project would be considered an alternative water supply project that was described in the RWSP. As such, it appears that a WUP application for such a project would be presumed to be in the public interest as described on Page 118 (Section 3.0 Water Use Permitting), unless the Governing Board has identified the need for a multi-jurisdictional water supply entity or regional water supply authority to develop that source (which would appear to limit the presumption only to such preferred regional entities). Please clarify if this is correct, and explain the District's position to assist us in understanding these relatively new statutory provisions and their relationship to the final 2006 RWSP.***

**Response:** As noted in Chapter 5 (page 95), the availability of brackish ground water to meet future demands will likely be limited based on impacts to MFL water bodies. Because the SWUCA Recovery Strategy seeks an overall reduction in ground water withdrawals to achieve the minimum aquifer level, we do not anticipate meeting a large portion of future demands with this source. The amount of brackish ground water that is potentially available in the Planning Region was estimated using permitted but unused quantities at existing facilities and quantities from three proposed sites in the NTB area. Please note that the projects listed in Table 6-9 were identified as part of the water supply plan developed for the Water Planning Alliance under the direction of the PR/MRWSA.

Pursuant to 373.223(5), F.S., “. . . the use of an alternative water supply project . . .” would be consistent with the public interest. However, the WUP application as a whole would still need to meet all the conditions for issuance of a permit. Because the impact of a brackish ground water withdrawal on an MFL water body is dependent on the location and amount of the withdrawal, it's possible for brackish withdrawals to be permitted in the future. Even though it's possible to obtain a WUP for a brackish ground water withdrawal, District funding of such projects would be limited to hydrogeologic exploration and testing.

**SWFWMD Responses to Manatee County Comments on the July 2006 Draft Regional Water Supply Plan**  
**John Zimmerman**  
**Manatee County Utilities**

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***Comment: You will find my greatest concern is with the population projections that the Districts were required to use and the significant impact that has on projected water demand. In addition, the inequity in the broad range of per capita rates used to project demand creates a problem in projecting reasonable demand. The need for reasonableness is also expressed regarding the anticipated conservation gains.***

Note: the comment above is a summary of what was received from Manatee County. The actual comment consisted of eight pages of text and graphs.

**Response:** As you know, the five Water Management Districts are required by the legislature to use the Bureau of Economic and Business Research (BEBR) medium population projections for projecting public supply water demand. District staff has confidence in BEBR projections for a number of reasons, among which is their ability to identify potential trends. The District can modify the water demand projections only if the Peace River/Manasota Regional Water Supply Authority (Authority) or its member governments provide population data to support claims that water demand will be higher. This was discussed at length with the Authority and its member governments during the development of the demand projections over the past several years. When the water demand projections were first reviewed during the Water Planning Alliance process, alternative population projection data were provided by Manatee County and Charlotte County. These data projected growth over the next 20 years based on the phenomenal period of growth that occurred in the region over the past few years. Because it is already becoming apparent that the rate of growth is slowing significantly, the District believes that the data provided by the counties may significantly over project demand for water through 2025.

An independent evaluation by HDR engineering prepared for the Water Planning Alliance supports the relative historical accuracy of BEBR population projections. During a workshop held on September 29, 2006, HDR showed that the actual average (long-term) population growth rate for the Authority's service area was 3.1 percent per year. This figure is significantly lower than the population growth rates provided by the Authority's member governments, including Manatee County.

Since the 2006 RWSP draft was prepared, BEBR has published the "Projections of Florida Population by County, 2005-2030", February 2006. The District is currently in the process of updating the water demand projections in the RWSP using this more recent BEBR population data. It is expected that these data will account for the recent high growth period and this will result in higher water demand projections for Manatee County. However, these projections will still be significantly below those of Manatee County.

Regarding per capita, the 2001 per capita of 133 that Manatee County Utilities reported to the District in their 2001 Public Supply Survey Report will be used as the basis for projection, since the survey reports submitted earlier this year are still under evaluation.

Finally, because the District shares your concern for how critically important accurate public supply demand projections are, staff would like to work with water supply utilities and population projection experts to develop a consensus on an improved projection methodology. Such a

methodology could be employed more frequently than every five years to maintain a better understanding of population trends.

**Comment:** *Pg. 55 Table 4.5, it is recommended that the per capita rates used to project water demand be included for each county. It becomes important when water conservation gains are anticipated or planned. My calculations suggest that the range in this table is from a low of approximately 80 gpcpd in Hardee to a high of 152 gpcpd in Polk. These differences clearly point out where future conservation gains should be anticipated.*

**Response:** As described in Chapter 4 of the RWSP, the water demand projections are based on an aggregate of per capita water use rates for each large utility, for small utilities and domestic self-supply. The calculations referenced in the above comment are inaccurate in that they are simply averages and are not weighted to reflect the population associated with each large utility, small utilities or domestic self supply line item. All of these details, including per capita water use and percent of population, are provided in the Appendix for Chapter 4, which can be found on the District's web site at "[watermatters.org](http://watermatters.org)".

**Comment:** *Pg. 56, Section 1.3.3, The estimated use of at least the 300 gpd/well is a significant improvement from the last RWSP and is much closer to that observed for irrigation users in our county as previously reported.*

**Response:** The figure of 300 gpd comes from better information; specifically, from an analysis of residential reclaimed water use.

**Comment:** *Pg 77 Section on the Manatee River: The description of our operation of Lake Manatee is misleading and reads as follows: "The utility typically holds water in the reservoir during the dry season and then releases large quantities during the wet season. This type of activity would skew the flow distribution and consequently affect the calculated potential withdrawal amounts." The actual operation is that water is released when the reservoir is full same as the Hillsborough River Dam, the Braden River Dam and the Shell Creek facility. It just happens that a lot more water passes through in the wet season. The releases are the result of rainfall and not something the Utility controls. The above text suggests that our wet season releases are something we could control or limit. The reservoir has very limited storage when compared to wet season river flow.*

**Response:** The text will be changed to reflect the fact that the release of water during the wet season is principally due to excess flows resulting from rainfall and the limited storage capacity of the reservoir.

**Comment:** *Pg 83 Table 5.2: If best available population information was employed the projected wastewater flow would be up along with the projected water demand. The projected 2025 flow for just the three Manatee County WWTPs is 38.91 mgd, which exceeds the total county flow as shown at 38.29 mgd. Total county flow would also include WWTP from the Cities of Palmetto and Bradenton.*

**Response:** These factors, and others, are considered in the reclaimed water information in the RWSP. As stated on page 82, Section 2.1 the estimated future 2025 wastewater treatment plant (WWTP) flows were calculated for each county by: (1) using each county's actual 2000 WWTP flows in mgd, which consist of flows from all utilities within each county, (2) subtracting utilities' planned 2000 to 2025 sewer flow reductions (in mgd) associated with inflow & infiltration

activities, as well as ongoing or planned indoor water conservation projects, and then (3) multiplying the product by the percentage increase in public water supply demand (based on projected population increases). As stated previously, the District believes the best available population information was used for the projections.

**Comment: Pg 83 Table 5-3; The top right cell in the table is incorrect should be 81 (382-301.)**

**Response:** Thank you for pointing out an apparent inconsistency on Table 5-3 regarding projected 2025 WWTP flows. Although the explanations of footnote numbers 7 and 8 were included below Table 5-3, references to these footnotes were inadvertently omitted from the appropriate table cells. Therefore, the District will add a reference to footnote 7 to the heading above the cell in question (top right cell), which will help readers understand why the value of 382 mgd is correct. As footnote 7 explains, this value represents the total wastewater flows in the year 2025. In addition, references to footnote number 8 will be added to the table's far right middle cell (additional use), and far right bottom cell (additional offset). Finally, the column heading and footnote will be changed to reflect that the WWTP flows, reuse and offsets represent a grand total of potential sources to help meet regional demands.

**Comment: Pg 93 SWUCA – Investigation of the Hydraulic Barrier concept in the Upper Floridan Aquifer - The report on this modeling was intriguing in that it demonstrated that an extraction line of wells could actually move the 1000 mg/L line westward toward the gulf, but it also caused the movement of the more brackish water on the gulf side toward the extraction line of wells. This would result in an abrupt salinity change at the extraction line. Conceptually such a line of wells could conceivably provide a better source of water for desalination than (sic) the direct use of bay water. The source would be filtered, warm, lower in TDS and more economical to treat due to the reduced TDS (around 15,000 mg/L?) and reduced pretreatment. The brine may also come up very close to the bay's TDS (30,000 mg/L), which could potentially make bay discharge less challenging. Proper positioning of the extraction wells would allow for control of the 1000 mg/L which seems to be the measure of salt water intrusion for the MIA in the SWUCA.**

**Response:** As concluded in the report by HydroGeoLogic, "The results of the modeling analysis indicate that there would be very little benefit of either a barrier trough (line of extraction wells) or a pressure ridge (line of injection wells). There would only be a marginal increase in the available water that would otherwise be impacted by saltwater intrusion. This minimal benefit would not be justified given the large costs of treating (saline) ground water extracted from the barrier trough or costs associated with injecting large volumes of reclaimed water into a line of injection wells. Furthermore, the barrier trough would reduce the amount of potable water that is available east of the barrier, because the ground-water extraction wells would lower the regional potentiometric surface and increase the ground-water flow rates toward the barrier." (HydroGeoLogic, Inc., 2004 August; Technical Memorandum: Predictive Ground-water Modeling Simulations for Proposed Hydraulic Barriers to Saltwater Intrusion; Prepared for Southwest Florida Water Management District)

**Comment: Pg 115 Table 5-11 Potential Water Availability; This Table presents some overly optimistic estimates of potential conservation gains. ... This table (provided by Manatee County) points out some of the real efficiency differences that exist within the projected demands and the estimated amount of water conservation. We have to ask is it reasonable to expect Hardee County residents to conserve an additional 0.9 mgd (Tables**

**5-3A and 5-4A Chapter 5 Appendix) when their Public Supply demand has been projected at 79.5 gpcpd? The projected reduction of 0.9 mgd from the projected demand of 2.9 mgd would leave Hardee with 2.0 mgd for the use of their 36,480 residents, and per capita amount of 54.8 gpcpd. While their northern neighbors in Polk County would be granted 129.56 gpcpd even after the proposed conservation gains are deducted, because their demand is projected at the highest rate of any county (151.84 gpcpd). ...There needs to be some reasonableness and equality in the projected water demands and expected conservation gains.**

**Response:** Staff agrees that reasonableness is critical in presenting projected demand and potential conservation and equality is important in the approach to determining the information; however, the District believes it is more appropriate to recognize that each water user is different in terms of its per capita water use, population and growth potential. Those differences were scrutinized and applied to demands and water conservation. Water conservation estimations were extremely detailed, as described in Chapter 5 of the RWSP, with great care taken not to over-estimate, but to identify the cost-effective measures that could be implemented across the board. Two measures that had been included in the 2001 RWSP, were not included in the 2006 RWSP due to cost. The public supply accounts that have already implemented any of the options identified were eliminated from the projections, and a conservative (30-50 percent) rate of participation of the remaining customers was the basis for the conservation estimates. These efforts, combined with savings and cost rates that are supported by numerous publications, provide District staff with the confidence that the savings rates are reasonable, and equitable where appropriate.

Some utilities have greater savings potential than others, due to the composition of their related customer bases and the degree to which conservation has already been employed. Therefore, per capita in and of itself does not identify which counties need to do more work in the area of conservation since a lower per capita does not necessarily indicate a greater degree of efficiency. For example, Manatee County has a low per capita water use rate because their public supply customers use sources such as shallow wells for irrigation. This does not negate the water savings potential of older homes to replace toilets or for commercial customers to replace spray valve nozzles. This is one aspect that would unfortunately be discounted by the table you provided. Another is the countywide per capita, which appears to reflect averages for each county. As described earlier, per capita was determined for each individual large utility, for small utilities as a group, and for domestic self-supplied users as a group. To take a countywide average and then set a target that does not accurately capture the potential each could achieve, would only identify what each county needs to achieve to reach a level playing field. The intent of the conservation element of the RWSP is to identify the potential conservation that could be achieved by broad-based programs that cost \$3 per 1000 gallons saved or less. The District's methods are useful in that they reveal that despite differences, such as the availability of irrigation wells in Manatee and Sarasota counties, or large numbers of commercial customers in Tampa, or aggressive conservation programs in Pinellas County, all water users can achieve some degree of water conservation for less than \$3 per 1000 gallons.

With respect to the specific comments regarding Hardee County, it is not unreasonable to expect Hardee County to save the water identified over the next few years. In addition to the reasons just described, while half of the county's per capita water use is quite low, as pointed out in the comments, the other half is between 117 and 131 gpcd, and none of these figures account for the 0.2 mgd of private irrigation wells. With respect to the specific comments regarding Polk County, again, the RWSP does not strive to identify what *should* be achieved, but what *could be achieved using nine conservation measures identified to be feasible*. The

county will not be “granted” a per capita rate reflected in the RWSP. The counties and cities are expected to evaluate these and, where possible, implement other conservation measures as appropriate.

