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## Southern Planning Region

**Peace River Manasota Regional Water Supply Authority, Mike Coates, Water Resources Division Director**

*Enclosed are the Peace River Manasota Regional Water Supply Authority's comments on the District's draft 2010 Regional Water Supply Plan (Southern Planning Region). We appreciate the update on development of the Plan that you provided to our Board in May, and the opportunity for the Authority to participate in development and review of the Regional Water Supply Plan. I hope the District staff will find these comments helpful.*

1. **Comment:** Chapter 2, Page 23, Section 3 (Technical approach to the establishment of MFL's) Paragraph 1: The threshold regime discussed would most likely show changed amplitude in flows (lower highs, lower lows, etc.) rather than changed frequency in highs and lows.

**District Response:** The section referring to the Technical Approach to the Establishment of MFLs has been revised in each volume to read: "The District's approach to establishing MFLs assumes that hydrologic regimes that differ from historic conditions exist, but those regimes will protect the structure and function of aquifers and other water resources from significant harm. For example, consider a historic condition for an unaltered river or lake system with no local ground or surface water withdrawal impacts. A new hydrologic regime for the system would be associated with each increase in water use, from very small withdrawals that have no measurable effect on the historic regime to very large withdrawals that could markedly alter the long-term hydrologic regime. A threshold hydrologic regime may exist that is lower than the historic regime, but which protects the water resources and ecology of the system from significant harm. The threshold regime, resulting primarily from water withdrawals, would essentially preserve the natural flow regime, but with changes to the amplitude in flows that reflect a general lowering across the entire flow range. The purpose of establishing MFLs is to define the threshold hydrologic regime that would allow for water withdrawals while protecting the water resources and ecology from significant harm. Thus, MFLs represent minimum acceptable rather than historic or optimal hydrologic conditions."

2. **Comment:** Chapter 2, Page 27, Part D (Reservations): This section indicates that the District is considering development of an off-stream reservoir on the upper Peace River in order to provide the additional flow needed to meet the upper Peace River minimum flow. Is this project still under consideration?

**District Response:** Staff was directed by the Governing Board in March 2010 to discontinue negotiations with respect to a specific reservoir site. However, the District continues to implement projects consistent with the SWUCA Recovery Strategy, which calls for an adaptive approach to restoring flows to meet established minimums. With respect to the upper Peace River, following the implementation of the Lake Hancock project, the District will monitor flows and determine if additional projects identified in the SWUCA Recovery Strategy (which may include a potential off-stream reservoir) are needed to achieve the minimum low flow. In order to better

reflect this adaptive management approach, Part D has been revised to read: “For example, in the upper Peace River actual flows are below the minimum flow established by the District. The District is implementing minimum flows and level projects as described in the SWUCA Recovery Strategy. The District is currently undertaking a project to raise water levels on Lake Hancock to provide a significant portion of the additional flows needed to meet the minimum low flows in the upper Peace River. Following implementation of the Lake Hancock project, the District will monitor flows and determine if additional projects are needed to achieve the minimum low flow for the upper Peace River. The District initiated rulemaking in May 2009 with the intent of reserving from permitting the quantity of water that will provide the flow necessary to meet the minimum low flows in the upper Peace River. When a reservation is established and incorporated into Rule 40D-2.302, F.A.C., only those water use withdrawals that do not reduce the reserved quantity can be evaluated for permitting.”

- 3. Comment:** *Chapter 3, Page 31, Water Demand Projections: On the whole, demand projections made by the District are reasonably close to the aggregate (sum total) increase projected by the Authority's customer governments for the timeframe shown. However, for individual customer governments the projection differences are more pronounced, particularly for the smaller users like DeSoto County. In communities such as DeSoto, the use of a linear projection method based on past use may not reflect a realistic projection of future demand change. For example, one new average sized subdivision developed in such a community could cause demand to increase by over 25% in a matter of a very few years. There are multiple developments proposed in DeSoto County. This comment is provided to ensure that when District permitting staff considers new public water supply source development they not rely solely on the District demand projections, but consider appropriate local conditions as well.*

**District Response:** The District concurs and the permitting staff considers multiple factors and conditions during permitting. It is important to note that the District considers all projections to be “snapshots in time.” All public supply projections are based on the current Land Use Maps for each utility and any changes in the maps completed after the projections are considered during the Water Use Permit renewal or modification period. Other items that would adjust the projections that are considered by Regulatory during the WUP renewal stage include Development Orders, Conceptual Site Plan Approvals, Environmental Resource Permits (ERPs), Buildout Schedules for DRI and Non DRI Developments, Letters of Commitment to Serve Developments, Ten-Year Facility Water Supply Plans, Developer Water Supply Infrastructure Provisions and/or Water Supply Impact/Contribution in Aid to Construction Fees. Together, these items ensure appropriate local conditions are considered and included in all future WUPs.

- 4. Comment:** *Chapter 4, Page 49, Evaluation of Water Source: The 1985-2005 estimated average flow in Cow Pen Slough is listed as 32.9 mgd. The text indicates that based on the established MFL, 32.9 mgd would be available from Cow Pen Slough. Just to confirm – is all flow in Cow Pen Slough considered excess flow and therefore available for harvest?*

**District Response:** Consistent with the current adopted minimum flow, all flow above the structure CPS-2 is available for use. This could change if the District reevaluates the minimum flow in the future.

5. **Comment:** Chapter 4, Page 51, Evaluation of Water Sources: Include the fact that the Peace River Water Treatment Facility was expanded from 24 mgd to 48 mgd. The existing text simply indicates that it was expanded to 48 mgd. Including the 24 mgd previous capacity provides context (plant capacity doubled).

**District Response:** The document has been revised to include the suggested text .

6. **Comment:** Chapter 4, Page 53, Evaluation of Water Sources, Table 4-1: Table 4-1 shows Peace River water treatment facility withdrawals of 14.9 mgd average from 2003 – 2007. This should be updated through May 2010. Withdrawals will increase with the additional storage recently completed and the increased contract deliveries from the plant. CY 2008 through May 2010 average river withdrawals at the PRF have been 20.03 mgd.

**District Response:** Average surface water use for all water bodies was calculated for the same time period (2003 to 2007). This time period was chosen to ensure the annual average captured complete years of permittee-reported use when the RWSP update began in January 2009. The following sentence has been added, based on the comment, to indicate current use is higher than the 2003 through 2007 average and the PRMRWSA is growing into the permitted quantity. “Average annual withdrawals by the PRMRWSA during the period 2003 to 2007 were 14.9 mgd and in recent years have been 20.0 mgd.”

7. **Comment:** Chapter 4, Page 62, Evaluation of Water Sources: This section indicates that "The District has recently completed a study to better assess the geology of the Intermediate Aquifer and to determine whether new wells would distribute capacity and allow increased withdrawals...". Please provide the completion date and a citation for the study.

**District Response:** The following reference has been added to the document:  
“PBS&J, 2009. Well Construction and Testing Summary Report, T. Mabry Carlton Jr. Memorial Reserve Wellfield Well Sites Nos. 59 and 60, Winter 2007/Spring 2008. Consultant’s Report submitted to Sarasota County Environmental Services. Sarasota, Florida.”

8. **Comment:** Chapter 4, Page 62, Evaluation of Water Sources: The City of Punta Gorda's April 2010 Shell Creek Water Treatment Plant Reverse Osmosis Addition, Preliminary Design Report indicates that the initial increment of RO capacity for the City is proposed at 3.0 mgd not 2.0 mgd.

**District Response:** The text has been revised as suggested.

9. **Comment:** Chapter 4, Page 64, Evaluation of Water Sources: The City of Punta Gorda's April 2010 Shell Creek Water Treatment Plant Reverse Osmosis Addition, Preliminary Design Report indicates that the ultimate RO capacity for the City facilities is proposed to be 8.0 mgd not 5.0 mgd.

**District Response:** The brackish groundwater projects listed in Chapter 4 are either existing water sources or projects under development. The Punta Gorda project is currently under development, and will be revised from 2 mgd to 3 mgd in the text of page 65 and table 4-3. Subsequently, the potential brackish groundwater quantities in table 4-8 have been updated (Charlotte 5.5 mgd, Total 16.2 mgd.) The total of

brackish groundwater quantities available for the Southern Region have also been updated in the Executive Summary Table 3.

The sentence in paragraph 2, page 65, can be revised as, “Regarding facilities that are under development, the Cities of Punta Gorda and North Port are developing facilities that will produce a total of 4.5 mgd of finished water.” The Punta Gorda RO Facility is being designed to accommodate a future build out to 8 mgd. However, costing information for the second RO expansion from 3 to 8 mgd is not currently available for inclusion as a project option in Chapter 5.

10. **Comment:** Chapter 4, Page 65, Evaluation of Water Sources, Table 4-3, Existing and Planned Brackish Groundwater Facilities in the Southern Planning Region (mgd):

- 1) Revise City of Punta Gorda RO capacity 2.0 to 3.0 mgd
- 2) Add project below in "Planned Facilities":

Name Of Utility	County	Trtmt Cpcty mgd	Avg. Perm. Withdr.	Ann. 2008 Withdr.	Avg 2008 Finished Supply	Avail. Supply mgd	Source Aquifer	Raw Water Quality (TDS) mg/L	Concentr. Discharge Type
PRMRWSA (RV Griffin site)	Desoto	5.0	TBD	N/A	N/A	5.0	Int/UFL A	500 – 1200	TBD

**District Response:** 1) The Punta Gorda Project capacity has been revised to 3.0 mgd, see comment above. 2) The “Planned Facilities” in Table 4-3 are budgeted by the District and are expected to be in service in a couple years. For clarification, the Table description will be revised to say “Facilities under Development.” The PRMRWSA’s RV Griffin RO project is more appropriately listed in its current location, Chapter 5: Water Supply Development Options.

11. **Comment:** Chapter 4, Page 69, Evaluation of Water Sources, Section 6 (1.0 ASR Hydrologic Conditions): what is the basis for the 70 to 100 percent recovery of injected water? Chapter 4, Page 69, Evaluation of Water Sources, Section 6 (2.0 ASR Permitting Requirements):

**District Response:** The basis for 70 to 100 percent recovery of injected water is typical for the District and is based on facility use and not necessarily quality of water as it is removed from the well.

12. **Comment:** The dissolved oxygen removal (degasification) pilot project in Bradenton included funding from multiple partners with the District including the PRMRWSA, SFWMD, City of Bradenton, etc.

**District Response:** Omission of funding partners for the Bradenton degasification pilot project was inadvertent; however they were noted in Table 7-2 and the text of Chapter 7. Text has been added to reflect all funding entities.



13. **Comment:** *Chapter 4, Page 75, Evaluation of Water Sources, Section 7 Water Conservation (3.1 Public Supply): Demonstrated savings since 1991 for District Water conservation programs has been identified as 13.8 mgd. What has been the total capital outlay required to achieve the 13.8 mgd savings?*

**District Response:** *The cost for the 13.8 mgd is approximately \$44.8 million. The total costs include funds provided by the District and participating cooperators.*

14. **Comment:** *Chapter 4, Pages 84-89, Evaluation of Water Sources, following Table 8, Section 8 Part B: These 6 pages were blank in the report I downloaded.*

**District Response:** *This is a formatting issue that has been corrected.*

**Comment:** *Chapter 5, Page 90+, Overview of Water Supply Development Options: The overview is void of any discussion on conjunctive use and or integrated resource development to link surface water and groundwater development (right source at the right time). Since this is a District goal in the SWUCA – it would be beneficial to provide some discussion on the topic.*

**District Response:** *In response to your comment, the following text has been added on page 64 of the Southern Planning Region “One of the most important benefits of using brackish groundwater in the Planning Region, especially as part of a regional system, is the potential to use it conjunctively with existing surface water sources. During normal or excess rainfall years, the region would make use of its abundance of surface water from the Peace, Manatee, and Braden Rivers and Shell Creek. Production from brackish groundwater wellfields would be reduced during these periods to minimize environmental impacts and water supply costs for the region due to the lower cost of surface water treatment. During severe drought periods when river flows are below minimums and reservoir and ASR storage facilities are depleted, production from brackish groundwater wellfields would be maximized to insure demands for the region would be met.”*

*Conjunctive use is also discussed in the Guiding Principles Section of the Executive Summary. In part, the text states the following: “Regional cooperation in water supply planning. The District promotes regional approaches to water supply planning and development. The benefits of regional systems include economies of scale, better ability to manage environmental impacts, improved system reliability, operational flexibility, and emergency backup capability. Larger, regional systems are also able to take advantage of conjunctive use, wherein both groundwater and alternative sources are available and can be managed to mimic natural hydrologic cycles.”*

15. **Comment:** *Chapter 5, Page 91, Overview of Water Supply Development Options, Section 1. Surface/Storm water: The paragraph that indicates the Authority has estimated that an additional 9 mgd will be needed to meet 2029 demands should be corrected to reflect the following: The Authority’s five customers have projected a collective increase in demand of 37 mgd within the next 20 years (planning period ending 2030). To meet that need Authority customers have proposed development of 43 mgd in new supplies, 14 mgd of this supply capacity has been proposed by customer governments to be developed by the Authority, with the remainder (29 mgd) developed by individual customer governments. The Authority identified ample resources through the 2008 Source*

*Water Feasibility Study (co-funded by the District) to develop well over 43 mgd in new regional supplies should customers require such development.*

**District Response:** The District's public supply demand projection increase for the region (including non-Authority customers) is 45.0 mgd. It should be noted that Authority customers' requests often exceed the District projections. Including the Authority's customer request numbers is not recommended as it could cause confusion when cross-referenced with the District Demand Projections reported in Chapter 3. The paragraph will be updated to say, "The PRMRWSA estimates an additional 14 mgd will be needed to meet their 2030 projected demand and system reliability."

16. **Comment:** Chapter 5, Page 91-92, Overview of Water Supply Development Options, Section 1. Surface/Storm water: Is Table 5-1 intended to be a comprehensive list of surface water/ storm water projects? It doesn't include any of the sources evaluated in the Authority's 2008 Source Water Feasibility Study.

**District Response:** Table 5-1 represents project options that were developed solely by the District. For clarification, the last sentence, "Table 5-1 is a list of surface water/storm water options developed by the District" will be moved up to the end of the previous paragraph. The options developed by the Authority in the PRMRWSA 2008 Source Water Feasibility Study are already included in the following pages.

17. **Comment:** Chapter 5, Overview of Water Supply Development Options: The "Cost/1,000 Gallons listed in all tables should be clarified to say Capital Cost/1,000 Gallons". In addition, please include somewhere in the beginning of the section the factors used to calculate these debt service costs. In the case of Authority projects it reflects APR 6%, 30 year bond. If you have not used the same factors on all projects evaluated in this section that should be corrected to ensure reliable comparison. Each table should also include column that shows total unit cost (Capital cost plus O&M cost) to enable project comparison.

**District Response:** The same costing factors have not been used by the many cooperators who have evaluated projects for the RWSP. The District considers this appropriate, as each cooperator evaluates project costs using the best available financing opportunities for that specific entity responsible for the project. Source documents can be referenced for specific rate calculations. The District intends to provide a cost-estimating model for cooperators to use during future feasibility studies which will assist in with comparison between project costs in future editions of the RWSP.

18. **Comment:** Chapter 5, Page 93, Overview of Water Supply Development Options, Upper Myakka River Public Supply: "Project components include an intake **structure on the Myakka River**, raw water pumping station, **6 BG** impoundment structure for raw water storage,..."

**District Response:** The document has been revised as suggested.

19. **Comment:** Chapter 5, Page 93, Overview of Water Supply Development Options, Dona Bay/Cow Pen Slough: "The initial **5 mgd** phase will include construction of a weir in the canal and a pipe to transport..."

**District Response:** The document has been revised as suggested.

20. **Comment:** Chapter 5, Page 93, Overview of Water Supply Development Options, Shell Creek Public Supply: Change project title to **Surface Water/Storm Water Option # 3 Shell/Prairie Creek Public Supply**. Change write-up: **This option consists of a new intake structure on Prairie Creek, raw water pumping station, new treatment facilities and associated piping, and an off-stream reservoir with a capacity of 6 BG for raw water storage. Additionally, improvements to the existing reservoir structure will be implemented to increase reliability. The project will increase raw water storage from 4 to 6 billion gallons. A pumping station will be constructed to increase raw water pumping capacity to at least 20 mgd.** A 6-mile regional interconnection between...

**District Response:** The suggested revision will be made with the exception of, **“This option consists of a new intake structure on Prairie Creek, raw water...”** The intake location is addressed in detail later in the paragraph.

21. **Comment:** Chapter 5, Page 95, Overview of Water Supply Development Options, Section 2 System Interconnect/Improvement Options: This section requires updating. The Authority has a Regional Integrated Loop System Feasibility Routing Study completed by PBS&J in 2008 that superceeds the 2005 G&H report. An electronic copy of the route study is attached. This 2008 work has been adopted by the Authority's Board of directors as the vision of a fully interconnected water supply system for the future, and we are proceeding with developing those interconnections. The write-up at the top of page 95 under Section 2.0 (System Interconnect/Improvement Options) that begins; "The system interconnection improvement options...."Is correct except the last sentence should be revised to reflect the new Regional Integrated Loop System Feasibility Routing Study completed by PBS&J in 2008. Four of the pipeline projects in the 2008 study are currently underway. The table below summarizes these projects. This information should be included rather than the table info currently provided (water planning alliance project number etc.)

Phase	Regional Connections	General Description
Phase 1 [U.S. 17 / Shell Creek]	Interconnect Shell Creek WTP [Punta Gorda] to the Authority's 20-inch RTS on U.S. 17 in DeSoto County.	Approximately 6 miles of 24-inch diameter transmission pipeline and 0.25 mile HDPE pipeline crossing under Shell Creek, including high service pumping station and ground water storage tank on the Shell Creek WTP site. Currently designed and awaiting financing.
Phase 1A [Kings Highway Shell Creek]	Interconnect the Punta Gorda water system to the Authority's 24-inch RTS on Kings Highway in DeSoto County.	Approximately 8 miles of 24-inch diameter transmission pipeline and 1.4 mile subaqueous crossing of the Peace River including a high service pumping station and ground water storage tank on U.S. 17. Contractor selected. Begin construction summer 2010. Scheduled completion 2012.



<p>Phase 2                  [New Water Delivery to City of North Port]</p>	<p>Second primary RTS from Peace River Facility to the North Port water system.</p>	<p>Approximately 7 miles of 42-inch diameter transmission pipeline paralleling the existing 36-inch diameter transmission pipeline. In final design. Scheduled for completion late 2012.</p>
<p>Phase 3A                  [Carlton /State Road 681]</p>	<p>First segment to interconnect the Authority's 42-inch RTS from Carlton WTP northward to Manatee County.</p>	<p>Approximately 9 miles of 48-inch diameter transmission pipeline including a high service pumping station and ground water storage tank on the Carlton WTP site. In construction. Scheduled completion spring 2011.</p>

**District Response:** The Regional Integrated Loop System will be separated from the two county projects listed in the 2005 G&H Report, and future Loop System future phases (1, 2A, 2B, 3B, 4A, 4B) will be listed in a new table. The table will be referenced to the PBS&J 2008 Regional Integrated Loop System Feasibility Routing Study. Three Loop System phases suggested in the Authority's comment are ongoing projects, and are appropriately listed on page 118 of Chapter 6, *Water Supply Projects under Development*. The General Descriptions used in the comment can be used to update the descriptions on Page 118.

22. **Comment:** Chapter 5, Page 97 & 98, Overview of Water Supply Development Options, Table 5-2: Include in foot-note that Cost/Benefit (column 7) is the Capital Cost/ 1,000 gallons offset. Need to make it clear that this is comparable to the capital cost/ 1000 gallons for new water supply projects.

**District Response:** This comment was addressed in comments for page 86.

23. **Comment:** Chapter 5, Page 101, Overview of Water Supply Development Options, Section 3 (Brackish Groundwater Development): The statement that it is unlikely that options proposing to withdraw brackish groundwater from the Upper Floridan Aquifer in the planning area would be permittable works in most areas, but is probably not the case in all locations. Suggest you reconsider the language.

**District Response:** The paragraph has been revised to include "...in most areas." The availability of groundwater is discussed in detail in Chapter 4, *Evaluation of Water Sources*.

24. **Comment:** Chapter 5, Page 103, Overview of Water Supply Development Options, Section 3 (Brackish Groundwater Development), Brackish Groundwater Option # 5 – Project Prairie: The entity responsible is the PRMRWSA only. We own the well and facilities.

**District Response:** DeSoto County has been deleted from the entity responsible.

25. **Comment:** Chapter 5, Page 105, Overview of Water Supply Development Options, Section 4 (Seawater Dealination): Provide annual O&M costs in the tables on a unit (1000 gallons) basis rather than annual total. Need to be able to compare with other supply

# Regional Water Supply Plan Southern Planning Region Comments and Responses

project O&M. In addition the "Cost/1,000 Gallons" listed in the table doesn't appear to reflect debt service like the other supply projects. For example — debt service on \$52.5 M using 5 mgd average production rate, 6% APR and 30 year term is \$2.09/1,000 gallons not \$4.31/1,000 gallons. With that said — it also appears that your estimated capital costs are far too low for a seawater desalination facility as described. Please re-check your numbers.

**District Response:** The costs given were provided by the Water Planning Alliance Regional Planning and Engineering Study, April 2005, and were adjusted by a factor of 1.155 for current year costs. The 2006 and draft 2010 RWSPs did not include land acquisition and other non-construction expenses for these capital project costs, and are updated below to show totals used to calculate debt service. The rate used by the 2005 Study was 5.63% over 20 years, and is reused for this cost update. The 2005 Study included O&M in the total cost/1,000 gallons. For consistency with other projects listed in Chapter 5, the table for the Port Manatee and Venice Desalination projects will be revised with the O&M/1,000 gallons separated from the Capital Cost/1,000 gallons as follows:

### Port Manatee Seawater Desalination

Quantity Produced (mgd)	Capital Costs	Cost/mgd	Cost/ gallons 1,000	O&M/ gallons 1,000
5	\$66,827,000	\$15,437,037	\$3.58	\$1.90
10	\$130,287,465	\$13,028,747	\$3.02	\$1.66
20	\$196,600,000	\$9,830,000	\$2.28	\$3.22

### Venice Seawater Desalination

Quantity Produced (mgd)	Capital Costs	Cost/mgd	Cost/ gallons 1,000	O&M/ gallons 1,000
5	\$73,235,085	\$14,647,017	\$3.39	\$1.89
10	\$119,964,299	\$11,964,299	\$2.77	\$1.65
20	\$195,226,185	\$9,761,309	\$2.26	\$1.45

26. **Comment:** Chapter 5, Page 107, Overview of Water Supply Development Options, Section 5 (Fresh Groundwater), Table for Surficial Aquifer: Convert "Capital Cost" and "Annual O&M" costs to unit costs rather than totals to be consistent with other supply project information and facilitate project comparison.

**District Response:** The capital cost for the fresh groundwater option is consistent with other projects. The annual O&M has been revised to O&M/ 1,000 gallons at \$0.47.

27. **Comment:** Chapter 5, Page 107, Overview of Water Supply Development Options, Section 6 (ASR): The District has multiple funding partners on the Bradenton ASR degasification project. They should be mentioned in this section.

**District Response:** The chapter and page reference do not match the text; however, the whole report was searched and no omission was found other than the one that was noted for Chapter 4, Page 73, Evaluation of Water Sources, Section 6. Omission of funding partners for the Bradenton degasification pilot project was inadvertent;

however they were noted in Table 7-2 and the text of Chapter 7. Text has been added to reflect all funding entities.

28. **Comments:** Chapter 6, Page 122, Water Supply Projects Under Development: The Authority's Reservoir Expansion Project cost \$82.5 Million. Filling of the new reservoir began on July 15, 2009. The Treatment Facility expansion cost \$93.5 Million. The table should be corrected to show Quantity produced 15.7 MGD, total cost @ \$179.6 M, District share of Capital Cost \$82.66 M. Cost/mgd \$11,400,000.

**District Response:** The text and table has been revised as suggested. Additionally, the total cost and quantity produced has been updated in the Executive Summary.

29. **Comment:** Chapter 6, Page 123, Water Supply Projects Under Development, Surface Water / Stormwater Project # 2: Please check the information in the associated table. Current District information shows this project not recommended for funding.

**District Response:** The options identified by the RWSP are not intended to represent the District's most preferable options for water supply development. They are, however, provided as reasonable concepts that water users can pursue to meet their water supply planning needs. The District has contributed cooperative funding to this project in prior fiscal years and considers the project worthwhile. Project costs were recently updated and have been revised as: Capital Cost - \$13,100,000; District Share - \$1,400,000; Cost/mgd - 8,733,333; Cost/1,000 Gallons 3.06.

30. **Comment:** Chapter 6, Page 124, Water Supply Projects Under Development, System Interconnect/Improvement Projects # 1 – Regional Integrated Loop System: PRMRWSA Regional Integrated Loop System Phase 2 Interconnect – City of North Port project Capital Cost is \$18,500,000. PRMRWSA Regional Integrated Loop System Phase 3A – Sarasota County project Capital Cost is \$33,100,000.

**District Response:** The Capital Cost of \$15,400,000 for Phase 2 was based on the District's cooperative funding agreement for the project. The suggested cost of \$18,500,000 has been used as it reflects the Authority's cost including additional expenses. The Phase 3A cost revision to \$33,100,000 is acceptable based on realized low construction costs. Also see District Response to comment for page 90.

31. **Comment:** Chapter 6, Page 127, Water Supply Projects Under Development, Brackish Groundwater Development – Brackish Groundwater Desalination project # 1: City of Punta Gorda project is 3 mgd not 2 mgd capacity.

**District Response:** This project has been revised to reflect recent costs available from the City's Water Treatment Cost Analysis Report (Tetra Tech, 2010): Quantity 3.0 mgd, Capital Cost - \$29,388,000, District's Share - \$14,694,000, Cost/mgd - \$9,796,000, Cost/1,000 gallons - \$3.35

32. **Comment:** Chapter 6, Page 128, Water Supply Projects Under Development, Section 4, ASR Projects: The PRMRWSA has 2 operating ASR wellfields. Wellfield # 1 has 9 potable ASR wells and a permitted AADF capacity of 5.67 mgd, and 6.61 mgd Peak Month. Wellfield # 2 has 12 potable ASR wells and a permitted AADF capacity of 8.53 mgd, and 9.94 mgd Peak Month.

**District Response:** Chapter 6, Section 4 and Table 6-3 only reference projects that are in the construction and testing stage, since Chapter 6 focuses on water supply projects under development. Operational ASR sites are not included. Chapter 4, Evaluation of Water Sources, Figure 4-3, is a map of ASR projects in the District that includes the PRMRWSA wells.

33. **Comment:** Page 154 (Tables): These tables are District-wide. Could become confusing since this report is southern planning region only.

**District Response:** The Tables included in Chapter 8 are the same for each Planning Region. Staff considers them to be necessary and has included them in each the RWSP for each Planning Region..

**Charlotte County Utilities, 25550 Harborview Road, Unit 1, Port Charlotte, Fl. 33980, Chris J. D'Urso, Utilities, Planner,**

1. **Comment:** Please incorporate language and data as required in Southwest Florida Water Management District's 2010 Regional Water Supply Plan Update, including the Southern Planning Region and Executive Summary sections, to properly reflect Babcock Ranch as a future water supply for Charlotte County. These updates are consistent with and coincide with the Charlotte County Smart Charlotte 2050 Comprehensive Plan that has been submitted to the Florida Department of Community Affairs for approval. See pdf file in File of Record, provides a summary of this initiative.

**District Response:** The District's position is unchanged from the letter (In File of Record). There could be some opportunities situated entirely within SFWMD District and completely outside of the SFWMD where the Babcock supply could be used to meet a demand.

**Manatee County Utilities Department, Mark R. Simpson, Water Division Manager,**

*Thank you for the opportunity to review this draft. I appreciate your efforts to divide the RWSP into the 3 planning regions. It allows us to focus our review resources during this most challenging economic period. This RWSP continues the trend of improvements seen through earlier versions. I have a few brief comments as listed below:*

1. **Comment:** Executive Summary - Table 5. - the cost information for Flatford Swamp Hydrologic Restoration included in this table of "Proposed Large-Scale Water Supply and Water Resource Development Projects to be Completed or Under Development by 2030" is inconsistent with costs estimates in the Southern Planning Region Section (p.88). The costs listed in the Executive Summary (\$39M) is for environmental restoration only. The cost listed on page 88 (\$298M) is for development as a water supply source. Also quantities available do not match, 8 mgd vs. 10 mgd.

**District Response:** These are two separate projects. Flatford Restoration project listed in Table 5 includes the only removal of excess flow that could be used beneficially as a water supply and shows only the District's 50% match. The Flatford Restoration project also is currently under development. The Flatford option listed from the PRMRWSA Source Feasibility Study was based on the Upper Myakka River



**MFL allowable quantities to be withdrawn and total project costs. This Flatford project is not scheduled to be developed in the near future.**

- 2. Comment:** 2.1 Manatee River, p.51 - *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. The above is an exact quote of a comment made to the previous draft RWSP (2006) and the following is the response received to that comment. **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.*

**District Response:** We apologize that your comment on the 2006 RWSP was inadvertently omitted. The suggested correction has been applied to the 2010 RWSP. Sentence was revised as follows: "The utility holds water in the reservoir during the dry season and releases large quantities during the wet season due to rainfall and the limited storage capacity of the reservoir."

- 3. Comment:** Table 4-1, p.55 - *Please review the data for the Manatee River. The quantity listed as "potentially available" (11.7 mgd) is 10% of the "Adjusted Annual Average Flow" (117 mgd). This does not seem to be correct based on footnote 2. (10% of mean flow for flows less than the median plus 20% for flows greater than the median flow.) The Permitted Average Withdrawal limit is 35.0 mgd., with Current Withdrawal listed as 30.0 mgd. No mention of this discrepancy, 18.3 mgd less available than is currently being used, 23.3 mgd less available than is permitted, is seen in the text.*

**District Response:** The table footnote is incorrect and has been revised. Please be aware that minimum flows for the Manatee River are scheduled for adoption in 2011 and that available quantities will likely change once they are adopted. Manatee County Utilities has been withdrawing water from the Manatee River since about 1967, prior to adoption of minimum flows. Once minimum flows are adopted, withdrawals will be required to operate in compliance with established flows.

- 4. Comment:** Section 2 Reclaimed Water, p.56-58 - *District projections for increasing utilization of available reclaimed water to 75% in Manatee County may be high. A significant portion of reclaimed water currently used in Manatee County goes to large agricultural users (MARS). Several of these users have plans for these agricultural lands to change to developed urban areas. Increased infrastructure and O&M costs for developed property will require higher reclaimed rates, which will result in a decreased reclaimed demand. Also, one of the "four main options to increase utilization beyond 50 percent" is increased storage. With the arsenic issue putting reclaimed ASR on hold, entities typically turn to surface water lake storage. However, land for lake development has a cost and lake storage requires at least partial re-treatment before the water can be distributed. This also will require additional capital and operating expense and associated reclaimed rate increases.*



**District Response:** The District concurs that attaining a 75% utilization rate may be challenging for every utility throughout the District to achieve, however on a County-wide basis the goal is obtainable by 2030. For instance, according to recently published FDEP 2008 reclaimed water statistics, Manatee County is at 80% utilization and the City of Palmetto is at 96% utilization of available reclaimed water flows. The City of Bradenton is currently considering an option to utilize 100% of its available reclaimed water flows. As such, the District continues to believe a 2030 reclaimed water goal of 75% utilization is achievable.

