

**MDWASD Reuse Feasibility Study Update**  
**Comment Review and Issue Resolution Matrix**

Revised: 10/26/06

Level of Treatment and Proximity of Reclaimed Water Use to Sensitive Receptors						Action Items		
Level of Treatment								
Discussion Points	Conclusions discussed at 9/18/04 workshop and 10/02/06 meeting	Permitting Agency	Requirements per FDEP	Requirements per DERM	Proposed Level of Treatment in RFS	Item	Due Date	Responsible
<b>Irrigation outside WPA</b>	FDEP - Responses based on minimum rule criteria. SFWMD - Defer to FDEP regulations. DERM - Concur with FDEP regulations	FDEP	Rule 62-610.460, Minimum treatment required: Public access (filtration and disinfection)	concur with FDEP	Filtration, disinfection (chlorination), except for locations sharing transmission lines with other higher-treated water. RO added at CDWWTP due to high chlorides.	None required	NA	NA
<b>Irrigation within WPA</b>	FDEP - Filtration, disinfection required. Minimum 75 ft setback from potable water supply well. SFWMD - Defer to FDEP regulations. DERM - Want to make sure wellfields adequately protected Not recommended by Miami-Dade County WAS	FDEP DERM/EQCB variance needed	Rule 62-610.460, Minimum treatment required: Public access (filtration and disinfection) and 75-ft setback	Chapter 24-43, will require a variance. Not recommended.	Not recommended	None required	NA	MDWASD to continue coordination with DERM
<b>Irrigation near private wells</b>	FDEP - Filtration, disinfection required. Minimum 75 ft setback from potable water supply well. SFWMD - Defer to FDEP regulations. DERM - concur with FDEP	FDEP	Rule 62-610.460, Minimum treatment required: Public access (filtration and disinfection) and 75-ft setback		Filtration, disinfection (chlorination), except for locations sharing transmission lines with other higher-treated water. RO added at CDWWTP due to high chlorides.	None required	NA	NA
<b>Irrigation in proximity to Biscayne Bay</b>	FDEP - Filtration, disinfection required. SFWMD - Defer to FDEP regulations. DERM - concur with FDEP but site-specific conditions to be considered	FDEP	Rule 62-610.460, Minimum treatment required: Public access (filtration and disinfection)	Concur with FDEP, however, site specific conditions to be implemented (BMPs, engineering controls such as berms)	Filtration, disinfection (chlorination), except for locations sharing transmission lines with other higher-treated water. RO added at CDWWTP due to higher chlorides. Site specific BMPs recommended.	RFS to be modified to include BMPs	NA	NA
<b>Aquifer Recharge (RIT) outside WPA</b>	FDEP - Per 62-610 S. 525, nitrogen removal to less than 10 mg/L, TSS less than 5 mg/L (i.e. drinking water standards at end of pipe). Engineering report should demonstrate recharge is taking place. Recommended disinfection via UV or ozonation due to concern with chlorinated byproducts. Backup disposal system needed. SFWMD - defer to FDEP regulations DERM - RO recommended	FDEP	Rule 62-610.525, minimum requirements public access (filtration and disinfection) plus meet primary and secondary drinking water standard. 500-ft setback from public water supply, 100-ft setback for non-pubic water supply	RO recommended	Filtration, disinfection (chlorination), RO.	RFS to be modified to match treatment assumptions	NA	MDWASD to continue coordination with FDEP, SFWMD, and DERM