**Comment:** *Pg. 121 Section 1, Surface Water/Storm Water Options: Second sentence seems to suggest that the Planning Level Criteria would result in developing rivers/creeks to their full potential. The full potential is far and away above that allowed by the planning level criteria, as one can determine by the western development of water resources, i.e., over 60% diversion (Lower Colorado River 7.2 BGD off stream consumptive use from a total 11.2 BGD annual renewable supply, USGS). Maybe the sentence needs to conclude with “were developed to this potential” (planning level).*

**Response:** The sentence will be modified to reflect the idea that “full potential” in the context of the RWSP means using the planning level criteria that were established for the plan (P85/10 percent) to calculate available quantities of water supply.

**Comment:** *Pg 162 Section 5, PR/MRWSA Planning Area – Fresh Ground Water Options: It is disappointing to not really find any clear reference to the use of the groundwater replacement credits that were a key element of the SWUCA rules and the Recovery Strategy and a fundamental objective of the Manatee Agricultural Reuse Supply (MARS) Project. The use of these groundwater replacement credits to provide for limited fresh ground water supply in Manatee County is a key source of near term (prior to 2014) local supply along with the development of surface/storm water options by the PRMSRWSA (sic) beginning in 2014 as shown in the 2006 Update to the Manatee County Water Supply Plan.*

**Response:** Beginning at the bottom of page 98, there is a brief discussion on the use of fresh ground water from the Upper Floridan aquifer in the SWUCA. Though it is possible that some users can meet all or a portion of their future additional demands with ground water from the Upper Floridan aquifer, the SWUCA Recovery Strategy seeks an overall reduction in ground water withdrawals in the basin from about 650 mgd to about 600 mgd. As discussed at the top of page 99, this will largely occur through land use transitions that have occurred and will likely continue to occur throughout the region. The use of ground-water replacement credits will be very important for some users. However, the net effect is to shift existing withdrawals from one user to another, with an overall net reduction in ground-water withdrawals. Though the approach is extremely beneficial to users who are able to provide a ground-water offset, it will not expand the use of Floridan ground water in the basin.

**Chapter 4: Demand Estimates and Projections: Section 3. Public Supply**

***Comment: (Chapter 4, Section 3, 1.0 & 2.0) The projected population growth within the four county service area of the Peace River Manasota Regional Water Supply Authority (Regional Authority) is much lower than either individual utility projections or projections being assembled by the Regional Authority. The unincorporated area of Sarasota County and the incorporated area have been growing at higher rate than is projected within Table 4-4 on page 55. We would suggest that the BEBR high population projections will more accurately reflect the anticipated growth within the entire Sarasota County area.***

***The Regional Authority has been conducting their Integrated Water Supply Master Plan including projections of new supplies needed. Although projections are still being completed at this time, the population projections and subsequent increases in demand are much higher than projected in Tables 4-4 and 4-5. The difference in projections for DeSoto County may be the most dramatic. The Authority is contracted to provide 4.815 mgd of water supply for DeSoto County over the next 7 years compared to the projected change in demand of 0.7 mgd over a 20-year period established by the Regional Water Supply Plan.***

***Regional Authority staff have mentioned that their preliminary analysis shows BEBR High population projections are the most realistic for their service area. This is a high growth area that is expected to far exceed the population growth projections developed in the Regional Water Supply Plan.***

**Response:** One reason why Sarasota County's water demand projections are higher than the District's is that the county is projecting demand using a per capita rate of 100 gpd, while the District is using the 2001 per capita of 93 gpd that Sarasota County Utilities reported in their 2001 Public Supply Survey. Subsequent Public Supply Survey Reports submitted by Sarasota County Utilities have shown a decrease in the per capita rate.

Regarding population projections, the five Water Management Districts are required by the legislature to use the Bureau of Economic and Business Research (BEBR) medium population projections for projecting public supply water demand. District staff has confidence in BEBR projections for a number of reasons, among which is their ability to identify potential trends. The District can modify the water demand projections only if it is provided with credible data that support higher demand projections. This was discussed at length with the PR/MRWSA (Authority) and its member governments including Sarasota County during the development of the demand projections over the past several years. When the water demand projections were first reviewed during the Water Planning Alliance process, alternative population projection data were provided by Manatee County and Charlotte County. These data projected growth over the next 20 years based on the phenomenal period of growth that occurred in the region over the past few years. Because it is already becoming apparent that the rate of growth is slowing significantly, the District believes that data provided by these counties may significantly over project demand for water through 2025.

An independent evaluation by HDR engineering prepared for the Water Planning Alliance supports the relative historical accuracy of BEBR medium population projections. During a workshop held on September 29, 2006, HDR showed that the actual average (long-term) population growth rate for the Authority's service area was 3.1 percent per year. This figure is significantly lower than the population growth rates provided by the Authority's member governments.

Since the 2006 RWSP draft was prepared, BEBR has published the "Projections of Florida Population by County, 2005-2030", February 2006. The District is currently in the process of updating the water demand projections in the RWSP using this more recent BEBR population data. It is expected that the latest BEBR population data will account for the recent high growth period and this will result in higher water demand projections. However, it is likely that these projections will still be significantly below those of Sarasota County.

Finally, because the District is aware of how critically important accurate public supply demand projections are, staff would like to work with water supply utilities and population projection experts to develop a consensus on an improved projection methodology. Such a methodology could be employed more frequently than every five years to maintain a better understanding of population trends.

**Comment: (Chapter 4, Section 3, 3.0) Because of the difference in population and demand projections associated with local planning and the Draft Regional Water Supply Plan, we would recommend that the service area of the Regional Authority be included in this discussion and that the Regional Authority's Water Supply Master Plan be referenced for best available data.**

**Response:** As was stated in the previous comment, following the District's evaluation of all available data sources and the independent evaluation conducted by HDR, the District is convinced that the public supply water demand projections in the RWSP, that are based on BEBR medium population projections, are reasonable.

## **Chapter 5. Meeting and Managing Future Water Demand**

**Comment: (Chapter 5, Part A, Section 1.0) We understand the District's approach of the p85/10 approach to evaluation of potential beneficial use of water from a surface water system. This approach is well explained as the second criteria on page 73. This is overall a large-scale approach to water supply planning, although we do encourage SWFWMD staff to incorporate into this discussion the potential for evaluation of impacts of prior hydrologic alterations on the natural water budget of a receiving water body. This approach will substantially alter the amount of water available for beneficial use from water bodies such as Cow Pen Slough. In Table 5-1, Footnote 7 starts this discussion, but we would request that it be more prominent in the report.**

**Response:** In Chapter 5, Part A., Section 1 of the RWSP, it is noted that several water bodies in the region (such as Cow Pen Slough) have in-stream impoundments that could affect available quantities. Yields associated with these, as well as all surface water bodies, will ultimately be determined in the permitting process and depend on the degree of structural alteration that has occurred, the habitat supported by the flows, and the minimum flows that are established. A minimum flow will be established for Cow Pen Slough in 2007. For purposes of the RWSP, it is appropriate to use the planning level criteria that were developed to provide a consistent and conservative estimate of available supplies. We agree that it is important to recognize factors



that could influence the amount of water supply that is potentially available. However, it is not appropriate to arbitrarily alter these criteria, especially when the available quantities will be determined during the permitting process. Please note that in Chapter 5, in the discussions for individual water bodies, there is recognition of potential water supplies that can result from environmental restoration efforts. This potential was also recognized in the descriptions for specific water supply development options in Chapter 6, where it was appropriate.

### **Cow Pen Slough**

***Comment: Sarasota county staff are concerned that our efforts in coordination with the Regional Authority and the District to restore a more natural flow to the Dona Bay watershed through capturing water on Cow Pen Slough could be misconstrued by a third party. The figure in the regional water supply plan of potentially available water supply of 4.4 mgd is well below our preliminary evaluation of water availability in the Dona Bay Watershed as 15 mgd, which is based upon our ability to store excess water, and not the amount of excess water going to Dona Bay.***

***Therefore on pages 78-79 we request that SWFWMD incorporate language into the end of the paragraph discussing Cow Pen Slough as follows:***

***“It is anticipated that future environmental restoration efforts in the watershed will focus on preventing the excess freshwater flows in the watershed from entering Dona Bay. Through the diversion and capture of these excess flows, opportunities for water supply development will be created which will help advance environmental restoration efforts. There is limited flow data available on Cow Pen Slough. As part of the District’s MFLs effort, flow measurements on the Slough were initiated in 2003. Using data collected for the period since 2003, the annual average flow has been 72 mgd (111 cfs) as measured at the structure near Laurel Road. The available yield from cow Pen Slough was based on flow data for similar watersheds in the area. Using these flow estimates and based on the planning level minimum flow criteria, 4.4 mgd of water supply is potentially available from the Slough. As more information is available on the excess flow created by the channelization of Cow Pen Slough to Dona Bay, the potential quantities of water supply are expected to increase greatly and be based upon the amount of storage that can be created within the watershed. Ongoing studies are currently quantifying the excess flow.”***

***Response:*** The District acknowledges the County’s concern and offers this language at the end of the Cow Pen Slough discussion: “As ongoing restoration studies continue, more information will be available to better quantify excess flows within Cow Pen Slough, which may result in significantly higher yield estimates. Ultimately, the quantity of future water supply available from Cow Pen Slough will be determined through the permitting process and following establishment of a minimum flow in 2007.”

***Comment: The Myakka River watershed has had several significant alterations and we are encouraged that SWFWMD has taken the lead with the Myakka River Watershed Initiative to evaluate all of the hydrologic alterations on the watershed holistically. Our concern is that there is excess flow in the upper watershed and potentially too little flow in the southern portion of the watershed going to Charlotte Harbor. We do understand and support SWFWMD’s efforts to restore a natural flow regime to the Flatford Swamp. We are concerned of this developed as a long term water supply since the excess flow is based upon an agricultural land use that can reasonably be expected to change to***

***suburban development over the planning period of the Regional Water Supply Plan. We do encourage the direction of the District and Manatee County to incorporate the groundwater permits into the Public Supply system as agricultural lands change use to development.***

***We are concerned that the Regional Water Supply Plan has overstated the potentially available water supply in the Myakka Watershed at 19.1 mgd. Our own personal experience with the Myakka River has low flows throughout much of the year and would limit the ability to withdrawal from the river without causing great harm downstream. We are encouraged that SWFWMD will be completing a detailed water budget of the watershed. We do encourage SWFWMD staff to consider the entire watershed before allocating water withdrawal quantities in the upper watershed.***

**Response:** As indicated in an earlier response, the potential availability of water from rivers, such as the Myakka River, was determined using the P85/10 approach providing a consistent estimate for planning purposes. Withdrawals in the Upper and Lower Myakka will be subject to the permitting process and adoption of MFLs. The Upper Myakka MFL was adopted last year and the draft Lower Myakka MFL is expected in early 2007. In an effort to address issues within the Myakka watershed on a holistic basis, the District launched the Myakka River Watershed Initiative earlier this year. As part of the scope of work for the project (a copy was provided to Sarasota County under a separate letter), alternative model scenarios will be run for the Upper Myakka Water Budget task. At least one of these scenarios will include a suburban development within the Flatford area. It is hoped that information obtained from the modeling effort will enhance our understanding of how the flow regime would change in response to land-use changes.

#### **Part A. Evaluation of Water Sources: Section 5. Fresh Ground Water**

***Comment: In Section 5.2.2, the Intermediate Aquifer System is listed as Fresh Ground Water. In Sarasota County, only PZ1 and PZ2 can really be considered "fresh." We request that PZ3 of the Intermediate Aquifer system be addressed separately from the Upper Floridan area in Section 4.2 Brackish Ground Water – SWUCA – Upper Floridan Aquifer Brackish Ground Water. Due to the heterogeneity and discontinuous nature of the Intermediate Aquifer System; it is not a regional system and should not be treated as such. Neither of these sections refers to the Intermediate Aquifer Management Plan being developed by the District in lieu of an MFL to better manage this resource.***

**Response:** In Chapter 5, Section 5.2.2 there is a brief discussion about brackish water existing in the lower zone of the intermediate aquifer in the coastal areas. Based on previous work on the intermediate aquifer, there are probably some areas in the eastern and northeastern portions of the county where the water quality of this lower zone can be considered fresh. The District will provide additional language to make sure this is clear when discussing the extent of brackish water in this zone. The heading for Section 4.2 in Chapter 5 will be changed to reflect a combined discussion of existing brackish ground water facilities that use the lower intermediate aquifer and/or the Upper Floridan aquifer. Staff agrees that the intermediate aquifer system is not a regional system and does not believe it was conceptualized as such in the RWSP. However, staff will review the discussions of the intermediate aquifer system in the report and make certain that point is clear. A brief discussion of the Intermediate Aquifer Management Plan will be presented in Section 5.2.2.

SWFWMD Response to CF Industries Comment on the July 2006 Draft Regional Water Supply Plan  
Richard S. Ghent  
CF Industries

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***Comment: CFI is requesting that its proposed Aquifer Recharge and Recovery project (ARRP) located within the South Pasture Mine at its Hardee Phosphate Complex in Hardee County be included as a water supply project in the draft plan.***

***Note: this comment was contained in a three-page letter that described the project and provided justification for including the project in the RWSP. The letter also provided specific language about the project that CFI requested be included in the RWSP.***

**Response:** The District strongly supports the aquifer recharge and recovery concept and will include the CFI Aquifer Recharge and Recovery project in Chapter 8 of the RWSP; Water Supply Projects Under Development. Part A, Section 5, Table 8-6.