**Sarasota County, Utilities Planning, Water Planning & Regulatory, Christopher Cole, Technical Specialist**

1. **Comment:** *How will the results from the water utility retail service analysis be used by the district within its regulatory framework? We applaud the districts approach to disaggregated population using a unified method and incorporating such factors as land parcel data, utility retail service area boundaries, and census block level data in the development of the population projections for a given service provider. As pointed out in the RWSP appendices, if the water utility retail service area boundary that is provided to the district is more generalized in nature (which is the case for most of the utilities) then the districts estimate of population served by that utility will contain some uncertainty in either under estimating or over estimating the number of customers served within a given service area. In the case of Sarasota County, utilities customer service records won't be located spatially at the parcel level or customer service information may not exist to that extent of detail. We are concerned how the results of this analysis will be used by the district and others within the regulatory framework.*

**District Response:** The District goes to a great deal of effort to ensure all published populations projections are reconciled for any variable that may over or under estimate functional population values. These include comparing current projections to historical projections and correcting any over projections that are usually associated with the inclusion of DSS locations, or under projections that are usually associated with the production date of the future land use maps and service area boundary shapefiles. To ensure service locations that are not located spatially by the utility at the parcel level are associated with the correct service area boundary, the population projection model uses the GIS developed centroids of said parcels instead of the perimeters where overlaps with adjacent or contiguous utilities.

2. **Comment:** *Please clarify how the district intends to use the 5 year per capita average in the regulatory process? Sarasota County Utilities has been using a per capita rate of 100 gpcd for its planning of major water supply infrastructure and for water use permitting. The county has also been successful with reducing its adjusted per capita rate and continues to try to lower this value. In the last few years this value has started to stabilize. While we agree with the districts methodology for using the five year annual average as a tracking tool for assessing conservation efforts and for looking at water supply quantities on a regional basis, we are concerned that this methodology will be used on the regulatory side and may place communities at risk when used as a benchmark in setting permitted quantities. We recognize each community has its own set of particular needs and natural system limitations. We ask that within the regional water supply plan itself that the district clarifies*

*for the reader how it intends to use this information during the regulatory process and clarifies more explicitly the limitations of how the information was intended to be used.*

**District Response:** Per Part B-Basis of Review, Water Use Permitting Rules, the 5-year compliance per capita average is used to determine public supply permitted quantities. It is important the District's Regulatory Division uses a base year per capita rate to determine future public supply quantities that represent actual water use in an average year, thus the 5-year per capita average. Using 100 gpcd to project future demand without supporting its true relationship to actual water use may result in both an under projection or an over projection of public supplies.

- 3. Comment:** *Chapter 5 in general, we think that identifying an entity responsible for implementation for each of the water supply development options is a good idea from the standpoint of indicating the possible or likely entity. However we do not consider this identification to be an absolute mandate or preclude other responsible entities from implementing a particular project.*

**District Response:** The Florida Department of Environmental Protection's guidelines for Regional Water Supply Planning for the water management district's require the identification of the entity responsible for implementation of each water supply development option. Furthermore, the water management districts are required to identify water supply options from which water users in each Planning Region can choose to meet their individual needs. These options are not necessarily the District's preferred options but are provided as reasonable concepts that water users in the region may pursue in their water supply planning efforts. It is anticipated that users will choose an option or combine elements of different options that best fit their needs for water supply development provided they are consistent with the RWSP. Having stated this, the District agrees that this identification is not an absolute mandate that precludes other responsible entities from implementing projects.

- 4. Comment:** *Page 4, the paragraph at the top of the page indicates that the expansion of the City of Punta Gorda's water treatment plant can be shared by the region and help with emergency supply. It should be noted that the infrastructure needed to share that supply is currently not in place.*

**District Response:** The sentence has been revised to *"The project will secure the city's water supply well into the future and provide excess capacity, once constructed, that potentially could be shared with the other regional partners, provide rotational capacity and resting of sources, and help with emergency supply interruptions."*

- 5. Comment:** *Page 4, the Water Conservation section makes no mention of Sarasota County's water conservation efforts including regulations limiting once a week watering, energy and landscaping initiatives and its past toilet rebate program.*

**District Response:** The statement currently in the plan (page 4), "Since 2006, conservation projects have been undertaken with Manatee County, Charlotte County and the Cities of Sarasota, North Port and Venice", has been revised to make it clear that this includes only District funded projects funded since 2006. This plan does not

provide a list of programs specific to each county and city in the Southern Planning Region.

6. **Comment:** *Page 32, the second bullet point at the top of the page, the five-in-10 vs. 1-in-10 could be stated more clearly for the reader. This methodology is hard to understand in the way it is written and it is unclear how the two are used in predicting demand.*

**District Response:** The 1-in-10 and 5-in-10 projections are used to predict the range of potential water demand (mostly Agriculture and Public Supply) when considering historic rainfall patterns. The 1-in-10 "is an event that results in an increase in water demand of a magnitude that would have a 10 percent probability of occurring during any given year," (Final Report: 1-in-10-year Drought Requirement in Florida's Water Supply Planning Process, September 2001). The 1-in-10 year Drought Subcommittee of the Water Planning Coordination Group, as stated in their final report, determined that a six percent increase in demand will occur in such an event for public supply water use. Therefore, the 1-in-10 year water demand projections are the average year demands times 1.06. The 5-in-10 would be considered to be the average demand during times of average rainfall and would be represented by the average year demands times 1.00.

7. **Comment:** *Page 40, in table 3-3 what was the basis for the decrease in water use in Sarasota County from 2005 to 2010. How is there a -6% change for DeSoto County if all years have the same number?*

**District Response:** The methodology used to formulate water demand projections in the Industrial/Commercial, Mining Dewatering, and Power Generation (I/C,M/D,PG) sector is documented in Chapter 3, Paragraph 4.0. The draft demand projections for Sarasota County were reviewed by the District's Sarasota Service Office regulatory staff. The regulatory staff is generally aware of planned start-up or shut-down of I/C,M/D,PG operations. In reality, the data for 2005 is not a projection; it is the baseline year (actual use). Per the District's Sarasota Office Regulatory Staff, four water use permits (WUPs) in existence in 2005 would no longer going to be in existence in 2010. The "loss" of these four WUPs accounts for the decrease from 2005 to 2010.

In the case of DeSoto County, demand projections have been revised and the 6% decrease has been deleted since it was so small that it is not noticeable when numbers are rounded to 1 decimal place.

8. **Comment:** *Pages 42, in table 3-4 please reconsider the overall percent change for Sarasota County for Recreational/Aesthetic Demand Projections. This increase seems quite large given the current economy and the trend we have been seeing of people trying to convert existing golf courses to housing developments. Furthermore in unincorporated Sarasota County any new golf course is required to develop an Irrigation Water Resources strategic plan that looks at the using reclaim water and/or stormwater as a priority over a groundwater source.*

**District Response:** The demand projections in table 3-4 are based on data from historical growth and our best estimates of future population growth. The economic downturn has decreased the growth rate for recreational/aesthetic demand as

compared to the 2006 RWSP. If the depressed economic climate continues, it would likely decrease future recreational/aesthetic demand and result in lower demand projections in the 2015 RWSP. The recreational/aesthetic demands outlined in this RWSP will have sources identified to meet these demands. The District is committed to maximizing the use of alternative water sources, such as reclaimed water and stormwater to meet these recreational/aesthetic and other demands.

9. **Comment:** *Page 52, it is important to point out for the Myakka River that the Florida legislature enacted the Myakka River Wild and Scenic Designation and Preservation Act which protects the river between State Road 780 in Sarasota County and the Sarasota/Charlotte County line (river mile 7.5 and river mile 41.5). This designation includes enhanced protection for 220 feet landward of the river area within this corridor. The RWSP may also want to point out that the Myakka River watershed protection plan is currently under development. The additional 41.7 mgd that is stated in the RWSP may not be available or may have a lower reliability after factoring in the potential land use transitions in the watershed, allocations to maintain a natural flow, and the other issues that are specific to this watershed.*

**District Response:** The 41.7 mgd that is identified as potentially available water supply from the Myakka River is based on proposed, preliminary minimum flow limitations. Minimum flows and levels rules require the District or FDEP to identify the limit at which further withdrawals would be significantly harmful to water resources or ecology of the area and require that this information be used for permitting to ensure that withdrawals do not cause significant harm to water resources or the environment. The 41.7 mgd presented in the plan is estimated to be available after considering environmental requirements. Development of this source will require further evaluation during the permitting process.

10. **Comment:** *Page 54, Section 2.7 Shell Creek is missing the information on the seasonal problems associated with TDS and the RO project to help correct this problem for the City of Punta Gorda. For this facility to become a regional source additional work will be needed to solve this problem and system reliability will become a major factor to the future resource.*

**District Response:** Yields associated with surface water sources will ultimately be determined as surface water projects are investigated and developed. Potential yield is presented in the RWSP to provide a consistent and conservative estimate of potentially available supplies. There are many factors that could influence the amount of surface water that is potentially available now and in the future, including environmental constraints, water quality, and the ability to construct adequate storage. Following a decision to pursue an option identified in the RWSP, it will be necessary for the parties involved to conduct more detailed engineering, hydrologic and biologic assessments to provide the necessary technical support for developing the option and to obtain all applicable permits.

11. **Comment:** *Page 55, update table 4-1 with the most current information. For example Peace River current daily demand is roughly 20 mgd±. Please update table 4-1 to correct the days in the Max column to 365 for Cow Pen Slough and Myakka River.*

**District Response:** Average surface water use for all water bodies was calculated for the same time period (2003 to 2007). This time period was chosen to ensure the

annual average captured complete years of permittee-reported use when the RWSP update began in January 2009. The following sentence has been added, based on the comment, to indicate current use is higher than the 2003 through 2007 average and the PRMRWSA is growing into the permitted quantity. "Average annual withdrawals by the PRMRWSA during the period 2003 to 2007 were 14.9 mgd and in recent years have been 20.0 mgd." The maximum number of days available, including leap years, is 366.

12. **Comment:** *Page 58, the projected reclaim water offsets may not be achievable given the fact that TMDL rules will likely limit the places where reclaimed water can be applied. It maybe a decade or more before we truly understand the ramifications of the net improvement goals that are currently being set for the region. Furthermore many wastewater treatment plants in Sarasota County do not treat their effluent to advanced wastewater (AWT) standards which means that treated effluent from those sources will have a more limited application. For Sarasota County as a whole achieving 14.49 mgd in true potable water quality offsets with reclaim water may not be a realistic goal.*

**District Response:** The numeric nutrient criteria (there are no TMDL rules) will not limit the places where reclaimed water can be applied. The rules/standards only directly apply to NPDES permitted discharges. In addition, the net improvement goals only relate to stormwater discharging into impaired waters, which are already applied by the District's Regulatory Department.

Table 4-2 contains 2030 reclaimed water utilization and offset amounts (19.32 mgd/14.49 mgd) for Sarasota County that are consistent with the District's goals for 75% utilization and 75% offset efficiency by 2030. The District concurs that attaining 75% utilization and offset rates may be challenging for utilities throughout the District to achieve, however on a County-wide basis the goal is obtainable by 2030. For instance according to recently published FDEP 2008 reclaimed water statistics, Venice is at 93% utilization, Aqua Utilities is at 97% utilization, Sarasota North Reuse System is at 78% utilization and the County-wide reclaimed water offset efficiency rate is at 71% (average of all utilities in Sarasota County). As such, the District continues to believe a 2030 reclaimed water goal of 75% utilization and 75% offset efficiency is realistic and achievable. We would be happy to meet and discuss potential reuse opportunities with County staff at your convenience.

13. **Comment:** *Pages 64 & 65 makes no reference to Electrodialysis Reversal (EDR) technology which is a viable option for some freshwater/brackish water sources. We suggest the district add a sentence clarifying that EDR is one of the RO membrane technologies that the district considers is an effective treatment method.*

**District Response:** A discussion of EDR has been added to each Planning Region that will highlight it as an effective, lower energy membrane treatment process.

14. **Comment:** *Page 64, second paragraph the permit for the 5.0 mgd at the Carlton is not only held by the PRMRWSA but includes other entities as well. Please correct this sentence.*

**District Response:** The Sentence has been revised to state that the 5.0 mgd is co-permitted between the PRMRWSA and other entities.



15. **Comment:** *Page 64, second paragraph, please change the last sentence to "additional supply for use by water suppliers in the Region".*

**District Response:** *The document has been revised as suggested.*

16. **Comment:** *Page 67, table 4-3 should be corrected to reflect the treatment capacity at the Venice Gardens facility is 2.75 mgd. Wells at the Carton site draw from the Intermediate and the Upper Floridian Aquifer. Please add the University wellfield with its 2.0 mgd permitted capacity to the table.*

**District Response:** *The Venice Gardens wellfield treatment capacity and the Carlton's source aquifers have been revised as suggested. The table is intended to quantify the permitted, unused quantities at existing membrane treatment facilities. Groundwater supply from the University Wellfield is currently blended down to potable standards with water from other sources, and is categorized as a traditional source. This categorization has been explained in the text. The University Wellfield RO project can be included as a project option in a future edition of the RWSP once the feasibility/costing of the project is completed.*

17. **Comment:** *Page 75, consider adding information to your write up on the Water Sense partnership program and the Florida Water Star Gold program. Currently, Manatee County, Sarasota County, and Tampa Water are the only members from the area.*

**District Response:** *Florida Water Star Gold (FWSG) is a Districtwide, voluntary certification program for builders, developers, and homeowners. It encourages water efficiency in household appliances, plumbing fixtures, irrigation systems and landscapes, as well as water quality benefits from best management practices in landscapes. Florida Water Star Gold is tailored to the needs of Florida's water resources and is easily integrated into other green certification programs such as Energy Star®, the Florida Green Building Coalition's green standards, and the U.S. Green Building Council's LEED program. In Chapter 4 of the Southern Planning Region, FWSG is listed as an example of a water conservation recognition program. More information regarding the FWSG program and all other water conservation programs can be found on the District's website.*

18. **Comment:** *Page 83, Part B talks about minimum flows for Shell Creek but makes no mention of the on-going efforts with regards to the MFL's for Manatee County. It would be appropriate to make mention of Manatee in this section.*

**District Response:** *Shell Creek has proposed minimum flows; however minimum flows for the Manatee and Braden rivers are still under development. When a proposed minimum flow is available, the District will determine if recovery is required.*

19. **Comment:** *Page 85, the bottom of the page talks about regional planning efforts, conservation and the use of reclaim water to offset demand. However there is no discussion about the regions take or pay contracts based on water allocations assigned to each customer. Based on the PRMRWSA contracts, customers must pay for their full allocation (contracted volume) regardless of the water amounts saved with no way to recoup that payment if they are able to cut back on usage. An offset mechanism would be required to keep the PRMRWSA whole and promote conservation. The RWSP also does not*

*acknowledge the balance between making regional commitments and the need to retain individual water user allocations in order to best serve a community.*

**District Response:** A discussion of contractual issues between water supply authorities and their member governments is not within the scope of the RWSP.

20. **Comment:** *Page 88, the cost for developing the Upper Myakka River Public Supply (Flatford swamp) should be qualified with text under the issues section due to the fact that the cost for transmission of the developed source is not included in the supply development cost. It should be noted that in order to use this source a significant amount of transmission infrastructure will be required when compared to some of the other supply alternatives that are closer to existing infrastructure. Another issue that should be noted for this project is land use transitions surrounding this project could negatively impact the capacity and reliability of this project as a public water supply.*

**District Response:** The project cost does include transmission costs. Please see “Final Source Water Feasibility Study for the Upper Myakka River, Shell and Prairie Creeks and Dona Bay Watersheds” (PBSJ, 2009) for specifics on the project including the use of the excess water and available water.

21. **Comment:** *Page 88, it should be noted under the Dona Bay/Cow Pen Slough project that the environmental restoration portion for the 15 mgd project is underway. The costs presented in the table include some of the infrastructure needed for the full 15 mgd project, but the table indicates a 5 mgd increment. In the project description it should be noted that the capital costs include significant elements of the capital improvements needed for the ultimate capacity of 15.0 MGD. We would like Sarasota County to be listed first as the entity responsible for implementation.*

**District Response:** The following sentence was added to the text “Some elements will be constructed to achieve the 15 mgd ultimate capacity.” The text will be revised so the County is listed first.

22. **Comment:** *Page 90, The Englewood Water District interconnect is currently under design. Construction is expected to begin within the next year.*

**District Response:** The option will be removed from Chapter 5: Water Supply Development Options. Please note that only District co-funded projects are included in Chapter 6: Water Supply Projects Under Development.

23. **Comment:** *Page 92, please correct table 5-2 List of Reclaimed Water Options, the Sarasota Co./Siesta Key Intercon. 2011-2030 project is expected to generate 2.0 mgd, and cost \$10,400,00. The county is also planning to install reuse transmission mains and pump stations to interconnect the north county and south county reuse systems in order to be able to manage the volume of reclaim water more efficiently. The Reuse Expansion in Siesta Key WWTP 2011-2030 project is replaced by the Sarasota Co./Siesta Key Intercon.2011-2030 project. We assume the Celery Field Reuse*

**District Response:** The District has updated the Sarasota Co./Siesta Key Interconnection project to reflect the County’s estimation of cost of \$10,400,000, however as the wastewater flows from Siesta Key are estimated to only be 1.5 mgd in

2030, the currently listed reuse flow of 1.5 mgd will remain. The District does not concur with the request to remove potential yet to be built options. The list of options is not mutually exclusive; options may be either/or (it is recognized that not all options can be pursued). For instance some options are contingent upon other options being built or not being built (see 5-2 table footnotes page 93). As such, the District will continue to list all potential “yet to be built” Options.

24. **Comment:** *Augmentation and its stormwater reuse component would count toward achieving the 75% potable water offset for reclaimed water.*

**District Response:** The District concurs that augmentation (including stormwater reuse) is a key component in achieving the District’s 2030 reclaimed water goals (75% utilization & 75% offset efficiency). Chapter 4 Evaluation of Water Sources, Section 2 Reclaimed Water, Page 57, includes text listing augmentation/supplementation as one of the four main options to achieve the 2030 goals and includes the following text “*Supplementing reclaimed water supplies with other water sources such as stormwater and groundwater for short periods to meet peak demand enables systems to serve a larger customer base*”.

25. **Comment:** *Page 96, Sarasota County is not planning to replace the existing electro dialysis reversal (EDR) treatment process at the Carlton Water Treatment Plant with reverse osmosis (RO) membranes as stated in the current draft. Please correct the text in this section to reflect that the county is planning to replace the existing EDR stacks (that are at the end of their useful life) with new EDR units. The phasing of replacement and the timing has not been finalized at this point. The county is considering adding the 2.5 mgd RO treatment capacity at this location. EDR remains to be a viable option at this facility. Please revisit and clarify the information about adding five new intermediate aquifer and Upper Floridan aquifer wells. The district may want to review the current water use permits for this facility and revise this statement accordingly.*

**District Response:** **The test has been revised as suggested.**

26. **Comment:** *Page 97, The O& M cost of \$0.99 per 1000 gallons at the RV Griffin reserve appears to be a to low in comparison to the other projects in this category. We also assume that any onsite monitoring costs associated with the groundwater withdrawals would not be included in the cost table. It would be appropriate to note this missing element as an issue under this project for clarification. Another issue of note would be the RO concentrate disposal system that would be used to support the treatment system. These items need to be considered when deciding where to add regional capacity. We recognize that RV Griffin has an ASR wellfield but any water supply wellfield will be taking water from a shallower aquifer and therefore require a different set of long term monitoring conditions.*

*The district may want to take another look at the details of this project which we assume was taken from the 2009 Source Water Feasibility Study. We were under the impression that the O& M cost of \$0.99 per 1000 gallons was for blending raw groundwater with the surface water source for emergency purposes with very little if any RO treatment. Missing from this analysis was the cost of the brine disposal facility. The report recommended going to a deep well closer to the coast (2009 Source Water Feasibility Study, page 4-24). We suggest the RWSP note the brine disposal costs and raw water treatment costs as issues*

*that will need to be resolved for this project because they will influence the cost benefit of this project.*

**District Response:** The RV Griffin RO Facility project costs are correct. The project has the advantage of utilizing existing staffing and infrastructure. Preliminary project costing for the 2009 Source Water Feasibility Study included six new intermediate aquifer wells, a 3 mgd RO facility for onsite blending with an additional 2 mgd of groundwater, and a deep injection disposal well located west of the facility.

27. **Comment:** *Page 97, For the City of Venice, Brackish Groundwater Option #3, Sarasota County is interested in working with the City of Venice on using some of the county's existing deep well capacity that may benefit the city project with regards to disposal capacity, provide redundancy, and develop a system backup that would benefit both utilities.*

**District Response:** The District has noted Sarasota's County's interest in developing a combined deep well disposal capacity and increased system reliability with the City of Venice.

28. **Comment:** *Page 101, the first paragraph in Section 5 talks about limiting additional fresh groundwater impacts. The following section Water Conservation, identifies the entities responsible for a series of water conservation strategies like landscape water budgeting for all users, plumbing retro fits, etc. What appears to be missing from these sections is the districts involvement in this subject and what forms of regulations or incentive strategies that maybe implemented by the district itself, the Health Department or the Department of Environmental Regulation to reduce the proliferation of irrigation wells and create incentives for some of the conservation measures and alternatives that are outlined in the plan. We feel more needs to be done by these agencies beyond BMP programs in order to make the recommended conservation programs effective. In order to create incentives for using reclaim water there needs to be more incentives for how the district permits new fresh groundwater withdrawals. When a prohibition for well installation is agreed to in a development rezone it is difficult to enforce it if another agency issues a well permit. Since it costs more to produce reclaimed water then groundwater the district needs to help develop some economic strategies to encourage the implementation of these conservation measures which we realize can be difficult since each community has a different set of needs. There are no goals or suggested strategies for these agencies outlined in this portion of the plan.*

**District Response:** In response to the comment regarding the lack of explanation of the District's involvement with conservation measures, the District's role is addressed in a number of chapters, including Chapter 1 page 4, Chapter 2 page 27, 28 and Chapter 4 page 74. The District's Cooperative Funding Program is thoroughly explained and water users and suppliers are encouraged to take advantage of the District's financial and technical assistance.

29. **Comment:** *Page 113, under Part A. "Projects Under Development" please mention the progress on the Dona Bay project which includes environmental restoration plan, mine closure and mine restoration activities, pilot study for water treatment, and preparations for reservoir creation.*

**District Response:** The District recognizes the MOU effort by the County and Authority discussing the Dona Bay project and look forward to the results. On page 88 the bullet has been revised to include the text “As Sarasota County restoration work and studies continue,.....” At the time of the comment, the cooperative funding agreement for the pilot study on water treatment and the consultant agreement have not been executed but the study is scheduled to begin Fall 2010.

30. **Comment:** *Page 116, please correct the capital costs in the PRMRWSA Integrated Loop System Phase table. For Phase 3A based on the bids that were received the total project costs are \$31,879,240. You may also want to verify and update the other costs in the table.*

**District Response:** The costs that will be used for the Integrated Loop System are those received from the PRMRWSA as part of their comments on the Southern Planning Region RWSP.

31. **Comment:** *Appendices, for the Water Supply Assessment Tables. You may want to underline the last cell in each column that is included in the bottom total to make it easier for the reader to tell which values are included in each total figure.*

**District Response:** The District appreciates the comment and will look for ways to improve the format of the Appendices.



## Heartland Planning Region

Highlands County Citrus Growers Association, Raymond Royce, Executive Director,  
Heartland Agricultural Coalition,

1. **Comment:** *SWFWMD Staff and Governing Board Members, I write on behalf of the wide range of agricultural commodity groups within Highlands County in regards to the proposed SWFWMD Regional Water Supply Plan. As Executive Director of both the Highlands County Citrus Growers Association and the Heartland Agricultural Coalition, I am very concerned about some of the purported data that is being utilized to formulate this policy. I am extremely concerned about the projected numbers that are being utilized to determine what the agricultural water demands will be by 2030 for our area.*

*If this Plan is relying on there being roughly 30% less citrus production (or other agricultural activity) in Highlands County in 2030 than there is in 2010; then I believe the data that is apparently being utilized to support a corresponding reduction of water usage by the citrus industry and agriculture in general for Highlands County is certainly seriously flawed at best! To my knowledge, no one from the District staff has approached local agricultural interests or IFAS personnel to quantify and verify this type of data or the assumptions derived from its usage. It is also now my understanding, that not only is the IFAS source of this information unknown or unavailable; but that the District staff member that initially received and worked with that data is no longer with the District. I would strongly encourage the District to reconsider the use of this data under these circumstances.*

*In fact, I believe that indeed it is very likely that agricultural water demand for that portion of Highlands County within SWFWMD jurisdiction will remain at comparable levels as 2010 due to several factors; including denser citrus plantings on perhaps slightly less acreage and the introduction of more diverse agricultural crops (blueberries, peaches, watermelons & other row crops, bio-fuel feed stocks, etc.) on former citrus properties. While certainly some very small portion of current Highlands Ridge citrus properties will convert out of agricultural uses, growth management restrictions being mandated by both our County and the State of Florida will preclude this from becoming too widespread. The vast majority of this property will remain in some type of agricultural use!*

*Despite what the text of Chapter 3 (pages 38 & 39) of your Demand Estimates and Projections says there certainly has not been a thorough stakeholder review! The fact that no one from either the District or IFAS can produce the actual data or identify its source calls into question its use for formulating this policy. I can assure you that a determined group of citrus growers and other agricultural interests are looking forward to the opportunities that come with the future for this portion of your District. To not accurately account for the water demand usage that they will rely on to keep agriculture viable and profitable for this portion of your District is a disservice to them.*

*I encourage your staff to come to Highlands County and discuss this issue directly with agricultural producers, their representatives and IFAS personnel in our area prior to finalization of the Regional Water Supply Plan.*

**District Response:** [Upon receiving this and other feedback related to the agricultural demand projections, staff scrutinized the demands and concurs that the citrus](#)

acreage projections in particular warrant revisions. To be sure projections have a foundation in documented information, historical data from the *Commercial Citrus Inventory* by the Florida Agricultural Statistics Service (FASS) are used as the basis for the revised projections. Essentially, the 20-year (1998-2008) trend of acreage was determined and used as the basis for future projections. Insight from RWSP comments and District staff with agricultural experience led to adjustments where the historical trend was not expected to be the future trend for a given county. This was the case in nine of the District's sixteen counties. For example, In Highlands County, FASS data produced a 17.4% decline in citrus over 20 years, but this trend is not expected to reflect the next 20 years due to factors such as the rural nature of the county, economic conditions and industry management enhancements. After adjustments, the projections indicate a decrease in citrus acres in Highlands County of 3.5%, and an overall agricultural decrease (including citrus) of 2.5%. An annual average and 2-in-10 demand was determined for the acres using the predominant soil types in each county for each crop type using the District's software program AGMOD, used to calculate supplemental irrigation, crop establishment, cold protection and other irrigation water uses.

Regarding stakeholder review and data sources, all of the demand projections, including the acreage, related water demand and projection methods were sent to the contacts that staff knew of in the agricultural community. Some of the more significant efforts included: (1) request for review by 41 IFAS and extension professionals, of which 16 responded, and 8 of those substantively (August 2007); (2) a review of the data and methods by, and follow-up presentation to, the District's Agricultural Advisory Committee (March – May 2009); and (3) direct e-mails requesting review to industry groups such as Florida Strawberry Growers Association, Florida Citrus Mutual, Florida Sod Growers Cooperative, Florida Nurserymen, Growers & Landscape Association (June 2009). That being said, your comments and the comments from other agricultural stakeholders that follow reveal an opportunity for improvement in the stakeholder review process. Their names and organizations will be kept on hand so they may be included in any future agricultural estimation in the region.

**University of Florida/Institute of Food and Agricultural Sciences Extension Service, Tim Hurner, Multi-County Extension Agent, Highlands County, 4509 George Boulevard, Sebring, FL 33875**

1. **Comment:** *I am to understand that someone(s) in IFAS has provided you with data for your Regional Water Supply Plan to support that the Highlands County Citrus Industry will be 30%+ smaller than 2010 due to growers throwing in the towel because of several ominous pests. I am unsure who supplied this data but I am comfortable that they did not collect their support data in Highlands County in conversations with local growers. I am the Multi-County Citrus Extension Agent in Highlands County and work closely with Highlands Citrus Growers.*

*I can tell you that they are a resilient, dedicated group of growers who intend to be fully engaged in growing citrus and fully plan to be doing so in 2010. If this were not the case, why would they be spending 15-20 million dollars from their pockets each year funding research to solve these pest issues and develop methodologies on how to be more*

*effective, efficient, and productive in the future? If they were planning in going away, they would invest that money in other ways to insure their future.*

*I can tell you that they will be growing as much citrus, if not more, in 2030 utilizing new found methodologies growing more volume on potentially less acreage and be more profitable. Even though they will most likely concentrate their production on fewer acres it will not exponentially reduce their need for a volume of water. If they double their trees per acre, they will need more water per acre than they required in the past. Not necessarily double their volume of water needed, but close. Most growers who might have lost trees and acreage, even though they have not replanted yet, plan to return citrus to that land. They are just waiting for the solutions to some of the maladies and the technology to concentrate more citrus per acre.*

*Before making a decision to finalize you're plan and giving the reduced volume of water to others, I would invite you to come down to Highlands County and meet with growers, meet with those IFAS Faculty doing the research leading this industry to the future. I am sure you will get a different slant than what you have been previously given. I am not saying that whoever gave you the data are wrong by their criteria (whatever that may have been), but I can tell you they are not out here on the front lines helping citrus growers plan their future.*

*I would invite you or anyone in IFAS to come down here to Highlands County and let us have the opportunity to discuss our future with you.*

**District Response: The District appreciates your comments. Please see the District's response above to comments provided by Raymond Roy Royce, Executive Director, Highlands County Growers Association, Heartland Agricultural Commission.**

**Florida Citrus Mutual, Laurie Hurner, Assistant Director, Grower Division**

1. **Comment:** *This letter is to serve as public comment on the 2010 Regional Water Supply Plan, specifically the Heartland Planning Region. Florida Citrus Mutual which represents close to 8,000 citrus growers in the state has grave concerns with some of the demand projections for this region.*

*According to the 2010 Regional Water Supply Plan for the Heartland Region you are anticipating a 37% (74,000 acre) reduction in irrigated acreage due mostly to the decrease in citrus production. This reduction would decrease the agriculture allocation for the area from 182.2 mgd in 2005 to 139.4 mgd in 2030. Your projected reduction in acreage due to a decrease in citrus production may be relevant and correct at the current time, however, we believe that these projections may be grossly misfigured into the future. Yes, citrus acreage in the Heartland area of the state has declined due to disease and hurricane damage; however, citrus growers are going to alternative crops at the current time with hopes of returning to citrus when some of the disease issues have been resolved.*

*Collectively the Florida Citrus Industry has agreed to spend \$15-20 million annually of their own money in search for a cure for citrus greening, a deterrent for the citrus psyllid and any other disease pressure that may come up. If citrus growers were not planning to continue to grow citrus, why in the world would they be spending this kind of money on research?*

*This letter is to request that you take a second look at this drastic reduction. There needs to be a clarification regarding these acres. Are they to be removed from agriculture all together or are they simply being converted to other crops with the hopes of returning to citrus once some of the current disease pressures are reduced?*

**District Response:** The District appreciates your comments. Please see the District's response above to comments provided by Raymond Roy Royce, Executive Director, Highlands County Growers Association, Heartland Agricultural Commission.

**Florida Fruit and Vegetable Association, Kerry Kates**

- 1. Comment:** *The Florida Fruit & Vegetable Association (FFVA) appreciates the District's hard work addressing and planning for our future water demands and the opportunity to comment on the Regional Water Supply Plans. One District-wide factor whose future impact might have been overemphasized when planning for agricultural allocations is land and urban development. Due to the economic downturn and the waning construction industry within the state, the District might have overestimated the overall percentage of existing agricultural lands that will be sold and/or converted to residential/commercial properties. As a result of the recession, Florida is experiencing its first net emigration in decades. The construction boom that fueled the State's economy from 2005 to 2008 has come to a grinding halt, leaving vacant strip malls and empty subdivisions in its wake. Many economists are anticipating the construction industry in Florida to remain relatively stagnant for at least the next decade. This should be carefully taken into consideration when contemplating and planning for the District's future agricultural water demands.*

*Regarding the Heartland and Southern Planning Regions, for a more accurate water supply projection, the District needs to consider the possibility that many of the citrus groves that are or will be affected by both insect infestation and disease will either temporarily or permanently transition to other commodities as opposed to being taken out of production. As of now, the District is operating under the assumption that all of the anticipated 74,000 and 18,000 acres of existing citrus within the respective Heartland and Southern Regions which is expected to be lost in the coming years will not continue to be active in agricultural activities. The likelihood is high that many of these citrus operations will seek out replacement commodities (i.e. blueberries, peaches, etc.), maintaining their current, irrigated agricultural acreages and, at a minimum, their current water demands. As a conservative measure, the District might want to reconsider its projected decrease in agricultural water demand, particularly within these two aforementioned regions. Again, FFVA greatly appreciates the District's extensive efforts regarding this matter and the opportunity to be directly involved during the process. If you have any questions or comments, please don't hesitate to contact me at [kerry.kates@ffva.com](mailto:kerry.kates@ffva.com) or 321-214-5200.*

**District Response:** The District appreciates your comments. Please see the District's response above to comments provided by Raymond Roy Royce, Executive Director, Highlands County Growers Association, Heartland Agricultural Commission.

**Charlotte Harbor National Estuary Program, Lisa Beever,**



1. **Comment:** *Thank you for the opportunity to review and comment on the Heartland Regional Water Supply Plan. The Charlotte Harbor National Estuary Program (CHNEP) is a partnership program that includes all or significant portions of seven counties, including Polk and Hardee Counties. We offer the following comments: We applaud District rulemaking to reserve from permitting the quantity of water that will be stored in Lake Hancock and a potential reservoir to provide the flow necessary to meet the minimum flow.*

**District Response:** **The District appreciates the comment.**

2. **Comment:** *The section on climate change is based on global climate change literature and does not include relevant regional analysis. Given that more than one hundred years of temperature and rainfall data are available from the Bartow station, and analysis of past climate effects tailored for the region would be useful. Some of the analysis CHNEP has conducted with our host agency, the Southwest Florida Regional Planning Council can be found at: <http://www.chnep.org/projects/climate/CRE.htm>. We would also be happy to help with language and analysis for the revised Heartland Regional Water Supply Plan.*

**District Response:** **Because regional data and analysis are only available for portions of the District, we believe that the current characterization of climate change in the RWSPs is sufficient to convey the scope of the problem and the need to begin monitoring and planning. Even without region-specific information, the District's flexible and progressive approach to water resource management, using data collection and analysis, regulation, financial incentives and planning and public outreach, is widely recognized as the most effective means of addressing the uncertain impacts from future fluctuations in climate. The District will continue as a science-based organization relying on climate change experts and the most accurate and current data to inform changes necessary to effectively carry out the District's mission.**

3. **Comment:** *CHNEP hosted a reservoir workshop April 13 through 14, 2009. One of the issues that prompted the workshop is the number of reservoirs listed in the Regional Water Supply Plan. We are pleased to see that the tables more clearly express the multiple reservoirs as "options." We are also pleased to see additional analysis of conservation options.*

**District Response:** **The District appreciates the comment.**

4. **Comment:** *Section 1. Surface Water/Stormwater requires additional description of the tables which follow. Does the Table 5.1 of the Polk Co Comprehensive Water Supply Plan options have special relevance over Table 5.2 from the District's own list? Additional unnumbered tables follow with no explanation related to relationships with Tables 5.1 and 5.2. A similar structure happens with later sections.*

**District Response:** **The tables are not listed in order of relevance. Table 5.1 is from the Polk County Comprehensive Water Supply Plan, which only includes projects within Polk County. Table 5.2 is a list of projects outside of Polk County, but within the Heartland Planning Region (Hardee and Highlands counties). The "unnumbered tables" in the remaining sections of the chapter are not tables in the same sense as**



the numbered tables. They are simply a way to present a quick view of the data from the individual options described.

**City of Winter Haven, Mike Brit P.E., Natural Resources Division**

1. **Comment:** *Thanks for the public hearing this morning. Staff was very informative and courteous. I have a few comments I would like to pass along: The overriding comment is that adding the section on water supply for environmental restoration is significant. This seems like a significant step towards balancing the needs for both people and natural systems. It is also significant that the report consistently mentions the relationship between historical land alteration, present land use practices and the management of water as integrated functions. This sets up a long needed conversation as to how best plan future land uses and water management activities as related functions.*

**District Response:** The District appreciates the comments.

2. **Comment:** *Page 8: This is relatively insignificant, but I recommend that the Peace Creek Drainage Canal be referred to as simply the Peace Creek. In comparison, Saddle Creek is also a significant drainage/conveyance system. This also points out that this system should be considered as a watershed area worthy of restoration consideration and not just a drainage canal.*

**District Response:** The text was edited to “Peace Creek” instead of “Peace Creek Drainage Canal.”

3. **Comment:** *Page 8: Lakes: The lakes along the Lake Wales Ridge are mentioned, but not the other lakes in the Planning Region. It would be nice to add a few sentences about the lakes in the Winter Haven/Lakeland areas. Please let me know if you need a few sentences for consideration. Page 8: It is nice that Kissingen Springs is mentioned.*

**District Response:** The following paragraph has been added to this section: “The Winter Haven Chain of Lakes (WHCL) is a priority waterbody of the Surface Water Improvement and Management (SWIM) Program and is composed of 19 interconnected lakes. The WHCL is made up of two major groups with 5 in the Northern chain and 14 in the Southern chain spanning a watershed area of 32 square miles in Polk County. The lakes in the WHCL are a mixture of depressional and seepage lakes, with the latter being similar to the Lake Wales Ridge lakes. The lakes were interconnected through the construction of navigable canals to promote recreational access, which have impacted the hydrology, water quality, and storage in the lakes.”

4. **Comment:** *Page 10: Wetlands: Last sentence. Since the planning region covers all of Polk County, the last sentence could be expanded to say that wetlands in Polk County play a significant role in the health of 6 major river systems.*

**District Response:** The following change has been made to the text: “health and flow of several major river systems.”

5. **Comment:** *Pages 21 and 22/23: The discussion of the MFL program is significant. It points out that ‘MFLs represent minimum acceptable rather than historic or optimal hydrologic conditions’ which is a very important distinction. It would be my desire, especially for highly altered systems, that we can also develop programs which define what the optimal hydrologic conditions could be with a long-term best management approach. I know that the City of Winter Haven would be interested in talking about how to maximize hydrologic conditions within the watershed for multiple benefits.*

**District Response:** The term “optimal conditions” is vague as stated in the plan and may have been unclear to the reader. The text will be edited to clarify the MFLs establishment discussion.

Historic conditions are considered when establishing MFLs and are used when determining the maximum allowable reduction in levels and flows without causing significant harm. The District’s goal with regard to MFLs is to balance water supply needs with environmental needs. As development has occurred over time, water resources have been threatened and impacted and those water bodies are the focus of the MFL effort. Long term management strategies, such as the SWUCA Recovery Strategy outline the process for achieving recovery goals for highly altered systems such as the Upper Peace River.

6. **Comment:** *Page 21, about halfway through the last paragraph. The sentence starts ‘Beginning with legislative to the MFL statute...’ – must be a typo.*

**District Response:** The word “changes” was inadvertently omitted and has now been inserted into the text.

7. **Comment:** *Page 33, 1<sup>st</sup> paragraph: As mentioned previously, the addition of the restoration category is important. I would recommend, based on the discussion on page 23 regarding the MFLs, that language also be included to look at ‘optimizing hydrologic conditions’ in the future. I believe that the public would better support water conservation efforts if there was a connection to having more water resource benefits.*

**District Response:** The District appreciates the comments and will address them with appropriate staff.

8. **Comment:** *Page 35/37: The bottom of page 35 and top of page 37 should match up, but don’t...there is a table in between that seems to cut off the text.*

**District Response:** Text was inadvertently deleted and has now been added back in.

9. **Comment:** *Page 46: It would be nice if the report gave the actual rainfall numbers for the 1/10 and 5/10 years.*

**District Response:** Quantities are not calculated based on actual rainfall; they are based on hypothetical quantities. For perspective, the 1-in-10 year drought event is, “an event that results in an increase in water demand of a magnitude that would have a 10 percent probability of occurring during any given year” (Water Planning Coordination Group, 1998, revised in 2003) and a 5-in-10 event has a 50 percent probability of occurring in any given year. Methodologies for calculating average and

drought demands are different for each use and are described in Appendix 3, Methodology for Projected Demands and Data Tables of the Regional Water Supply Plan, which is available on our website. All water management districts use the same methodology to calculate demands.

10. **Comment:** *Page 50, last paragraph: The Peace Creek Watershed is about 230 sq. mi. vs. the 93 sq. miles mentioned.*

**District Response:** **The text has been revised as suggested.**

11. **Comment:** *Page 115: The discussion about the Watershed Management Program in context of the water supply plan is important. Under the 4<sup>th</sup> element, it states that one of the ways to coordinate is for local governments to identify BMPs to improve the watershed when it falls below levels of service. I assume this is mostly for flood control, but it could also be interpreted for lake levels, water quality and natural systems. If this is the case, please have someone give me a call at 863/291-5881 to discuss a number of areas where we can coordinate, especially for water quality, lake levels, wetland restoration and aquifer recharge restoration.*

**District Response:** **The Watershed Management Program is the key to the FEMA Floodplain Mapping projects the District participates in with cooperating partners. This focuses on water quantity and flooding issues. The District does have a Cooperative Funding Initiative (CFI) program. This is a key program for building partnerships with local municipalities. The CFI covers up to 50 percent of the cost of projects that help create sustainable water resources, enhance conservation efforts, restore natural systems and provide flood protection. Contact Danny Kushmer at (863) 534-1448 ext. 6000 for additional information.**

12. **Comment:** *Page 119 & 126: Change Peace Creek Canal Watershed to just Peace Creek Watershed.*

**District Response:** **The references to Peace Creek Canal Watershed are specific to an existing District project and changing it in the plan would make it inconsistent.**

13. **Comment:** *Mr. Britt noted that the draft watershed plan is exceptional in that it identifies water-supply needs associated human use and recovery of minimum flows and levels where significant harm thresholds (i.e., minimum flows or levels) are not currently being met. However, he suggests that the plan and District activities in general could be improved by a thorough evaluation and discussion of the amount of water needed for maintenance of water bodies without minimum flows or levels and for maintenance of flows or levels above the adopted minimum flows and levels. I believe Mr. Britt's suggestion is directed towards enhanced discussion of water-use permitting and the goals associated with preventing adverse impacts as outlined in Chapter 40D-2, F.A.C, rather than the prevention of significant harm as outlined in Chapter 40D-8, F.A.C.*

**District Response:** **The District appreciates the comments and will address them with appropriate staff.**

**David Gore, Concerned Citizen**

1. **Comment:** *Drainage alterations are significantly impacting the surficial aquifer system in Polk County and elsewhere in the state and that these alterations are not being sufficiently addressed through the District's minimum flows and levels and regulatory programs. Minimum levels should be established for the surficial aquifer system in Polk County and elsewhere and monitoring of the surficial aquifer system should be enhanced or increased.*

**District Response:** Water bodies with adopted minimum flows and levels, and those the District is currently or planning to work on, are identified in the District's Minimum Flows and Levels Priority List and Schedule. The list and schedule is updated annually with priority based upon the importance of the listed waters to the state or region and the existence of potential for adverse impacts associated with water use. Impacts to the surficial aquifer are addressed by establishing minimum levels in surficial features, such as lakes and wetlands that are an extension of the water table.

2. **Comment:** *Environmental resource permitting rule language should be revised to enhance on-site water retention and improve ground water recharge.*

**District Response:** Recharge is indirectly addressed through the Environmental Resource Permitting process, which covers flood protection, water quality issues, and wetland impacts. Closed basin alterations are required to maintain the stormwater runoff volume within the basin for the 100-year, 24-hour rainfall event. If alterations are in a basin that is not closed, runoff rate must be maintained for the 25-year, 24-hour rainfall event. When compared to the entire water budget, which includes groundwater withdrawals, evapotranspiration, and rainfall, the effects of land use changes on recharge is expected to be minimal.

**George Horvath, Peace River Alliance, Winter Haven, Fl.**

1. **Comment:** *Mr. Horvath asked to be provided with information/documents pertaining the Peace Creek watershed. He's a member of a nascent group of concerned citizens that want to learn more about the watershed so they may develop appropriate goals for their organization.*

**District Response:** Staff provided a detailed list of resources to Mr. Horvath via email.

2. **Comment:** *The Peace Creek Alliance is a newly created Stakeholder initiative to insure that water resources in the Peace Creek Watershed are being managed to maximize both local and regional benefits. One of the core ideals behind the organization is that because no ground or surface water flows into this watershed, that restoring lost storage in lakes, wetlands, floodplains and aquifers is critical. Once the area is 're-hydrated', local and regional benefits to water quality, flooding, water supply and natural systems will be provided with little long-term maintenance costs. My name is George Horvath the founding director of the Peace Creek Alliance, as well as one of the original and founding members of Florida's Lake Watch program. I encourage the Southwest Florida Water Management District to look at restoring historical natural systems as a part of the regional water supply approach. Benefits to downstream surface and groundwater users would more than pay for the costs of performing this work.*

**District Response:** The District appreciates the comments and will address them with appropriate staff.

**Edward McDonald, 820 Lake Mattie Road, Auburndale, FL 33823**

*Thank you for giving the public an opportunity to comment on the Regional Water Supply Plan. I live in Polk County and have been following water issues within Polk County for many years now. Both Polk County Utilities and the SWFWMD personnel were very helpful in allowing me to attend meetings and submit comments to Polk County's recently completed water supply plan. All of my comments in this email are limited in scope to the Heartland Planning Region. Many of my more general comments are duplicates of comments that I made to Polk County's plan. As the Heartland Planning Region water supply plan is a very lengthy and detailed document I will do my best to identify the exact location, within the document, of the issue upon which I am commenting. Due to the fact that the document's structure results in many similar topics being discussed in multiple locations I am hoping that my method of identifying where within the document my comment applies will avoid confusion. My comments will follow sequentially in the same order as presented in the document. Each comment is preceded by the page number followed by a short excerpt from the document indicating the exact location where my comment applies.*

1. **Comment:** *Page 7. Section 2. Physical Characteristics. Land surface elevations gradually increase from east to west across the region, reaching a maximum of 300 along the northwest-trending sand ridges in central Polk and Highlands counties. These ridges are characterized by steep escarpments and have a shape similar to islands and peninsulas rising above the surrounding flat, poorly-drained lowlands. The ridges show where former marine shorelines were located. Where do the above numbers come from? What do they represent? Doesn't the Lake Wales Ridge represent the highest elevations in the area? Isn't Bok Tower located at the highest elevation? Doesn't the elevation generally increase when travelling from west to east?*

**District Response:** In response to your comments, this section of the Regional Water Supply Plan has been revised to read: "The region has a diverse physiography. In southern Polk County and Hardee County, a broad, gently sloping plain is drained by the Peace River and its tributaries. Farther north in central Polk County, a poorly drained upland area contains numerous lakes. The northernmost portion of Polk County contains part of the area known as the Green Swamp, actually a mosaic of uplands and wetlands that forms the headwaters of four major rivers and the potentiometric high for the Floridan aquifer. Finally, the eastern side of the region is defined by the Lake Wales Ridge, a northwest-southeast trending highland characterized by high elevations, deep sands and sinkhole lakes."

2. **Comment:** *Page 13. A significant finding of both the Ridge II study and the ETB WRAP was that the lowering of the potentiometric surface within those areas was due to groundwater withdrawals from beyond as well as within those areas. Additionally, the ETB WRAP concluded that there was a need for a basin-wide approach to the management of the water resources. Based on results of these studies and work group discussions, in October 1992, the District established the SWUCA to encompass both the ETB and Ridge area WUCAs and the remainder of the groundwater basin. Would it be more accurate to say that*



*groundwater withdrawals cause a rebalance of the aquifer system? As water is withdrawn, areas of recharge and discharge shift in location and quantities and water levels adjust. This only becomes a problem when these effects result in unacceptable impacts on the environment or when the withdrawals are of such a magnitude that a natural rebalance cannot be established and are thus unsustainable. How do you separate local withdrawal impacts from regional impacts? Pumping tests can identify local impacts, but clearly only a detailed understanding of flow within the aquifer will identify the source and magnitude of regional impacts.*

**District Response:** As you note, groundwater withdrawals do cause a “rebalance of the aquifer system” to occur. As groundwater withdrawals increase, recharge is increased and/or discharge is decreased, though this does not always mean that recharge and discharge areas shift. The principal goal of sustainable water resource management is to determine the amount and distribution of groundwater withdrawals that can occur while ensuring the environmental systems are protected.

The extent of impacts due pumping is often described as being local, sub-regional, or regional. The determination of whether pumping impacts are local or regional depends on several factors, including the hydrogeologic setting, and the amounts and distribution of pumping that are occurring. The District relies on analysis of data from its extensive hydrologic data collection program and groundwater models to assess local and regional pumping influences. These data and models are used to assess impacts of withdrawals when applicants apply for water use permits.

- 3. Comment:** *Page 15. Key to the management approach was to optimize resource management to provide for all reasonable and beneficial uses without causing unacceptable impacts to the water resource, natural systems, and existing legal users. Now that “free” groundwater is being rationed, who is the most qualified entity to determine what is a “reasonable and beneficial” use of our water resources? How will these determinations be made? What are the criteria? This is an unprecedented situation for this area of Florida and it’s time to rethink how water permits are issued and who has the authority to define “reasonable and beneficial”. There are clearly competing interests for water and no one group has the expertise or insight to determine the “best” use of this limited resource. Business as usual or “staying the course” just aren’t good enough anymore.*

**District Response:** The Florida legislature has determined that the five regional water management districts are best qualified to determine reasonable and beneficial use of our water resources. Chapter 373 of the Florida Statutes authorizes the water management districts, based on many factors including, science and public interest relevant to the region, to issue water use permits for reasonable-beneficial uses of water. Statutory guidelines for permit issuance can be found in Chapters 373 and 120 of the Florida Statutes and Florida Administrative Code Chapters 40D-1 and 40D-2. These include that a permit applicant is required to demonstrate that the use is reasonable and beneficial, is consistent with public interest, will not interfere with existing legal uses, and will not be harmful to water resources.

The Florida legislature has also designated the water management districts as the entity to assess current and future water needs on a

district wide basis. The water management districts do this through use of experts in numerous scientific and social disciplines and with public input. The District's water management responsibilities include planning for water supplies while also sustaining natural systems (Section 373.0361, Florida Statutes). Completed and continuing District initiatives to improve water resource management include MFL establishment, recovery strategy adoption in areas where MFLs are not being met, research funding to determine methods for efficiently using water for different uses, and funding the development of alternative water supplies.

- 4. Comment:** *Page 15. Major recommendations of the study included the need for users to rely on local sources to the greatest extent practicable to meet their needs before pursuing more distant sources, requiring users to increase their water use efficiency, and pursuing a regional approach to water supply planning and development. Shouldn't the decision as to how water demands are to be met be based mainly on economics? Would it make sense for a water supplier to spend large dollars for an alternative, local water supply or to expect water users to make unreasonable (or unnecessary) reductions in water usage due to a "local sources first" policy if the economics of using a non-regional water supply were more cost effective and/or more reliable?*

**District Response:** The existing sentence is consistent with direction given to the District by the State Legislators through Chapter 373.016 of the Florida Statutes.

- 5. Comment:** *Page 25. Section 1. Prevention Activities. No formal prevention strategies for MFLs have been adopted into District rules. Why aren't there any formal prevention strategies for MFLs? Millions of dollars have been spent in determining these levels. Projects are already well underway to implement minimum flows along the Peace River. These are serious problems that have been known for decades. What is SWFWMD waiting for? The whole reason for having a RWSP is to protect our environment. Prevention is always better than remediation.*

**District Response:** The District agrees that prevention is preferable to recovery. Many of the resource concerns that exist in the district occurred prior to the mid 1970s when the District's were granted permitting authority. As a result, when the MFLs program was established in the mid-1990s, many systems were already in recovery. For water bodies that are not in recovery, prevention is the top priority. The District's Minimum Flows and Levels Rules in tandem with the Water Use Permitting rules that address cumulative environmental impacts, serve to prevent significant impacts from occurring. The ultimate goal is to prevent impacts that may shift a water body into recovery. As discussed in the plan, the District's prevention strategy is implemented through three important programs: data collection and analysis; water supply planning; and water use permitting.

- 6. Comment:** *Page 25. Portions of the regulatory component of the Action Plan were put in place through adoption of amendments to existing water use permitting rules in December 2007. Key provisions of the rules require that additional groundwater withdrawals for all uses be limited to what is necessary to meet 2013 demands and permit*

*durations may be limited to 2013, or a longer duration permit will be limited to those groundwater withdrawals documented as the applicant's Demonstrated 2013 Demand, unless there is a commitment to develop alternative water supplies. This first set of rules is considered to be temporary in nature and will sunset in December 2012. Is the term "groundwater" as used above limited in definition or does it apply to all groundwater (intermediate, Upper and Lower Floridan, etc.) that has a TDS of less than 500 ppm? This report should clearly define what is meant by groundwater.*

**District Response:** Thank you for your comment. The term "groundwater" applies to all groundwater, consistent with both Chapter 40D-2, F.A.C. and the Basis of Review. The Basis of Review defines "brackish groundwater" in the Central Florida Coordination Area as groundwater in or below the Lower Floridan Aquifer that has chloride concentrations at or above 1000 milligrams per liter (mg/L) or total dissolved solids concentrations at or above 1500mg/L. For clarity, the sentence has been revised to read "Key provisions of the rules require that additional fresh groundwater withdrawals for all uses be limited to what is necessary to meet 2013 demands and permit durations may be limited to 2013, or a longer duration permit will be limited to those fresh groundwater withdrawals documented as the applicant's Demonstrated 2013 Demand, unless there is a commitment to develop alternative water supplies."

- 7. Comment: Page 25. This first set of rules is considered to be temporary in nature and will sunset in December 2012. Development of long-term rules began in 2008 and the Water Management Districts are continuing to implement other aspects of the Action Plan. Doesn't the current lack of "long term" rules have a negative impact on the value of this 2010 RWSP? What new information will be available in 2013 that is not reasonably known today? Our water shortage problem was identified back in the 1960's. What is there to study that has any real potential for some new, game altering revelation?*

**District Response:** The development of CFCA rules will not affect the District's Regional Water Supply Plan (RWSP). The 2010 RWSP is an update of the assessment of projected water demands in the District and potential sources of water to meet these demands for the period from 2005 through 2030. The document is updated every five years in accordance with Chapter 373.0361 of the Florida Statutes. The RWSP addresses the water supply demands for the entire District where existing sources of water are not adequate to supply water for future reasonable and beneficial uses, as well as to sustain water resources and the related natural systems.

- 8. Comment: Page 27. 2.0 Polk County Comprehensive Water Supply Plan. How can Polk County or any other county develop a comprehensive, cost effective strategy for meeting its water demands while the SWFMD is performing studies and other investigations to determine the true quantities of the available water supplies? The fact that previous water supply plans that are only a few years old have vastly different supply and demand numbers and are now considered obsolete confirms the difficulty of developing a solution to a problem prior to developing a clear definition of the problem.*

**District Response:** Polk County in partnership with the District developed a comprehensive Water Supply Plan that identified and quantified viable public water supply and alternative water supply sources for various public utility systems within Polk County. The options identified provide choices for municipalities to pursue, meeting their future water supply in a flexible manner that fits their specific needs.

Many water supply projects can take as much as 10 years to be fully developed from conception to construction. As the Polk County projects move forward in the development process and are refined, the most comprehensive, cost effective solution will emerge.

9. **Comment:** Page 28. The water resource and water supply development components of the strategy simply require “staying the course,” which is how the District has addressed these issues for the past decade. What does “staying the course” mean?

**District Response:** The District will continue its SWUCA strategy that has six basic components: encouraging conservation, development of alternative water supply, resource recovery projects, land use transitions, permitting, and monitoring and reporting. Additional information is provided in the District’s Response to the comment below.

10. **Comment:** Page 28. Monitoring will provide the information necessary to determine progress in achieving recovery and protection goals and will enable the District to take an adaptive management approach to the resource concerns in the SWUCA to ensure the goals and objectives are ultimately achieved. Is progress being made in achieving recovery? Is it possible that additional restrictions will be placed on water supplies in order to meet recovery and protection goals? Is an adaptive management approach the same as “staying the course”? Would I be correct in assuming that the SWFWMD would not allow any actions to occur that would slow the recovery process?

**District Response:** By the end of 2010, it is estimated that a reduction of 3.2 mgd will have occurred in the region, leaving a reduction of 23.7 mgd to be achieved by 2025.

What is meant by staying the course is that the *SWUCA Recovery Strategy (2006)* maximizes the use of existing District rules, and very few rule changes are anticipated to be needed to meet the goals of the recovery strategy. The water resource and water supply development components of the Strategy simply require “staying the course,” which is how the District has addressed these issues for the past decade. For example, the District has developed a “financial engine” to encourage the development of alternative supplies and more aggressive demand management throughout the District. This “financial engine” also provides the necessary funding for water resource restoration projects in areas such as the upper Peace River, a critical component of the recovery strategy. Changes that resulted from development of the recovery strategy include enhancements to how the District does business, such as streamlining collection and analysis of water use permitting data and forming staff teams to facilitate priority water use activities (e.g., reconstitution of the agricultural teams). The management approaches outlined in the Strategy will be reevaluated and updated over time.

The District updates its Regional Water Supply Plan (RWSP) at a minimum of every five years. These updates include revisiting demand projections as well as reevaluation of potential sources, using the best available information. In addition, monitoring of recovery in terms of resource trends as well as trends in permitted and used quantities of water, is an essential component of the recovery strategy. This monitoring will provide the District with the information necessary to determine



progress in achieving recovery and protection goals. This information will enable the District to take an adaptive management approach to the resource concerns in the SWUCA to ensure the goals and objectives established by the Governing Board are ultimately achieved.

11. **Comment:** *Page 31. For example, the District promotes water conservation across all use sectors, from agriculture and industrial to residential and commercial uses, which not only saves supplies for the future, but also reduces chemical and energy use. How are realistic water usage values determined for industrial and agricultural users? Promoting water conservation is very different from requiring water conservation. Agricultural and Industrial consumers are the big users of water and therefore represent the maximum potential savings for water savings due to conservation and other water saving measures.*

**District Response:** **The estimated water supply demands for industrial and agriculture sectors in the RWSP are based upon; 1) Empirical historical data, 2) Industrial/Mining industry permitting and use trends, 3) Univ. of Florida IFAS crop projections, 4) GIS/Permitting analysis, 5. Agricultural and industrial stakeholders review/comments, and 6) Account for industrial and agricultural conservation Best Management Practices (BMPs).**

12. **Comment:** *Page 31. The District also emphasizes the need for diversified water supply sources and helps to fund environmentally sustainable and drought-resistant water supply options such as reclaimed water, stormwater reuse, brackish groundwater, surface water reservoirs, aquifer storage and recovery, and the country's largest seawater desalination plant. Does the district subsidize any of the operating costs for this seawater desalination plant?*

**District Response:** **Operation costs of the seawater desalination plant are the responsibility of Tampa Bay Water. The options listed in text are examples of water supply projects for which the District has provided funding assistance for development.**

13. **Comment:** *Page 32. The Water Management Districts are important players in maintaining Florida's unique quality of life, water resources, environmental sustainability, and economic vitality. Each local government is required by the 1985 Growth Management Act to develop and maintain a comprehensive growth management plan. It is my understanding the SWFWMD does not actively participate in the development of this plan. In light of the fact that water supply has a large impact on quality of life, environmental sustainability, and economic vitality of a region shouldn't the development of at least some sections of the Comprehensive Plan and its companion document the Land Development Codes be developed jointly between SWFWMD and the local governments? This would insure consistency amongst neighboring plans, compliance with the terms of water use permits, and maximize the adoption of the goals of this RWSP.*

**District Response:** **The 1985 Local Government Comprehensive Planning and Land Development Regulation Act (also known as Florida's Growth Management Act) requires all of Florida's 67 counties and 410 municipalities to adopt Local Government Comprehensive Plans that guide future growth and development. Comprehensive plans contain chapters or "elements" that address future land use,**



infrastructure (e.g., potable water), transportation, coastal management, conservation, recreation and open space, intergovernmental coordination, housing and capital improvements. The Growth Management Act authorizes the Department of Community Affairs (DCA) to review and certify comprehensive plans and plan amendments for compliance with the Act. As part of this process, the District reviews all comprehensive plans and amendments within our jurisdiction and provides comments, recommendations, and objections to DCA. The District recognizes the importance of coordinating water management activities with local government comprehensive planning efforts and works to accomplish common objectives and respond to changing conditions.

14. **Comment:** *Page 34. All Water Management Districts agreed that 2005 would be the base year from which projections would be determined. The 2005 base year population for each county was derived from the Estimated Water Use report (SWFWMD, 2005a). How “typical” was the base year of 2005 with regards to rainfall, water usage, etc.? Wasn’t 2004 the year of exceptional rainfall totals due the three hurricanes that hit the area? How would that impact 2005 water usage and MFLs? I believe that at least parts of Polk County were under watering restrictions during 2005. Using totals from a single year may not be representative of “typical” usage. Would using more of a statistically based “average” be more appropriate? If 2005 is our base year I want to be sure that it represents an accurate snapshot of water demand and supply.*

**District Response:** The year 2005 was relatively typical year with regards to rainfall, water usage, etc. To address any variance in climatic impacts to water use, the District has calculated average five year per capita use rates for large utilities, small utilities, and domestic self-supply (using data provided in the Estimated Water Use reports (2003 – 2007), see Note 4 on Tables 3 through 18) that normalizes the factors you mention.

15. **Comment:** *Page 35. The District achieved this by developing a model that projects future permanent population growth at the census block level, distributes that growth to parcels within each block, and normalizes those projections to BEBR county projections. The model is described in the Appendix for Chapter 3. Will SWFWMD update population number based on 2010 census data?*

**District Response:** Yes, the 2010 Census data will be incorporated into the population projections once it becomes available.

16. **Comment:** *Page 37. The model accounted for land use transition from agriculture to residential, commercial, or industrial use and a land use conversion trend was determined. How do we account for loss of natural recharge when we transition from agricultural to residential? Some documents show reductions in recharge of over 30 percent.*

**District Response:** Recharge is indirectly addressed through the Environmental Resource Permitting process, which covers flood protection, water quality issues, and wetland impacts. Closed basin alterations are required to maintain the stormwater runoff volume within the basin for the 100-year, 24-hour rainfall event. If alterations are in a basin that is not closed, runoff rate must be maintained for the 25-year, 24-hour rainfall event. When compared to the entire water budget, which includes groundwater withdrawals, evapotranspiration, and rainfall, the effects of land use changes on recharge is expected to be minimal.

17. **Comment:** *Page 41. Eliminating entrainment quantities reduced projected demand through the planning period by approximately 1.4 mgd Districtwide. No matter how you classify the various water demands, isn't the actual water demand what's important? If the water comes from a source (groundwater, surface water, storm water, whatever) and is not immediately returned to that source isn't that a water demand? Isn't it just a simple mass balance calculation?*

**District Response:** Yes, total demand is a function of all quantities including Public Supply, Domestic Self Supply Industrial/Commercial, Agricultural, Recreational/Aesthetic and Mining/Dewatering. Actual demands in these categories are routinely utilized when available to assist in the estimation of future demands.

18. **Comment:** *Page 41. Suggested changes were only taken into consideration if they were based on historical regression data and long term trends and supported by complete documentation. Simply because the stakeholders comments lacked complete documentation would not be sufficient justification to ignore their input. Their comment may still be relevant and require further investigation by district staff.*

**District Response:** The District appreciates the comments and will address them with appropriate staff.

19. **Comment:** *Page 43. Reclaimed water has made a definite impact on golf course water use and this should continue into the future. Most recreational/aesthetic water use occurs near major population centers, which is also where large quantities of reclaimed water are located that can be used to offset the use of potable water for this category. Isn't the purpose of this section is to all water demands. At this point it doesn't make any difference how these demands are being met. It could be surface water, shallow wells, reclaimed water or other non upper Floridan sources.*

**District Response:** The mention of reclaimed water influence on Golf Course demands is appropriate for the "Demand Estimates and Projections" section as reclaimed water has had (and is anticipated to continue to have) a profound influence on Golf course water demands. Over the past few decades nearly half (46% or 208) of the 453 golf courses within the SWFWMD have switched to reclaimed water irrigation supplies (SWFWMD, 2010).