**SWFWMD Response to Lakeland Electric Comments on the July 2006 Draft Regional Water Supply Plan**  
**Farzie Shelton**  
**Lakeland Electric**

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**Comment 1. *Lakeland Electric has concerns about HWA Planning Area Reclaimed Water Option #1-Lakeland Zero Liquid Discharge Reuse set forth of pages 171 and 172 of the draft RWSP and also listed on Table 6-13 shown of page 174 of the RWSP.***

**Comment 1a. *The draft RWSP does not identify the entity that would undertake this project; Lakeland Electric assumes that it is the intended entity.***

**Response: 1a.** The District identified “the city” as the option entity, as the District did not want to presume which city department could take the lead on this option. However, in response to your question, either the City of Lakeland Department of Electric Utilities or the City of Lakeland Department of Water Utilities could both be potential entities to pursue this option, as the option has the potential to benefit both entities.

**Comment 1b. *The data set forth in support of this water supply option significantly underestimates the cost of undertaking this project. Lakeland Electric estimates the project would have an capital cost of \$31,477,106 and an annualized O&M cost of \$3,582,917, resulting in annualized capital and O&M cost of \$6,327,235 assuming capital recovery over a twenty (20) year period and a 6 percent discount rate.***

**Response: 1b.** The sources used to generate the District’s cost estimate for this option were detailed in a District Memorandum on the City of Lakeland’s water use permit dated July 2, 2004, and include information from Sandia National Laboratories and US Bureau of Reclamation, information presented at the *2003 National Salinity Management and Desalination Summit*, as well as project information from the City of Clearwater Brackish RO Project. The higher project costs estimated by the City appear to be based on older cost estimates. The costs detailed in the RWSP are based on District research using the latest available data.

**Comment 1c. *The RWSP estimates that this project will produce approximately 7.0 MGD (2.0 MGD of high quality water and 5.0 MGD of “freed up” reclaimed water currently used for dilution). By comparison, Lakeland Electric estimates that the project will produce only 6.0 MGD or less.***

**Response: 1c.** The sources used to generate the District’s estimates 7.0 mgd of supply and offset for this option were detailed in a District Memorandum on the City of Lakeland’s water use permit dated July 2, 2004. The 7.0 mgd used in the option description is more conservative than the 8.51 mgd of reclaimed water Lakeland actually reported as being utilized for dilution alone in 2005 (FDEP 2005 Reuse Inventory).

**Comment 1d. *If (a future ) feasibility study confirms our anticipated high costs or/and funding by the District to support this project is not available, then this project would not be feasible. Therefore, Lakeland Electric, at this time respectfully requests that this project be removed from the RWSP.***

**Response: 1d.** The referenced project presented in the RWSP is one of several future options. If the city conducts a study resulting in defensible data and conclusions indicating the project is not feasible, future versions of the RWSP can be adjusted. The current RWSP reflects an

estimated timeframe for this option of 2011 to 2025. It would be premature to remove the option based upon the lack of a current feasibility study when the implementation could be up to 20 years in the future. The District will continue to include this option in the RWSP; however, the description will include a statement that a feasibility study would be prudent before implementation.

**Comment 2. *Lakeland Electric also has concerns regarding the Lakeland Electric Storage Facility project set forth on Table 6-13 HWA Area-List of Reclaimed Water Options on page 174 of the draft RWSP. The RWSP does not describe this project anywhere else in the text. However, based on prior communications with District staff, Lakeland Electric assumes this project refers to Lakeland Project Number LPE9760. The feasibility of undertaking this project was investigated by Lakeland Electric in circa 2001. The project was later determined to be unfeasible and cancelled. For this reason, Lakeland Electric respectfully requests that this project be removed from the RWSP.***

**Response: 2.** The District included the Lakeland Electric Storage Facility option as well as other reclaimed water options in the RWSP that may have been determined to be unfeasible in the past, as they may become viable options at some point in the future (out to 2025). The project presented in the RWSP is one of several future options; however, based upon your description of a completed feasibility study with a determination of infeasibility, the District will remove the option from the RWSP, as requested.

**Comment 3. *Finally, and most importantly, Lakeland Electric believes the RWSP does not consider Lakeland Electric's future water use needs because the RWSP does not include the needs of new generation of Lakeland Electric that will be added in the future. Presently Lakeland is in the process of planning a new electric generation plant, which Lakeland Electric predicts bringing into operation sometime in 2013. Lakeland Electric intends to utilize substantially all of the remaining reuse water that is produced by the City of Lakeland's PWWT as the primary source for the unit's cooling water.***

**Response: 3.** While individual water use permits (WUP) such as those issued to Lakeland Electric are considered in industrial/commercial (I/C) water demand projections, water demand is projected by County and not by individual WUP. The 2005 demand for Polk County was projected at 71.9 mgd; actual use was 67.7 mgd. While a bit high, the Polk County projections are certainly "within the ballpark." The District considers and includes quantities for all proposed industrial expansions in formulating demand projections. As part of the 2011 RWSP update (and if Lakeland Electric is still on schedule to bring an additional generating facility on line in 2013), the District will revise its demand projections for Polk County.

**SWFWMD Responses to Bill Harper Comments on the July 2006 Draft Regional Water Supply Plan**  
**Bill Harper**  
**Citizen**

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**Comment:** *I notice that on the 2006 table 4-7, p58 the numbers are less than from the 2001 report, table IVA6, p57, up to year 2010 and then the 2006 is higher than the 2001 forecasted. What happened around the 2010 mark to cause this sudden change in direct?*

**Response:** The 2001 RWSP projected demand from 1995 to 2020, using 1995 Bureau of Economic and Business Research (BEBR) projections as the base year to project population through 2020 and using 1995 per capita data to project demand through 2020 (Technical Memorandum, January 18, 2000). The 2006 RWSP forecasts demand from 2005 to 2025, using 2005 BEBR projections as the base year to project population through 2025 and using 2001 per capita data to project demand through 2025 (Technical Memorandum, March 14, 2004 and January 2005 Addendum to Technical Memorandum, March 14, 2004). The difference in the time period reported for as well as the base years used to project the population and demand are alone, significant enough to create a variance between the 2001 and 2006 RWSP reports. Another factor to note is the difference in per capita from 1995 to 2001. For most counties in the Planning Region, the per capita has been reduced since 1995.

**Comment:** *Also why do the totals for SWUCA on p55 and p58 differ by 20-25 mgd per time column even when you add the PS and DSS together on p55 to compare to p58?*

**Response:** Table 4-4 lists the demands for Public Supply (PS) and Domestic Self Supply (DSS) for the Planning Region. Thus, when you compare the tables you will need to look at the Planning Region demands portion in table 4-7, not the SWUCA demands portion. Also, the Public Supply demand projections include the demands associated with domestic irrigation wells, the demands for which are provided in Table 4-6.

So, for example if you take year 2005:

From Table 4-5 add the PS and DSS demands (488.3 + 25.3), then from Table 4-6 add the additional irrigation demand (19.6) = 533.2 mgd. Compare this to Table 4-7 where, for Planning Region in 2005, the average-year demand is 533.3 mgd. There is a slight rounding error when comparing this way, due to formatting.

**Comment:** *Table IVD-1 p138 in the 2001 report shows Shell Creek as 10mgd yield and 40 mgd capacity and Table 6-4 p148 in the 2006 report says the same. Question is, in 2001 the emphasis was on ASR storage, but with the concern over ASR at present, wouldn't it make more sense to go off stream reservoir? There are projects doing just that and with land being purchased now for that purpose, your document would give credence to that rather than ASR. In the southern area of Shell Creek ASR recovery is going to be lower than normal, so reservoir evaporation loss is not an issue since no money has been spent on treating it before storage except pumping.*

**Response:** In the report, it is recognized that storage is an important element of water supply projects that can be accomplished using reservoirs and/or ASR. In fact, on page 145 of the report, in the description of the option entitled "PR/MRWSA Planning Area Surface Water/Storm Water Option #4 – Shell Creek Public Supply," it is contemplated that the storage needs of the project would be met using a reservoir. Though there are still issues associated with the

development of ASR systems, those systems have tremendous potential to assist water suppliers in meeting their long-term water supply needs, especially during periods of drought or low surface water flows. In the future it is anticipated that reservoirs and ASR wells will be used as complements to each other.

Regarding your statement that, ". . . reservoir evaporation loss is not an issue since no money has been spent on treating it," evaporation loss in a reservoir is always an issue. This is especially true when you consider the volume of water supply that is lost and unavailable for use. If ASR can be used to reduce the size of a reservoir, the water not subjected to evaporation losses can be used for additional water supply.

**Comment:** *Table IVB-2 p80 of 2001 report shows Shell at 220 mgd mean, shows the 5.4 permitted and the 3.7 mgd use and 17 mgd theoretical available but only estimates 10 mgd for new source. A statement on p86 states the average potential yield is 17 mgd ABOVE the permitted amount based on 10% over the P85. The 2006 report says 225 mgd, and the use is 4 mgd and an additional 17.6 is available, using the 10% after P85.*

**Response:** Table IVB-2 in the 2001 RWSP included a column labeled "Practical Available New Water" which included factors such as local need. Because the projected demands in Charlotte County did not require the total available amount from Shell Creek this amount was limited to 10 mgd. In Table 5-1 of the 2006 RWSP, this column was deleted from the table. In addition, the relatively small differences in available yield you note (17 versus 17.6 mgd) are due to the use of a slightly longer period of time to estimate available yield in the 2006 RWSP (1965 to 1998 for the 2001 RWSP versus 1965 to 2003 for the 2006 RWSP).

**Comment:** *Now on p149, it states 7.8 mgd current yield to 17.8 mgd. Where did the .2 mgd come in? Also on p149 is says in column yield is 8 mgd but the text in descript says 7.8 mgd. It doesn't appear that rounding off is appropriate since the rest of the table column have decimal in them. Just an item that draws questions like "Can't you make up your mind?"*

**Response:** As indicated in the header, the information in Table 6-5 was taken as reported in the Water Planning Alliance (WPA) Regional Planning and Engineering Study. This study was done independently from the District's RWSP by a consulting firm and therefore, it does not always agree with the District's work. It was included to provide readers with information from other ongoing water supply plans within each region. A copy of the WPA Study can be obtained from the Peace River/Manasota Regional Water Supply Authority.

**Comment:** *This leads to the comparison of the 2001 report showing 17 mgd and the 2006 report showing either 17.6 or 17.8 mgd and then there is the confusion over is the 17 plus the 5.4 permitted (22.4 mgd) in 2001 against the 17.6 plus the 4 mgd use (21.6 mgd) or is it just the 17.8 mgd from page 149 in the 2006 report? Couldn't there be more consistency in your numbers so that they at least add up?*

**Response:** The following table compares the quantities reported by the District for Shell Creek in Table IVB-2 of the 2001 RWSP and Table 5-1 of the 2006 RWSP. The differences you note are relatively small and due to the reasons mentioned in the responses to your previous comments. It is not possible to directly calculate the last column from the other numbers in the table because of the conditions that need to be satisfied before calculating available yield. The first thing that is done is to make sure existing permitted uses are satisfied. New uses are allocated water only after existing uses are satisfied, flow in the river/creek is above the

minimum flow cutoff, and the sum of existing permitted quantities is less than 10 percent of the total flow of the river. In addition to the minimum flow cutoff for new uses, the available yield is limited to twice the median daily flow for the period of record. Another factor that affects the “Theoretically Available Additional Withdrawals” is how the existing uses were permitted. Keep in mind that the potential yield from Shell Creek and other surface water bodies will be modified in future updates of the RWSP as minimum flows and levels are established and water use permits are modified to incorporate these flows in their withdrawal schedules.

| Report | Annual Average Flow | !0% of Mean Flow | Permitted Annual Average | Current Use | Theoretical Available Additional Withdrawals |
|--------|---------------------|------------------|--------------------------|-------------|--|
| 2001   | 220                 | 22               | 5.4                      | 3.7         | 17   |
| 2006   | 225                 | 22.5             | 5.4                      | 4.0         | 17.6   |

Note: quantities are in million gallons per day (mgd)

**Comment:** *Conservation as a source in 2001 projected non-ag at 95.3 mgd by 2020, p96 and in 2006, p.106, the savings is 120.2 mgd. Does that mean that from 2020 to 2025 that there will be another 25 mgd in savings added to the total of 2030, or is it an increase in the rate of conservation starting with 2005 and increasing to 2025? I note that Public Supply goes from 60 mgd in 2020 (2001 report) to 73.85 mgd in 2025 in the 2006 report. I would think with all the emphasis on conservation now focused on the public, there ought to be a declining trend in the amount saved by conservation as time goes on, since as is said “how low can you go?” I also note that the costs/1000 in just 5 years has doubled (some inflation).*

**Response:** The savings presented are cumulative from 2005 through 2025 based on the incremental increases in population projected for the area and the associated "new" conservation from that population segment being combined with the existing conservation already occurring.