20. **Comment:** *Page 45. One of the requirements of the District's SWUCA Recovery Strategy is a 50 mgd reduction in groundwater withdrawals that is expected to result in achievement of the SWIMAL in the Upper Floridan aquifer. Is this 50 mgd reduction based on the actual 2005 groundwater withdrawal rates? In general I find the presentation of water demand in terms of reductions and additions as very confusing. I would prefer to see a chart that shows: all of the 2005 water demands for each category of users, the source of water that met those demands, all of the 2030 projected water demands assuming no additional conservation measures were implemented, all water sources that could be made available to meet this demand. This approach would present a clearer picture as to where our water comes from and what our maximum supply potential really is. I think that it is important for people to understand just how close we are to maximizing our water supply in the Heartland*

*Planning Region. It's not just a matter of spending more money as some people would lead you to believe. (Please include SWIMAL in your list of abbreviations.)*

**District Response:** As described in *SWUCA Recovery Strategy (2006)*, long-term average annual ground-water withdrawals in the SWUCA over the past 20 years have been about 650 mgd, of which nearly 90 percent are from the Floridan aquifer. Based on the existing distribution of withdrawals, it is estimated that long-term average annual withdrawals from the Floridan aquifer need to be reduced by 50 mgd to ensure the saltwater intrusion minimum aquifer level is met. If the reductions were more optimally distributed (i.e., reductions in the most impacted areas) it is possible that less than 50 mgd would be needed in order to meet the minimum aquifer level.

Regarding the water demand projections, the text and tables have been modified in a number of ways that hopefully will make them easier to understand. There are important reasons for tracking increases in demand separately from decreases in demand. Decreases in demand are reductions in the use of groundwater for the agricultural and industrial/commercial, mining/dewatering, and power generation use categories. Decreases in demand are not subtracted from increases in demand but are tracked in separate tables. This is because increases in demand may be met with alternative sources and/or conservation and the retired groundwater quantities may be reallocated for mitigation of new groundwater permits for other use categories and/or permanently retired to help meet environmental restoration goals. Please reference Tables 3-6a and 3-6b for demand projections by category, and Table 4-7 for potential water availability by source. SWIMAL was added to the list of abbreviations.

21. **Comment:** *Page 49. The Lower Floridan aquifer has the potential to be a significant source of additional water in the northern portion of the Planning Region and a number of studies are in progress to evaluate this potential source. What is the basis for this statement? Have you performed a water budget on the Lower Floridan aquifer? Do you know the impact of withdrawing significant quantities of water on existing users of the LFA? If the LFA has significant quantities of water available why don't other water districts utilize this water and free up water from the UFA for users west of the Lake Wales Ridge? I have raised this issue with the SWFWMD in the past and to date I have not been shown any study that shows the potential impacts of using water from the LFA. From what I have been able to determine no one fully understands the flow direction or flow rates of water within the LFA or its source of recharge.*

**District Response:** The District has a general understanding of the availability of water supply from the LFA, however no water budget is currently established. The District is in the process of exploring the LFA with recent and ongoing studies. The *Construction and Testing Report Holly Hill Lower Floridan Aquifer Deep Exploratory Well No.1, Northeast Regional Utility Service Area, Polk County, PBS&J 2009* (prepared for Polk County Utilities,) reported that potential potable quality water was detected, and recommended that the effects of long-term pumping on this potential source be further analyzed. A second LFA long-term aquifer performance study is being conducted at the Holly Hill location. The *Construction and Testing Report, Southeast Polk County Deep Exploratory Well, Frostproof, Florida, PBS&J 2010*, (prepared for Polk County Utilities and SFWMD) detected brackish quality water at its

locale, yet predicted minimal potential withdrawal impacts to adjacent stressed water bodies. Water quality treatment requirements and intended uses may limit utilization. Additional studies and observations, conducted through cooperators and by the District's ROMP program, will continue to provide important data on the LFA's confinement and water quality for the District's further evaluation of this resource.

22. **Comment:** *Page 51. To maximize development of additional water supplies from the river, future withdrawals will need to be closely coordinated with the PRMRWSA and other users. Based on the minimum flow criteria, an additional 80.4 mgd of water supply is potentially available from the river. Is this 80.4 mgd number a physically practical number or just a hypothetical? Where along the Peace River would these withdrawals take place? What is the maximum available for the Heartland Planning Region?*

**District Response:** The 80.4 mgd cited is a "physically practical" number. It represents the additional amount of flow above what is currently allocated, that is potentially available to meet future demands and was calculated based on MFLs for the lower freshwater portion of the Peace River. It represents what is available from the combined flows of the Peace River at Arcadia, Horse Creek near Arcadia, and Joshua Creek at Nocatee gages and assumes that sufficient storage will be developed to capture excess flows during the wet periods, for use during the dry periods. Though withdrawals are available in some upstream portions of the river, the amount that can be withdrawn at a particular location is dependent on the environmental concerns at that location and downstream of that location (MFLs). Additional cumulative withdrawals from the river would not be able to exceed this amount.

23. **Comment:** *Page 53. Table 4-1 summarizes potential availability of water from rivers in the Planning Region. The estimated additional surface water that could potentially be obtained from rivers in the Planning Region ranges from approximately 0.05 mgd to 4.35 mgd. The lower end of the range is the amount of surface water that has been permitted but is currently unused and the upper end includes permitted but unused quantities plus the estimated remaining unpermitted available surface water. In general I find these discussions on the potential for surface water as a viable source of water for the Heartland Planning Region to be very confusing. First we say that 80.4 mgd is available, but due to all sorts of constraints including commitments to other users, permitted but unused water, physical constraints, whether ASR is viable or if existing above ground reservoirs could be used, and a whole laundry list of issues that must be addressed only a small percentage of that number may be potentially available. Is there a bottom line on what quantity of water that can reasonably (There can be a big difference between potentially available and reasonably available.) be made available to the Heartland Planning Region? Would this number (whatever it is) be considered a maximum number that would not be expected to increase in the future? Would it be fair to say that surface waters is a high risk, high cost, low reliability, low quantity water source for the Heartland Planning Region?*

**District Response:** Though we have provided a reasonable estimate, there are several factors affecting our ability to "precisely" know how much additional surface water is available at different points along the river, especially at this point in the planning process. The estimate is a planning-level quantity and is the quantity expected to be available given environmental constraints. In addition to what you mentioned, economies of scale will play a role. For example, it is possible that the least



expensive alternative is to withdraw all available surface water at the lower end of the river, where the greatest amount of supply is available, and pipe it to demand centers in upstream areas. Because much of the Heartland Planning Region encompasses the Peace River's headwaters where the flow is relatively low, the amount of flow that is available in the Planning Region will be much less than in the downstream areas and may be more costly to develop.

The climate in Florida is a major factor affecting the availability of surface water. As you know, the Florida climate is highly seasonal (i.e., very distinct rainy and dry seasons) and that, there are clearly periods of time (on the order of several years) when rainfall is higher than other periods of time. These factors result in highly variable pumping rates and the necessity of building storage to maximize the amount of water supply that can be provided.

Storage ability allows project risk to be reduced, because water can be stored in the rainy season when excess surface water is available and used during the dry season when water availability is limited. Surface water yield will be different for upstream projects and downstream projects, all of which will have to be managed in a way as to not impact existing legal users.

As you can see, there are numerous factors that have to be considered further into the planning process as the source is developed. Surface water can be a reliable source, as has been demonstrated by successful projects that have already been developed.

24. **Comment:** *Page 54. The District's goal is to achieve a 75 percent utilization rate of all wastewater treatment plant flows and offset efficiency of all reclaimed water used of 75 percent by the year 2030. This goal is intended to reduce the over-use of reclaimed water and increase potable and groundwater offsets. Does this goal only apply to wastewater from public supply wastewater treatment plants or does also apply to industrial wastewater treatment plants as well?*

**District Response:** The SWFWMD 2030 goal of 75% utilization and 75% offset efficiency applies only to domestic wastewater treatment plants. Florida Statutes defines "Reclaimed water" as "water that has received at least secondary treatment and basic disinfection and is reused after flowing out of a domestic wastewater treatment facility" (F.S. 62-610). Industrial wastewater treatment plants are prohibited from supplying public access reuse and are not included in the District's reclaimed water goal. Note: The District does encourage and promote "on-site" recirculation and reuse of industrial wastewater; however, such flows are outside the definition of reclaimed water and are outside the scope of the RWSP.

25. **Comment:** *Page 57. becomes a concentrate byproduct that must be disposed of through methods that include surface water discharge, deep well injection or dilution at a WWTP. Where in the Heartland Planning Region would surface water discharge be acceptable?*

**District Response:** There may not be many options available to dispose of concentrate in surface waters in the Heartland Planning Region. The determination of acceptable discharges would be made by the FDEP through the issuance of a NPDES permit.



26. **Comment:** *Page 57. The resulting solid may have economic value since there is potential to use it in various industrial processes. This technology addresses the issue of concentrate disposal for situations where traditional methods are not feasible. The District is participating in a research study to apply this technology to water quality and climatic conditions found in Florida. Will any of these technologies be available by 2030? How can the public view the reports associated with this research?*

**District Response:** [The Zero Liquid Discharge Study is expected to be electronically published by the Water Research Foundation in early 2011, at which time a PDF of the final report will be available in the District Library and through the website.](#)

27. **Comment:** *Page 57. Energy recovery systems use the high-pressure concentrate flow exiting the RO membranes to drive turbines. Energy produced from the turbines helps feed raw water into the membrane system. Energy efficiency may be increased by 30 to 40 percent, which can reduce overall operating costs. Didn't the preceding sections say that most cost effective RO systems will be low pressure systems due to the relatively low TDS of the feed water? I know that the Tampa Bay Desal Plant uses energy recover turbines, but does that have any applicability to the Heartland Planning Region?*

**District Response:** [Energy recovery systems are more common with seawater desalination, but are commercially available for mid and low pressure brackish water systems. As treatment efficiency for a brackish system may be as high as 90 percent, the amount of pressurized concentrate available for use in a recovery system is comparatively less, and may only be practical for larger brackish facilities. The economic viability of a recovery system for a specific application would be determined by the design engineer.](#)

28. **Comment:** *Page 57. Factors affecting the development of supplies include the hydraulic properties and water quality of the aquifer, rates of groundwater withdrawal, and well configurations. Wouldn't the source of recharge of the brackish groundwater be a major consideration? If the test wells indicated that nearby freshwater aquifers had a higher hydraulic head than the brackish water aquifer would this be a point of concern? What is the status of the South east Polk County LFA test well and how can the public view this results of this investigation?*

**District Response:** [Please refer to the District Response for comment #21.](#)

29. **Comment:** *Page 58. The two Lower Floridan aquifer well locations in Polk County are outside of the SWUCA but within the Central Florida Coordination Area (CFCA). Requirements for new withdrawals from the Lower Floridan aquifer in the CFCA include a justification of demand, demonstration of adequate confinement between the Upper and Lower Floridan aquifers, and a determination of whether long term water quality will meet fresh or brackish criteria. Prior to significant development of the Lower Floridan aquifer, an improved understanding of aquifer characteristics and recharge must be acquired to better manage this resource. How can you say that the LFA has potential as a viable water supply option when you don't know the District Response to these questions? It just seems inconsistent.*

**District Response:** [Please refer to the District Response for comment #21.](#)

30. **Comment:** Page 65. Fiscal Responsibility. Most water conservation measures have a cost effectiveness that is much greater than that of other alternative water supply sources. The cost effectiveness is defined as the cost of each measure compared to the amount of water expected to be conserved over the lifetime of the measure. Need to make sure that the total cost to implement the measure is used and not just the cost to the water utility, water management district, etc is considered. Anything less may result in an erroneous conclusion that a particular conservation method is the most cost effective.

**District Response:** The total cost includes the rebate amount to the customer and some administrative costs associated with a utility implementing a project. For conservation, the operation and maintenance and administrative costs vary greatly depending on the utility's experience and staff to run the programs, so we have based our cost benefit on costs associated with projects that the District and other representatives have been implementing over the past 10+ years. This method allows for a simple comparison between conservation measures.

31. **Comment:** Page 65. Periodically, Water Management Districts in Florida issue water shortage orders which require short-term mandatory water conservation through Best Management Practices (BMPs) and other practices. What do you call the mandatory watering restrictions that have been in effect for the past seven plus years? Mandatory water conservation is a misnomer. It's not conservation it restriction. Conservation minimizes waste while maintaining a quality of life, restriction is doing without.

**District Response:** Even though mandatory, it is still a measure that assists with conserving the water supply. Restrictions do not necessarily require people to do without, but limit the amount of water that is used.

32. **Comment:** Page 67. Residential. Clothes Washer Rebates. Does the state legislature have the authority to require that only high efficiency washing machines be sold in Florida. This may have the added benefit of lowering the cost of the high efficient washers as currently only high end (price) models are listed as having low water usage. When you consider the \$400 premium charge for a low water usage washer, they will be hard to justify as a cost effective conservation measure.

**District Response:** Yes, we understand the state legislature has the authority, however, there is not a state law requiring washing machines sold in Florida to be high efficiency washers. High efficiency washing machines are one alternative that may be implemented and may be cost effective for a particular utility.

33. **Comment:** Page 70. The I/C,M/D,PG water use category includes those factories, mines, and other industrial enterprises that obtain water directly from surface water and/or groundwater sources through a water use permit According to a survey sent to I/C,M/D,PG permittees, water use efficiency improvements related to industrial processes have been implemented to a limited extent since 1999. If water use efficiency improvements have only been implemented on a limited basis why is the estimated savings through conservation so low? If a company is getting free water via their own wells, where is the incentive to save? I see the implementation of water conservation measures within this segment of water users as having much more potential for water savings (including innovative recycle and treatment systems) than anything possible in the public use sector.

**District Response:** In reality, I/C and M/D has shown a steady downward trend since 1990. PG water use reflects the increase in population as demand for electricity increases proportionally to the population. The I/C and M/D sector continually strives to improve water use efficiency as new technology becomes available. Given the level of efficiency at which this sector operates, there is limited opportunity to further increase efficiency. I/C, M/D and PG accounted for 9% of SWFWMD's total water use in 2008. In the same year, Public Supply accounted for 46%, or fully 5 times as much. Comparatively, there is much greater potential for water savings in the Public Supply sector given the far greater percentage of total water withdrawal associated with public supply.

34. **Comment:** *Page 74. Table 4-7 shows permitted unused groundwater from the Upper Floridan as 35.7 mgd for Polk, 0.8 mgd for Hardee, and 4.4 mgd for Highlands. What is the real significance of these numbers? If all of this permitted quantity would be used today would this have any impact on our meeting the MFLs goals? From past discussions with SWFWMD personnel it was my understanding that the amount of groundwater currently permitted is in excessive of the quantities that are required to limit brackish water intrusion along the west coast. What is the total amount of groundwater (UFA) that can be withdrawn from the Heartland Planning Area and still maintain our MFLs? Do the MFLs need to be met during the 1 in 10 drought years?*

**District Response:** The permitted unused groundwater quantities in Table 4-7 represent the difference between the amount of groundwater currently being used by Public Supply Utilities and the Utilities' permit quantities. These permitted unused quantities can be applied toward the Public Supply Utilities' 2030 demand to offset the additional need. Within the SWUCA, many of the MFL water bodies were in recovery at the time the MFLs were adopted, and if all permitted quantities were used today, it would affect the MFL goals. However, this scenario is unlikely to happen at one time. Public Supply Utilities are expected to continue to grow into their permit quantities at the same time other major use types in the Heartland Planning Region are projected to decrease their water use. In addition, the District continues to fund the development of water resource restoration and alternative water supply projects and conservation programs which are all important elements of the SWUCA Recovery Strategy.

The total amount of upper Floridan aquifer groundwater available to meet the MFL goals and future reasonable and beneficial needs is currently being evaluated for portions of the Heartland Planning Region under the Central Florida Coordination Area work effort. Cycles of drought are expected and are not considered a reason for an MFL not being "met." MFLs are evaluated using hydrologic data averaged over five and ten year periods in addition to climate conditions that occurred during the evaluation period and data on nearby withdrawals. An MFL is not "met" when withdrawals adversely impact the water body.

35. **Comment:** *Page 78. The SFWMD is assessing the effects of surface water diversions from the river on downstream users and natural systems to insure proposed withdrawals do not interfere with downstream. When will this study be completed?*

**District Response:** The SFWMD, State of Florida and the Federal Government have provided substantial support for the restoration of these ecosystems along

the Kissimmee River and its tributaries. This is a multi-faceted project dealing with operational guidelines for water control structures through restoration targets on the river and within the Chain of Lakes. As part of this effort, SFWMD is identifying the water necessary for the protection of fish and wildlife while protecting existing legal uses. This work was initiated in 2008 and is proposed to culminate in the development of a draft reservation rule for Governing Board consideration in 2011.

36. **Comment:** *Page 80. The quantity of water available for water supply is currently being determined through ongoing studies conducted by the SFWMD. When will these studies be completed?*

**District Response:** This project is dependent on results from the Kissimmee Chain of Lakes study. The SFWMD indicates this project is still under development by other entities and estimates it will not be complete until after 2018.

37. **Comment:** *Page 85. Additional feasibility studies should be performed and District cooperative funding may be required to make this project feasible. Who is working on these studies? How are they being funded and when will they be completed?*

**District Response:** The text refers to a recommendation for the City of Lakeland McIntosh power facility to perform a site-specific feasibility for a Zero Liquid Discharge reclaimed water project. The feasibility study and any District funding involvement would be pending the City of Lakeland's decision to pursue investigation of the Option. The City has not chosen to pursue this option; however, the feasibility study as well as project design and construction could be eligible for District cooperative funding consideration.

38. **Comment:** *Page 87. As discussed in Chapter 4, this aquifer is used extensively in central Florida for drinking water supplies. What does the water budget for the LFA look like? In other words how much available capacity does this aquifer have? Are we talking an additional 10 mgd, 50 mgd, more?*

**District Response:** Please refer to the District Response for comment #21.

39. **Comment:** *Page 91. In particular, projected effects of groundwater withdrawals cannot impact groundwater levels in the Most Impacted Area (MIA) of the SWUCA and cannot cause lake levels to fall below their established minimums. How is this determined? How sensitive are SFWMD's models? If a Lake Wales Ridge UFA well is withdrawing 2.0 mgd can SFWMD determine the impact of this withdrawal on the MIA?*

**District Response:** The District-wide Regional Model is used during the permitting process to determine anticipated impacts of proposed withdrawals on water bodies including lakes that are below minimum levels, and the Most Impacted Area (MIA). For lakes that are below the minimum level, any additional drawdown resulting from the model is not permissible without mitigation. As to your last question yes, the impact on the MIA from a Lake Wales Ridge withdrawal can be determined using the District's model.



40. **Comment:** *Page 91. Requests for groundwater for new uses will be considered if the requested use is reasonable and beneficial, incorporates maximum use of conservation, and there are no available alternative sources of water. What is the maximum use of conservation? How is this figure determined? What document can I look at that shows me what is the “maximum use of conservation”? Are these values fixed or are they constantly changing? Who determines the availability of alternate sources of water?*

**District Response:** The maximum implementation of conservation is determined case by case. The maximum conservation for a permittee could be reached when they have maximized the implementation of conservation measures for their operation, and is not necessarily a value or gallons saved. There is no document available that shows the maximum use of conservation, however, this RWSP provides an estimated potential conservation in mgd for every utility in the Southern Planning Region. This is also available at the county level for the non-public supply category. **Specific water conservation criteria tailored to individual use type (e.g., agriculture, public supply) are set forth in the Basis of Review for Water Use Permits.**

When applying for a permit, the applicant must demonstrate the following with regard to water conservation, as stated in the Basis of Review, Section 4.10:

“Applicants shall demonstrate that any economically and practicably feasible water conservation activities related to their use have been or will be implemented. Water conservation measures that have been approved by the Governing Board shall be implemented. Where specific water conservation elements have been developed for specific use types, such as water conservation plans for public supply use or best water management practices for agricultural uses, these elements shall be incorporated into the permit.”

Alternative sources have been identified in the RWSP. In addition, on a site specific basis, the applicant may also identify alternative sources. The Basis of Review requires that alternative sources be considered by water use permit applicant and provides a definition of what is considered to be alternative sources (supplies):

“Alternative water supplies’ and ‘alternative water supply’ means saltwater; brackish surface water and brackish ground water; surface water captured predominately during wet-weather flows; sources made available through the addition of new storage capacity for surface or ground water; water that has been reclaimed after 1 or more public supply, municipal, industrial, commercial, or agricultural uses; the downstream augmentation of water bodies with reclaimed water; stormwater; and any other water supply source that is designated as non-traditional for a water supply planning region in the applicable regional water supply plan. (Rule 40D-2.021(1)).”

41. **Comment:** *Page 93. This option is for rebates for installation of water efficient clothes washers in single family homes, multi-family housing and commercial establishments. These \$ per thousand gallons cannot be compared to other cost savings measures as they only*



*capture the cost to a utility and not the actual total cost. It assumes the money spent by the customer is “free” and therefore is not representative of the actual cost to implement.*

**District Response:** The cost is related to the utility incentive not the cost to the consumer. The cost of a new washer is born by the consumer regardless of efficiency. All measures in this plan use the same cost structure, only include rebate amounts and some administrative costs. The customer may be required to pay more than the rebate amount provided, but these costs are not included here. This method allows for a comparison between conservation measures in the plan.

42. **Comment:** *Page 98. During the 2010-2030 planning period, the total irrigated acreage is expected to decrease by 25 percent or 50,000 acres. Almost all of the decline in acreage will occur in the citrus category. Is there any interest in turning some agricultural land into farms that produce biomass for alternative energy use to meet the requirement for renewable energy? This could have the impact of reversing the trend of the reduction of agricultural water demand. In addition, Polk County is introducing growth policies that allow for higher density growth in selected areas. This trend may slow the reduction in irrigated agricultural acreage. It may be risky to assume past trends will continue at their previous rates for the next 20 years.*

**District Response:** Based on comments regarding the District’s agricultural demand projections, these demands have been revised such that the decline in irrigated acreage in Polk County is 2,256 acres, or 2.6 percent. Although the District acknowledges that new growth policies and crop management practices will most likely allow for more dense cultivation on less acreage in the future, the District cannot speculate as to the viability or the extent of conversion of citrus acreage into alternative crops, including bio-mass feed stock, and the water demand decrease/increase such conversions would incur. The District understands the potential alternative crops may have on the industry and will address this issue in the next RWSP as needed.

43. **Comment:** *Page 101. The Well Back-Plugging Program provides funding assistance for property owners to partially back-plug wells with poor water quality. Back-plugging involves plugging the lower portion of deep wells with cement to isolate the geological formation where poor-quality groundwater originates. Where are these wells located? What is the source of the high levels of chlorides and sulfate?*

**District Response:** The 2009 Well Back-plugging Report document, which is available at the District’s Well Back-plugging website (see below), contains a map (page 5) of all back-plugged well locations. Most of the sites are in the Shell and Prairie Creek watersheds or in the surrounding area of the Peace River Basin. The source of chloride and sulfate is the natural geologic formation in the Upper Floridan aquifer system. For the few wells close to the coast, brackish groundwater is the source of chlorides. ([www.swfwmd.state.fl.us/agriculture/well\\_back-plugging](http://www.swfwmd.state.fl.us/agriculture/well_back-plugging))

44. **Comment:** *Page 137. As lower cost, traditional water sources become scarce, more expensive alternative sources that involve more technical expertise and financial risk must be developed. This expertise and risk may be beyond the level of expertise and risk tolerance*

of many utilities and water supply authorities. Surely with all of the studies being done a project that has questionable results or unresolved problems would never be listed as a viable water source. Government supported projects may be expensive, but they should not be risky. Public funds should never be put at risk. Private firms can afford risk as they always have the option of going out of business.

**District Response:** The RWSP provides information to assist water users in developing funding strategies to construct water supply projects. Public-Private Partnerships is a viable option for some utilities to explore with specific projects. The following Sections 5.1, 5.2 and 5.3 provide examples of public-private partnership options. Section 5, Public-Private Partnerships and Private Investment, explains the potential risk managing relationships between public and private entities.

45. **Comment:** I am very much interested in our water supply and I am in full agreement that the economic health of a region is directly related to having an inexpensive, reliable source of clean water available to meet the demands of all of its citizens. I would like to review comments made by others to the 2010 RWSP. Will everyone's comments be made available on the district's website? I know that many of my comments are questions and that it's not reasonable to expect the district to respond to everyone's questions individually, but if enough people have similar comments that may be justification to modify the RSWP to make those areas more clear.

**District Response:** All public comments and the District's responses will be posted to the RWSP website by January 1, 2011.

**Polk County Utilities, Krystal J. Azzarella, Utilities, Environmental Manager,**

On behalf of Polk County, we sincerely appreciate the opportunity to review and comment on the Southwest Florida Water Management District's Regional Water Supply Plan (2010). Our specific concerns with regard to the Heartland Planning Region draft document are as follows:

1. **Comments for Chapter 1:** Page 4 – Reference to Polk County Comprehensive Water Supply Plan (PCCWSP) is different than in other sections of the RWSP (example: Chapter 5 page 75). It is recommended that the reference to this report be consistent throughout the whole document. Page 7 – Table 1-1 only adds up to 99.98. Page 14 – The County does not understand why the PCCWSP is not referenced in this section of the District's RWSP.

**District Response:** The text has been revised as suggested.

2. **Comments for Chapter 2:** Page 27 Section 2.0 - This specific sub-section, which contains the PCCWSP appears to be out of place in this report. This section would be more appropriate in Chapter 1 Section 3 Water Supply Investigations, as mentioned previously. Page 27 Section 2.0 - Please note that the Municipalities did **NOT** initiate the PCCWSP. Please delete "and it's municipalities". Page 29 – The last paragraph says that this is the executive summary section and it's Chapter 2.

**District Response:** The text has been revised as suggested.

3. **Comments for Chapter 3:** Page 45 – The District's 2006 Regional WSP noted a reduction goal of 50 MGD by 2025:

- Please provide a summary of the accomplishments of this goal since the issuance of the 2006 Plan. In addition, please provide the accounting process used to monitor this specific goal, specifically with respect to the goals and accomplishments achieved within Polk County.
- The new Plan specifies 26.9 MGD reduction for the Heartland Region (Polk, Hardee, Highlands Counties), which portion of this is estimated for Polk County?
- States that in 2010 the Heartland Region has only reduced 3.2 MGD of the 26.9 MGD
- However, from '00-01 to '05 Polk County alone has dropped 11.3 MGD. Therefore it would seem that either there is a discrepancy in tracking or Hardee and Highlands County have dramatically increased their pumping. If the second is true, Polk County should not be punished because of the pumping in Hardee and Highlands Counties. Especially since water levels are typically impacted the most by local pumping.

**District Response:** Staff monitors and reports the status of recovery in the SWUCA on an annual basis to the Governing Board. Most recently this was done during the August 2010 Governing Board meeting and is available for viewing on the District's web site. The focus of the annual status report has been water resource trends, factors affecting the trends, and progress on alternative water supply development, groundwater offset, and conservation projects. Accomplishments in the SWUCA will not be fully realized until initiatives implemented to reduce groundwater withdrawals and achieve MFLs are completed. A large portion of projects are under construction or have been completed, but the benefits have not yet been fully realized. The benefits of these projects will be quantified and reported when the SWUCA Recovery Strategy is re-evaluated in 2012.

Groundwater reductions in the SWUCA are calculated using the ten-year average historical use of expired/cancelled permits, estimated groundwater offsets from FARMS projects, and long term changes in water use associated with permit modifications. All long-term reductions are not used to meet environmental restoration demands. They are also used to meet demands due to increases in public supply water use and projected increases in water use associated with changes in water use permits. Therefore, the 3.2 mgd groundwater reduction in the Heartland Region is the *net* reduction based on total reduction in groundwater use from expired/cancelled permits, FARMS projects, and reductions from permit modifications and the quantity of these savings that were used to meet other demands.

The SWUCA Recovery Strategy does not assign recovery goals by planning region (as in the RWSP) or by county and there is no county by county goal. Recovery is expected to occur with a 50 mgd reduction over the entire SWUCA. The estimated quantities required for SWUCA restoration were divided into planning regions to accommodate the format of the 2010 RWSP. Estimation by planning region was accomplished by basing the recovery quantity on the percentage of estimated groundwater withdrawal/reported use by county in the SWUCA for the period 2000 to 2007. Polk County's average groundwater use for this period was 36% of groundwater use in the SWUCA. Of the estimated 26.9 mgd reduction in groundwater use in the Heartland, 18.2 mgd of this is estimated (but not required) to come from Polk County. The RWSP and the SWUCA Recovery Strategy state that recovery may be achieved with reductions of less than 50 mgd, depending on where the reductions occur.

4. **Comments for Chapter 4:** Page 51- End of first paragraph states “it (Peace River Expansion Constant Supply Option from the Peace River Evaluation Royal Consulting Services, Inc. as part of the PCCWSP) was not calculated using the District’s proposed minimum flow criteria for the lower Peace River as was done in Table 4-1”. However, the Peace River Evaluation report states on page 13 that “The methodology from the Lake Hancock and UPRWS models was revised to include the specific MFL withdrawal schedules and the **proposed Lower Peace River MFL.**” Additionally, on page 15 the proposed MFLs used in this evaluation are referenced again; “The **proposed Lower Peace River MFL** (SWFWMD, 2007) was used to compute the maximum amount of water that could be diverted from the Peace River upstream of Charlotte Harbor. This MFL is based on the combined flow from three United States Geological Survey (USGS) gages: Peace River at Arcadia, Joshua Creek at Nocatee, and Horse Creek near Arcadia.”
- Page 52 – Table 4-1 does not specify surface water quantities available along the Peace River for the Heartland Region
  - Page 55 – In Table 4-2 the 75% Potable Water Reclaimed Offset for Polk is listed as 39.77 MGD. The County is curious how this number has almost tripled from the 14.4 MGD previously determined through collaboration with the District in the PCCWSP.
  - Page 71 – Small text edit: it says Chapters 7, need to delete the “s” or include another chapter number.
  - Page 74 – In Table 4-7 the potential Conservation quantity for Polk County is listed as 18.6 MGD non-agricultural. This number is greater than the 15.41 MGD previously determined through collaboration with the District in the PCCWSP. What is the basis for this change?

**District Response:**

**Page 51: Surface water availability in the Polk County Comprehensive Water Supply Plan Joint Study Peace River Evaluation (Royal 2008) was calculated based on proposed minimum flow criteria available at the time the study was completed. After the Polk County plan was completed, the Lower Peace River minimum flow criteria were revised and ultimately adopted by the District’s Governing Board in 2010. The RWSP calculations are based on the adopted criteria. The RWSP text was revised to clarify this point.**

**Page 52: All available surface water in the Peace River is allocated to the Southern Planning Region in Table 4-1, because more water is physically present and available downstream; however, future withdrawals from the river in the Heartland Planning Region are possible. The quantity estimated to be available in the Southern Planning Region is for the entire Peace River. It is the estimated additional amount of flow above what is currently allocated that is potentially available to meet future demands and was calculated based on MFLs for the lower freshwater portion of the Peace River. It represents what is available from the combined flows of the Peace River at Arcadia, Horse Creek near Arcadia, and Joshua Creek at Nocatee gages and assumes that sufficient storage will be developed to capture excess flows during the wet periods, for use during the dry periods. Though withdrawals are available in some upstream portions of the river, the amount that can be withdrawn at a particular location is dependent on the environmental concerns at that location and downstream of that**



**location (MFLs). Additional cumulative withdrawals from the river would not be able to exceed this amount.**

Page 55: The 14 to 15 mgd of reclaimed water offsets included in the PCCWSP are related to *“The potential yield for reclaimed water is the quantity of water used for public supply that can be offset”* (PCCWSP, Section 2-39, Potential Yield) and thus are treated drinking water offsets. The 39.77 mgd listed in the RWSP includes all potable-quality offsets which would include public supply (treated drinking water) and non-public supply offsets.

Page 71: The unnecessary ‘s’ on page 71 referencing Chapter 7 has been removed

Page 74: **Two different models were used in determining water savings potential for each plan. The models have some variation in methods and assumptions including participation rates, so the savings potential is not exact between both plans.**

#### 5. Comments for Chapter 5:

- Page 76 – Reference to PCCWSP (“Reiss Environmental, 2009”) change to Reiss Engineering. Also see Chapter 1 comment on making consistent references.
- Page 77 – Table 5-1 states that the values are from the PCCWSP. However one of the projects is listed incorrectly:
  - Peace River at Ft. Meade + Bowlegs Ck is listed with a 5.2 mgd yield and 70,226 Capital Cost in \$1,000/mgd. Based on the PCCWSP the yield is 5.1 and the Capital Cost in \$1,000/mgd should be 44,019.
- Page 79 – The Peace River/Land Use Transition Groundwater Supply project has costs and quantities listed for the surface water component only. These values are listed incorrectly. Please see previous comment about page 77 and adjust accordingly.
- Page 81 – On page 81 end of the first paragraph, it states that an “expanded description is provided for 4 of the 50 options that are....projects listed above.” The projects listed above references the PCCWSP, as such please change the 50 options to 58 options.
- Page 82 – It is suggested that units be included in the column headers for added clarity.
- Page 82 – The 12<sup>th</sup> project listed in Table 5-3 “W. Haven Plt # 2 to #3 WWTP Interconnect, Cty of Winter Haven” provides an interconnect supply of 0.4. This should be 0.544 according to the PCCWSP (this can be found on the Long List #19 project R-42).
- Page 88-90 – The order of projects listed in Table 5-4 is confusing. It does not appear to be sorted by city, quantity, cost or unit cost. Unless there is a specific reason for the present order, it is suggested that the projects be listed by City, followed by quantity.
- Page 102 Agricultural Alternative Source Option #2 – This paragraph is confusing because it says that Chapter 5 has a list of options. This paragraph is in Chapter 5. Perhaps the Chapter number is wrong. Please edit the text to improve clarity.

#### District Response:

Page 76: The change to Reiss Engineering has been made.



Page 77: The suggested revision has been made.

Page 79: The listing of costs for the project's surface water component is appropriate for this section of the RWSP.

Page 81: The sentence references the project options on table 5-3. There are 50 **reclaimed** water options selected for inclusion in the RWSP.

Page 82: The units have been added as requested and for consistency with other RWSP volumes.

Page 82: The quantity has been revised as suggested.

Pages 88-90: The projects are listed in a similar order as the PCCWSP. The order will remain as is.

Page 102: The appropriate sections within Chapters 4 and 5 will be specified. Chapter 5, Section 2 in each volume lists each Reclaimed Water Option for the planning region including Agricultural options. Additionally, the types of crops that can be irrigated with reclaimed water will be specified.

**South Florida Water Management District, Kimberly Shugar, Director, Intergovernmental Programs Department, South Florida Water Management District**

*The South Florida Water Management District (SFWMD) appreciates the efforts of the Southwest Florida Water Management District (SW District) in developing the draft 2010 Regional Water Supply Plan (RWSP or Plan) and the opportunity to review and comment on the Plan. As you are aware, SFWMD is also presently developing its RWSP updates for the Upper East Coast and Lower West Coast Planning Regions, so the opportunity to comment on the draft Plans is timely for both our agencies. In reviewing SW District's draft Plans, our attention focused on the plans for the Heartland and Southern planning regions.*

*These documents are well written and comprehensively reflect the effort devoted to the process and plans. We agree with your multiple region approach; we feel it provides the ability to focus more on local issues and assist in subsequent outreach efforts. In reviewing the draft SW District Plans, SFWMD staff identified some important topics which we have already discussed with SW District staff. This letter elaborates on those discussions. The SFWMD concerns relate primarily to Josephine Creek and the Kissimmee River water supply availability/projects in this draft Plans and the processes to coordinate in areas of shared resources and boundaries.*

1. **Comment:** Josephine Creek Water Availability. As noted in Chapter 4 of the draft Heartland Plan, Josephine Creek is a source of significant inflow to Lake Istokpoga in the SFWMD. Lake Istokpoga is the primary supply of water for multiple users downstream of the Lake, including the Seminole Tribe of Florida. The draft Heartland Plan indicates that an additional 4.35 MGD is available from Josephine Creek.

*In 2006 the South Florida District established a minimum level for Lake Istokpoga. This Lake minimum level was based in large part upon inflows from area creeks. Josephine Creek is a significant, direct tributary to Lake Istokpoga. The Lake's minimum level is currently not projected to fall below its minimum level within the next 20 years. Therefore, the SFWMD has adopted a prevention strategy for Lake Istokpoga. This strategy provides, in summary, for continuation of the Lake's regulation schedule and operational plan. (See Rule 40E-*

8.421(7), Fla. Admin. Code). With this background information in mind, SFWMD respectfully requests that SW District consider the following concerns:

As noted, draft Heartland Plan indicates that an additional 4.35 MGD is available from Josephine Creek upstream of Lake Istokpoga. However, this diversion of a substantial portion of the Creek's inflows could have significant, detrimental impacts on the Lake Istokpoga minimum level and permitted, downstream water users. It is possible the proposed withdrawals may alter the SFWMD's current conclusion that Lake Istokpoga's minimum level will not be violated. Clearly, a full analysis of the hydropattern alteration associated with the potential loss of 4.35 MGD must be completed as a part of determining the project's feasibility as related to the Lake's minimum level.

**District Response:** The District understands South Florida Water Management District's (SFWMD's) concern regarding the use of surface water from Josephine Creek. The District intends to coordinate with SFWMD on future withdrawals from Josephine Creek so they are consistent with established minimum levels and the adopted prevention strategy for Lake Istokpoga. As noted in Chapter 4, Section 1 of the plan, minimum flows and existing legal users will affect source availability. Text was added to the plan to acknowledge that use of Josephine Creek surface water will require coordination between Districts regarding minimum flows on Lake Istokpoga and existing legal users, including the water rights of the Seminole Tribe of Florida. Certainly, effects to existing minimum flows and existing legal users would have to be considered before any project is implemented. Project viability with regard to impacts to Lake Istokpoga will be evaluated and addressed during a collaborative permitting process with SFWMD.

- 2. Comment:** The SFWMD has issued consumptive use permits for a number of agricultural activities in the Indian Prairie Basin located directly south of Lake Istokpoga. These permits serve an irrigated acreage of more than 500,000 acres; this is in addition to the acres irrigated by the Seminole Tribe of Florida at their Brighton Reservation. The agricultural interests in this Basin are primarily dependent upon surface water discharges from Lake Istokpoga for irrigation. These discharges are conveyed south from Lake Istokpoga via several Central and Southern Florida Flood Control Project canals. This Basin has historically experienced recurrent water shortage declarations. In this regard, it is especially important to note the impact of the United States Army Corps of Engineers regulation schedule for Lake Istokpoga. Generally, when the Lake reaches the regulation schedule's "floor elevation," S-68 cannot be opened for the purpose of releasing any water for supply. Given the dependency of permitted users on surface water supply from Lake Istokpoga and the potential for full closure of S-68, water shortages can be particularly severe in this Basin. The District identified this Basin as a restricted allocation area nearly 30 years ago and has, since that time, not authorized any increased withdrawals from the affected surface water bodies. Consequently, a full analysis of the potential of Josephine Creek to support an additional 4.35 MGD withdrawal must also assess the potential for interference with the water rights of existing legal users in the SFWMD.

**District Response:** Please refer to the District Response for Comment 1.

3. **Comment:** *The Seminole Tribe of Florida Brighton Reservation is also located in the subject Basin. Pursuant to the Water Rights Compact Among the Seminole Tribe of Florida, the State of Florida, and the South Florida Water Management District, a state and federal law, the Seminole Tribe has substantial surface water entitlement rights. The full scope of these rights are defined in the Compact and implementing agreements. In general, the Tribe is entitled to a percentage of surface water which can be withdrawn from Project canals; as noted, these canals receive water from Lake Istokpoga. Interference with the Tribe's water rights is prohibited. In addition to the surface water entitlement rights, the Tribe may compete with other proposed water users for available water supplies.*

*SFWMD's recommendation regarding the identification of Josephine Creek as a potential source of new water is that the Plan be revised to identify these concerns associated with development or that the identification of available water from Josephine Creek be removed from the Plan. The text and tables on pages 51-53 of the Heartland Plan and other tables (5-2) in the Plan that summarizes potential water availability and those in the Executive Summary would also need to be adjusted. Page 23 lists MFL's established by SW District – this may be a location where the MFL for Lake Istokpoga could be mentioned as having a role in determining final water availability from Josephine Creek even though it is located outside the SW District.*

**District Response:** *A footnote has been added to Table 5-2 that states that any source development must be in compliance with the Lake Istokpoga MFL and consider existing legal water users in the permitting process.*

#### **Kissimmee River and the Upper Chain of Lakes**

*Chapter 5 of the Heartland Plan discusses several water supply development options; including the Kissimmee River Potable Supply project. This effort has been jointly discussed in the past by SFWMD. SW District and several Central Florida utilities for deliveries of water in Polk, Osceola and Orange counties. The current text on page 78 of the Heartland Planning Region document acknowledges this partnership and the fact that SFWMD is still assessing the effects of possible surface water diversions. SFWMD staff encourage SW District to consider the flowing concerns:*

4. **Comment:** *The SFWMD continues to pursue efforts to develop a water reservation for the Kissimmee River and Chain of Lakes system. Current efforts to delineate water available by the SFWMD focus on the amount and timing of environmental, navigational and flood control needs within the Kissimmee Chain of Lakes and River system. If additional water is identified that is not required for these purposes, then that water might be available for allocation at a future time. It is premature to conclude water is available for potable or agricultural water supply from the Kissimmee River.*

**District Response:** *The District understands the ongoing complex analysis on the Kissimmee River and Chain of Lakes System. As indicated on page 75 of the Heartland Planning Region document under Part A. Water Supply Development Options, “The options presented in this Chapter are not necessarily the District’s preferred options but are provided as reasonable concepts that water users in the region may pursue in their water supply planning. Following a decision to pursue an option identified in the RWSP, it will be necessary for the parties involved to conduct more detailed engineering, hydrologic and biologic assessments to provide the necessary technical support for developing the option and to obtain all applicable*

permits.” The District is presenting possible options; it is up to the respective entity to perform the necessary tasks to develop a future source .Additional bullet was added at the bottom of page 78: Available quantities from this project depend on the outcome of ongoing studies conducted by SFWMD to develop a water reservation.

5. **Comment:** Any impact analysis that considers water availability in the Kissimmee River and Chain of Lakes system will need to take into consideration the amounts of water necessary for environmental sustainability in both the Kissimmee River and the Kissimmee Chain of Lakes systems because these systems act as an interconnected unit.

**District Response:** The District acknowledges the ongoing effort by SFWMD as bulleted items on Pages 80-81.

6. **Comment:** SFWMD staff questions the origin of Polk County's estimates regarding the potential for a facility with a minimum capacity of 24 MGD on the Kissimmee River as discussed on page 78 of the Heartland Plan. It is thought that this amount was predicated on preliminary reports found as part of the 2005/2006 Kissimmee Basin Water Supply Plan. Recent work by the SFWMD indicates these numbers are obsolete. Our recommendation in this regard is that the issues language current in the Heartland Plan beginning on page 78 be modified to clarify the points listed above. If this source is determined to have availability that merits a regional project we welcome SW District's partnership in developing the project that might address a portion of Polk County's future demand.

**District Response:** The following sentence was added to page 80: “The 24 mgd is based on conceptual analysis and the final determination of available water will depend on ongoing studies by SFWMD.

#### Charlotte County/Babcock Ranch

7. **Comment:** SFWMD staff would encourage SW District staff to include some text acknowledging the need for both agencies to coordinate on resource analysis, planning, and permitting in this area.

**District Response:** Text has been added to address this comment.

#### Miscellaneous Issues

During the review of the Plan some small items were identified that may be worth considering and adding to the document.

8. **Comment:** The term CFCA does not appear in the abbreviations list

**District Response:** The CFCA has been added to the abbreviation lists of the appropriate volumes.

9. **Comment:** Chapter 4, page 60 appears to discuss groundwater availability of the Upper Floridan Aquifer in the context of the SWUCA. The discussion does not appear to address CFCA availability issues which apply to eastern and north Polk County. The current opinion of the three Districts' is that some addition UFA water may be available pending the final determinations underway. This seems to be discussed as a brackish water blending project beginning on page 87 of the Heartland Plan.

**District Response:** The CFCA is discussed in Chapter 2, Section 1, Prevention Activities, but was not referenced in Chapter 4, Section 4, Fresh Groundwater. Text has been added to recognize the CFCA.

The Lower Floridan aquifer is discussed as a potential source in Chapter 4, Section 3, Brackish Groundwater Desalination; however, it was not included in the Chapter 4, Section 4, Fresh Groundwater. A subsection has been added to Section 4 to include a discussion of the Lower Floridan as a fresh groundwater source.

10. **Comment:** *Incorporate a discussion of the Lower Floridan aquifer as a potential source. The SW District, SFWMD and Polk County have studies underway for this potential freshwater source.*

**District Response:** Please refer to the District Response to Comment #9.

11. **Comment:** *Include text to acknowledge the need of each agency to include the applicable minimum flows and levels and reservations established by other water management districts in resource analysis, planning, and permitting.*

**District Response:** Please refer to the District Response to Comment #1.

*Again, the SFWMD appreciates the opportunity to provide comments on the draft 2010 regional plan and to continue to work with the SW District to address joint water supply planning issues.*





## Tampa Bay Planning Region

### Tampa Bay Water, Ivana Blankenship, Environmental Planner

1. **Comment:** *Non-Agricultural Water Conservation Option #1 - Clothes Washer Rebates*

*The Regional Water Supply Plan (RWSP) states a family of four usually generates 300 loads of clothes washing per year. It states that high efficiency washers use 15 to 30 gallons of water to wash clothes with an estimated water savings is 16.3 gpd. It appears that the number of loads per year might be a bit off since other research indicates that High-Efficiency Clothes Washer Rebates save 16.3 gpad. This is calculated as follows:*

*In an end use study conducted in Pinellas County it was determined the old top load washer used an average of 40.2gpl (gallons per load) and 42.0 gpad (gallons per account per day). The SF loads per day (lpd) = 42.0 gpad ÷ 40.2 gpl = **1.04 lpd per account/day**. Potential water savings per high efficiency washer machine was found to be 15.7 gpl based on a study conducted in Bern Kansas. Savings per account for the SF sector = 1.04 lpd per account x 15.7 gpl = 16.3 gpad, exactly the same as the District's statement. Therefore the numbers of loads per year would be 1.04\*365= 380 loads per year. Some clarification of background data collection would be help clarify this issue.*

**District Response:** We prefer to use the statement as currently written in the plan, source is the Alliance for Water Efficiency. The statement does say “more than 300 loads” so this clarifies that it could be more than 300 loads per year. Here is the statement currently in the plans, “A family of four using a standard clothes washer may generate more than 300 loads per year, consuming 12,000 gallons of water annually. High efficiency clothes washers can reduce this water use by more than 6,000 gallons per year.”

2. **Comment:** *The RWSP cost per rebate is estimated at \$160, this seemed to be along the range of other high-efficiency clothes washer rebates. Should a range be established?*

**District Response:** Clothes washers were evaluated in this plan for single-family uses only. The cost is presented as “cost per rebate at approximately \$160”, so the cost per rebate could be more or less. The method/model that was developed to determine the savings and costs per measure, per utility, use these approximate costs to calculate costs and cost benefits.

3. **Comment:** *The RWSP states, “Higher savings and lower costs could be achieved in multi-family or commercial laundry facilities.” If there is higher potential saving and lower cost in other sectors would it be prudent to assess this further by sector to clarify how maximum water savings could occur? There is information available that can quantify common area and inhome laundry usage for the multi-family sector and turns per day per machine for coin operated laundries. Additionally, some description of large scale commercial laundry use, savings rate, and cost effectiveness would be an excellent addition to this section.*

**District Response:** For the purposes of this current plan we will only be providing specific savings, costs and cost benefits for single family uses. The District developed a method for this current RWSP for determining the water conservation potential and costs, which only includes a savings benchmark for single family

residences. The District is familiar with the information available for multi-family and commercial facilities and plans to provide this detail in the next update of the RWSP.

- Comment:** Non-Agricultural Water Conservation Option #2 – Plumbing Retrofit Kits (residential users) *How would this option be tracked? Unless there is some specification of actual replacement of **existing high water use fixtures in areas that have not changed out fixtures**, this option may not be quantifiable. Additionally, specification of the retrofit kit devices, including use of Water Sense products (if applicable) savings rate and retention rates should be identified.*

**District Response:** We agree this is a challenge and suggest the utility conducted as an exchange, the utility could keep track of customer addresses as the exchanges are made. Give-aways are more difficult to track, and so the exchange method is recommended. A general statement regarding the availability of WaterSense labeled showerheads will be added to this section.

- Comment:** Non-Agricultural Water Conservation Option #3 - Ultra Low Flow Toilet (ULFT (residential and commercial users) *Although the District has historically funded toilet rebate programs, many parts of the US and other countries have identified and implemented various strategies such as bulk toilet purchase giveaway programs. Research indicates bulk toilet purchase giveaway programs appear to be more cost-effective than rebate programs. Bulk toilet purchase programs allow agencies to create specifications that control the quality of product installed, increasing the likely retention of savings and cost-effectiveness, while lowering the programs total cost. (For example, toilets purchased retail by customers through rebate programs can cost more than twice as much as buying toilets in bulk and lower out of pocket expenses by the end user.) Agencies require certain specifications for HET and ULF toilets and purchase the product in bulk for half the retail cost and, in some cases, require the product be held by the seller until all devices are provided the public. The agencies had the ability to buy in bulk and get a much better quality toilet for the same price that was offered as a rebate. The Metropolitan Water District of Southern California and East Bay Municipal Utility District, calculated the savings of the ULF versus the HET, the HET saved .850 AF (276,973.35 gallons) compared to .758 AF (246,995.06 gallons) for ULF.*

*Recommend elimination of incentives for ULF toilets and only provide incentives for Water Sense or higher quality High Efficiency Toilets (single or dual flush). Please note that there is no actual data that shows dual flush toilets with a full flush or 1.6 gpf and half flush at 0.8 gpf equates to 1.28 gallons/flush in reality. Therefore, no advantage over HET toilets has been documented. This conservation option can be used for commercial users as well but it does not state the savings rate and cost per measure for the commercial sector.*

**District Response:** In the past, the District has not typically funded bulk-purchase projects mainly because this “singles- out” a few brands, but this is something utilities may want to consider in the future. In regard to eliminating ULF toilets, if a 3.5 or more gpf toilet is being replaced with a water efficient toilet, a considerable amount of water will be saved whether replaced with a 1.6 gpf or 1.28 gpf toilet. For this reason, the District will not eliminate incentives for ULF toilets in the plan at this time.

- Comment:** Non-Agricultural Water Conservation Option #4 – Water Efficient Landscape and Irrigation Evaluations and Large Landscape Surveys (all users) *How are savings of a*

*completed evaluation measured if it's not known if recommendations are implemented? It seems like savings need to be verified by on-site follow up visits. Non-residential and multi-family savings rates vary significantly from the default, due to irrigated area differences. It might be appropriate to note this in the report or provide a savings rate per square foot of irrigated area.*

**District Response:** We agree. A statement has been added to this section in regard to follow-up evaluations. The 428 gpd for large landscape surveys (benchmark for properties larger than one acre) is typically applied to non-residential customers. The District recognizes the differences in savings benchmarks for multi-family and non-residential customers that are less than one acre and agrees to address this in the next update of the RWSP.

7. **Comment:** Non-Agricultural Water Conservation Option #5 – Rain Sensor Device Rebates (all users) *The RWSP mentions, “soil moisture sensors have shown in certain circumstances to be capable of saving even more water in residential settings, and potentially save greater quantities of water than rain sensor devices.” As funded by the District, research conducted by Dr. Michael Dukes on water savings of soil moisture sensors and rain sensors when used in landscape irrigation indicate “The soil moisture sensor yielded the largest water savings of 65% less irrigation applied, compared to homes that were only monitored with a meter, whereas rain sensor devices yielded only 14% savings over homes only monitored. It seems that more discussion on water savings potential of soil moisture sensors should be provided.*

*It might be appropriate to provide some information or identify lack of information regarding rain shut off device life. Also, since there have been requirements since 1991 for use of rain sensors on new irrigation systems some assessment or description that new systems should have rain sensors installed and would lower the potential for rebates or giveaways, should be provided in the report.*

**District Response:** We agree that soil moisture sensors appear to hold promise, however, the data we have is based upon very limited research conditions. The District agrees to address these devices in the next update of the RWSP. A statement has been added that recognizes rain sensors typically have a five-year life. In regard to the rain sensor requirement, Senate Bill 494 is defined in Chapter 4, Section 6 or 7, subsection 1.0, and will also be added to this section.

8. **Comment:** Non-Agricultural Water Conservation Option #6 – Industrial Commercial Pre-Rinse Spray Valve Rebates (industrial and commercial users) *The EPA is currently developing a Water Sense certification program and specification for pre-rinse spray valves that flow at 1.28gpm or less. Use of this specification, when completed, will provide not only more water savings per device, but will also provide a specification that the devices actually work (the current 1.6 gpm Federal standard has no device specifications required).*

**District Response:** The District recognizes that the WaterSense certification is underway for spray valves. However, as it has not been finalized by the EPA, we plan to mention this in the next RWSP update.

9. **Comment:** Non-Agricultural Water Conservation Option #7 – Industrial, Commercial, Institutional Water Facility Assessments (industrial, commercial, institutional users)

*Estimated water savings for audits do not equate to savings unless there is a requirement for implementation. Please clarify!*

**District Response:** This clarification is addressed in this section. The following language (page 108 in the Tampa Bay plan) is currently in this section of the plan: “While the average survey will have a variable cost of \$3,450, the average savings rate is 2,308 gpd. Offering rebates along with the surveys will enhance the likelihood that recommended measures get implemented but will also increase the program costs. It should also be noted that many performance contractors are also available to conduct ICI surveys, and will normally invest in the efficiency improvements for an agreed upon percentage of the financial savings achieved through the water, sewer and energy savings.” A statement addressing the savings related to surveys result from the implementation of recommendations, has been added to this section.

10. **Comment:** *How are savings of a completed assessment calculated if it is not known which recommendations are implemented? It might be appropriate to identify that savings need to be verified by on-site follow up visits. (This conservation option poses the same problems as the water efficient landscape evaluations)*

**District Response:** The District concurs with the suggestion to verify savings with follow-up visits, and has added a statement to the section.

11. **Comment:** *Non-Agricultural Water Conservation Option #8 – Water Budgeting (all users) The report identifies a savings of 78gpd. Some background on how this was calculated and from what data or research is needed. The RWSP identifies the program cost of \$11/account. Please provide background information and a description of the impact on the customer. The water budget is for all users, therefore the program cost and water savings will be different for single family, multifamily, and commercial sectors. Does the water budget option assume that existing potable water users that currently have no irrigation system will be provided a water budget for their landscapes? If this is true and the local utility creates this entitlement is there a requirement that the utility must have capacity available to meet that anticipated need? It might be helpful to clarify!*

*Water budgets are custom developed for each community. I think the issue for water budgets is “does the water budget assume that existing water users that are not irrigating have a right to do so under the budget process? If so, does this require the utility to provide adequate capacity to meet all potential water budget candidates?”*

**District Response:** The water savings benchmark of 78 gpd is based on a study that was completed in August 2000 for the District. The benchmark is based on the annual average use of residential irrigation systems and the amount that would be used if those systems were following a water budget. The water budget is based on reducing the number of irrigation events per year. A brief description of this benchmark has been added to the text.

In regard to the program cost of \$11 per account, it is currently explained in the plan that this includes monitoring of the properties and enforcement (page 109 in Tampa Bay plan): “Since this measure is an on-going program that targets all accounts the variable cost is \$11 per account per year, regardless of the participation rate. This is based on standard monitoring and enforcement of water budgets, which is ideally



automated through the billing system.” In response to the comment on “impact to the customer”, a sentence has been added to explain that “program participants would be required to follow the local water restrictions and to not exceed their prescribed water budget.” Language will be also added to clarify that this measure targets water users that have in-ground irrigation systems.

12. **Comment:** *Potential BMP options not discussed within RWSP - Has the District considered the use of Water audits/Leak Detection programs as a BMP in the Regional Water Supply Plan?*

**District Response:** Water audits and leak detection are widely used in conjunction with the permitting process. They are better suited as regulatory tools than as BMPs for planning purposes, and are already required of public supply utilities. Additionally, potential savings from conducting water audits and leak detection programs are not quantifiable in advance of their accomplishment, and have been omitted from the RWSP for that reason. It should be noted, however, that the SWFWMD is the only water management district that has an in-house leak detection (urban mobile lab) program which provides leak detection services to water use permit holders. The SWFWMD’s urban mobile lab program also provides meter testing services and provides assistance in the conduction of water audits.

13. **Comment:** *On page 48 of the draft document, section 2.2, Tampa Bay Water recommends the following changes: [...] The most significant environmental impacts in the NTBWUCA resulted from the Tampa Bay Water’s West Coast Regional Water Supply Authority’s (Tampa Bay Water’s predecessor agency) groundwater withdrawals from the central wellfield system. To reduce groundwater withdrawals and mitigate impacts, the District entered into the Partnership Agreement with Tampa Bay Water and its member governments in 1998 [...]*

**District Response:** The text has been revised as suggested.

14. **Comment:** *On page 57 of the draft document, section 2.4, Tampa Bay Water recommends the following changes: [...]Tampa Bay Water operates three withdrawal points on the canal: Harney Canal, Middle Pool and Lower Pool. Water can be withdrawn up to an annual average of 20 mgd from the Harney Canal, where the Hillsborough River connects to the Tampa Bypass Canal, and transferred to the Hillsborough River just upstream of structure S-161. Water withdrawn from the Middle Pool is sent to Tampa Bay Water’s pump station. Permitted withdrawals from the canal’s Lower Pool are dependent on discharge at structure S-160, the structure on the lower end of the Canal’s Lower Pool. Tampa Bay Water is permitted to send up to 85 mgd on an average annual basis from the Middle and Lower Pools to the pump station provided constraints based on flow at the relevant structures are met. Given limitations of withdrawals by the flow schedule in the permit, actual annual average withdrawals were expected to be 29 mgd based on an analysis of the period from 1975 to 1995. Future withdrawals are expected to be similar. Total combined permitted withdrawals, including 20 mgd from the Harney Canal and 29 mgd from the Middle and Lower Pools, are 49 mgd.*

Tampa Bay Water operates two pumping stations on the Tampa Bypass Canal. The Harney pump station withdraws water from Harney Canal (middle Pool) of the Tampa Bypass Canal and delivers this water to the City of Tampa’s Hillsborough River Reservoir. The

purpose of this transfer of water is to augment the City's reservoir during low flow conditions in the Hillsborough River. Tampa Bay Water also operates the Tampa Bypass Canal Pump Station which is permitted to withdraw water from the middle pool and lower pool of the Tampa Bypass Canal. The withdrawal intakes are located just upstream and downstream of Structure S 162. This control structure separates the middle and lower pools. Tampa Bay Water's Harney Canal Augmentation permit allows withdrawals up to an annual average of 20 mgd. Tampa Bay Water's Hillsborough River/Tampa Bypass Canal Water use permit does not limit the annual amount of withdrawal allowed. Diversions from the Hillsborough River to the Tampa Bypass Canal are based on flow calculated at the Hillsborough River Dam. Water is diverted from the Hillsborough River through Structure S161 into the Tampa Bypass Canal for subsequent use by Tampa Bay Water. Tampa Bay Water's withdrawals from the lower pool of the Tampa Bypass Canal are based on stage. The minimum flow at Structure S160 is 0, so no flow downstream of S 160 is required. Tampa Bay Water is permitted to take 100% of the available water when the pool stage is at 9 feet or above, up to the permit capacity of 258 mgd. Tampa Bay Water manages the pool stages in the middle pool and lower pool to maximize the availability of water on a day to day basis. Long-term yield analysis estimates that 88.5 mgd of water is available for withdrawal from the Tampa Bypass Canal including the current flow-based diversions from the Hillsborough River. [...]

**District Response:** The document has been revised as follows: Tampa Bay Water operates two pumping stations on the Tampa Bypass Canal. The Harney pump station withdraws water from Harney Canal (middle Pool) of the Tampa Bypass Canal and delivers this water to the City of Tampa's Hillsborough River Reservoir. The purpose of this transfer of water is to augment the City's reservoir during low flow conditions in the Hillsborough River. Tampa Bay Water also operates the Tampa Bypass Canal Pump Station which is permitted to withdraw water from the middle pool and lower pool of the Tampa Bypass Canal. The withdrawal intakes are located just upstream and downstream of Structure S 162. This control structure separates the middle and lower pools. Tampa Bay Water's Harney Canal Augmentation permit allows withdrawals up to an annual average of 20 mgd. Tampa Bay Water's Hillsborough River/Tampa Bypass Canal Water use permit does not limit the annual amount of withdrawal allowed. Diversions from the Hillsborough River to the Tampa Bypass Canal are based on flow calculated at the Hillsborough River Dam. Water is diverted from the Hillsborough River through Structure S161 into the Tampa Bypass Canal for subsequent use by Tampa Bay Water. Tampa Bay Water's withdrawals from the lower pool of the Tampa Bypass Canal are based on stage. The minimum flow at Structure S160 is zero, so no flow downstream of S 160 is allowable. Tampa Bay Water is permitted to take 100% of the available water when the pool stage is at 9 feet or above, up to the permit capacity of 258 mgd. Tampa Bay Water manages the pool stages in the middle pool and lower pool to maximize the availability of water on a day to day basis. Long-term yield analysis estimates that 88.5 mgd of water is available for withdrawal from the Tampa Bypass Canal including the current flow-based diversions from the Hillsborough River.

# Regional Water Supply Plan Tampa Bay Planning Region Comments and Responses

15. **Comment:** On page 59 of the draft document, Table 4-1, Tampa Bay Water recommends District use the following table:

Water Body	In-Stream Impoundment	Adjusted Annual Average Flow <sup>1</sup>	Potentially Available Flow Prior to Withdrawal <sup>2</sup>	Permitted Average Withdrawal Limits <sup>3</sup>	Current Withdrawal <sup>4</sup>	Unpermitted Potentially Available Withdrawals <sup>5</sup>	Days/Year New Water Available <sup>6</sup>		
							Avg	Min	Max
<b>Tampa Bay Planning Region</b>									
Anclote River <sup>7</sup>	No	43.4	TBD	0	0	TBD	--	--	--
Alafia River @ Bell Shoals Rd. <sup>8</sup>	No	261	43	22.6	13.1	18.5	285	124	364
Hillsborough River @ Dam <sup>9,10</sup>	Yes	278.4	25.2	82	72.9	TBD	TBD	TBD	TBD
Tampa Bypass Canal @ S-160 <sup>10,11</sup>	Yes	NA	0	88.5	34.5	TBD	TBD	TBD	TBD
Little Manatee River @ FPL Reservoir	No	98.6	9.9	8.7	3.7	0.2	71	6	148
<b>Total</b>				<b>201.8</b>	<b>124.2</b>				

<sup>1</sup>Mean flow based on recorded USGS flow plus reported water use permit (WUP) withdrawal added back when applicable.

Period of record for Hillsborough River is October 2001-September 2009. A minimum flow of 0 has been established for TBCS-160. Withdrawals from the Lower Pool are stage-based and not flow-based.

<sup>2</sup>Based on 10% of mean flow for water bodies without minimum flows established. TBC minimum flow @S160 is 0 mgd.