The Public Supply increases generally reflect the projected increases in population served by the utility. The calculation used holds the per capita use to the initial 2005 value, i.e., per capita is not reduced to reflect effects of conservation measures initiated during previous years. If the per capita demand is adjusted to reflect previous conservation efforts, Public Supply conservation does generally decrease across the planning period.

The costs were adjusted to reflect a 34 percent increase in costs since the 2001 RWSP was published. Costs for certain conservation measures, especially for local governments with smaller populations available for implementation tend to escalate much more than others with larger populations because of the ability to spread costs over larger participating populations.

**Comment:** *On page 155 of the 2006 report, there is the Punta Gorda reclaimed water section. For your information, the effluent has been going to deep well since August 6, 2001. There is no application on the hay fields at all. It is also stated that there is problem with high inflow/infiltration. The correct way to state this is there is a high concentration of salts infiltrating from the harbor which is a lot harder to find and tighten up than just high flows coming into the system as your text reads. To supply reclaimed water for a use is the City’s aim. There is a concern over offsetting Potable water. Most of the water to be offset from ground water use is non-potable. To offset potable when the only potable around is the City’s supply is the most complicated and expensive of the*



***possibilities. A study to look at current and potential reuse is currently planned and a more realistic picture can be had, but counting it as offsetting ground water use rather than potable is more appropriate for now.***

**Response:** Regarding the effluent disposal method, you are correct; Punta Gorda's effluent disposal method will be modified to "deep well." Regarding the suggestion to re-characterize inflow/infiltration (I&I) as only infiltration, the District will continue to use I & I. This is a standard industry term that describes multiple pathways of non-sewer water entering the sanitary sewer system, not just infiltration. The discussion of potable versus non-potable may be resolved by a clarification of offset expected. If potable water is not offset from the city's system, then the District believes there is opportunity to offset potable-quality water from other sources. There are benefits that can be realized beyond the offset of strictly public water supplies, and this is what the potential offset reflects.

**SWFWMD Responses to Joe Bourassa Comments on the July 2006 Draft Regional Water Supply Plan**  
**Joe Bourassa**  
**Citizen**

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**Comment 1:** *Since we are well into 2006, I have to wonder why this "2006" RWSP can not use 2005 numbers as its basis for projecting. There appears to be some interjection of 2001 & 2003 numbers, but most projection refer back to 2000. Of course 2000 was a very severe drought period [ 1 in 200 yrs. ?] so all usage is exaggerated. Compounding that is that this QA report now uses a 25 year planning period, when the intent was to use a 20 year planning period.*

**Response:** The five water management districts agreed to use certain methods for preparing the Regional Water Supply Plan (RWSP), in accordance with statewide guidelines agreed upon with DEP. This included using the year 2000 as a base year. When work on the demand projections for the 2006 RWSP began, the 2003 population and 2002 water use were the latest published data. The year 2000 is a starting point for planning purposes but, as explained in Chapter 4 (p.45), it actually reflects water use from 2001 to ensure that use would not be exaggerated due to the 2000 drought for those demand projections based on historical water use. In addition, some demands are based on numbers of permits (Industrial/Commercial) or numbers of acres (Agricultural), rather than water use. That being said, based on feedback such as yours, population data for 2005 will be used to update the population projections and related water use for the final version of the RWSP.

**Comments 2 through 9 pertain to the District's 2003 Estimated Water Use Report and not the draft 2006 RWSP. Staff will respond to these comments in a separate e-mail.**

**Comment 10:** *Page 55, Table 4-4 & Table 4-5---District Totals---It is apparent that the projected 40% increase in both Population & Public Supply between 2000 & 2025 equals a 1.6% / yr increase. That agrees with the BEBR population projection but really does not indicate any improvement in Per Capita Usage. Since reclaim will be a much more significant part of future water usage, will it be just added on to the historic GW & SW usage---or will it be separately reported??*

**Response:** As described in Chapter 4 (p.45), the projected demand represents the total amount of water required through 2025 and does not account for demand management measures. The potential for demand management measures such as conservation and reclaimed water to reduce water use is accounted for in Chapter 5. So, for the purpose of calculating demand, the per capita was held constant throughout 2000-2025. It is expected that as additional conservation methods are added, per capita will decrease. Pages 80-83 of the 2006 RWSP discuss the possibilities for offsetting future demand by each county in the Planning Region by implementing reclaimed water projects.

**Comment 11:** *Page 55; Table 4-5, Last Columns "Change (%)" Since the numbers in both columns [PS & DSS] are exactly the same, I cannot understand why the PS Total is 40 % and the DSS Total is 50%.*

**Response:** The "Total Change (%)" is calculated as shown below.

$$\text{Total Change (\%)} = (\text{Change in Demand} / 2000 \text{ Demand}) * 100 \%$$

So:

$$\text{PS Change (\%)} = (179.2/444.6)*100\% = 40 \%$$
$$\text{DSS Change (\%)} = (11.5 / 22.8)*100\% = 50 \%$$

Note that the results are rounded to the nearest whole number. The data in the table is aggregated from detailed utility-level information for Public Supply, and then rounded by county. Both the Public Supply and Domestic Self-Supply totals in the table are rounded by year. The DSS data are quite small, and rounding can have a noticeable impact. We double checked the numbers and can assure you they are correct for the county totals, planning-year totals, and overall totals.

**There does not appear to be a comment 12.**

**Comment 13: *Page 58; Table 4-7 “Public Supply Projections” I find it interesting that this table uses 2001 as its base point. Since the District has all the EN 50’s for 2005, why not compare that number with the one shown here (533.3 mgd).***

**Response:** Staff does not understand your comment. Please provide more information.

**Comment 14: *Page 85; 2.0 “The Tampa Bay Water Seawater Desalination Plant”, I know this is a July draft, but it will not be finalized for awhile. --- The latest published TBW number is \$3.01 not your \$2.54 / 1,000 gal. What always must be remembered is that is for the plant to be operating at its 25 mgd design capacity.***

**Response:** Based on recent discussions with Tampa Bay Water staff, the new cost for seawater desalination is \$3.19 per 1000 gallons. This will be the number used in the final report. When originally drafted, the cost per 1000 gallons for the desalination plant was \$2.54.

**SWFWMD Responses to Nancy Lopez Comments on the July 2006 Draft Regional Water Supply Plan**  
**Nancy Lopez**  
**Citizen**

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**Comment:** *As part of the explanation for not including the Northern District in the RWSP, on page 4 of the Draft 2006 RWSP the District states that in 2005 Marion County and the Withlacoochee Regional Water Supply Authority (WRWSA) initiated "... separate comprehensive water supply plans ..." in cooperation with the District. This week I began reviewing the WRWSA's draft plan. In particular, I downloaded draft Technical Memorandum 1: Existing and Future Demand, dated September 15, 2005, from the WRWSA website. This document states on page 17 that "Sumter County's water demand in 2000 was 44 mgd. An increase of 15 mgd (34%) to 59 mgd was computed for the planning horizon time period [2000 to 2025]." The Villages began major development in Sumter County after 2000. Basically, the currently permitted groundwater withdrawals for the Sumter County portion of The Villages is about equivalent to the computed water demands for all of Sumter County over the planning horizon. I will be providing comments to WRWSA on their water supply plan. However, such departures from reality cannot possibly support sound water management and cannot substitute for careful, timely planning by the District. What kind of cooperation is actually occurring between the District and WRWSA's water supply planning effort?*

**Response:** Because it is recognized that portions of the Northern Planning Area have experienced high growth, and that it will be beneficial to begin planning for future water resources development to avoid the impacts that have been experienced in other areas, the District and the Withlacoochee Regional Water Supply Authority (WRWSA) have initiated an update of the Authority's water supply plan. This project is cooperatively funded by the District and the WRWSA and District staff work very closely with the WRWSA's consultants to make certain that the water supply plan will be as comprehensive as the RWSP that is being drafted for the southern 10 counties.

Regarding your concerns about the water supply demand projections, the five Water Management Districts are required by the legislature to use the Bureau of Economic and Business Research (BEBR) medium population projections for projecting public supply water demand. District staff has confidence in BEBR projections for a number of reasons, among which is their ability to identify potential trends. The District can modify the water demand projections only if credible population data is provided to support claims that water demand will be higher.

Since the 2006 RWSP draft was prepared, BEBR has published the "Projections of Florida Population by County, 2005-2030", February 2006. The District is currently in the process of updating the water demand projections in the RWSP using this more recent BEBR population data. It is expected that the latest BEBR population data will account for the recent high growth period, and this will result in higher water demand projections for the Northern Planning Area.

Because the District shares your concern for how critically important accurate public supply demand projections are, staff would like to work with water supply utilities and population projection experts to develop a consensus on an improved projection methodology. Such a methodology could be employed more frequently than every five years to maintain a better understanding of population trends.

***Comment: Regarding surface water impacts, the District approved these major groundwater withdrawals in an area of Sumter County where it had previously identified stressed surface waterbodies. In 1991 the District determined that Lake Miona and Black Lake were stressed. Re-evaluating these waterbodies again in 2005, the District again determined that they are stressed. Unfortunately, the District failed to meet its 2005 deadline for re-establishing the Minimum Levels for these two waterbodies.***

**Response:** The “stressed lakes” criterion has been used for lakes without adopted minimum levels to indicate where the lake is fluctuating relative to its adopted Guidance levels, in particular the Low Level and Extreme Low Level. These levels are generally used to indicate the normal range of fluctuation for a lake and are often influenced by cultural features and interests of lakeshore property owners. Since the late 1990s, the District has undertaken an intensive effort to adopt minimum levels on priority lakes in the District. These are the levels the District now uses to assess whether withdrawals are causing significant harm to the lake habitat. Because of differences in how minimum levels and Guidance levels are established, it is hard to make direct comparisons between whether a lake is identified as “stressed” and whether or not a lake is meeting its minimum level. Since we received your letter, the Governing Board, at their October 2006 meeting, adopted minimum levels for lakes Deaton, Miona, Okahumpka, Panasoffkee, and Big Gant in Sumter County. At this time, all these lakes are meeting their adopted minimum levels.

***Comment: At the bottom of page 2, the District's Draft 2006 RWSP states that "... declines in water levels in recent years have primarily coincided with and can generally be explained by an extended period of lower rainfall. Because the Upper Floridan aquifer is either unconfined or has little overlying confinement over much of the area, low rainfall means less recharge to the aquifer resulting in lower aquifer water levels." It seems, the District approved these major withdrawals knowing that the lakes are stressed and that aquifer levels in the area are especially sensitive to low rainfall because of the geology. After 2000 the consulting firm CH2M Hill analyzed drawdowns in Sumter and surrounding areas that would be caused by pumping in The Villages during severe drought conditions. That information might be helpful to the District as it reviews the need for water supply planning in Sumter County.***

**Response:** Though the District generally evaluates the long-term effects of withdrawals on water resources in its water supply planning efforts, the District also evaluates shorter-term impacts to the water resources under its water use permitting criteria to ensure that potential harm to environmental features does not occur. This typically is conducted by modeling peak monthly quantities that the applicant proposes to use during dry season conditions. For the Villages existing water use permits, District regulatory staff conducted an extensive evaluation of the proposed withdrawals and concluded that they met their criteria for issuance – namely that the proposed withdrawals did not cause adverse impacts to adjacent users or on-site environmental features. Conditions of the water use permits require an extensive monitoring program of both surficial and Upper Floridan aquifer wells, metered withdrawals, lake and wetland stages, and other data. Calendar year withdrawals in 2005 for the District’s portion of the Villages were 7.3 mgd, or a little over half of permitted ground-water withdrawals. Based on review of on-site and nearby monitor well and lake stage data, there does not appear to be a significant lowering of aquifer levels or lake stages as a result of the increasing ground-water withdrawals in the area.

***Comment: The St. John's River Basin Water Management District included the area of The Villages that is under their jurisdiction in a Priority Water Resources Caution Area.***

***The SWFWMD was aware of St. John's action in plenty of time to include Sumter County in the draft 2006 RWSP, but instead the District chose to exclude it. Recently, at my urging, the SWFWMD Governing Board directed the staff to determine the extent of the Caution Area in Sumter County. The Governing Board requested that this information be provided to them by January 2007. Given the current schedule, it appears that the information will be available too late to assist with the 2006 RWSP. In the interim, I request that SWFWMD rely on the St. Johns River Basin Water Management District evaluation of conditions in Sumter County for the purposes of revising the 2006 RWSP.***

**Response:** As you note in your comment, the District is evaluating options for delineating a potential water use caution area in a portion of the Northern Planning Area. As part of this evaluation, staff is reviewing the information developed by the SJRWMD that formed the basis for delineation of their Priority Water Resource Caution Area, and it is anticipated that a recommendation will be provided to our Governing Board in January 2007.

It is important to note that the SWFWMD and SJRWMD routinely coordinate and discuss water resource issues that may impact both Districts. At the October 2006 Governing Board meeting, District staff made a presentation to the Governing Board regarding the coordination of activities among staffs of the SJRWMD, SFWMD, and SWFWMD in the Central Florida area. In addition, staff also informed the Board of an intensive effort that was recently initiated by the SJRWMD and the District to coordinate water supply planning, water use regulation, and water resource evaluation activities in the area of Lake, Marion and northeast Sumter counties.

***Comment: On page 2, Part A, Section 1, paragraph 2, the draft states that "...regional water supply planning should be initiated for the west-central, east-central and southern planning regions because 'traditional sources of water are not adequate for the planning period to supply water for all reasonable-beneficial uses and to sustain the water resources and related natural systems' (373.0361(1), F.S.)." Sumter County meets this criteria for inclusion in the RWSP. In closing, the District needs to take timely action to revise the 2006 RWSP to include Sumter County and closely related concerns in nearby areas. Waiting until 2011 to initiate water supply planning for this area would not be in compliance with the statute and would not support responsible water management. Please take effective action now to correct the 2006 RWSP.***

**Response:** Even though the Northern Planning Area is not included in the 2006 RWSP, the District has numerous water supply planning, water supply development, and resource protection activities in progress in the area. For example, the District has been expanding its hydrologic monitoring networks, developing regional ground-water flow models, conducting cooperative hydrologic studies with the U. S. Geological Survey, and rapidly working through the process of establishing MFLs. These efforts will enhance the District's technical understanding of the area and help provide the technical foundation to support water resources management. Another example is the funding and technical assistance the District is providing for water supply planning efforts conducted by the WRWSA and Marion County. An update of both of these efforts was presented to the Governing Board at their October 2006 meeting. For both of these efforts, it was concluded that water resources throughout the region are generally in good condition; however, there are areas of resource concern that exist, such as the northeastern portion of Sumter County. One of the main goals for water supply planning in the Northern Planning Area is to develop and implement a strategy to prevent harm to the resources from occurring so that the resource problems experienced in the southern 10 counties of the District can be avoided.

Chapter 1 of the RWSP now includes a lengthy discussion of water resource issues and District programs to address the issues in the Northern Planning Area.

**SWFWMD Responses to Florida Department of Environmental Protection Comments on the July 2006 Draft Regional Water Supply Plan**  
**Thomas Swihart**  
**Florida Department of Environmental Protection**

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**Comment:** *The plan should include an executive summary as set out in the Format and Guidelines.*

**Response:** An Executive summary will be included in the final version of the RWSP.

**Comment:** *In Chapter 4, pages 45-68, the plan does not present demand projections for all of the individual use categories prescribed in the Format and Guidelines. These use categories must appear in the final plan. Specifically, Domestic Self Supply must be separated from the Public Supply totals, and Power Generation must be broken out of the Industrial / Commercial totals.*

**Response:** The demands were prepared and reported in accordance with Format and Guidelines agreed to by the five water management districts and DEP. The *Format and Guidelines* document prescribes minimum thresholds, and category definitions that should be included in the projections of demand. Each of these has been included in the 2006 RWSP, according to the definition, and meet or exceed the reporting thresholds. Power Generation is the only category the District chose not to *report* separately, but there is no such reporting requirement in the guidelines. The Domestic Self Supply demands are presented in Table 4-5, *Public Supply (PS) and Domestic Self Supply (DSS) Demand Projections (mgd) (5-in-10)*. The detailed population, per capita and demand figures are provided in the Appendix for Chapter 4. The Power Generation figures are not presented separately in the main part of the RWSP. As was the case in the 2001 plan, Power Generation is included in the "Industrial/Commercial" category and the disaggregated information for the demand category is provided in the Appendix for Chapter 4. The Appendices are not included in the RWSP, but are available on the District's web site at "[watermatters.org](http://watermatters.org)."

**Comment:** *The plan does not always present the 1-in-10 demand projections as required by Section 373.0361(2), F.S. Sometimes the plan explains this exclusion (e.g., Table 4-3, page 51 with text in the last paragraph) and sometimes it does not (e.g., Table 4-8, page 61 with text in subsection 2.1, page 60). We also found that the text for Table 4-12 (partial paragraph at the top of page 64) refers to a 1-in-10 demand projection, but this projection is not in the table.*

**Response:** The 1-in-10 demands were calculated and presented, if not in the text then in the Appendix for Chapter 4, for all categories required. The text at the top of page 64 will be adjusted to eliminate the reference to 1-in-10 demands. The demands for the Recreational/Aesthetic category are presented as required, showing average and 1-in-10 demands, in Table 4-9. The golf course demands, a segment of the Recreational/Aesthetic category, are shown only with the average demands for discussion purposes. The golf course demands represent the majority of the Recreation/Aesthetic category demands and warranted additional discussion using Table 4-8 as a reference.

**Comment:** *On pages 61-66, environmental restoration is not the same type of water "demand" as the water needs identified in the required use categories. Placement with these categories may suggest that the environment needs to obtain a consumptive use permit and must meet all requirements for permit issuance. We are aware the District*



***finds the environmental restoration information useful in planning to meet MFLs and recovery strategies in the region. We suggest moving this discussion to the Chapter 3, Part B (MFLs) or Part C (Reservations), whichever best fits with District plans.***

**Response:** The District sees no difference between meeting the demands of the environment and other water use categories such as public supply. To meet public supply demand, new sources of water must be developed and must obtain consumptive use permits. To meet environmental restoration demands (minimum flows and levels), new sources of water must be developed to make up for reductions in ground-water withdrawals. An example of this was the 68 mgd reduction in ground-water withdrawals from Tampa Bay Water's 11 central system wellfields. These quantities had to be replaced by quantities developed from rivers and seawater, and the projects that were built to utilize these sources had to obtain consumptive use permits. It follows then that the District must calculate the total demand for new water quantities, including environmental restoration demand, in order to plan for water supply and water resource development projects that need to be constructed to meet these demands and accumulate the necessary financial resources.

**Comment:** *We are very much interested in the District's proposal to obtain 35 mgd from South Florida Water Management District's (SFWMD) Kissimmee Basin for use in the Heartland Water Alliance (or just Polk County?) area. The plan acknowledges that close coordination with SFWMD will be required to develop this option. The option should be developed carefully to ensure that it meets the interdistrict transfer and local sources requirements found in Sections 373.223(3)(a) and 373.2295,F.S., and in Chapter 62-40.422, F.A.C., as well as the Central Florida Coordination Area Action Plan.*

**Response:** The District appreciates and shares the Department's concerns and will proceed cautiously with this project as the Department suggests. The area where Kissimmee River water would be utilized is most likely limited to Polk County.

**Comment:** *On Page 121 (Section 1, paragraph 1) and page 167 (Option 1, paragraph 2), the plan indicates the transferred water would come from the Kissimmee River, but on pages 123 (Section 5, paragraph 3) and 176 (Section 5, paragraph 1) the text says the transfer would involve groundwater. Please provide substantially more information on these possibilities.*

**Response:** It is not clear from your comment what questions or concerns you have regarding these options. In Chapter 1, Part B, and Chapter 6, Part B, there are summaries of other water supply planning efforts that were ongoing at the time the District prepared the 2006 RWSP. In compiling water supply options for the 2006 RWSP, staff felt it was important to recognize the options that were identified in those other planning efforts. In the plan developed for the Heartland Water Alliance (Polk, Hardee, Highlands, and DeSoto counties), water supply options involving both ground water and surface water in the SFWMD were identified. These options are summarized in Tables 6-11 and 6-15. As was discussed in the RWSP, these options would result in a transfer of water from one district to another. However, the water would generally be used in the same county in which the withdrawal(s) occurs. The District will supply the Department with a copy of the final report that was prepared for the HWA water supply planning effort.

**Comment:** *Please continue to coordinate very closely with the Department on the Tampa Bay Water Enhanced Surface Water System (pages 207-209).*

**Response:** The District has every intention of very closely coordinating this project with the Department.

**Comment:** *The plan refers (page 3, paragraph 3) to demand projections for the counties north of the planning region. Please provide this information to us.*

**Response:** This information will be sent to you but will not be included in the final version of the RWSP.

**Comment:** *We are unsure about what constitutes the NTB WUCA in the Plan. Compare the RWSP's Figure 1-1 (page 3) with Figure 3-1 (page 28), and both of these figures with the NTB WUCA map found in the BOR Figure 7.3-1, Chapter 40D-2, F.A.C. Figure 7.3-1 includes only portions of Pasco and Hillsborough Counties, as illustrated in Figure 3-1, rather than the entirety of these counties as seen in Figure 1-1.*

**Furthermore, in April 2006, the District created a new Water Resource Caution Area (WRCA) encompassing the portions of Hillsborough, Pasco and Polk Counties not already in the NTB WUCA or SWUCA. The new WRCA does not appear to be identified in the plan (Chapter 3, Part A, pages 27-33), and its defined area also seems to conflict with the boundaries shown in Figure 1-1. The significance of the new WRCA should be addressed in the plan.**

**Response:** There are several overlapping areas in the RWSP that have been delineated for different purposes. Figure 1-1 was not meant to show the NTB WUCA. It was included to show the SWUCA and the area where Tampa Bay Water's Central System Wellfields are located, that is commonly referred to as the Northern Tampa Bay (NTB) Area. Figure 3-1 depicts both the NTB WUCA and the SWUCA accurately. The area of the Planning Region that is not included in either of these WUCAs is the area that was designated as a Water Resource Caution Area (WRCA). This area was designated as a WRCA pursuant to recent amendments to Chapter 62-40.520(2) F.A.C. by the FDEP. The amendments require the water management districts to designate any area requiring a water supply plan as a WRCA. This designation enables the FDEP to require utilities in the area to conduct reuse feasibility studies. Staff will identify this area on Figure 3-1 and provide a brief description in the text of the final version of the RWSP.

For the benefit of local governments and water suppliers, the discussion of water supply options was broken out by planning areas. The planning areas encompass the service areas of Tampa Bay Water, the Peace River/Manasota Regional Water Supply Authority, and the Heartland Water Alliance, which is the group of counties that are working together to plan for water supply development. These areas are shown on Figure 6-1 of the plan. The reason the options were segregated by planning areas is explained in Chapter 6, Part B, paragraph 4.

**Comment:** *On page 30, it will take until 2025 to restore minimum levels to lakes in the Lake Wales Ridge and to the upper Peace River. Please explain why.*

**Response:** The goals of the SWUCA Recovery Strategy include restoring minimum levels on priority lakes along the Lake Wales Ridge and minimum flows in the upper Peace River by 2025. One of the major tools identified in the Recovery Strategy that will be used to achieve recovery is the significant reduction in ground-water withdrawals that is occurring in the basin as agricultural lands go out of production and discontinue the use of their permitted ground-water quantities. Benefits to the resource from land-use transitions, however, will occur gradually over an extended period of time. This is one of the reasons full recovery may not occur until 2025.

As described in Chapter 7 of the report, the District is also conducting several water resource development projects that will be used to help the lakes and the upper Peace River meet their minimum flows and levels. These projects include: the Lake Hancock Lake Level Modification project; the Upper Peace River Resource Development project; Effect of Karst Development on Peace River Flows investigation; and the Lake Lotela Pilot Augmentation project. The success of these projects will ultimately determine the time frame in which recovery will be achieved. It is anticipated that these projects will be completed and fully operational by 2025.

**Comment:** *Beginning on page 40 and throughout the document, the plan references different appendices that are not available in this draft. Please provide this information in the next version.*

**Response:** The appendices have been available on the District's web site since the end of September. They will not be part of the final version of the RWSP, but can be downloaded at any time from the District's web site.

**Comment:** *On page 45, please update the reference to the 1998 version of the Format and Guidelines to the 2005 version.*

**Response:** The document has been updated.

**Comment:** *There are differences among the demand projection data tables that should be clarified. We are not sure if these anomalies are related to the NTB WUCA delineation discussed in comment A-2, or if there is a different explanation.*

*As an example, compare Table 4-1 (page 48) with Table 4-7 (page 58). In Table 4-1, column 2, the Polk County total for the SWUCA (107.7 mgd) is the same as the Polk County total for the Ten-County Planning Region (107.7 mgd), and the SWUCA + NTB subtotals add up to the ten county grand total ( $440.0 + 51.6 = 491.6$  mgd).*

**Response:** Table 4-1 presents agricultural demand information, while Table 4-7 presents public supply demand projections. Within Table 4-1, the Polk County agricultural demands are the same for SWUCA and the 10-County Planning Region because all of Polk County's agricultural demands occur within the SWUCA. There is a small portion of northern Polk County that is located outside of the SWUCA and the NTB Area but inside the 10-County Planning Region. This portion of Polk County is located mainly in the Green Swamp where there are very few agricultural land uses.

**Comment:** *In Table 4-7, column 2, the Polk County total for the SWUCA (66.7 mgd) is different from the Polk County total for the Ten-County Planning Region (73.4 mgd),*

**Response:** Table 4-7 reflects that public supply demand occurs in the portion of Polk County that is inside the SWUCA and the small portion of northern Polk County that is outside of the SWUCA and NTB Areas but still in the 10-County Planning Region. It is the public supply demand in this northern portion of Polk County that is responsible for the discrepancy.