<sup>3</sup>Based on individual WUP Permit conditions, which may or may not follow current 10% diversion limitation guidelines.

<sup>4</sup>Based on average reported withdrawals from Jan 2003-Dec2009.

<sup>5</sup>Equal to remainder of 10% of total flow after permitted uses allocated, with minimum flow cutoff for new withdrawals of p85 and maximum system diversion capacity of twice median flow (p50) with this exception: for Alafia River, based on lower limit of the actual supply range for the constant supply option in the Polk County Comprehensive Water Supply Plan Joint Study, Alafia River Evaluation (Royal Consulting Services, Inc., 2008).

<sup>6</sup>Based on estimated number of days that any additional withdrawal is available considering current permitted quantities and withdrawal restrictions.

<sup>7</sup>A study currently under peer review (Heyl et al., 2009) indicates that Anclote River may be in recovery, and withdrawal may not be allowed. Available quantities will be determined when minimum flow is approved.

<sup>8</sup>Permitted Alafia River withdrawals include Tampa Bay Water's current permitted capacity (51.8mgd) based on WUP with a long term annual yield of 17.5mgd. Mosaic Fertilizer permitted withdrawals from Lithia and Buckhorn Springs average 5.1 mgd.

<sup>9</sup>Permitted withdrawal limits based on City of Tampa WUP at 82 mgd. Tampa Bay Water's Hillsborough River diversion are included in the Tampa Bypass, see note 11 below.

<sup>10</sup>It may be possible to develop additional water supply from the Hillsborough River and Tampa Bypass Canal by expanding current withdrawal limits associated with WUPs. Additional work will be necessary to ensure additional withdrawals do not cause environmental impacts and is cost effective to develop,

<sup>11</sup>Tampa Bay Water's TBC permitted withdrawals are based on stage levels in the lower pool and a flow-based diversion schedule from the Hillsborough River through S 161. The permitted withdrawal capacity from the Tampa Bypass Canal is 258mgd, Tampa Bay Water is permitted to take 100% of the water in the lower pool when the stage is above a level of 9.0 feet. Long term yield from the Tampa Bypass Canal is estimated at 88.5 mgd including diversion from the Hillsborough River through S 161 estimated at a long term yield of 45 mgd. Current total withdrawal from the Tampa Bypass Canal (January 2003-December 2009) averaged 34.5 mgd including an average of 13.2 mgd of water diverted from the Hillsborough River through S 161. This does not include District withdrawals from the TBC to meet Hillsborough River MFL.

**District Response:** The text and table revisions have been added to the document to reflect many of the suggestions in the comment. Average surface water use for all water bodies was calculated for the same time period (2003 to 2007). This time period

was chosen to ensure the annual average captured complete years of permittee-reported use when the RWSP update began in January 2009.

Permitted average withdrawal limits for Alafia River were calculated based the criteria stated in Chapter 4, Section 1. Specifically, permitted quantities for TBW WUP 11794, Mosaic WUP 1532, and agricultural WUPs 5156 and 6420 were taken directly from permits that existed when the RWSP authored and summed to the 23.6 mgd in the plan. TBW's permitted withdrawals from the Alafia River are flow based rather than quantity limited. Appendix A of the permit quantifies average available withdrawals for this permit for the period 1977 through 1996 as 17.5 mgd, which is the quantity that was used to calculate permitted withdrawals for TBW.

16. **Comment:** *On page 67 of the draft document, section 1.0, Tampa Bay Water recommends the following changes: [...]Historic impacts from excessive withdrawals of groundwater from the Upper Floridan aquifer in the Northern Tampa Bay Water Use Caution Area (NTBWUCA) significantly lowered water levels in lakes and wetlands throughout the region in the past [...]*

**District Response:** **The District believes the current language is appropriate.**

17. **Comment:** *On page 68 of the draft document, first paragraph, Tampa Bay Water recommends following changes: [...] Tampa Bay Water's 5 mgd Mid-Pinellas Brackish Groundwater Desalination option was evaluated for development in 2001. A 4.5 acre site near Lake Seminole was acquired for the project in 2002. Groundwater modeling performed in 2004 predicted a drawdown in the Upper Floridan aquifer in the vicinity of the Bridgeway Acres Landfill, which raised mitigation concerns. Additionally, easement acquisitions for a dispersed wellfield appeared problematic due to the dense residential and commercial development surrounding the site. The project was suspended in 2005, but may be reevaluated at a later date. The project concept was not approved for Tampa Bay Water's Master Water Plan and is not expected to be reevaluated over the next several years [...]*

**District Response:** **The document has been revised as suggested.**

18. **Comment:** *On page 69 of the draft document, Tampa Bay Water recommends: That the District deletes Tampa Bay Water Reverse Osmosis from Figure 4-2. A Tampa Bay Water Reverse Osmosis plant is not under consideration now and it did not move forward in the planning process. Subsequently, figure 4-2 title should read: Existing and Potential Brackish Groundwater Desalination Facilities.*

**District Response:** **In comment #20 below, Tampa Bay Water still considers the inclusion of the potential locations for long term planning. The figure will be revised to use the term "Potential" instead of "Proposed."**

19. **Comment:** *On page 100 of the draft document, Tampa Bay Water recommends re-wording the first bullet as follows:*
- ~~• Competition for Use of the reclaimed water by other project options could affect the viability of the project [...]~~

**District Response:** **The document has been revised as suggested.**

20. **Comment:** On page 101 of the draft document, Tampa Bay Water recommends following changes:

*[...] Pinellas County have been added to their Long-Term Water Supply Plan. These options are listed in Table 5-3. It is important to note that these project concepts did not move into Tampa Bay Water's approved Master Water Plan. As such, these projects may not be evaluated again for many years. [...]*

Project	Quantity Available (mgd)	Capital Cost	Cost/mgd	Cost/1,000 Gallons	Annual O&M/1,000 gallons
<del>Mid Pinellas Brackish Groundwater Desalination Project</del>	5	\$115,510,000	\$23,102,000	\$7.16	\$2.70
<del>Small Footprint Reverse Osmosis (5mgd) Pasco County</del>	5	\$80,330,000	\$16,066,000	\$5.51	\$2.41
<del>Small Footprint Reverse Osmosis (5mgd) Pinellas County Configuration 1 (groundwater)</del>	5	\$134,650,000	\$26,930,000	\$7.91	\$2.72
<del>Small Footprint Reverse Osmosis (5mgd) Pinellas County Configuration 2 (bay water)</del>	5	\$143,000,000	\$28,698,000	\$8.20	\$2.67

**~~Brackish Groundwater Option #1- Small Footprint Reverse Osmosis (5mgd) Pinellas County~~**

- ~~Entity Responsible for Implementation: Tampa Bay Water~~

~~This project includes the development of a reverse osmosis (RO) desalination plant with 5 mgd yield from various sites within Pinellas County. Tampa Bay Water's preliminary evaluation identified sites such as Lake Tarpon along US-19, the Pinellas County Resource Recovery waste to energy property, the Paul L. Bartow Power Plant property on Weedon Island, and the vicinity of US-19 and 22<sup>nd</sup> Avenue in Southern Pinellas County.~~

~~Tampa Bay Water's Long Term Water Supply Plan preliminarily evaluated two configurations that would utilize different sources of brackish water. Configuration 1 would use groundwater from the Upper Floridan aquifer and Configuration 2 would use surface water from the bay. Both configurations were evaluated while holding constant piping, treatment, storage, easement and permitting costs. Configuration 1 involves the development of a wellfield that would supply brackish groundwater to the RO treatment facility. The waste concentrate would be disposed of in a deep injection well. Configuration 2 involves the construction of intakes to withdraw water from the bay for treatment in an RO facility. The waste concentrate would also be disposed of in deep~~



injection wells. Project components and costs for both configurations are based on estimates from the appendices of “Tampa Bay Water Long Term Water Supply Plan” (Black & Veatch, 2008).

Configuration	Quantity Available	Capital Cost	Cost/mgd	Cost/1,000 Gallons	Annual O&M/1,000 gallons
1 (groundwater)	5	\$134,650,000	\$26,930,000	\$7.91	\$2.72
2 (bay water)	5	\$143,490,000	\$28,698,000	\$8.20	\$2.67

**District Response:** The four projects have been combined into one table as suggested. Project localities have been omitted, but the explanations for the Configurations 1 and 2 will remain. Text has been revised to mention that these projects are not part of Tampa Bay Water’s current master plan.

- Comment:** On page 102 of the draft document, section 4, Tampa Bay Water recommends the following change in approach: The District states that [...] All project components and costs are based on estimates from the “Tampa Bay Water Long-Term Water Supply Plan” (Black & Veatch, 2008). Where estimates are presented as a range, the highest and lowest numbers are averaged to maintain consistency within the RWSP [...]. Tampa Bay Water recommends that the District does not average cost estimates and instead maintains the range calculated by Black & Veatch. When evaluating cost estimates for different types of infrastructure, averaging those costs would not produce an accurate estimate as the differences in cost are based on different infrastructure requirements. Averaging the costs thus does not represent any infrastructure option and produces a false estimate.

**District Response:** The source plan gives a “Base” estimate and an “Enhanced” estimate for the desalination expansion. While the draft 2010 RWSP text says the two estimates are averaged, the given costs actually match the Base estimate. The text has been revised as follows, “Project components and costs are represented as estimates of base costs, assuming infrastructure costs have been accounted for in the implementation of the 25 mgd desalination plant. Depending on the specific configuration, additional expansion components may be required. Enhanced estimates for infrastructure upgrades are included in the Tampa Bay Water Long-Term Water Supply Plan.”

#### City of Tampa, Seung Park

- Comment:** The population and water demand projections developed for the RWSP for City of Tampa Water Service Area differs from the City's Comp Plan projections for population and water demands. I do believe our Comp Plan projections may be outdated as the base numbers may have come from older BEBR figures...However, I need to point this large difference out. How can we address this concern?

**District Response:** The numbers were shopped to Tampa on 4/24/2009 during which time the City was told that if they wanted to re-assess the demands as modeled by the District, we needed to see Tampa’s complete methodology and documentation that was used to project the future population. (See attached letter from my predecessor to Tampa related to this – spells out what the District needs to review any updates to population projections) Outdated data doesn’t qualify. Tampa should also be aware

that the City is going to be required to amend its comprehensive plan to include detailed information on water supply planning (section 163.3177(6)(c), Florida Statutes) (the local government shall adopt its comprehensive plan amendment within 18 months after the governing board approves an updated regional water supply plan. The element must identify such alternative water supply projects and traditional water supply projects and conservation and reuse necessary to meet the water needs identified in s. 373.0361(2)(a) within the local government's jurisdiction and include a work plan, covering at least a 10 year planning period, for building public, private, and regional water supply facilities, including development of alternative water supplies, which are identified in the element as necessary to serve existing and new development). At that time, the population projections used for water supply demand projections will need to be consistent with the population projections in the comprehensive plan. Also, the cost of developing the needed water supply sources will have to be quantified and included in the comprehensive plan's Capital Improvement Element (CIE). The CIE is required to be financially feasible, that is, plausible funding sources must be identified to cover the costs of developing these water supplies. The District understands and shares the City's concern of how critically important accurate public supply demand projections are. We look forward to our continued cooperation with this effort.

**City of Clearwater, Ron Fahey and Nan Bennet**

1. **Comment:** *The City of Clearwater has updated its plans related to the proposed Brackish Groundwater Water Treatment Plant #2. Page 136 should read that the proposed facility would "...treat up to 8 mgd of brackish groundwater to produce up to 5.0 of potable water supply on an annual average basis."*

**District Response:** **The document has been revised as suggested.**

2. **Comment:** *Also on 136: "...According to the City, this project will reduce the demand on Tampa Bay Water's regional system by approximately 5.0 mgd on an annual average basis." The associated table should read: Qty produced = 5.0, Capital Cost = \$34,288,820, District Share (no change), cost/mgd = \$6,857,764, and cost per 1000 (no change).*

**District Response:** **The document has been revised as suggested.**

3. **Comment:** *Chapter 1, 1.0, Last paragraph add the city of "Clearwater" to the statement that "the District is providing funding for the Cities of Tarpon Springs and Oldsmar to augment water supplies by developing brackish groundwater wellfields and reverse osmosis membrane treatment facilities". The PA basin board CFA project number for the City of Clearwater Brackish Facility at Water Treatment Plant #2 project is N176. These changes will be consistent with the quantities included in the pending cooperative funding agreement with SWFWMD. Please contact me if you need additional information.*

**District Response:** **The document has been revised as suggested.**

**Nestle Water North America, Manson Law Group, Douglas Manson**

1. **Comment:** *On behalf of Nestle Waters North America ("NWNA"), please consider this letter our comments to the Southwest Florida Water Management District's ("SWFWMD") proposed Regional Water Supply Plan ("RWSP"). Although the trend of discharge from the Crystal Springs Complex is in fact downward, the statement within Chapter 1 section 3.0 Springs that there has been "significant decline over the last 40 years" is misleading and may cast false blame on NWNA due to its withdrawals, It has been established that discharge from nearly all magnitude 1 and 2 springs in Central Florida is downward trending. In addition, on a technical note, there are several references to "Crystal Spring" within the Regional Water Supply Plan. To be accurate, it should be referred to as "Crystal Springs" or "Crystal Springs Complex." (Chapter 1 section 3.0 Springs - page 9 - three references). As further explained, we propose the following changes to the Tampa Bay RWSP regarding Crystal Springs: "Several second magnitude springs (discharge between 10 and 100 cubic feet per second (cft) are located in the Planning Region. These include the Crystal Springs Complex in Pasco County, Wall (Health) Spring and Crystal Beach Springs in Pinellas County, and Sulphur, Lithia, and Buckhorn Springs in Hillsborough County. The Crystal Springs Complex is one of the principal sources of the Hillsborough River. Discharge of the spring complex averages ~~57.6~~ 54.5 cft (~~37.4~~ 35.2 mgd) for the period of record (1935 to present 2009) - ~~though a significant decline in flow has been noted over the 40 years.~~ A decline in spring flow has been noted over the past 40 years; however, the decline is similar to other first and second magnitude springs in West-central Florida."*

**District Response:** In order to address several issues raised in your letter, Section 3.0 has been revised to read: "Several second magnitude springs (discharge between 10 and 100 cubic feet per second (cfs)) are located in the Planning Region. These include the Crystal Springs group in Pasco County, Wall (Health) and Crystal Beach Springs in Pinellas County, and Sulphur, Lithia, and Buckhorn Springs in Hillsborough County. Crystal Springs is one of the principal sources of the Hillsborough River, though an appreciable decline in flow due to climatic and human causes has been noted over the past 40 years. Discharge of the spring group averages 54 cfs (34.9 mgd) for the period of record (1923 to 2009); however, due to the difficulty of determining spring discharge during high river stages there is a large degree of uncertainty associated with the data collected prior to 1965." The District acknowledges that these revisions do not address comments regarding the significance of the decline and its relationship to Nestle Waters North America and other first and second magnitude springs in west-central Florida. It is the District's position that these issues are thoroughly addressed in the document "Proposed Minimum Flows and Levels for the Upper Segment of the Hillsborough River, from Crystal Springs to Morris Bridge, and Crystal Springs" where the pronounced decline in flow has been documented extensively. This document details differences between Crystal Springs and other spring systems throughout west-central Florida and specifically states that the "actual permitted direct withdrawal by Crystal Springs Corp. is small relative to the apparent decline...and thus could account for no more than 10% of the decline (2-106)."

2. **Comment:** *For purposes of evaluating the statements provided in the DRAFT SWFWMD Regional Water Supply Plan - Tampa Bay Planning Region, specifically the statements regarding Crystal Springs Complex, our consultants reviewed the USGS/SWFWMD data records, reviewed pertinent documents, and spoken with SWFWMD and USGS personnel regarding the discharge estimates from the Crystal Springs Complex and resulting modeling simulations which incorporate the discharge estimates.*

*There appears to be an issue with data integrity for the Crystal Springs Complex that is used within the RWSP. The discharge data available from the USGS for the Crystal Springs Complex is riddled with problems as documented in the "Proposed MFL for the Upper Segment of the Hillsborough River", ("MFL Document") as attached as Exhibit "A". On page 2-61 of the MFL Document, the quality of the older data for the Crystal Springs Complex prior to 1965 is questionable. The following statements were made within the MFL Document:*

*"An inspection of USGS data from 1937-1964 indicated that when measured stream flow at the station above Crystal Spring was compared with the datum elevation, there was a significant deviation of recorded flow when the datum elevation exceeded 15 ft - with values varying by as much as 80 cfs with the same datum elevation. Upstream river flow graphed against calculated spring flow shows a high degree of variability when spring discharge is above 55 cfs. A plot of Crystal Springs discharge record shows about 75 percent of all measured discharge was above 55 cfs prior to 1965. Post-1965, recorded discharge above 55 cfs makes up just 15 percent of the values. An examination of the USGS comments from the 1937-1964 period shows that discharge was measured at over 20 different locations from the gaged sites. In addition, several comments in 1948 indicated that all previous river flow measurements included multi-channel flow but thereafter they did not. There were also two datum elevation changes that occurred in 1937 and 1964 which suggests new rating curves and perhaps relocation of the stream flow measuring stations."*

**District Response:** The District appreciates the comments and will address them with appropriate staff.

3. **Comment:** *Our consultant also spoke with Richard Kane, the Chief of the Hydrologic Data Section in Tampa, who has stated that Crystal Springs is very difficult to acquire true spring flow data. The statements made regarding the flow at the Crystal Springs Complex appear to be roughly correct depending upon the dataset. According to the discharge values that were received from Marty Kelly that were used to calculate the MFL (1935 and 2004) and official USGS data from 2004 to the end of 2009, NWN's consultant determined the following discharge averages:*

- *Period of record average (1935 through 2009): 54.5 cfs (referenced as 57.6 in the Tampa Bay RWSP)*
- *40 year average (1970 through 2009): 45.9 cfs*
- *20 year average (1990 through 2009): 42.0 cfs*

*As stated earlier, the trend of discharge from the Crystal Springs Complex is in fact downward. The MFL Document states that the declines are due to regional withdrawals and climatic affects (2-63 through 2-64 of the MFL Document). Notwithstanding, it is very interesting to note that the trend of discharge from the Crystal Springs Complex is actually only very slightly downward over the past 20 years. This twenty-year time period extends prior to when Zephyrhills, and now NWN, began its water withdrawals for bottled water. The trend analysis is attached as Exhibit "B."*

**District Response:** The District appreciates the comments and will address them with appropriate staff.

4. **Comment:** *In addition, our consultant verified the input values were used for the discharge at the Crystal Springs Complex for the regional groundwater/surface models. These details are provided below.*
- *SWFWMD District-wide Regional Model ("DWRM"). Per a discussion with Robert Peterson, the liaison between SWFWMD and its primary modeling consultant, it appears as though the discharge from the Crystal Springs Complex was not included in Version 2 of the model. Version 3 of the model will be available following calibration later on this year. The calibration details of the model are a steady state calibration to the 1995 data and then a transient calibration to the data between 1995 and 2006.*
  - *Upper Hillsborough MFL models. The surface water model utilized for the determination of the Upper Hillsborough MFL was HEC-RAS which is a one dimensional hydraulic cross section model. The Hillsborough River gauge data from above the Crystal Springs Complex was used in the HEC-RAS model but not the data from below the Crystal Springs Complex. It is important to note that HEC-RAS does take into account the groundwater contribution (or base-flow) to surface water flow. During the determination of the MFL, groundwater modeling was performed independently by Ron Basso of the SWFWMD using the Integrated Northern Tampa Bay Model (INTBM) which is a coupled model utilizing MODFLOW (groundwater model) and HSPF (surface water model).*

**District Response:** **The District appreciates the comments and will address them with appropriate staff.**



## Northern Planning Region

### Comments from June 2010 Northern Planning Workgroup Meeting

1. **Comment:** *The District should be putting more emphasis on conservation in the plan and the optimistic sentiment that portrays groundwater as sufficient to meet the needs of the region may contradict with conservation messaging. In fact, “research” shows rainfall levels are declining in the northern region and recharge quantities are possibly based on overly optimistic estimates.*

**District Response:** The RWSP places a strong emphasis on conservation in the Northern Planning Region, as well as the entire District. Conservation is viewed as a future supply source and can work to “stretch out” available groundwater supplies before more costly alternative sources have to be implemented. District rules now require that all public supply utilities within the Northern District meet a per capita use rate of 150 gpd per person by 2018.

The District has a series of rules that limit outdoor irrigation and other uses that are applied directly during drought conditions. Some of the highest recharge rates in the state of Florida exist in the northern region due to its unique geology. The area generally has well-drained sandy soils, a deep water table, little to no clay confining material overlying the Floridan aquifer, and active karst processes (sinkhole activity) which all combine to create high recharge to the Floridan aquifer. Based on average rainfall of 52 in/yr, recharge to the Floridan aquifer is around 12 in/yr, and groundwater withdrawals are on the order of one in/yr in the Northern West-Central Florida Groundwater Basin.

2. **Comment:** *A more thorough discussion of soil moisture sensors (not just rain sensors) should be added to the document.*

**District Response:** There is a discussion of both rain and soil moisture sensors on page 85/option 5. Staff will explore opportunities to further emphasize soil moisture sensors.

3. **Comment:** *Dan Hilliard said the Withlacoochee River is characterized as having too much water available in the future. He dislikes the proxy MFLs in the WRWSA plan. He said it was putting the cart before the horse and was a bold assumption. The District should look at the whole package of total MFL analysis before planning. He would like to see the planning process done correctly instead of having to go back and piece things back. He also questions the validity of the river data. Taking water from the river could lower estuarine water levels and create coastal intrusion. He stated that on page 51, the Holder gage seems off as does the Rainbow River gage. They seem to have actual data showing about 1/3 less water available.*

**District Response:** Surface water availability in the RWPS is an estimate based on the best available information at the time the report was published. Estimated surface water availability quantities may change when minimum flows are adopted. Minimum

flows will take into account the quantity of water needed to protect all environmental aspects of the river system. Projects that propose use of surface water must demonstrate that the project will not impact the system's ability to meet adopted minimum flows. As noted in the plan, additional factors could affect quantities of water that are ultimately developed for water supply, including the future establishment of minimum flows, variation in discharges to the river from outside sources, and the ability to develop sufficient storage capacity.

Flows from the Withlacoochee River and Rainbow Rivers gages were not reported separately. Flows from the Rainbow River at Dunnellon were added to flows from the Withlacoochee River near Holder and averaged for the period 1965 to 2003, which equals the 1,003 mgd (1,552 cfs) presented in the plan.

- 4. Comment:** *Paul Marraffino said as he looked over the plan he feels that the proposed NW Marion wellfield is of concern to Rainbow Springs. He would like to see a major emphasis on reuse. He feels reuse availability scales with population so it is a viable option as population grows. The listing of a groundwater well field in Marion County could affect the Rainbow River.*

**District Response:** The proposed NW Marion wellfield was simulated with the Northern District groundwater flow model to determine if unacceptable impacts would occur to nearby wetlands, lakes, and springs. The simulation results using this regional model indicated that adverse impacts were unlikely. The Rainbow Springs Basin currently has a small amount of groundwater use and modeled springflow impacts from all users shows only a one percent flow reduction. Modeled impacts due to groundwater withdrawals in 2030 indicated only a two percent reduction to Rainbow Springs flow. In addition, prior to actual implementation, any proposed wellfield will have to obtain a water use permit from the District where the wellfield quantities are evaluated on a more local or site-specific basis. Permits are not issued for withdrawals that do not meet permitting criteria, which include environmental impacts.

The District actively promotes the use of reclaimed water to offset potable water use. The District has funded or currently plans to fund several reuse projects within the planning region. One challenging aspect of the northern planning region is the limited amount of centralized sewer systems that produce treated wastewater for reuse due to the relatively high proportion of septic tanks.

- 5. Comment:** *The plan needs a better explanation on exactly how much water DSS uses. Approximately 54 percent of the households in Citrus County are on private wells and the gpd jumps to 800 when households are on reclaimed water with no restrictions.*

**District Response:** DSS is estimated since to our knowledge no empirical data exists. To address this, the District is working with the United States Geological Survey to develop an accurate and analytical method for quantifying domestic self supply quantities. Table 3-1 shows all Public Supply Demand Projections, including Public Supply, Domestic Self-Supply and Private Irrigation Wells for the Northern Planning

Region. Breakdowns of each type of use can be found in the accompanying appendices.

6. **Comment:** *District staff should be coordinating and planning with SJRWMD.*

**District Response:** District Staff has coordinated with SJRWMD, SFWMD, and SRWMD staff and continues to coordinate throughout the planning process. District staff has worked with SJRWMD staff to resolve modeling differences in Marion County. In addition, SJRWMD staff attended the first Workgroup meeting in March and attended the public input meeting in May.

7. **Comment:** *Nancy Lopez expected to see the lower Floridan discussed and was disappointed that was not in the plan. She would like more information in the plan on the lack of confinement layer in the northern region. She did like the emphasis on interconnections and would like to see more. She said we must have the ability to interconnect to give water managers flexibility. Nancy also liked the concept of conjunctive uses where possible. She did express concerns over drought implications. She said there was a need to use transient groundwater modeling and it should be stated in document. She would like the plan to discuss the relationship between the upper and lower Floridan system and a description of its difference in the north compared to the District's southern region. Nancy would also like to see an analysis of proposed well locations to include mitigation for sinkhole risks. She feels that research shows rainfall levels are declining in the northern region and is concerned over recharge quantities being based on 'happy' estimates.*

**District Response:** The Lower Floridan aquifer (LFA) contains fresh groundwater in the portions of the SFWMD in Sumter and Marion Counties. This area is currently the focus of deep exploratory drilling and testing by the District to characterize the water quality and delineate the areal and vertical extent of the LFA. Our data-collection program includes obtaining important information on the geology, hydraulic properties, and water quality of the near surface sediments, confining units, and the Upper Floridan aquifer (UFA), and LFA. The District is cooperatively funding exploratory drilling and testing of the LFA with the City of Wildwood. We have recently tested the LFA at the ROMP 117 site near Lake Okahumpka, the ROMP 102.5 site near Bushnell, and the ROMP 119.5 site along State Road 200 southwest of Ocala. Results from drilling and testing at these sites will help better define how leaky the confining layer (MCU 1) is between the UFA and LFA and the possible productivity of the LFA.

At present, the LFA only provides fresh groundwater in northeastern Sumter County. Groundwater withdrawals from the LFA averaged only 1.9 mgd in 1995 and are projected to increase to only 9.3 mgd by 2025 in the SFWMD. In contrast, total groundwater use from the UFA in the northern half of the District and adjoining Lake and Marion Counties in 2005 was over 400 mgd.

The District is using the Northern District groundwater-flow model in transient analysis to predict current and future impacts to the water resources in the Northern Planning Region. Because it is unknown where withdrawals will specifically occur in the future, the 2030 pumping scenario adjusts current withdrawals upward in the region to match projected demand. New and renewal water-use applications utilize transient groundwater-model analysis to demonstrate conformance with the District Rules for water-use permits.

The risk of sinkholes is always present in most of the Northern Planning Region because of the karst geology. However, because sinkholes can result naturally, it is difficult to assess the cause and effect relation between pumping and sinkhole development.

Future water-supply planning is based on average annual use and average climatic conditions, and is not meant to account for short-term drought conditions. The District has water shortage rules that limit outdoor irrigation and other non-essential uses during drought conditions.

Some of the highest recharge rates in the state of Florida occur in the Northern Planning Region because of the unique hydrogeologic conditions. The region generally has well-drained sandy soils, a deep water table, little to no clay confining material overlying the highly-transmissive UFA, and active karst processes that combine to create high recharge to the UFA system. Based on average rainfall of 52 in/yr, recharge to the UFA averages 12 in/yr and groundwater withdrawals are about one in/yr in the Northern Planning Region.

8. **Comment:** *The plan should contain an analysis of proposed well locations to include mitigation for sinkhole risks.*

**District Response:** The risk of sinkholes is always present in most of the northern region due to its active karst geology. However, since it is a natural phenomenon, it is difficult to assess cause and effect reasons for their occurrence nor can we predict with any certainty when and where future sinkholes will form.

9. **Comment:** *A policy discussion regarding reclaimed water is necessary. Also, reclaimed water ought to be listed as a viable option in the plan to meet the needs of the growing population.*

**District Response:** The SWFWMD's policy of encouraging and funding expansions of reclaimed water as an alternative water resource is included within the RWSP in Chapter 4 Evaluation of Water Sources, Section 2 Reclaimed Water. Reclaimed water options (including viable types of conventional and indirect potable reuse options) for the Northern Planning Region are included within the RWSP in Chapter 5 Overview of Water Supply Development Options.

10. **Comment:** *The executive summary needs to be shorter.*

**District Response:** The executive summary is longer because it must summarize all four of the District's Planning Regions. The final draft will be shorter than earlier drafts.

11. **Comment:** Table 3-6 on page 47 did not have any totals.

**District Response:** The table has been revised to include totals for the 5-in-10 (average) rainfall condition.

12. **Comment:** On page 28 [Part D. Reservations] SWFWMD appears to be set up as the overall authority for quality and appropriateness of plans. Nevertheless, as mentioned on page 51, the District cooperated on a study with the WRWSA "to determine the availability of surface water from the Withlacoochee River by applying a 'proxy minimum flow.'" It seems inappropriate for the umpire to do a cooperative program with the manager of one of the teams. In addition, if the "proxy minimum flow" is effective in replacing the needed MFL work, Marty Kelly and his department are superfluous. There are two major natural functions of the Withlacoochee River. One is reducing the salinity of the near shore estuarine areas of its outlets in the Gulf of Mexico. The District's RWSP does not address the danger to the estuary. A second major function is feeding the aquifer directly and overflowing into lakes and wetlands that indirectly support the aquifer which flows to the Gulf Coast. The sucking out of Withlacoochee River water through 3 and 4 foot diameter pipes will interfere with the natural, historical functions. The District's RWSP does not address the danger to the lakes, the wetlands and the aquifer. Al Grubman

**District Response:** The District's water management responsibilities include water supply planning for all future reasonable and beneficial uses while also meeting the needs of the environment (Chapter 373.0361, Florida Statutes). Development of the Regional Water Supply Plan in cooperation with the regional water supply authorities is essential, since the District and the Authority are working toward a common goal of developing permittable water supply projects.

The District is tasked with determining available sources of water and the quantities of water that are potentially available from those sources as part of the regional water supply planning process. The proxy MFL is a planning level used by the WRWSA that is based on established minimum flows for other rivers in the District. The estimated surface water availability quantities in the RWSP were based on minimum flows when available. Where minimum flows were not available, they were based on 10% of average river flows, consistent with the method used in previous water supply plans. The estimates were presented with the caveat that they may change when minimum flows are adopted. When minimum flows are adopted, they will supersede all prior estimates. Minimum flows for the Upper and Middle Withlacoochee River are currently being peer reviewed and are scheduled to be adopted by the end of 2010. Minimum flows for the Lower Withlacoochee River, which will address environmental needs of the estuary, are scheduled for adoption in 2011. Minimum flows account for water needed to protect environmental resources. Groundwater modeling completed in cooperation with the WRWSA addressed the environmental needs of lakes, wetlands, and the aquifer.