**Comment:** *The SWUCA + NTB subtotals do not add up to the ten-county grand total ( $204.5 + 274.2 = 485.4$  mgd).*

**Response:** Again, the discrepancy results from the fact that the northern portion of Polk County is not in the SWUCA and NTB areas but is in the 10-County Planning Region. This is made clear in the footnote to Table 4-11a.

**Comment:** *On page 61, subsection 2.2, last sentence, is unclear if the corresponding table (Table 4-9, page 62) is for landscapes only (since this text appears within the Landscapes subsection), or if the table includes data for both golf courses and landscapes (as indicated in the title).*

**Response:** Table 4-9 refers to the entire category of Recreation/Aesthetic Demands, as indicated by the title. The last sentence of Subsection 2.2 makes this clear.

**Comment:** *On page 68, it would be helpful to have grand totals for Table 4-12.*

**Response:** A grand total will be added to the final version of the RWSP.

**Comment:** *On pages 118-121, Part B, there should be a brief explanation of why some projects are highlighted in the subsequent subsections, while others are not. Currently, there is such an explanation for reclaimed water projects (page 121, Section 2, paragraph 2) that could be moved to an earlier location to address this concern. We suggest also adding this explanation to page 180, Part B.*

**Response:** Your concern has been addressed In Chapter 6, part B., at the bottom of paragraph 3 with the following text: *“A description of one or more representative options for each source is included that more fully develops the concepts and refines estimates of development costs. Due to space limitations, only a small fraction of the options were described in the text; the majority of the options are included in tables. Options that are described in the text are not necessarily considered by the District to have a higher priority than those in the tables.”*

**Comment:** *Throughout Chapter 6, pages 129 ff, the highlighted projects do not always appear in the corresponding table. One example is Option 1, Bradenton Agricultural Reuse, page 152, which doesn't seem to be in Table 6-8, pages 156-157. Similarly, highlighted projects that seem to appear in the corresponding table often have mismatching information, making it unclear if the project in the corresponding table is the same as or different from the highlighted project. An example is Option 2, Cow Pen Slough, pages 144-145, which has different Quantity Available (MGD) and Cost per 1,000 Gallons from either of the Cow Pen Slough projects in Table 6-4, page 147.*

**Response:** Let's use the Cow Pen Slough option as an example of how the options are set up. Three different options to produce water from Cow Pen Slough were developed. One of them was described in detail in the text to provide the reader with a better understanding of how such a project could be configured. The other two options were included in the tables. The options in the tables are configured differently than the one in the text and, therefore, have different costs, available quantities, and may even supply different user groups. The projects described in the text are never included in the tables.

**Comment:** *Perhaps related to this issue is the difficulty in identifying projects in Chapters 6 and 7 that correspond to the alternative water supply projects adopted by the Governing Board for Water Protection and Sustainability Program Trust Fund monies. Any assistance you could offer on how these lists correspond would be most appreciated.*

**Response:** Only projects that are under development have been allocated Water Protection and Sustainability Trust Fund (WPSTF) monies and these projects are listed in Chapter 8, Water Supply Projects Under Development. The projects in Chapter 6 are all potential water supply options that are not under development and none of these have been allocated WPSTF monies. The projects in Chapter 7 are water resource development projects and a number of these are receiving WPSTF monies.

**Comment:** *In Chapter 7, pages 180 ff, the plan periodically mentions the status of projects as scheduled for or expected by the end of 2004 or 2005. One example is page 185, Subsection 5.2 paragraph 1, next to last sentence. Please provide an updated status of these projects in the plan.*

**Response:** These projects have been updated in the final version of the RWSP.

**SWFWMD Responses to Tampa Bay Water (Paula Dye) Comments on the July 2006 Draft Regional Water Supply Plan**  
**Paula Dye**  
**Tampa Bay Water**

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**Chapter 1: Introduction**

**Comment Page 1, Second Paragraph. States that water users can select water supply options from those presented in the RWSP or different options “provided that such options are consistent with the RWSP.” What does this phrase mean? Consistent with the direction and intent of the RWSP?**

**Response:** The words “consistent with the direction and intent” have been added to the text.

**Comment: Page 5, First bullet under Section 1.0: Conservation is treated as a potential source of water in this planning document. We agree that water conservation is a very important part of water management but disagree that it should be considered a “water supply source” for public water supply planning purposes. From the perspective of a regional water supplier, continued conservation is not a given and if a conservation program is abandoned suddenly by the public, a water supplier could face serious water shortages (same comment on Page 69, Part A).**

**Response:** It is understood that from a water utility’s perspective, conservation is viewed as a means to serve more customers with a limited source and is not truly a “new “ source of water. However, the five water management districts and the FDEP agreed that water conservation is a source to be evaluated in the RWSP. By treating conservation as a source, with demand projections done in an unconstrained fashion, the RWSP allows for the quantification of future conservation and provides an impetus for conservation to be considered on equal footing with other, more traditional sources in meeting future demands. The prospect for a conservation program to be “abandoned suddenly” is very unlikely, as proven over the past two decades, if the program is well researched, planned and implemented.

**Comment: Page 6, last paragraph: Maximizing the use of alternative sources when available is a gross oversimplification of the realities of operating a public water supply system with different water sources. Agree with the concept but the statement should be along the lines of “maximizing the use of alternative sources when available and feasible recognizing the multiple constraints of a multi-source water supply system.”**

**Response:** The District certainly recognizes the complexities involved in operating Tampa Bay Water’s system and is well aware that a great deal of coordination must occur between the two agencies to optimize the conjunctive use concept. The last sentence in the guideline in question makes this clear: “The District will be working with water utilities and water supply authorities to explore the feasibility of implementing a conjunctive use approach to managing their water supplies.”

**Comment: Page 7, second paragraph. Discussion of the existence and utilization of the AMO in water supply planning. Since we do not know how long the current period of increased tropical precipitation will last, how is the District planning for alternative water supply sources during the next period of diminished tropical precipitation?**

**Response:** One of the principal ways the AMO was incorporated into this planning effort was to base estimates of surface water availability on the period 1965 to 2003, a period that mostly encompassed a cooler period, which corresponds to a dry phase of the AMO. This was discussed in Section 1.0 of Chapter 5. Using this period to assess surface water availability provided estimates of yields that are more likely to be sustained during low rainfall periods without causing impacts to natural systems.

**Comment:** *Page 9, third paragraph: Typo – please make a global search for the word “Tamp” and replace with “Tampa” – applies to the City of Tampa and Tampa Bay Water in multiple places.*

**Response:** Document has been corrected.

**Comment:** *Page 10, first full paragraph: The Tampa Bay Water desalination facility will be undergoing modifications through December 2006, not October 2006.*

**Response:** Document has been corrected.

### **Chapter 3: Resource Protection Criteria**

**Comment:** *Page 29, second paragraph: States the first 1994 SWUCA rule objective as “significantly halt saltwater intrusion.” Do you mean significantly reduce?*

**Response:** The rule does contain the phrase “significantly halt.” However, the District’s goal, as stated in the 2006 SWUCA Recovery Strategy, is more clear: “...reduce the rate of saltwater intrusion in coastal Hillsborough, Manatee, and Sarasota Counties by achieving the proposed minimum aquifer level for saltwater intrusion by 2025.”

**Comment:** *Page 31, third paragraph. Discussing Tampa Bay Water’s central wellfield system and reports a reduction in pumpage from a high of 158 to 90 mgd. Earlier you referenced the previous permitted quantity of 191 mgd. Are you making a distinction between permitted quantity and actual production?*

**Response:** The discussion on page 12 will be modified to make it consistent with the discussion on page 31 and the discussion contained in the Partnership Agreement regarding the “Phased Reductions” in combined pumping from the 11 central system wellfields from 158 mgd to 90 mgd by December 31, 2007.

**Comment:** *Page 41, Figure 3-3a. What are the dotted lines on the map? Please include in legend.*

**Response:** The dotted lines represent public supply wells that are generally dispersed and not located on large tracts of land such as the Starkey wellfield. The figure will be modified based on your comment.

**Comment:** *Page 43: Part “C” should be relabeled as Part “D”*

**Response:** Document has been corrected.

### **Chapter 4: Demand Estimates and Projections**

**Comment: *How are the local government and Water Supply Authority demand projections considered in the District's Process here? (see statement made on page 53, first paragraph below bulleted list)?***

**Response:** The basis of our demands starts with reports that water use permittees have submitted to the District in the form of the annual Public Supply Permittee Surveys required as a condition of their water use permit. The District's Planning Department also conducted a data query in 2003 wherein the planning departments within the counties of the District were forwarded a population survey requesting information on permanent and functional population projections.

For a full description of the District's methodology, please see the Technical Memorandum dated March 17, 2004. This can be viewed online at the District's website as an Appendix to Chapter 4. <http://www.swfwmd.state.fl.us/documents/plans/RWSP/appendix4.pdf>

Since the 2006 RWSP draft projections have been available for public comment, BEBR has published the "Projections of Florida Population by County, 2005-2030", BEBR, February 2006. The District is currently in the process of updating population projections using the most recent BEBR figures.

**Comment: *Page 45, first bullet item: 2001 was used as a base year for demands - wasn't this also a very dry year? Same comment on page 53, fourth paragraph.***

**Response:** The five Water Management Districts and the FDEP agreed to use certain methods for preparing the RWSP. This included using the year 2000 as a base year. However, the year 2000 was a relatively dry year in terms of precipitation. The relationship between public supply water use and the amount of annual precipitation is inverse (less rain results in increased water use, largely due to outdoor water use). This is confirmed by a higher district-wide average per capita water use rate in 2000 versus other recent years. Water use projections based on observed 2000 per capita rates would be higher than a reasonable average water use projection. While 2001 may have been a drier than normal year, it was less severe than 2000, and was the most recent published data available.

**Comment: *Page 54, second paragraph; The District's well construction database was used to develop the number of domestic irrigation wells. While this may well be the very best source of available data, our experience in the Brandon and South Central Hillsborough area has been that a query of this database will greatly underestimate the number of wells in the field.***

**Response:** The District contracted D.L. Smith & Associates to prepare an inventory of irrigation wells within the District, the result of which was the *Southwest Florida Water Management District Irrigation Well Inventory, August 12, 2004*. Although this report started with the District's well construction database as a first step, many other methods (such as using spatial GIS and FDEP data) were applied and the District is confident that all available data were comprehensively analyzed.

**Comment: *Page 63, top paragraph: Please add a statement that the 58 mgd needed for environmental recovery will meet interim goals but will not result in a "recovered" SWUCA ecosystem.***



**Response:** Staff believes the statement in the first paragraph after the Section 5, Environmental Restoration Sub-heading makes the point you suggest above. “*Environmental restoration comprises quantities of water that may need to be developed and/or existing quantities that need to be retired to help impacted natural systems meet their MFLs.*” Notice the emphasis on meeting MFLs as opposed to returning the system to pre-development conditions.

**Comment:** *Page 65, Table 4-11a: Please recheck sums on table. The last line before the overall sums (Restoration for the entire Planning Region) sums incorrectly. It should be 132.0 mgd, not 124.0 mgd.*

**Response:** Document has been corrected.

### **Chapter 5: Meeting and Managing Future Water Demands**

**Comment:** *Page 70, first paragraph. For the average quantities presented, what are the time periods for each? Are they the same: (Comment applicable throughout this chapter)*

**Response:** The time periods vary and are noted in the discussions of each respective water body in Section 1 of Chapter 5. The variability in time periods used was due to the lack of available data for some surface water sources.

**Comment:** *Page 71-72, Table 5-1: Is it possible to use consistent dates for each average flow/quantity reported? If not, please footnote to show date ranges.*

**Response:** See previous comment. Also, footnote number 1 addresses this question as well, though it appears some sources may not be included. The footnote will be revised to indicate the period used for all sources in Table 5-1.

**Comment:** *page 84, third paragraph: The cost of ZLD is presented as \$3.00/kgal of total product water – does this include disposal costs for the dry salts?*

**Response:** No, the cost of ZLD does not include the costs associated with the disposal of dry salts.

**Comment:** *Page 95, fourth paragraph: The Mid Pinellas Brackish RO project may be technically feasible but if not developed by Tampa Bay Water at this point in time, the project will likely become infeasible due to infrastructure limitations in this urbanized area. Consider removing these quantities from the total quantity available in this paragraph.*

**Response:** Tampa Bay Water’s Board recently voted to keep this project on the Master Water Supply Plan list. Therefore, the possibility exists that the stated quantities could one day be developed in the area.

**Comment:** *Page 99, top paragraph: add phrase in sentence: “As discussed previously, the reduction in ground-water use resulting from land-use transitions and the purchase of conservation lands with water use permits is projected to be approximately 84 mgd.*

**Response:** Document has been corrected.

### **Chapter 6: Water Supply Development Component**

**Comment: Page 117, first bulleted item: Only alternative water supplies can be proposed to meet a local government's future water supply needs? No "traditional" water supply source will be considered/accepted even if available?**

**Response:** This language was taken directly from Senate Bill 444 that was passed in the 2005 legislative session. It is likely that your question could best be answered by the FDEP Office of Water Policy staff.

**Comment: Page 125, third paragraph: States that Tampa Bay Water's Downstream Augmentation Project is presented as a stand-alone option in the reclaimed water section of this chapter." Could not find this stand-alone reference in the reclaimed water section.**

**Response:** This project was originally placed in Chapter 6; the Water Supply Development Component. It was later realized that the project needed to be moved to Chapter 8; Water Supply Projects Under Development. The sentence you identified above was inadvertently left in the text of the draft of the RWSP and has now been removed.

**Comment: Page 125, fourth paragraph: States that Tampa Bay Water's ESWS can deliver approximately 260 mgd to the reservoir. This is a typographical error. The correct number should be approximately 120 mgd to the reservoir.**

**Response:** Document has been corrected.

## **Chapter 7: Water Resource Development Component**

**Comment: Page 185, third paragraph: References District projects scheduled to be completed by the end of 2005. Can you provide an updated schedule?**

**Response:** The schedule will be updated in the final version of the RWSP.

**Comment: Page 186, second paragraph: References 19 water resource development projects. The number should be 17 as reflected in this paragraph and in the referenced tables.**

**Response:** A re-evaluation of this section indicates a total of 18 water resource development projects.

**Comment: Page 186, bottom paragraph: Please perform a global search for "Florida aquifer" and correct.**

**Response:** Document has been corrected.

**Comment: Page 187, Table 7-2. Please correct lettering scheme for projects – use consecutive letters. Also, on following pages, the lettering system used as paragraph headings to describe each project does not match the lettering system on the table.**

**Response:** Document has been corrected.

**Comment: Update project status: Page 191, top paragraph**

***Page 191, second paragraph  
Page 192, top paragraph  
Page 198, third paragraph***

**Response:** An updated status of these projects will be provided in the final version of the RWSP.

**Comment: *Page 196, top paragraph: Correct reference should be to Table 7-3, not 6-3.***

**Response:** Document has been corrected.

**Comment: *Page 200, table 7-4: Correct lettering for projects; add USEPA as a funding source for the Section 21 Wellfield Rehydration Pilot Project.***

**Response:** Document has been corrected.

**Comment: *Page 201, second paragraph. Please obtain an updated project status from Doreen Chan for the Section 21 Wellfield Rehydration Pilot Project.***

**Response:** The status of the project will be updated in the final version of the RWSP.

**Comment: *Page 202, Item D. Please correct references to reflect that the cooperative funding agreement between Tampa Bay Water and the District has been executed for the Cypress Creek Wellfield Surface Water Management Project.***

**Response:** Document has been corrected.

### **Chapter 8: Water Supply Projects Under Development**

**Comment: *Page 203, first three paragraphs: It is confusing to the reader to discuss projects under development and include projects that have been completed and are operational in this discussion. Could you include another distinction – projects completed since the 2001 RWSP? (Similar comment on first paragraph of page 229 – Chapter 9).***

**Response:** Staff believes that the definition of “projects under development” which is provided in the first paragraph of Chapters 8 and 9, makes it clear that completed projects are included in this category. As requested, the words “completed since the year 2000” will be added after the project title of projects that have been completed.

**SWFWMD Responses to Tampa Bay Water (Dave Bracciano) Comments on the July 2006 Draft Regional Water Supply Plan**  
**Dave Bracciano**  
**Tampa Bay Water**

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**Comment:** *Could the District add some language to the RWSP that promotes the use of High Efficiency Toilets (HET's) and specific information about the enhanced specifications for testing and flush ability.*

**Response:** Although HET's were not evaluated in the RWSP, the District will provide a general description of HET's including water savings and the specifications that are being developed. The purpose of the additional language will be to provide information regarding HETs as an additional option, or an option to consider in place of Ultra-Low Volume (ULV) Toilets.

**Comment:** *Did your calculation of savings for ULF toilets get modified to reflect actual researched and quantified savings? As I recall, your savings reflected a high average number of flushes per person per day and a simple but elevated calculation for water savings per person.*

**Response:** For the purposes of the RWSP, the water savings for the water conservation measures, including ULV toilet rebates, were determined by using the work of Ayres Associates (2000), and other data available to the District (Chapter 6, page 124). The District also used the ULF toilet rebate savings rate provided in the Potable Water Conservation Best Management Practices for the Tampa Bay Region Final Report, September 2004. The information generated by Ayres Associates for the conservation measures, was reviewed updated based on current population, household and per capita estimates, and extrapolated through 2025, for the 2006 RWSP (Chapter 5, page 100). It was assumed that an average of 1.4 rebates would be issued per single-family program participant, 1.3 rebates would be issued per multi-family program participant and 4.2 for the nonresidential category (Chapter 6, page 138). The water savings was calculated in gallons per measure per day, taking into account the number of rebates per residence/establishment and the persons per household for each county utility.

**Comment:** *The use of retrofit kits in the future will probably need to be eliminated due to natural replacement of fixtures occurring. Is that reflected in your calculations?*

**Response:** Since there are older homes that exist with older plumbing devices, the District considers plumbing retrofit give-aways to be a viable option for water conservation at this time. The District acknowledges your comment and it will be considered for future RWSPs.

**Comment:** *From previous conversations, you know the Energy Policy Act of 2005 required the use of 1.6 gpm pre-rinse spray valves. Are you going to describe this in the report?*

**Response:** A description will be added in the portions of the RWSP that draw attention to the valves as a potential option. It is agreed that the section of the Energy Policy Act of 2005, specifically the new requirement for all pre-rinse spray valves manufactured on or after January 1, 2006 to have a flow rate of not more than 1.6 gallons per minute, is a significant development that should be discussed. It should be also noted, however, that there is no companion legislation that requires valve users to select and install the efficient devices over those manufactured elsewhere.

**SWFWMD Responses to Tampa Bay Water (Black and Veatch) Comments on the July 2006 Draft Regional Water Supply Plan**  
**Paula Dye, Project Supervisor**  
**Tampa Bay Water**

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**Comment:** *Chapter 1. Introduction. Page 1, fifth sentence. The words "and economic perspective" should be deleted. The report states that "Because sources within the Planning Region are sufficient from a technical and economic perspective to meet these demands, the District's major focus for meeting demands has been on sources within the Planning Region." The cost of new water supplies continues to rise, and to our knowledge there has been no economic analysis which demonstrates that sources are sufficient from an economic perspective. While the overall Planning Region may have sufficient water, there are localized demand and supply imbalances. Some public water service areas do not have adequate potential water supply projects within the service area, which could mean relatively high costs.*

**Response:** Staff believes it is valid to include the "economic perspective" language. All of the water supply development options in Chapter 6 have undergone a financial analysis that has provided information such as capital cost, cost per mgd, annual operation and maintenance costs, etc. Comparing this information to the costs of water supply projects that have recently been built, gives a general indication of what costs are reasonable or economically feasible for each type of water supply option. If the cost of a water supply option fell well outside of this range, it was not included in the RWSP. Admittedly, this is a rather subjective method of evaluating economic feasibility. However, as the cost of water supply projects continues to increase, and as all the "easy" options in the RWSP are developed, options that are more expensive and more difficult to develop are likely to be included in subsequent updates of the RWSP.

**Comment:** *Page 13, Section 4, first sentence. The identified quantity of new water meets the projected demands; however, in lieu of describing this new water as "restoring" minimum flows and levels, could be better worded to "allow impacted natural systems to be restored."*

**Response:** The quantities of new water identified for the Environmental Restoration category in Chapter 4 are what is necessary to meet the minimum flow and level of a water body. This is not the same as the quantity of water necessary to restore an impacted natural system.

**Comment:** *Part A., Bulleted list. One key component that should be added to the list is developing the plan in coordination with local water supply authorities. Joint development with regional water supply authorities was added in 2004 and confirmed in 2005 legislation.*

**Response:** Text has been modified as suggested under Part A., Section 3, 2.0, Guiding Principles Developed Since Completion of the 2001 RWSP.

**Comment:** *Page 125. NTB Planning Area Surface Water/Storm Water Option #1: Updated cost estimates for this option are being finalized now and will be provided to you under separate cover.*

**Response:** Document will be modified as you suggest.

**Comment: Page 126. The Starkey Ecosystem Enhancement Project option description furnished by Tampa Bay Water appears to be missing from the text. The project is listed in Table 6-1, but the writeup is not in the text.**

**Response:** As explained in the text in Chapter 6, Part B., paragraph 4, a write up on one or more representative options for developing a given water source is included in the text and all the remaining options for developing that water source are included in the table. For the Northern Tampa Bay Surface Water Storm Water options, a write up for the Downstream Enhancement project was included and all other NTB Surface Water Storm Water options were included in Table 6-1. The text has been modified as follows to make this more clear: “A description of one or more representative options for each source is included that more fully develops the concepts and refines estimates of development costs. Due to space limitations, only a small fraction of the options were described in the text; the majority of the options are included in tables. Options that are described in the text are not necessarily considered by the District to have a higher priority than those in the tables.”

**Comment: Page 129, Part C, Section 1. At the end of section 1, there should be a section on System Interconnect Projects for the NTB Planning Area, as previously commented on. A writeup is included.**

**Response:** A table has been included in Chapter 6 at the end of Section 1, that includes all of the system interconnect and improvement options that are not yet under development. Those that are under development are included in Chapter 8.

**Comment: Page 133, Table 6-3. Mosaic Reclaimed Exchange should be added to the table as an option.**

**Response:** This project has been added to the final version of the RWSP.

**Comment: Page 135. The Downstream Augmentation Project option description furnished by Tampa Bay Water appears to be missing from the text. The project is listed in Table 6-3, but the write up is not in the text, although it is referenced on page 125. Updated cost estimates for this option are being finalized now and will be provided to you under separate cover.**

**Response:** The write up for the project is now in Chapter 8; Water Supply Projects Under Development, Part A., Section 2, 1.0 NTB Area Reclaimed Water.

**Comment: Page 135, NTB Panning Area Seawater Desalination Option #1 – Big Bend costs need to be updated as follow:**

| Quantity Produced (mgd) | Capital Cost  | Capital Cost (District's Share) | Cost Per MGD | Cost per 1,000 Gallons |
|-------------------------|---------------|---------------------------------|--------------|------------------------|
| 25                      | \$158,430,000 | \$85,000,000                    | \$6,337,200  | \$3.01                 |

**Response:** Costs have been updated as you suggest. Please note that per recent discussions with staff from TBW, the final report will cite a cost per 1,000 gallons of \$3.19.

**Comment: Page 135, NTB Panning Area Seawater Desalination Option #2 – Big Bend Expansion costs need to be updated as follows:**

| Quantity Produced (mgd) | Cost per 1,000 Gallons |
|-------------------------|------------------------|
| 10                      | \$3.01                 |

**Note:** A detailed engineering estimate for the Desalination Expansion project has not been developed at this time. For the purpose of this table, it is assumed that the unit cost for the Desalination Expansion project would be the same as the unit costs for the Seawater Desalination project.

**Response:** Costs have been updated as you suggest. Please note that per recent discussions with staff from TBW, the final report will cite a cost per 1,000 gallons of \$3.19.

**Comment:** Page 136, NTB Planning Area Seawater Desalination Option #3 – Anclote Power Plant costs need to be updated as follows:

| Quantity Produced (mgd) | Capital Cost  | Cost Per MGD | Cost per 1,000 Gallons | Annual O & M |
|-------------------------|---------------|--------------|------------------------|--------------|
| 25                      | \$182,500,000 | \$7,300,000  | \$2.52                 | \$10,180,000 |

**Response:** These costs have been updated as you suggest.

**Comment:** Page 137. The cost per 1000 gallons for the Mid-Pinellas Brackish project was modified from the Tampa Bay Water furnished cost of \$3.17 per 1000 gallons. The text identifies that some costs were modified.

**Response:** The “Cost per 1,000 Gallons” has been changed to \$3.17 per 1000 gallons.

**Comment:** Chapter 6, Part C, Section 1 Addition (page 129 just prior to Section 2): NTB Planning Area – System Interconnect Projects. Included in the list of projects identified as part of Tampa Bay Water's ongoing water supply planning efforts are several projects that will develop critical components of the regional water supply distribution system. The projects are pipeline and booster pumping station projects. Implementation of these projects will further regionalize the potable water supply system by providing transmission of water from areas of supply to areas of demand, increasing the rotational reserve capabilities and providing redundancy of water supplies during emergency conditions.

**NTB Planning Area Tampa Bay Water System Interconnects Project 1 – NW Hillsborough Pipeline.** This 10,000-ft, 36-inch diameter pipeline will allow supply from Tampa Bay Water's regional system to be delivered to the NW Hillsborough WTP. Currently, the NW Hillsborough WTP is dependant on supply from the NW Hillsborough Wellfield. As the demands at the NW Hillsborough WTP continue to grow, the NW Hillsborough Wellfield will no longer have sufficient capacity to keep up with the demand. Connecting the NW Hillsborough WTP to Tampa Bay Water's Regional System will reduce its dependence on the NW Hillsborough Wellfield, and allow alternative water supplies to be delivered to the WTP. The estimated capital cost for this pipeline is \$8,050,000.