13. **Comment:** *The Fresh Groundwater Option #2 - Citrus County Regional Wellfield] on page 84 and the [Fresh Groundwater Option #4 - Regional Water Supply Framework] on page 85 unnecessarily take water from Citrus County through a new pipe to Hernando Utilities and Brooksville contrary to statements by WRWSA. Water conservation in Citrus County is in its infancy. The District and others have been working to support and advance water conservation in Citrus County. The option to move water from Citrus County wells out of Citrus County or even just the existence of the enabling pipe will have a significant dampening effect on Citrus County water conservation. The proposals to transport water from Citrus County wells to Hernando County through the proposed new pipeline will have a negative effect on Hernando County conservation. When Hernando County gets water from Citrus County and has a pipeline coming from Citrus County, the incentives to conserve and control growth will be reduced. Al Grubman*

**District Response:** The RWSP identifies potential options and associated costs for developing alternative sources as well as fresh groundwater. The options are not intended to represent the District's most preferable options for water supply development. They are, however, provided as reasonable concepts that water users can pursue to meet their water supply planning needs. The location and sizing of the Citrus County Regional Wellfield was based on constraints of drawdowns affecting MFL priority water bodies throughout the region. Each proposed wellfield for the region is located in a general area identified by its distance from springs and lakes that could be impacted by groundwater withdrawals. The Citrus County Wellfield option is proximate to demand centers in both Citrus and Hernando Counties, therefore utilities in both counties are suggested as recipients. Members of the WRWSA have expressed their opposition to groundwater transfers across county boundaries. However, the District recognizes water transfers within an authority's region as consistent with local-sources-first policy, and has assisted other water authorities with similar multi-jurisdictional interconnects. The District will not provide funding assistance for the construction of fresh groundwater wellfields. The District would only assist with a regional interconnect once available conservation measures have been implemented by the project's recipients, and if the pipeline was designed to transfer alternative water supplies.

**Kenneth Dale Ravencraft, Hernando County Utility Department, 21030 Cortez Blvd., Brooksville, FL 34601**

1. **Comment:** *Regarding Table 5.1: The Glen Water Reclamation Facility (WRF - formerly WWTP) is currently under construction. The plant capacity is being expanded from 1 MGD to 3 MGD and reclaimed water production capabilities are being implemented as part of the expansion effort. The Glen WRF wastewater collection system and service area are also being expanded and upgraded. As a result, the Berkeley Manor WWTP and the Weeki Wachee WWTP will be decommissioned in 2011. The Hernando Beach WWTP was decommissioned several years ago. In the next three to four years, the Airport WWTP (there is only one plant, no such thing as #1 & #2) is scheduled to be expanded to 5 MGD and includes RCW facilities. As a result, Spring Hill WWTP will be decommissioned.*

**District Response:** Table 5-1 on page 80 of the Northern Region document will be modified to indicate that pending planned WWTP decommission the transfer of supplies and offsets from the decommissioned Hernando Beach, Berkeley Manor,

and Weeki Wachee WWTPs would likely be to the Glen WWTP. The table will also be modified to indicate the planned transfer of supplies and offsets from the soon to be decommissioned Spring Hill WWTP would likely be to the Airport WWTP. The reference to the Airport WWTP as having two facilities (#1 & #2) is due to FDEP records which list two WAFR ID numbers (FLA12025 & FLA017223) and two WWTP names with different capacities and different flows in the 2005 FDEP Reuse Inventory (RWSP base year).

**Withlacoochee Area Residents, Inc. (501.C3)**

1. **Comment:** *The 2010 Regional Water Supply Plan for the Northern Region outlines options to address anticipated demand by increasing supplies 92.5 MGD at a cost of \$800M. We believe implementing these projects will result in additional reductions in flow to the lower segment of the Withlacoochee River (l-WR) which currently receives inadequate freshwater inflow from the system's watershed to maintain healthy wetland and estuarine ecosystems in the lower river.*

*The upper segment of the WR (u-WR) and Barge Canal (BC) currently shunt an annual average of 350 MGD of freshwater directly to the Gulf. If the cooling water intake system (CWIS) proposed by Progress Energy (PEF) for the Levy Co. nuclear facility is implemented as planned, this potential freshwater supply will be converted to steam and permanently lost. PEF has been advised by SWFWMD to seek alternative fresh water sources to replace on-site groundwater consumption at the proposed Levy generating facility.*

*We propose capturing freshwater inflows to the u-WR and BC that would otherwise be wasted by installing a saltwater barrier in the canal similar to the one evaluated in Option 2 in the 2004 URS Lower River Restoration Alternatives Feasibility Study (fig. 5). Moving the canal control structure and lock six miles below the Inglis Lock will allow an impoundment of 1.5 B gal +, assuming a 2 foot head is maintained above current average water. Option 2 also includes diverting the water volume from the spillway for discharge into the u-WR via the Inglis Dam control structure. Combined with the 350 MGD lost via the canal, an average total freshwater inflow of 1.2 BGD would be available to resupply the impoundment (equivalent to 67% of total capacity). We also note the total 2004 estimated construction costs for Option 2 (dams, control structures and lock) was approximately \$26 M. The \$ 770M+ difference between impoundment related construction costs relative to estimated cost of supply projects proposed in the 2010 "Study Plan" projects appear to be more than sufficient to cover treatment and distribution infrastructure costs necessary for addressing specific regional water demands.*

*A significant co-benefit of placing a saltwater barrier in the lower reach of the BC is groundwater remediation. Figures 1 and 2, from Faulkner's 1972 assessment of the Canal's impact, show a marked reduction of potential of the unconfined upper Floridan. This is the principal rationale for locating a control structure further west than proposed in the URS evaluation. Maximum drainage from canal construction (red contours on fig.2) is centered west of US19. Figure 3 represents the additional drainage of the upper Floridan related to deep, limerock mining. This has resulted in inland migration of seawater and leakage of S04-rich water from deeper, semiconfined zones. Maintaining a stable higher stage in the*

*impoundment will partially, but significantly, mitigate some of the degradation that has occurred in the last 40 years. A canal impoundment stage 2 to 3 ft. higher than existing tidal stage will flush contaminated shallow groundwater, documented on both sides of the canal, and improve wetlands drained by the canal and deep mining.*

*Figure 4 represents a conceptual model that attempts to approximate the degree of expected improvement in potential for the upper Floridan aquifer adjacent to the canal and left bank of the u-WR segment. Flushing seawater and mineralized contaminants from the aquifer would add 70-80 MG of fresh ground water to the system. When combined with increased retention of groundwater further inland on both sides of the canal, the total increase in fresh groundwater would conservatively exceed 200MG. These estimates assume an average 10% "effective" porosity in the upper 45 ft of the aquifer. Restoring 200 + MGD to the "thin" freshwater saturated zone of this coastal, karst aquifer would be a very significant driver for arresting and mitigating some of the widespread damaged to coastal wetlands along this segment of the coast.*

**District Response:** The quantity of water needed to maintain the Lower Withlacoochee River, wetlands, and estuaries will be considered when the District develops minimum flows. Adopted minimum flows will identify the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area. Future withdrawals will have to be compatible with adopted minimum flow criteria. Adoption of Lower Withlacoochee River minimum flows is scheduled for 2011.

The District engaged a consultant to conceptually investigate four restoration alternatives for the Lower Withlacoochee River. Based on the results of the investigation, the District's Withlacoochee River Basin Board eliminated Options 1 and 2 from consideration at their October 2004 board meeting. The impact of placing another structure on the Barge Canal could result in an increased risk of flooding for nearby residents. When the Withlacoochee River experiences high flows, the Inglis Dam is opened and water flows out to the Barge Canal. If the Barge Canal is impounded to create a freshwater reservoir, there is the potential for flooding from high flow regimes on the river, either to homeowners along the lower river or property owners further upstream. This situation will need careful evaluation in light of any future plans to alter the flow regime of the Barge Canal. Additional modeling is being completed by District staff to determine the effects of diverting additional water to the Lower Withlacoochee River. Diversion of additional flows from Lake Rousseau is most needed during periods of low rainfall; however, diversion during those periods could affect Lake Rousseau's water level.

The concept of using water from the Lower Withlacoochee River is included in three different options in the RWSP. Options in the plan are not necessarily the District's preferred options but are reasonable concepts that water users could pursue. The options are presented to demonstrate estimated costs to develop the supply. Costs include construction *and* treatment costs, whereas the URS option includes construction costs only. The Withlacoochee Regional Water Supply Authority (Authority) may choose to develop one of these options or an option not included in the plan, but will not develop all three. The Authority does not have plans to pursue surface water sources at this time, because it appears there are sufficient groundwater sources to meet demands for the next 20 years. The District

recommended to the Authority in 2007 that the Barge Canal option be evaluated. The Authority indicated that even though the Barge Canal was not identified as a storage and withdrawal location, it should be further evaluated when the Lake Rousseau option is further evaluated.

District staff has evaluated the potential for saltwater intrusion in the area. Our conclusion, based on data from monitor wells and numerical models of the region, is that while there may be localized water quality degradation, the overall threat for regional or sub-regional saltwater intrusion is minimal. That is because groundwater levels in the Upper Floridan aquifer (UFA) are higher than the Barge Canal stage elevation and the UFA currently discharges into the Barge Canal. There is little opportunity for seawater to intrude into the aquifer under these conditions.

Additionally, well withdrawals in the area are small and expected to increase modestly over the next 20 years. UFA water levels monitored in wells near the Barge Canal have shown no appreciative coastal decline over the last 30 years. Chloride concentrations from the District's coastal saltwater interface monitoring network show no significant changes over the last 15 years. Predictive models of both aquifer levels and water quality show only a slight decline in UFA water levels and no appreciable degradation in groundwater quality over the next 20 to 50 years. Water supply evaluations by the District and the WRWSA have demonstrated that groundwater sources will be sufficient to meet the needs of growth in the area for the next 20 years.

#### Withlacoochee Regional Planning Council

1. **Comment:** *The staff of the Withlacoochee Regional Planning Council (WRPC) have reviewed the above referenced draft document and find it generally consistent with the Strategic Regional Policy Plan (SRPP) for the Withlacoochee Region. We appreciate the opportunity to participate in the District's planning efforts and provide the following comments.*

*The Regional Water Supply Plan (RWSP) for the Southwest Florida Water Management District (District) is an assessment of projected water demands and potential sources of water to meet these demands for the period from 2005 through 2030. The purpose of the RWSP is to provide the framework for future water management decisions in the District. The RWSP for the Northern Planning Region shows that demand for water through 2030 can be met with fresh groundwater.*

*This review pertains only to the RWSP for the northern planning region, which includes Hernando, Citrus, and Sumter Counties and the portions of Lake, Levy, and Marion Counties within the District. The Withlacoochee Region includes all of the counties in the northern planning region except for Lake County.*

*The Withlacoochee Region is the location of numerous first, second, and third magnitude springs. Most of the known springs in the region are listed in the SRPP as regionally significant resources. The District's strategy for prioritizing the establishment of MFLs for springs is consistent with the protection goals forwarded by the SRPP. Further efforts should be instituted for springshed protection to ensure that high recharge areas most attributable to spring flows are coordinated with water withdrawals and spring flows are not degraded.*



Additionally, the SRPP identifies regionally significant features in the form of specific wetlands, lakes and rivers for protection. The SRPP provides the following guidance:

- Minimize environmental impacts from water withdrawals by keeping water pumpage below levels that would cause significant harm to native communities, spring flow, or water quality.
- Cooperate at intergovernmental levels to establish and maintain minimum seasonal stream and spring flows, minimum and maximum estuary inflows, and lake levels based on ecosystem water needs.

Following the adoption of the RWSP for the northern region, affected local governments will be required to create a 10-Year Water Supply Workplan as a part of their local government comprehensive plan. The 10-Year plans are also required to be consistent with the RWSP. WRPC staff applauds the District's proposal to create "Community Data Sheets" in recognition of the consistency issue. The WRPC requests that the District continue to focus on ways to assist local governments in compliance with this mandate as supported by the SRPP:

- Adopt comprehensive programs and plans for protection of current and future public water supplies. Each plan and program should require, at a minimum: scientific delineation of zones of contribution for wellfields and protection of these areas from incompatible land uses and activities, analyses of supply and demand that are based on population projections and the location of uses indicated on future land use maps (series), and the maintenance and restoration of natural systems.
- Use consistent policies and data from the water management districts' (WMDs) "Needs and Sources Studies" and WMD "Water Resource Plans", and similar studies by water supply authorities in formulating local government comprehensive plans and water supply policies.
- Formulate water shortage contingency plans that are consistent with the plans of the water management district.
- Seek technical assistance from water management districts and regional planning councils in formulating and implementing water conservation plans.

Water conservation and reuse will play primary roles in the efficient use of existing water supplies. Clearly the District's experiences with the SWUCA provide useful assumptions for the amount of conservation and reuse that hopefully can be realized in the northern region. However, assumptions regarding the amounts of conservation and reuse should be monitored and adjusted over time to relate directly to local land use patterns and rates of consumption. The SRPP contains numerous strategies for water conservation and reuse. The district is implementing almost all of them directly or indirectly:

- Reduce per capita use of groundwater and surface water.
- Use rate structures and other incentives to encourage the efficient use and re-use of water.
- Encourage the use of water-efficient plumbing fixtures and devices in new construction and renovation through building codes and other means.
- Cooperate with water management districts in water conservation education, leak detection, and plumbing retrofit programs.
- Require efficient irrigation practices in all new development.
- Create incentive programs that reward installation of plumbing systems in new construction that will immediately use gray water systems or will facilitate the use of future gray water systems.



- *Use treated wastewater effluent for irrigation, instead of freshwater, where it is feasible, environmentally sound, and safe.*
- *Adopt minimum landscape ordinances incorporating the use of drought-resistant native plants and assigned preference to the preservation of native vegetation on site.*
- *Use water-conserving and water re-use processes and techniques in mining and other industrial processes.*
- *Consider waste to energy plants for the purpose of powering desalinization facilities.*

*It is comforting to know that groundwater supplies are expected to be sufficient until 2030. However, issues such as alternative sources and water transfers remain prominent in public discussion and should be generally covered in this initial study for the northern planning region. For information and clarification purposes, the following long term guidance for future water supply is provided in the SRPP:*

- *Consider pumpage of water outside the region only when the following factors have been met:*
  - *The receiving community has exhausted all legally available alternative sources including, but not limited to desalinization, effluent reuse, and mandatory conservation measures;*
  - *A detailed study of the proposed impacts to water sources has demonstrated the proposed pumpage will cause no adverse environmental and economic impacts or the impacts can be mitigated through practices including, but not limited to, the re-hydration of wetlands and recharge areas within the region.*
  - *Support the development of local water sources first, prior to any import of water from outside the region.*

*WRPC staff looks forward to the opportunity to work with District staff as part of the comprehensive planning interface with the Regional Water Supply Plan.*

**District Response:** **The District appreciates the comments and they will be addressed by appropriate staff.**



### General Comments

#### Florida Department of Environmental Protection

1. **Comment:** *Chapter 1. Statute references (e.g., s. 373.0361, F.S.) should be updated to conform to the new version of Ch. 373, Part VII, F.S. (from Senate Bill 550).*

**District Response:** *The documents have been revised as suggested.*

2. **Comment:** *Chapter 2, Part C, Section 2.0, subsection 1.0 (SWUCA), paragraph 3 states that an overview of the Long Range Water Supply and Resource Development Funding Plan is in the Executive Summary. We could not find this overview in the Executive Summary.*

**District Response:** *The name of this Chapter, which is now Chapter 8 in all four of the Planning Region documents, has been changed to “Overview of Funding Mechanisms.” The Executive Summary now contains only a summary of Chapter 8.*

3. **Comment:** *Chapter 2. In Part E, the District’s approach to climate change is monitor and adapt. Would it be feasible to study the relationship between water management activities and the emission of greenhouse gases?*

**District Response:** *The analysis you suggest would be extremely complex, expensive, and time consuming because the term “water management activities” could be interpreted to cover everything the District does. It is the District’s position that this analysis would be more appropriate as part of a Climate Change Plan rather than a Regional Water Supply Plan. The District currently does not have the resources or Governing Board authorization to undertake such a complex initiative. Ideally, a Climate Change Plan should be part of a legislative directive that would include a source of funding.*

4. **Comment:** *Chapter 2. Also, please add information from the recent reports of the US Global Change Research Program, including those for the Southeastern US (<http://www.globalchange.gov/>). It has specific climate projections for our region and is more recent than the IPCC report.*

**District Response:** *The District believes that the current characterization of the climate change issue in the RWSPs is sufficient to convey the scope of the problem and the need to begin monitoring and planning. A reference to the website has been added to the text.*

5. **Comment:** *In Chapter 3: The RWSP must break the projected demand data into the six Water Demand Projection Categories identified in Table 1 of DEP’s Format and Guidelines for Regional Water Supply Plans (August 2005, June 2009). Specifically, the Thermoelectric Power Generation Self-Supply and the Domestic Self-Supply and Small Public Supply Systems are their own categories and need to be broken out in the plan. Also, Institutional Self-Supply needs to be included in the Industrial/Commercial category. (We’re not sure where these data have been included in the draft documents.) Use of the designated*

*categories is essential to developing statewide data and comparing this round of RWSP updates with previously published plans.*

**District Response:** The Water Demand Projection Categories used by the District for the 2010 RWSP are the same as those used for the District's 2001 and 2006 RWSPs. The District has compiled the demand data according to the categories in Table 1 in the Format and Guidelines document. However, for the demand summary tables in the RWSP, we have combined Public Supply with Domestic Self Supply and Thermo-Electric Power Generation with Industrial/Commercial/Mining Dewatering. Again, this is how the District presented this data in the 2001 and 2006 RWSPs. At this point in the District's process of developing the RWSP, it would be very time consuming and expensive to revise the tables and text in each of the four Planning Regions to present the data as FDEP is requesting. We will seriously consider making the change when the RWSP is updated in 2015.

For the draft 2010 RWSP, the data is broken out as FDEP is requesting in the RWSP online appendices. In the Chapter 3 Appendix, Public Supply Demand projections, Tables 3 through 18 show the individual components of Public Supply Demand including Domestic Self Supply. Table 19 summarizes the data for the entire District. In the Chapter 3 Appendix, Industrial/Commercial Mining/ Dewatering, the IC/MD/PG category is broken out into its component parts in Table 2: Historic Usage and Water Demand Projections in 16 County Area. Power Generation is listed as a separate category.

- Comment:** Chapter 3. DEP's guidelines should be mentioned and referenced in each plan. In addition, note that in the third paragraph at the beginning of the Chapter 3, the reference for WPCG has different dates (2001 or 2005) in different plans.

**District Response:** The guidelines are referenced and discussed on the first page of Chapter 3, Demand Estimates and Projections. A sentence has been added to the first page of the RWSP stating that the District developed the RWSP in accordance with the FDEP's Guidelines. The reference has also been changed to 2005.

- Comment:** Chapter 3. In the demand projection tables, does Avg refer to the 5-in-10 demand condition?

**District Response:** Avg. does refer to the 5-in-10 condition.

- Comment:** Chapter 3. For Public Supply demand projections, please provide the rationale for assuming that per capita will remain the same as in 2003-2007. In recent years, the District and a number of individual communities have been successful in reducing per capita water use. Does the District not expect further reductions in per capita usage over the next 20 years?

**District Response:** The District projects raw demand which is the demand prior to any conservation measures being taken. The District does not attempt to predict what the 2030 per capita will be. Instead, water conservation and reclaimed water are treated as sources to meet demand as shown in the Tables for water availability at the end of Chapter 4. The District is confident that public supply per capita will decrease

significantly as a result of its extensive mandatory and voluntary water conservation and reclaimed water programs, which are discussed at length in the RWSPs. This rationale is discussed in the last paragraph of the introduction to Chapter 3, just prior to Part A.

9. **Comment:** *Chapter 3. The Agricultural Section and Appendix 3-1 forecast remarkable reductions in citrus acreage. Are the reductions in anticipated pumpage comparable?*

**District Response:** The District has received significant comment from the agricultural community regarding the agricultural demand projections. In response to these comments, the District has done additional research and has concluded that the reduction in citrus acreage will be considerably less than what was stated in the previous draft. The final draft has been modified to show considerably lower declines in citrus acreage.

10. **Comment:** *Chapter 3. SWFWMD's category for Additional Irrigation Demand is separate from both the Public Supply and the Domestic Self-Supply and Small Public Supply Systems categories. It is fine to break out Additional Irrigation Demand and Environmental Restoration into separate categories for the District's purposes; however, the plan needs to present clearly the totals in each of DEP's six required categories, and grand totals for all six DEP categories, as required in the Guidelines document.*

**District Response:** See the District's response to FDEPs first comment (#5) on Chapter 3 above.

11. **Comment:** *Chapter 3. Why are there no 1-in-10 demands for the I/C and PG categories? This needs a brief explanation.*

**District Response:** Unlike public supply, agriculture, and recreation, the I/C and PG use categories require the same amount of water regardless of the rainfall condition. A footnote has been added to the I/C, M/D, PG demand table to make this clear.

12. **Comment:** *Chapter 3. There are some key elements in Appendix 3 that should be presented in the main body of each plan as well as in the Executive Summary. Population projections A-3 for public supply are one such element. Table 4-4 from the 2006 RWSP is an example of how SWFWMD presented these data previously.*

**District Response:** After the first drafts of the RWSPs for each Planning Region were completed, it was discovered that the documents were overly lengthy and complex. To reduce their size and make them more user friendly, it was decided to move a lot of information to the appendices. Regarding our decision to include the population projections in the appendices, our position is that the key piece of information for the RWSPs is how much public supply demand will increase during the planning period. This of course is included in the RWSPs. Population is just part of the equation necessary to project public supply demand. For anyone wanting to access the population projections, it is very easy to do so by going to the SWFWMD website and accessing the RWSP Appendices.



13. **Comment:** *Chapter 3. Another element is the actual quantity of the projected demand. We noticed that the plans sometimes seem to have totaled quantities (Tables 3-1 through 3-5) and sometimes only increased/decreased amounts (Tables 3-6 and 3-7). Is this correct? It is a bit confusing. Please understand it is fine to have tables of increases/decreases in the plans. In addition, to develop statewide totals, we also need tables with totals after the increase/decrease has been applied for each category by county, region and district (the latter in the Executive Summary). If Tables 3-6 and 3-7 are the only ones showing just increases/decreases, this request may amount to simply adding two corresponding tables with totals.*

**District Response:** The tables in Chapter 3 have been revised as follows. For agriculture and I/C,M/D,PG (Tables 3-2 and 3-3), which are the only use categories that have decreases in demand, increases in demand and decreases in demand are now tallied in separate tables. So there is now a Table 3-2a and 3-3a (increases in demand) and a 3-2b and 3-3b, decreases in demand. Tables 3-1 through 3-5 now have just increases for each five-year increment rather than cumulative totals for each five-year increment. Table 3-6a is a summary of just increases in demand for the 5-in-10 and 1-in-10 conditions. Table 3-6b is a summary of just the decreases in demand for the 5-in-10 and 1-in-10 conditions. Tables 3-6a now shows the increase in demand for each five-year increment and in the next row, the cumulative increase for each five year increment. Table 3-7, now shows the 5-in-10 increase in demand for each use category by county and it shows both the increase by five-year increment and the cumulative increase for each five-year increment.

The reason why increases and decreases need to be tracked separately and not combined to get total demand is explained as follows. Decreases in demand are reductions in the use of groundwater for the agricultural and I/C,M/D,PG use categories. Decreases in demand are not subtracted from increases in demand but are tracked in separate tables. This is because increases in demand may be met with alternative sources and/or conservation and the retired groundwater quantities may be reallocated for mitigation of new groundwater permits for other use categories and/or permanently retired to help meet environmental restoration goals.

It must be noted that when mitigating impacts of a new withdrawal, it may be necessary to retire 5 mgd to offset the impacts from a 2 mgd withdrawal. The fact that this process may not result in a 1 for 1 offset, is another reason why it is not valid to subtract a projected decline in groundwater demand from a projected increase in demand in that category. The District used this same methodology in the 2006 RWSP which was accepted by the FDEP.

The numbers you should use for the District's demand projections are those in Table 1, in the Executive Summary.

14. **Comment:** *In Chapter 4: In the Reclaimed Water Section, Table 4-2, we have not been able to use the formula in footnote 3 to calculate the value shown in the table for any of the planning regions. For example, in the Heartland Planning Region's table:  $77.11 \times 0.75 =$*

57.825, and  $57.825 - 14.27 = 43.555$ , not 50.68 as shown in the table. Please clarify in all plans.

**District Response:** The Table 4-2 footnote 3 references an average of 75% utilization and 75% offset, however these are only general guidelines, as footnote 2 (referring to overall utilization and offset numbers) refers the reader to “See Table 4-1 in Appendix 4” for specific data. The general average of 75%/75% is just that, a general estimated average, however many utilities already provide and/or will provide all of their available reclaimed water flow to one large customer (hence a utilization rate listed that is greater than the general 75% average) and such customers may achieve offset efficiency rates greater than the general average of 75% efficiency rate (hence the offset rate listed that is greater than 75%). This is made clear in the text that explains the Table (see text; “Utilization and offset could potentially be greater than the 75 percent because of industrial operations that use large quantities of water and achieve virtually 100 percent offset rates”). Examples of these greater than 75%/75% utilities are numerous and are included in the source data for Chapter 4 Table 4-2. The footnote 2 in Table 4-2 directs the reader to Appendix 4 Table 4-1 which contains *utility by utility data* (i.e. Bartow reclaimed water 100% utilization to an industrial customer with 100% offset efficiency). Table 4-1 in Appendix 4 also contains footnote “N” which identifies all the utilities with utilizations and offsets that are higher than 75%.

15. **Comment:** Chapter 4. The discussion in the Desalination Section (both here and in Chapter 5) may benefit from information found in DEP’s recent report: *Desalination in Florida: Technology, Implementation, and Environmental Issues* available at: <http://www.dep.state.fl.us/water/default.htm> (under Quick Links).

**District Response:** Rather than altering the existing text, a reference to the website has been added to the text.

16. **Comment:** Chapter 4. In the Fresh Groundwater Section, for the Southern and Heartland Regions, the text says because it is difficult to quantify the potential availability of water in the surficial aquifer, the estimates of water availability in the surficial aquifer are combined with estimates for the intermediate aquifer. How does this difficulty lead to the combination of estimates? We think it is reasonable to use a combined number; however, the rationale presented for doing so is difficult to understand. (For example, in order to combine estimates, it seems one must know the individual values before summing can occur. By presenting a summed number, the District evidently was successful in obtaining individual estimates, even though it may have been difficult to do so.) Perhaps it is the interconnection between the aquifers that supports using a combined number, rather than the difficulty of the successful attempt to obtain individual numbers. Please note that Tampa Bay Region’s plan also presents a combined number (Table 4-4), but there is no corresponding explanation of why the numbers are combined. A-4

**District Response:** The quantities of water that could potentially be available from the surficial and intermediate aquifers were combined due to the inherent difficulty in forecasting where the aquifers might be utilized and how much water they could provide. There currently is insufficient information available to accurately define future intermediate withdrawals on a per unit (PZ 1, PZ 2, or PZ 3) basis. The quantity

identified in the RWSP as being available from the surficial and intermediate aquifers 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 surficial or upper portion of the intermediate aquifer. The types of demands that the aquifers might reasonably supply included domestic self-supply, recreation, and outdoor lawn watering associated with public supply uses. The District recognizes that additional water from the surficial and intermediate aquifers, beyond the quantities indicated in the RWSP, is potentially available over portions of the SWUCA. However, the determination that the surficial and intermediate aquifers 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 systems.

17. **Comment:** *Finally, the Water Conservation Section makes several references to the Chapter 4 Appendix for descriptions of program cost calculations and planning models (e.g., three references to the appendix on p. 77 of the Southern Region's plan). We could not find these descriptions in the appendix.*

**District Response:** This information had not been added to the Appendix for Chapter 4 at the time of your review of the draft. It is now in the appendix.

18. **Comment:** *Chapter 3. For counties shared with other Districts (Charlotte, Highlands, Polk, Lake, Levy, and Marion), were the demand projection estimates reviewed by or otherwise coordinated with the corresponding Districts? A discussion of any inter-district coordination should be included in the text.*

**District Response:** Demand projections for shared counties have been reviewed by staff at the other water management districts.

19. **Comment:** *Chapter 4. In the Water Conservation Section, the plans do not always present corresponding information when compared to each other. For example, the average cost effectiveness for all public supply measures is given in all plans, but the average cost effectiveness for all domestic self-supply measures is only given in the Southern Region's plan (page 79). As another example, in subsection 1.4.1.a, last paragraph, all planning regions except the Heartland present information on the measure with the second largest impact. Please provide cost-effectiveness estimates for all regions and water use categories.*

**District Response:** All of the regional plans include the above requested information in both the text of section 1.4, Potential for Non-Agricultural Water Conservation Savings, and the table at the end of the section. The second comment is that in the Heartland plan, a second largest impact measure is not provided for DSS category. A statement has been added to DSS in Heartland plan, page 70, subsection 1.4.1, Domestic Self-Supply.

20. **Comment:** *Also in the Water Conservation Section, the amounts and costs are exactly the same across some plans. For example, in subsection 1.4.2, the average cost effectiveness for all measures (\$0.37/1000 gal) is exactly the same in all plans although the water savings differ for most regions. The water savings, 0.06 mgd, also are exactly the same for the Northern and the Southern Planning Regions. Similarly, in subsection 1.4.3 for the Northern*

and the Heartland Planning Regions, the savings and average cost effectiveness values (0.02 mgd at \$0.39/1000 gal) are exactly the same. Tampa Bay's plan has the same cost effectiveness for a different quantity (0.04 mgd at \$0.39/1000 gal). Note that the values given in the text do not match the values in the corresponding table in the Southern and Northern Regions' plans. In addition, the quantity and cost for landscape surveys also are exactly the same across all plans (0.01 mgd at \$1.30/1000 gal), except for Tampa Bay's plan in which the quantity differs, but the cost is the same (0.02 mgd at \$1.30/1000 gal). Please address the basis for the identical estimates.

**District Response:** The overall comment is to address the basis for identical estimates in cost effectiveness, water savings and costs. The short District Response is since the cost per measure and savings per measure default is the same for each conservation measure through all user categories, the cost effectiveness is always the same for each conservation measure.

1.4.2 is I/C,M/D,PG. The same types of measures are applied to this category with the 30% participation assumption carried throughout all planning regions. Each measure has the same default cost and water savings, so the cost effectiveness is the same. This is also the case for the Rec/Aesthetic category, the overall cost effectiveness is always \$0.39/ 1000 gallons. The reason we don't see this happening (in overall cost effectiveness for an entire user category, i.e. PS, DSS) in the PS or DSS categories is because there are some utilities that do not have every conservation measure applied to them.

Subsection 1.4.2 for I/C,M/D,PG; coincidentally the Northern and Southern planning regions have an almost identical number of permittees that meet planning threshold for evaluation, and with 30% participation applied, the number of measures applied are almost identical for each of these regions (appendices for I/C,M/D,PG will be provided, which provides the data for this user category).

All four regions have a cost effectiveness of \$0.39/1000 gallons. The same types of measures are applied to the Rec/Aesthetic category with the 30% participation assumption carried throughout all planning regions. Each measure has the same cost and water savings, so the average cost effectiveness is the same.

The text and values in the table in Section 4.4 have been corrected. In regard to the identical cost benefits, cost and savings per measure is the same, so the cost benefit for one measure across all plans and all user categories will be the same, regardless of the total water savings.

**Comment:** Additionally, we are concerned about the very low goals for some water conservation activities. For example, in the Recreation/Aesthetic category for the Southern Region, the District estimates a potential savings of 30,000 gpd (p. 79) for a region currently using 27.4 mgd, and forecast to rise to 38.8 mgd (p. 42), indicates that only about 0.1% can be conserved in this category in 20 years. Also, we are unsure if the 0.03 mgd is an annual figure or a figure for the entire 20-year planning period. (Note use of the phrase "by 2030" on p. 79, and the phrase "in 2030" found in Table 4-5, p. 80, when referring to the same number.) Nevertheless, it seems much more than a tenth of one percent can be conserved in this category, especially over two decades.



**District Response:** Many Rec/Aesth. conservation measures and alternative supplies have already been implemented within the southern Region. More than half of the golf courses in the region already have reclaimed water. The .03 mgd is the estimated savings through 2030, so over the 20-year planning period the savings are conservative, but are based on the actual number of Rec/Aesth water use permits in the District, with a 30% participation rate. So this assumes 30% of the active permittees will implement the water conservation measures provided in the plan for this category. The potential level of opportunity will vary greatly depending on the type of Rec/Aesth permit and level of commitment by the permittee in conducting a program.

21. **Comment:** Chapter 4. As another example, when comparing water conservation in the Public Supply Sector, the projected savings in the Southern Region is 6.6 mgd and in the Heartland Region is 20.6 mgd (Tables 4-5 and 4-4, respectively). This is a 3-fold difference in savings, even though there is less than a 2-fold difference in A-5 increased demand (Table 3-1) over the 20 years. Why are the projections for the Southern Region so low?

**District Response:** Many conservation measures and alternative supply have already been implemented in the southern Region. As such, the Southern Region has much less opportunity for additional conservation. The District developed a method for the current RWSP for determining the water conservation potential for the four planning regions. The District looked at the average water use per capita for utilities in the District. In determining the potential, the District applied between 10 to 28 percent water savings from water conservation measures for each utility. Where a utility falls in the 10 to 28 percent range largely depends on the size of the utility and the average per capita. For utilities with current per capita averages below 150, the target for reductions is a reasonable, achievable amount of conservation while maintaining reasonable per capita water use. For utilities above the 150 per capita that must be met by 2019, the target reductions were focused on applying sufficient achievable conservation to assist with per capita compliance. The Southern Region has one utility that has a per capita above 150, while the Heartland Region has a number of utilities well above 150; so when evaluating these regions for conservation, a higher percentage of water savings was applied to the Heartland Region.

A number of factors were used to determine which conservation measures would be the best fit for the utility, including demographics and the type and estimated number of conservation measures completed to date (county models in the appendices will provide background data for this).

22. **Comment:** Chapter 4. The District should carefully review the assumptions that resulted in these apparently low levels of water savings. In each plan, please provide the potential water savings from the implementation of different levels of effort in improving water use efficiency. One way to obtain alternative estimates is to use the potential water conservation rates for different BMPs found in Conserve Florida's EZ Guide.

**District Response:** The District developed a method for estimating water savings by utility/county for those over the guidelines threshold of 0.1 mgd demand. For public supply, this included using the average per capita water use for each utility, demographics (i.e. pre-95 built for indoor measures) to determine potential levels of opportunity, and conservation measures already completed were taken into



consideration. We did account for different levels of effort in that customers with an already low per capita, (below 150) may not implement as many conservation measures that a customer with a high per capita (above 150) might; a utility with a per capita above 150 may have more potential for water savings. For the ICMDPG and Rec/Aesthetic categories, we used a 30% participation rate for all conservation measures. For these categories, the potential level of opportunity will vary greatly depending on the type of ICMDPG or Rec/Aesthetic permit and level of commitment by the permittee to implement conservation measures. It is the District's understanding that the Conserve Florida EZ Guide is still under development

23. **Comment:** *Chapter 4. For the I/C, M/D Water Demand Projections (Part A, Section 3, subsection 3.0), the text says the District no longer includes non-consumptive dewatering uses for M/D in permitted quantities. We're confused by this change, especially when we compare SWFWMD's data with data from other water management districts and the USGS. For example, the USGS's 2005 withdrawal data for I/C included water withdrawn for dewatering and mining operations (see the water use report at: <http://pubs.usgs.gov/sir/2009/5125/>, pp. 20-21). The other districts include dewatering amounts in their plans. Does SWFWMD have the withdrawal data? If so, please include these data in the plans. In addition, for the (separate) Power Generation category, please indicate whether or not these numbers include once-through cooling.*

**District Response:** The intent of the Regional Water Supply Plan is to ensure that adequate volumes of water will be available for all future users, not to document current water use. The District annually publishes its Estimated Water Use report, which provides details on water withdrawal. Non-consumptive dewatering is just that, non-consumptive. It is water that is merely moved from one location to another in the same general area. Given the intent of the RWSP, the District does not believe it is necessary to ensure that adequate water be available so that it can be relocated from a product being mined. Excess water that must be removed from a mined product is not a demand that must be met. Since it is not consumed, the District does not permit it as a consumptive use. Because it is no longer permitted, the District no longer requires permit holders to report dewatering quantities, nor does it collect data on quantities moved around on any given mine site.

24. **Comment:** *Chapter 5. Some water conservation goals seem very modest in light of what the plans describe as large potential savings. For example, in the Southern Region, rebates for efficient clothes washers (pp. 102-103) seem to have only a minimal effectiveness, as only 80,000 gallons per day will be saved in the region by 2030. (We think the units in the table on p. 103 should be mgd instead of gpd. Also, we are unsure if the 0.08 mgd is an annual figure or a figure for the entire 20-year planning period.) If the use of high efficiency clothes washers can reduce the annual amount of wash water used from 12,000 gallons to 6,000 gallons for a family of four, it seems that only 13 such families (= 80,000/6,000) will make use of these rebates, a very low number whether this figure is per year or per 20 years. From a different view, because the plan estimates that each efficient washer saves 16.3 gallons per day (per household?), only about 4900 households (= 80,000/ 16.3, assuming one machine per household) will install these washers, an especially low number if this figure is for the next two decades. Is our arithmetic in error about these very low projections?*

**District Response:** The goal is not 13 washers but 4,900 washers at 16.3 gpd. In regard to the following, “We think the units in the table on p. 103 should be mgd instead of gpd. Also, we are unsure if the 0.08 mgd is an annual figure or a figure for the entire 20-year planning period”, the units for all of the tables in Section 6, subsection 1.0 Non-Agricultural Conservation, have been changed from gpd to mgd. The “Water Savings Rate in 2030” is currently in mgd. The 0.08 mgd is the savings for public supply clothes washers for the 20-year planning period.

25. **Comment:** Chapter 5. In the Agricultural Water Conservation Section, the Tailwater Recovery Option has exactly the same costs in the Northern, Southern, and Tampa Bay Planning Regions. Similarly, the Rainwater Harvesting Option numbers are exactly the same in all four planning regions. Please address the basis for these identical estimates.

**District Response:** As stated in the text, costs for the Tailwater Recovery Option were based on the costs of a specific project that was developed in Manatee County. Obviously, the cost of projects using similar technologies would be different from one project to the next because there are so many variables that would vary widely, i.e., pipe size and length, variable costs between contractors for excavation and installation, different models and suppliers for systems such as pumps, just to name a few. The idea was simply to present a ball park estimate of what it might cost a farmer to use similar technologies for their specific operation. The Rainfall Harvesting Option was a hypothetical example but the principle of providing a ball park estimate was the same.

26. **Comment:** Chapter 7. Which planning regions have had QWIP projects?

**District Response:** Most of the QWIP projects have been completed in the Southern Planning Region. A smaller but significant number have been completed in the Heartland and Tampa Bay Planning Regions. Very few have been completed in the Northern Planning Region.

27. **Comment:** Chapter 7. In Part A, Section 2, paragraph 1, the number of water resource development projects identified in the text as summarized in Table 7-2 differs from the number of projects shown in this table in all four planning regions. Please address.

**District Response:** There are a total of 20 Water Resource Development Projects Districtwide. For each Planning Region, the projects in Table 7-2 include only those of the 20 that will provide a benefit to and are funded from that Planning Region. For example, in the Southern Planning Region there are 12 Water Resource Development Projects listed in Table 7-2. The other eight projects are not listed in the Table because they do not provide a benefit to and are not funded from the Southern Planning Region.

28. **Comment:** Chapter 8. In Part B, Section 3, paragraph 1, the phrase —The reduced funding related to...is not a sentence.

**District Response:** The word “was” was left out of the sentence. The sentence has been revised to read “The reduced funding was related ....”

29. **Comment:** Chapter 8. In Part C, Table 8-3 the following groups of rows are confusing:

1	Basin Board Cooperative Funding Initiative.	\$300
2	Funding provided assuming all of the Basin Board Cooperative Funding Initiative water supply funds are used for projects that would be matched by a partner on an equal cost share basis	\$300

and

1	District WSRD Program funding	\$1,200
2	Funding provided assuming one half of the WSRD funds are used for projects that would be matched by a partner on an equal cost share basis.	\$600

From the text in the table, it is not clear if the information in the second row is a subset of the first row, or if it is a non-District amount contributed by cooperators. Please clarify.

**District Response:** As explained in the text included in the first 2 bullets on the previous page of Chapter 8, the \$300 million in the first line of Table 8-3 is the amount of funding the District can generate from 2011 through 2030. The \$300 million in the second line is the amount of funding that could potentially be generated by cooperators to match the District’s contribution. The \$1.2 billion in the third line has now been revised down to \$400 million based on the District’s latest revenue projections. The \$400 million is the amount of Water Supply and Resource Development (WSRD) funding the District will generate from 2011 through 2030. Since WSRD projects are sometimes undertaken solely by the District, it was assumed that only half of the \$400 million may be matched by cooperators.

30. **Comment:** Chapter 8. It is interesting that SWFWMD and others might be able to fund the \$2.4 billion (Table 8-3) needed to create additional water. It is also interesting that the projected revenues from new customers, \$2.995 billion (Table 8-2), is in the same range. We suggest expanding Section 3 with a recap of the District’s role in (partial) project funding, and a discussion of cooperator funding responsibilities, including the cooperators’ amount of estimated costs. What are the District’s criteria for an appropriate division of funding responsibility?

**District Response:** The District has completely revised the projections of available funding in Table 8-3 and the types and costs of large-scale projects in Table 8-4. Regarding your suggestion to add additional discussion, staff believes it is not necessary to do so because the information the comment is requesting is provided in detail in Part A., Section 2 of Chapter 8.

31. **Comment:** Executive Summary. We suggest the last guiding principle (The role of constraints..., p. 18) be modified as a positive statement, such as maintaining sustainability.

*For example, the provision of old Ch. 373.016(2), F.S. has the following directive: ...take into account cumulative impacts on water resources and manage those resources in a manner to ensure their sustainability. A-7*

**District Response:** The concept of sustainability and how it relates to MFLs is a recurring theme throughout the RWSP. The District does not believe the suggested language needs to be added to this guideline to reinforce a principle that is so basic to the District's mission.

32. **Comment:** *Executive Summary. For the information in Table 1, please create two additional tables: A table with the same rows and columns that give total amounts, rather than quantities of change. (See comment 3, last bullet.) District-wide totals for each water use sector. If desired, this information could be inserted into the table mentioned above, between the rows for Subtotal and Total.*

**District Response:** Table 1 has been revised as follows. For each Planning Region there is now an incremental increase row, which shows the amount of increase for each five-year increment and a cumulative increase row which shows the cumulative increase from one five-year increment to the next. Although we have not provided Districtwide totals for each water use category, this can easily be calculated by adding the total for a given use sector for each Planning Region. Table 2, which shows the decreases in demand, has been structured similarly.

33. **Comment:** *Southern Planning Region. On page 6, Section 5, it would be helpful to provide the link to the demographics web page as you did in the other 3 plans.*

**District Response:** The link has been added to the final draft of each Planning Region RWSP.

34. **Comment:** *Southern Planning Region. The list of priority water resources without established MFLs (p. 22) needs to be updated.*

**District Response:** The list has been updated as suggested.

35. **Comment:** *Heartland Planning Region. In Figure 1-2 (p. 9), why is Lake Sebring identified and not Lake Jackson, as shown in Figure 2-2 (p. 24)? Lake Jackson is the larger water body.*

**District Response:** Lake Jackson has been added to the figure.

36. **Comment:** *Heartland Planning Region. In Figure 1-3 (p. 11), the geologic cross-section inset appears to barely graze the SW corner of Hardee County, yet the detailed map indicates the cross section intersects both (central?) Polk and Hardee Counties. Which is correct? Figure 1-3 doesn't seem to correspond with the description in the text.*

**District Response:** The purpose of the geologic cross section inset is just to provide a general picture of the location of the cross section. The purpose of the text is to

explain the geology and hydrogeology of the Heartland Planning Region, not just what is in the immediate vicinity of the cross section.

37. **Comment:** *Heartland Planning Region. In the text on the top of page 37 doesn't follow from the text at the bottom of page 35.*

**District Response:** **The document has been corrected.**

38. **Comment:** *Heartland Planning Region. In Table 3-5 (p. 45): What does superscript 1 refer to?*

**District Response:** **This is a reference to a footnote that was intentionally deleted. The reference to the footnote has also been deleted.**

39. **Comment:** *Heartland Planning Region. In the table, the SWIMAL demand is 26.9 mgd. On page 60, it is 23.1 mgd. Please address.*

**District Response:** **In Table 3-5 on page 45, the restoration demand of 26.9 mgd includes 3.2 mgd that was met during the period between 2005 and 2010. Subtracting 3.2 mgd from 26.9 mgd leaves 23.7 mgd. This is the remaining SWIMAL demand that must be met between 2010 and 2030. The 23.1 mgd on page 60 has been changed to 23.7 mgd.**

40. **Comment:** *Heartland Planning Region. The report identifies Josephine Creek (p. 50) as a major creek system, but this water feature does not appear in Figures 1-2 or 2-2. It would be helpful to show where this creek is. The text mentions the discharge near the DeSoto City gauge, but this location also is not shown.*

**District Response:** **Josephine Creek has been added to both Figures.**

41. **Comment:** *Heartland Planning Region. On page 51, we are concerned about including Josephine Creek as a potential water source. In the time since SWFWMD published its 2006 RWSP, SFWMD has adopted a MFL for Lake Istokpoga based on the then present-day inflows to the lake. Lake Istokpoga also is in a SFWMD restricted allocation area. Close coordination with SFWMD is necessary before planning for any water withdrawals can proceed.*

**District Response:** **The District shares the Department's concerns and will proceed cautiously with this project as the Department suggests.**

42. **Comment:** *Heartland Planning Region. In Chapter 4, the two paragraphs on the surficial aquifer (p. 59) don't comport. In particular, the second paragraph states that uncertainty in the hydraulic capacity of the surficial aquifer makes it difficult to quantify the potential availability of water in this aquifer. What creates this uncertainty and difficulty, particularly along the Lake Wales Ridge where the aquifer is composed of highly permeable sands that are 200'–300'thick? Furthermore, in 2006, the annual average permitted withdrawal for this region was 11.8 mgd from the surficial aquifer. How does the District allocate permit quantities from this aquifer if the hydraulic capacity is uncertain?*



**District Response:** To accurately determine the hydraulic capacity of the surficial aquifer in the entire Heartland Planning Region, the District would have to install numerous test wells at many different locations and conduct numerous pump tests. A groundwater flow model would need to be developed for the region that would incorporate these data as well as the numerous lakes and wetlands, the underlying intermediate and Upper Floridan aquifers, and withdrawals from all the aquifers. Because the potential availability of water from the surficial aquifer is a very small percentage of what is available from the Upper Floridan aquifer, the District decided over two decades ago to invest its limited resources in accomplishing everything that is discussed above for the Upper Floridan aquifer throughout its 16 county area. The cost of this effort, which is not yet complete, has been several tens of millions of dollars. Because the District has not invested this level of resources into the surficial aquifer, it is difficult to quantify the potential availability of water from the aquifer.

It is not necessary to have this level of information to issue permits for withdrawals from the surficial aquifer. This is because each applicant for a permit must demonstrate that they will not negatively impact adjacent legal users, sensitive natural systems, or established MFLs. Using existing data and relatively simple groundwater models, it is possible for most small-quantity permittees to demonstrate that they can meet these conditions. Permittees seeking larger quantities would be required to construct wells, conduct pump tests, and develop more complex groundwater models.

43. **Comment:** *Heartland Planning Region. The ASR section of Chapter 4 should include some discussion of the ASR projects shown in figure 4-2 (p. 62).*

**District Response:** The Discussion of the ASR projects in the Heartland Planning Region that are shown in Figure 4-2, can be found in Chapter 6, Water Supply Projects Under Development, pages 106 and 107.

44. **Comment:** *Heartland Planning Region. On page 73, where does the quantity of 56 mgd in reduced agricultural demand come from?*

**District Response:** In response to comments from the agricultural community in the Heartland Planning Region, the District has revised projections for agricultural water demand. See the comments and responses in the Heartland Planning Region section of this document. The revised decrease in agricultural groundwater use is now 5.2 mgd. Added to the projected decline for the I/C, M/D, PG use category of 6.3 mgd, the total projected decrease in groundwater use in the Heartland Planning Region is now 11.5 mgd.

**Comment:** *Within the Heartland Planning Region, there is a projected deficit of 13.3–39.9 mgd by 2030 (p. 74). State water policy (Ch. 373, F.S. and Rule 62-40, F.A.C.) supports a local sources first approach for obtaining water. Consequently, we have concerns about the plan's suggestion of availability and long-distance transport of water from Tampa Bay Water or the Toho Water Authority. Please also address how the local sources first policy is being considered in this and the other plans.*

**District Response:** The projected demand in the Heartland Planning Region has been revised downward to 129.6. Subtracting the potential quantity available from all sources (123.6) results in a projected deficit of 6.0 mgd. The Local Sources First statutory language should not be interpreted to mean local sources only. Local Sources First allows inter-county and inter-District transfers if all local sources have been exhausted. In the RWSP for the Heartland Planning Region, the District has developed a great deal of information to show that the Heartland Planning Region could potentially exhaust all of its available water sources by 2030. However, the RWSP also makes it clear that a quantity of 11.5 mgd of groundwater may be available from the Upper Floridan if quantities permitted to agriculture and I/C,M/D,PG are reduced as projected. In the unlikely event that the 11.5 mgd does not become available, then available water supplies in the Heartland Planning Region will be exhausted and Local Sources First will no longer apply to the Region. It is because the possibility of a 2030 deficit exists that local governments, water supply authorities, and the District have developed contingency plans to import water to overcome the projected deficit.

The District has always been completely supportive of Local Sources first and has vigorously opposed past efforts by water suppliers in the District to obtain water from north Florida. Because this position is so fundamental to all of the District's efforts to develop sustainable water supplies and because the other Planning Regions are projected to have a comfortable water supply surplus in 2030, the District does not consider it necessary to add additional discussions of the Local Sources First issues to the RWSPs for each Planning Region.

45. **Comment:** *Heartland Planning Region. On page 78, for the Kissimmee River potable supply option, the report identifies the current restoration efforts, fluctuating lake levels, and inter-basin transfers as issues related to this project. An additional issue is that SFWMD is in the process of trying to establish reservations for both the river and the Kissimmee Chain of Lakes. This may affect water availability for out-of-district allocations. We also recommend including information from the CFCA work group's recent action plan for this area.*

**District Response:** This issue has been added to the list. In Chapter 2, Part C, Section 1, Prevention Activities, of the Heartland Planning Region RWSP, there is nearly a page of text describing the CFCA and the action plan.

46. **Comment:** *Northern Planning Region. Page 11, Section 4, paragraph 1 discusses the disappearance of the intermediate aquifer and its confining unit, as one moves from south to north in the planning region. The discussion is confusing. The sentence starting with —From south to north... continues with a disjointed idea about the confining unit in the central Tampa Bay Planning Region, far to the south.*

**District Response:** Your confusion may result from the term “from south to north.” This means from the southern Planning Region through the Tampa Bay Planning Region and into the Northern Planning Region. You may have thought “from south to north” meant from the southern boundary of the Northern Planning Region to the northern boundary of the Planning Region. Text has been added that explains this more clearly.

47. **Comment:** *Northern Planning Region. On page 41, section 1.0, paragraph 1, the demand quantity in the second sentence does not match the value shown in Table 3-3.*

48. **District Response:** **This section has been completely revised. Demands in the text should now match the tables.**

49. **Comment:** *Northern Planning Region. On page 51, for the Withlacoochee River, why was the proxy minimum flow methodology used, which is based upon flows in other nearby rivers, rather than the planning level minimum flow criteria, used in the other plans, which is based upon the actual river flows? A-9*

**District Response:** The Withlacoochee Regional Water Supply Authority commissioned a water supply planning effort several years ago and the consultant that was awarded the project choose to use the proxy minimum flow methodology. This should not be a concern because it is highly unlikely that the Withlacoochee River will be developed for water supply within the next 20 years. Long before then, the District will have established minimum flows on the river and these minimum flows will be used to determine the sustainable yield of the river. The next update to the RWSPs in 2015 will contain the available flow based on the established minimum flow.

50. **Comment:** *Northern Planning Region. Page 82, paragraph 1 states that no seawater desalination plants are planned, yet the Progress Energy project is presented later on this page (and earlier in the document).*

**District Response:** The term “not planned” means that there are no plans at this time by any entity to begin the development of a seawater desalination plant. The Crystal River Power Plant discussed on p. 82 is simply a water supply option to show that a seawater desalination plant may be feasible in the Planning Region if a water supply entity wishes to build one at some point in the future.

51. **Comment:** *Tampa Bay Planning Region. When did the Partnership Agreement require TBW to reach 90 mgd—2007 (page 21) or 2008 (page 27)?*

**District Response:** The text has been corrected to show that Tampa Bay Water had to achieve a 12 month running average of 90 mgd By January 1, 2008.

52. **Comment:** *Tampa Bay Planning Region. On page 28, why isn't the Morris Bridge Sink Project included in Table 2-1? Is the amount from Morris Bridge sink included in the Lower Hillsborough quantity given in Table 3-5 (page 47)?*

**District Response:** As stated in the text below Table 2-1 on p. 28, the project is not included because the District is exploring the feasibility of developing the Morris Bridge Sink project. The 8.8 mgd for the Lower Hillsborough River given in Table 3-5, is not an accounting of how much water will be produced by the various recovery projects. It is the quantity that must be developed to recover the river.

53. **Comment:** *Tampa Bay Planning Region. On page 40, last paragraph, the information presented in the text does not match the data in Table 3-2.*

**District Response:** This section has been completely revised. Demands in the text should now match the tables.

54. **Comment:** Tampa Bay Planning Region. Page 85, paragraph 3 needs to reference Table 4-5.

**District Response:** The reference to Table 4-6 is correct. The Tables on page 86 were mis-labeled as Tables 4-5a and 4-5b. They labels have been corrected in the text to be 4-6a and 4-6b.

55. **Comment:** Tampa Bay Planning Region. On page 122, why is the TBW desalination plant listed as under development for providing 25 mgd? The plant is already completed and Chapter 4 (page 64) says the planned expansion is for 10 mgd.

**District Response:** All projects that met the District's definition of "under development" are included in Chapter 6. The definition states in part that all projects that have been completed since 2005, the base year for the 2010 RWSP, are considered to be under development. Tampa Bay Water's Seawater desalination plant was remediated and completed its acceptance testing between 2005 and 2010.

Roger Landry, Building Energy Solutions, [BuildingEnergySolutions@comcast.net](mailto:BuildingEnergySolutions@comcast.net), 3152 Novus Street, Sarasota, FL 34237

Comments 1-13 were taken directly from the SCOPE SEE Water Committee Position Paper Regarding the 2010 RWSP Update.

Of the actions that the Committee is asking the District to take: 1) those that we could address would be implemented at a community scale or smaller. While, the RWSP includes conservation incentives on a municipal scale, the purpose of the RWSP is to identify regional demands and regional sources and identify specific projects that represent options that may be implemented to achieve the regional supplies, and 2) other actions requested are not under the District's authority to address.

1. **Comment:** Since decision makers are most likely to read the Executive Summary, I am requesting that rainwater harvesting and storage be included in both the Executive Summary and the Regional Water Supply Plans. In the executive summary, cisterns should be considered a "conservation measure". Additionally on larger scales, cisterns should be considered as a water supply development option (development, community, or municipal scale). Remember that water that is supplied from another source, such as rain water, no longer needs to be withdrawn from the ground or surface water sources. In effect, this makes rain water harvesting both a conservation measure and a "water supply".

**District Response:** While there are many benefits of practicing rainwater harvesting, after review of the material provided by the Committee, the District does not feel that rainwater harvesting can be included in the RWSP as a potential water supply option

at this time. Each of the alternative water supply options included in the RWSP are supported by independent research and/or documentation of broad-based and sustained practical implementation. We have extensive data to support the viability, feasibility and quantification of these options as potential measures that nearly all urban water users in the District can implement cost-effectively. Further, District research has indicated that the cost effectiveness of implementing rainwater harvesting as a water supply on a large scale is not sufficient for us to pursue at this time. However, the District is not opposed to including rainwater harvesting as a conservation measure with a potential for future community scale projects. With that said, please see our responses to the Committee's requests below.

2. **Comment:** *Add rainwater harvesting to the executive summary as an alternative source of water and as a tool for water conservation. Cisterns should be considered a conservation measure.*

**District Response:** Cisterns, when installed, are already considered a conservation measure. While they are not mentioned per se in the RWSP or promoted for in-home use, the concept is covered in our conservation measures, specifically the implementation of Florida Friendly Landscape Principles in the appropriate volumes. Specific measures are not listed in the Executive Summary. The District is willing to include rainwater harvesting as a conservation measure, with potential for future expansion.

3. **Comment:** *On larger scales, cisterns should be considered as a water supply development option development or community scale.*

**District Response:** As noted above, the RWSP's purpose is to identify regional demands and regional sources and identify specific projects that represent options that may be implemented to achieve the regional supplies. While it may be possible to consider rainwater harvesting as a potential source in the future, the District cannot support it as a supply option in this update. We can, however support it as a conservation measure, with potential for future expansion. Expansion into whole house use would require consistency with local government codes and Health Department regulations, as well as the appropriate District water use permitting criteria.

4. **Comment:** *Recognize that rainwater and stormwater have different qualities and thus have different uses.*

**District Response:** Water use designations and water quality standards are established by the Florida Department of Environmental Protection (FDEP). The District has no authority to differentiate between the rainwater and stormwater quality or to determine the uses thereof.

5. **Comment:** *Connect cistern use to stormwater management and DEP stormwater rules. Stormwater has hit the ground, rainwater comes directly off the roof. Rainwater is harvested from the roof, stormwater goes on to become surface water or reclaimed water.*



**District Response:** While not necessarily for whole house use, the District gives potential Surface Water Environmental Resource Permitting credits when low impact design is used, which includes the use of various vessels for storage and irrigation use of impervious (roof) surface runoff.

- 6. Comment:** Differentiate vaults from cisterns. Vaults are used for stormwater collection. Cisterns are used for rainwater collection.

**District Response:** This is an issue that the FDEP would address, due to the water quality implications.

- 7. Comment:** Document other areas that have cisterns approved for whole house use (examples the Mid-West, Monroe County, others).

**District Response:** In order for the District to include rain water harvesting in the RWSP as a supply option, much more practical data from broad-scale uses and analysis of that information would be needed. Documentation of whole house use in other areas would not be sufficient to support its inclusion in this update of the RWSP. If the Committee has documentation, research or data regarding this, it could be used to perhaps solicit support for a pilot project.

- 8. Comment:** Water usage supply to be appropriately allocated; appropriate water quality for the appropriate use. Different quality levels include reclaim water, stormwater, rainwater (captured directly from roof), well water, public supply water, etc. As part of using the appropriate water quality for the appropriate use, promotion of “dual plumbing” on both the supply side (for toilet flushing) and collecting greywater from shower and other sources for secondary use before eventual disposal as wastewater.

**District Response:** Again, water quality and use issues are under the FDEP’s authority. Further, the issue of “dual plumbing” and the use of specific types of water in the home would be addressed by the local building and plumbing codes and/or the Health Department.

- 9. Comment:** Possible cistern supply offset use; irrigation, toilet flushing and whole house use.

**District Response:** Potable water offset through the use of cisterns for irrigation is already accepted by the District and is promoted through the Florida Friendly Landscaping Principles. We will include rainwater harvesting in the RWSP as a conservation measure to offset the use of potable water for irrigation. A method of measuring use (i.e., metering) would be required to quantify offset. Toilet flushing and whole house use is not under the District’s jurisdiction and would be addressed by local governments and the Health Department.

- 10. Comment:** Promote a path to water neutral homes (similar to energy neutral homes) as an extension of or similar to the Florida Water Star Gold Program.

**District Response:** Once the water quality issues for whole house use and plumbing codes have been resolved, this is potentially feasible in the future.

11. **Comment:** *Promote ET based irrigation controllers, soil moisture sensors, and high efficiency irrigation equipment.*

**District Response:** *The District not only promotes these currently, but also provides funding to implement them.*

12. **Comment:** *Promote amending DEP's safe drinking water rules to define and include rain water as a potential potable source – we feel this is the easiest path to establish treatment standards for cistern water as a public water supply. Define when stormwater in a ditch becomes surface water and define when this water can now be utilized as a possible potable water source.*

**District Response:** *Rule making is a very involved undertaking that takes extensive amounts of staff time and funding. It often takes years to complete and is often challenged in court. Rule amendments would require extensive data to support scientifically defensible revisions. While these actions could be possible in the future, the District does not feel that the RWSP is the appropriate vehicle to promote such rule revisions.*

13. **Comment:** *Plans for new wells in citrus county, and lines connecting them to hernando, and sumter county, are dangerous to the ecological, and economic health of citrus county. our county has little industry, but a lot of water related recreation and tourism, any draw of groundwater affects water levels in our lakes and rivers, and flow from our springs, these are the major reasons people visit or live here.*

**District Response:** *Protecting natural systems is one of the District's core functions. Florida law (Chapter 373.042, Florida Statutes) requires the state water management districts or the Department of Environmental Protection to establish minimum flows and levels for aquifers, surface watercourses, and other surface water bodies to identify the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area. Minimum flows and levels are adopted into the Districts rules (Chapter 40D-8, Florida Administrative Code) and used in the District's water use permitting program to ensure that withdrawals do not cause significant harm to water resources or the environment.*

### Andrew Nouné, Sarasota County Citizen

**Comment:** *Hello SWFWMD, Thanks a lot for making the draft plan so easy for review! I am a citizen in Sarasota County and would like to see a lot more mentions, study, and use of rainwater harvesting in the Regional Water Supply Plan. In an geographical area with 50+ inches of rain per year, I am shocked to see that SWFWMD hardly mentions a word about rainwater harvesting in its whole Regional Water Supply Plan.*

*It seems that rainwater collection could warrant being evaluated as a water source and water development option on its own accord and should have its own sections in both Chapter 4 and 5. It seems to me that rainwater collection can at least be mentioned in the water conservation sections of each chapter if nowhere else.*

*On page 78, you mention that outdoor water use and landscape irrigation can account for up to 50% of residential public supply demand. I would like to see SWFWMD mention rain barrels and harvesting rainwater to offset some of this use.*

*On page 13, the RWSP highlights a 1992 SWFWMD study: "Major recommendations of the [Water Supply Needs and Sources:1990-2020] study included the need for users to rely on local sources to the greatest extent practicable to meet their needs before pursuing more distant sources..." This paired with concerns that climate change will likely limit the reliability of surface water sources (pg. 27) seem to lend support for more rainwater collection and use. Rainwater can be collected at the home and used at the home, greatly reducing energy used to move processed water.*

*It would be great to see rainwater collection mentioned as an official alternative water supply source by SWFWMD in its RWSP. It is the cheapest, closest source of water for many applications, especially when it comes to residential landscape irrigation.*

*Just want to say it would be great to see a lot more discussion about rainwater collection and use. I don't think I saw rainwater harvesting even mentioned once as a possible alternative water supply source in this whole Executive Summary.*

*I just learned how to install gutters and rain barrels and they have already saved me over a thousand of gallons of city water that I was using for landscape irrigation. Promoting rainwater harvesting seems to be a really good thing and it is not even mentioned in this summary!!*

*Please add rainwater harvesting to this plan and its Executive Summary so rainwater harvesting projects can be identified and supported as a viable alternative water supply source. It seems like it could often be the least expensive option for people and utilize the water closest to where it is needed.*

**District Response:** While there are many benefits of practicing rainwater harvesting, the District does not believe that rainwater harvesting can be included in the RWSP as a potential water supply option at this time. Each of the alternative water supply options included in the RWSP are supported by independent research and/or documentation of broad-based and sustained practical implementation. We have extensive data to support the viability, feasibility and quantification of these options as potential measures that nearly all urban water users in the District can implement cost-effectively. Further, District research has indicated that the cost effectiveness of implementing rainwater harvesting as a water supply on a large scale is not sufficient for us to pursue at this time. However, we are not opposed to including rainwater harvesting as a conservation measure with a potential for future community scale projects. In fact, cisterns are considered a conservation measure, and while they are not mentioned per se in the RWSP or promoted for in-home use, the concept is covered in our conservation measures, specifically the implementation of Florida Friendly Landscape Principles in the appropriate volumes. The District is willing to include rainwater harvesting as a conservation measure, with potential for future expansion.