**NTB Planning Area Tampa Bay Water System Interconnects Project 2 – South-Central Hillsborough Infrastructure Improvements Project (SCHIIP) – Phases IB and II.** The series of improvement projects will allow Tampa Bay Water to deliver supply from the

***regional transmission system to the South-Central Hillsborough service area. Currently, the South Central Hillsborough service area is highly dependant on supply from the South Central Hillsborough Regional Wellfield (SCHRWF). As the demands in this service area increase, the SCHRWF will no longer have sufficient capacity to keep up with the demand. Implementation of the SCHIIP Phase IB and II project will reduce this service area's dependence on supply from the SCHRWF, and allow alternative water supplies to be delivered to the South Central Hillsborough service area. The estimated capital cost for the series of projects included in SCHIIP Phases IB and II is \$12,060,000.***

***NTB Planning Area Tampa Bay Water System Interconnects Project 3 – Morris Bridge Booster Pumping Station Improvements. This project will allow Tampa Bay Water to maintain the original design capacity of this booster pumping station. Improvements to the pumps at this booster pumping station are required due to the higher regional system pressures that are anticipated as more alternative supply source capacity is implemented in the southeastern portion of Tampa Bay Water's system. The estimated capital cost for the Morris Bridge Booster Pumping Station Improvements is \$2,000,000.***

***NTB Planning Area Tampa Bay Water System Interconnects Project 3 – Cypress Creek Pumping Station Improvements. This project will increase the pumping capacity of the Cypress Creek Pumping Station. Additional pumps will be required at this facility to handle the increasing demands and supplies of the regional transmission system. The estimated capital cost for the Cypress Creek Pumping Station Improvements is \$2,000,000.***

**Response:** The system interconnect options listed above that are under development will be included in Chapter 8 and those not under development will be included in Chapter 6.



**SWFWMD Responses to Peace River/Manasota Regional Water Supply Authority  
Comments on the July 2006 Draft Regional Water Supply Plan  
Mike Coates P.G.  
Peace River/Manasota Regional Water Supply Authority**

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***Comment: Please include an Executive Summary: Due to the high level of detail included in the plan, incorporating an executive summary would be very helpful in conveying the Water Supply Plan key messages and findings. One critical item that should be included in the executive summary is a discussion of the statutory requirements (Chapter 373.0361 F.S.) for local government reporting associated with District adoption of the Water Supply Plan.***

**Response:** An executive summary will be included in the final version of the RWSP that will be taken to the Governing Board for approval at their November 30/December 1, 2006 meeting.

Regarding the inclusion of a discussion of the statutory requirements (Chapter 373.0361 F.S.) for local government reporting associated with District adoption of the water supply plan, such a discussion is found on the first page of Chapter 6 in the RWSP.

***Comment: The Water Supply Plan should identify an entity responsible for implementation of each project included therein (where possible): The current plan structure identifies projects within planning areas such as the PR/MRWSA planning area, but does not specifically identify the entities responsible for implementing listed projects within the area. Chapter 373.0361 (3) requires specific provisions to be included for each project in District Water Supply Plans, including identification of the entity that should implement each project option. Recognizing that an implementing entity might not be known for every project, this information is known in many cases, such as in Authority's future water supply projects, and thus should be included in the plan. In addition to the statutory requirement to include this information, identification of the entity responsible for each project would clarify the District's expectations on supply project development, streamline the permitting of these new supplies, and aid local governments in the process of meeting water supply project reporting requirements in Chapter 373.0361 F.S.***

**Response:** Staff has now modified the text to identify the most appropriate entity or entities for implementing each of the water supply options in Chapter 6.

***Comment: The District should consider a policy/practice of updating components of the Water Supply Plan on a more frequent basis than every 5 years: The statutory timeframe requirement for updating water supply plans is approximately every five years. Considering growth and development conditions in southwest Florida, the new implementation of SB 444 and HB360, potential water supply project changes, and the planning efforts of supply entities in the area, the District should consider updating plan components such as population projections in rapid-growth areas, and water supply projects on an "as-needed basis" between major five-year plan updates. As an example, consider the Master Water Supply Plan that the PR/MRWSA is currently developing, which will be completed in early 2007; not in time to meet the District's statutory deadline (12/31/06) for completion of the Regional Water Supply Plan. Under these circumstances the District Water Supply Plan would not include the most up-to-date project information from the Authority's 2007 Master Water Supply Plan, until the next scheduled update of the District's Plan in 2011. Chapter 373.0361 requires that "The water supply development component of a regional supply plan which affects public utilities and***

***public water supply for those areas served by regional water authority and its member governments within the boundary of the Southwest Florida Water Management District shall be jointly developed by the authority and the district." Considering the circumstances stated above, the Authority requests that the District conduct "as needed" updates of Regional Water Supply Plan components on a more frequent basis than every five years.***

**Response:** The District would like to work with water supply utilities and population projection experts to develop a consensus on an improved projection methodology. Such a methodology could be employed more frequently than every five years to maintain a better understanding of population trends.

Regarding frequent updates to the portion of the RWSP that deals with water supply projects, the District does not see a need for this since water supply projects that are not included in the 2006 RWSP could still receive District and state funding as long as they meet the necessary criteria. In addition, staff believes that the projects the Authority is proposing for development for the next 20 years have been included in the RWSP in significant detail.

**Comment: *Please clarify whether a project must be listed in the 2006 (or most recent) Water Supply Plan in order to be eligible for State of Florida Water Protection and Sustainability Program (FWPSP) co-funding: The South Florida Water Management District has a general requirement that only AWS projects included in the Water Supply Plans are eligible for FWPSP co-funding. There is no mention in the SWFWMD Regional Water Supply Plan of this District's policy or practice to such co-funding eligibility requirements.***

**Response:** Although language in Senate Bill 444 implies that state funding can only be applied to projects listed in a Water Management District's RWSP, the FDEP has interpreted this language to mean that projects not in the RWSP can receive state funding as long as the project concept is specifically listed in the RWSP. For example, a reclaimed water project sponsored by a local government could receive state funding even if it is not specifically listed in the RWSP because the reclaimed water concept is very clearly delineated and encouraged in the District's RWSP.

**Comment: *Please clarify the District's position on Intermediate Artesian Aquifer Development opportunities in the SWUCA: The Regional Water Supply Plan treatment of new water availability from the IAS is somewhat disjointed throughout the document and seems generally inconsistent with the findings of the District's 2005 study entitled "Assessment of Minimum Levels for the Intermediate Aquifer System in the SWFWMD." The Water Supply Plan suggests that very limited supplies are available from the intermediate aquifer system (IAS), yet the aforementioned District's 2005 study results showed the IAS to be a potential supply source for small to moderate withdrawals that could generally be developed with minimal environmental effect, and no significant impact on saline water intrusion in the Floridan Aquifer within the SWUCA. In an area where new Floridan Aquifer groundwater development is extremely limited, it appears from the 2005 study that the IAS has the potential to become an important source, particularly for brackish groundwater supply in the future. This seems inconsistent with the overall discussion of IAS availability in the Water Supply Plan and should be clarified.***

**Response:** The 34 mgd identified in the RWSP as being available from the IAS and surficial aquifer system (SAS) was determined by identifying the types of demands that are projected to

occur through 2025 that could be met using relatively low yielding wells supplied by the SAS or upper portion of the IAS. The types of demands that were identified included domestic self-supply, recreation, and outdoor lawn watering associated with public supply uses. The District recognizes that additional water from the SAS and IAS, beyond the 34 mgd indicated in the RWSP, is potentially available over portions of the SWUCA. However, the determination that the SAS and IAS can supply 34 mgd for users whose demands can be supplied by relatively low yielding wells, provides a conservative minimum amount of water that could be developed from these two systems.

Regarding brackish ground-water supply and the lower portion of the IAS, the 2005 study indicated that in general, there is moderate-to-good hydraulic connection between the lower portion of the IAS and the Upper Floridan aquifer. It is also evident that this connection can vary on a site-specific basis. In the future, requests for new withdrawals from the lower portion of the IAS would need to be evaluated based on projected impacts to the Upper Floridan aquifer. Given the proximity of the MIA and generally good connection with the Upper Floridan aquifer, this could be problematic for major expansion of withdrawals from this zone.

***Comment: Public water supply demand projections for the PR/MRWSA service area should be reconciled between the District, the Authority and Authority members and customers: The District's public water supply demand projects for Authority customers and members are approximately 82 mgd lower in 2025 than the demand projections made by Authority customers and members. The Authority is holding a workshop on September 29, 2006 in Sarasota with its members as a step toward reaching consensus on population and demand projection methodology. Considering the 82 mgd demand difference in 2025 it would be prudent for the District, Authority, and member government staff to meet and discuss population and water demand projection methodologies in an effort to reconcile the difference. The District has recognized (section 3.0 page 59) that in some high-growth areas additional tools will be necessary to refine demand projects. We recommend that the PR/MRWSA service area be included in that effort. If not quickly addressed, the significant difference in District and Authority member demand projections has the potential to delay or derail future water supply development, permitting, and funding decisions. On a specific note, the 5-in-10 demand projection for 2025 in Table 4-5 (page 55) for the Authority's members do not match the same projections in Table 4-7 (page 58). Review of the text does not provide any rational for the difference.***

**Response:** The five Water Management Districts are required by the legislature to use the Bureau of Economic and Business Research (BEBR) medium population projections for projecting public supply water demand. District staff has confidence in BEBR projections for a number of reasons, among which is their ability to identify potential trends. The District can modify the water demand projections only if the Authority or its member governments provide population data to support claims that water demand will be higher. This was discussed at length with the Authority and its member governments during the development of the demand projections over the past several years. When the water demand projections were first reviewed during the Water Planning Alliance process, alternative population projection data were provided by Manatee County and Charlotte County. These data projected growth over the next 20 years based on the phenomenal period of growth that occurred in the region over the past few years. Because it is already becoming apparent that the rate of growth is slowing significantly, the District believes that the counties data may significantly over project demand for water through 2025.

An independent evaluation by HDR engineering prepared for the Water Planning Alliance supports the relative historical accuracy of BEBR population projections. During the workshop you reference, held on September 29, 2006, HDR showed that the actual average (long-term) population growth rate for the Authority's service area was 3.1 percent per year. This figure is significantly lower than the population growth rates provided by the Authority's member governments.

Since the 2006 RWSP draft was prepared, BEBR has published the "Projections of Florida Population by County, 2005-2030", February 2006. The District is currently in the process of updating the water demand projections in the RWSP using this more recent BEBR population data. It is expected that the latest BEBR population data will account for the recent high growth period and this will result in higher water demand projections. However, these projections will still be considerably below those of the Authority's member governments.

Finally, as stated previously, because the District shares the Authority's concern for how critically important accurate public supply demand projections are, staff would like to work with water supply utilities and population projection experts to develop a consensus on an improved projection methodology. Such a methodology could be employed more frequently than every five years to maintain a better understanding of population trends.

Regarding your concern that the demand projections do not match in subsequent tables: Table 4-5 represents Public Supply (PS) and Domestic Self-Supply (DSS) Demand Projections, whereas table 4-7 represents the Public Supply Demand Projections for the entire Planning Region. The cumulative Public Supply Demand Projections in Table 4-7 include demands from PS, DSS, and Domestic Irrigation Wells (the sum of demands in Table 4-5 for PS and DSS and in Table 4-6 for Domestic Irrigation Wells = Planning Region Demands in Table 4-7). District staff will incorporate text into the 2006 RWSP to make this distinction more clear.

**SWFWMD Responses to Rich Rollo Comments on the July 2006 Draft Regional Water Supply Plan.  
Rich Rollo  
Englewood Water District**

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***Comment: As you are well aware, population projections drive utility capital expansion projects in an effort to have public water supply capacity available when needed. On page 55, it appears the Charlotte County population growth is projected at slightly less than 2% per year, for a total increase of 51% over 25 years (and Sarasota even less). This projection does NOT appear to consider the potential impact baby-boomer retirements may have on the future population, especially in coastal counties. I have heard that 20% of retirees have historically retired in Florida. If 20% of baby-boomers retire in Florida, the State population could almost double in the next 20 years. This could double the 51% projection for Charlotte County in the Plan. The impact of baby-boomer retirement is a new phenomenon that departs from historical projections. I fear the Plan may significantly under-estimate future domestic water supply demand as drafted if baby-boomer retire to Florida in large numbers.***

**Response:** The five Water Management Districts are required by the legislature to use the Bureau of Economic and Business Research (BEBR) medium population projections for projecting public supply water demand. District staff has confidence in BEBR projections for a number of reasons, among which is their ability to identify potential trends such as the retirement of the baby boomers. The District can increase the water demand projections only if it is provided with credible data to support claims that water demands will be higher. This was discussed at length with the Authority and its member governments during the development of the demand projections over the past several years. When the water demand projections were first reviewed during the Water Planning Alliance process, alternative population projection data were provided by Manatee County and Charlotte County. These data projected growth over the next 20 years based on the phenomenal period of growth that occurred in the region over the past few years. Because it is already becoming apparent that the rate of growth is slowing significantly, the District believes that the counties data may significantly over project demand for water through 2025.

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Because the District shares your concern for how critically important accurate public supply demand projections are, staff would like to work with water supply utilities and population projection experts to develop a consensus on an improved projection methodology. Such a methodology could be employed more frequently than every five years to maintain a better understanding of population trends.