**MDWASD Reuse Feasibility Study Update**  
**Comment Review and Issue Resolution Matrix**

Level of Treatment and Proximity of Reclaimed Water Use to Sensitive Receptors						Action Items		
Level of Treatment								
Discussion Points	Conclusions discussed at 9/18/04 workshop and 10/02/06 meeting	Permitting Agency	Requirements per FDEP	Requirements per DERM	Proposed Level of Treatment in RFS	Item	Due Date	Responsible
<b>Aquifer Recharge within WPA</b>	FDEP - No additional requirement than stated for aquifer recharge SFWMD - defer to FDEP regulations DERM - RO recommended but variance required. Not recommended by Miami-Dade County WASD or DERM	FDEP DERM/EQCB variance needed	Rule 62-610.525, minimum requirements public access (filtration and disinfection) plus meet primary and secondary drinking water standard	Chapter 24-43, will require a variance. Not recommended.	Not recommended	RFS to be modified to match treatment assumptions	NA	MDWASD to continue coordination with FDEP, SFWMD, and DERM
<b>Aquifer Recharge near private wells</b>	FDEP - No additional requirement than stated for aquifer recharge SFWMD - defer to FDEP regulations DERM - RO recommended	FDEP	Rule 62-610.525, minimum requirements public access (filtration and disinfection) plus meet primary and secondary drinking water standard	RO recommended	Filtration, disinfection (UV), RO, microfiltration, advanced oxidation.	RFS to be modified to match treatment assumptions	NA	MDWASD to continue coordination with FDEP, SFWMD, and DERM
<b>Aquifer Recharge in proximity to Biscayne Bay</b>	FDEP - No additional requirement than stated for aquifer recharge SFWMD - defer to FDEP regulations DERM - RO recommended	FDEP DERM approval may be needed	Rule 62-610.525, minimum requirements public access (filtration and disinfection) plus meet primary and secondary drinking water standard	Chapter 24-48 RO recommended	Filtration, disinfection (UV), RO, microfiltration, advanced oxidation.	RFS to be modified to match treatment assumptions	NA	MDWASD to continue coordination with FDEP, SFWMD, and DERM
<b>Canal Recharge</b>	FDEP - Filtration, disinfection (either UV or ozonation), nutrient removal required. RO recommended. QBEL to be performed. Minimum advanced treatment required. Although microconstituents not regulated, public health concerns may exist. SFWMD - defer to FDEP DERM - RO recommended, nutrient removal, and must meet surface water standards	FDEP SFWMD DERM	Rule 62-610.555(4), shall meet antidegradation policy (62-610.525(4)(f))	Chapter 24-48. RO recommended, nutrient removal, meet surface water standards	Filtration, microfiltration, RO, UV, advanced oxidation, plus nutrient removal	RFS to be modified to match treatment assumptions	NA	MDWASD to continue coordination with FDEP, SFWMD, and DERM

**MDWASD Reuse Feasibility Study Update  
Comment Review and Issue Resolution Matrix**

Level of Treatment and Proximity of Reclaimed Water Use to Sensitive Receptors						Action Items		
Level of Treatment								
Discussion Points	Conclusions discussed at 9/18/04 workshop and 10/02/06 meeting	Permitting Agency	Requirements per FDEP	Requirements per DERM	Proposed Level of Treatment in RFS	Item	Due Date	Responsible
Biscayne Bay Coastal Wetlands	FDEP - Filtration, disinfection (either UV or ozonation), and nutrient removal required. RO recommended. QBEL to be performed. Minimum advanced treatment required. Although microconstituents not regulated, public health concerns may exist. Recommend same treatment as CERP Technology Report for South Dade Advanced Wastewater Treatment SFWMD - defer to FDEP regulations DERM - Concur with FDEP	USACE SFWMD FDEP DERM approval needed	Rule 62-302.700 Outstanding Florida Waters. Recommend same treatment as CERP Reuse Pilot Technology Report for SDWWTP: nutrient removal, microfiltration, UV disinfection	Recommend same treatment as CERP Reuse Pilot Technology Report Chapter 24-48.	Contingent on Coastal Wetlands Rehydration Project. Assume: microfiltration, UV, plus nutrient removal	RFS to be modified to match recommended treatment proposed in CERP Reuse Pilot technology report.	NA	NA
Wetlands Rehydration Demonstration Project	FDEP - QBEL to be performed, permit will ultimately have Water Quality requirements. If effluent retained within project site, QBEL may not be necessary. SFWMD - defer to FDEP regulations DERM - concur with FDEP	FDEP	Rule 62-610.555(4), shall meet antidegradation policy (62-610.525(4)(f))		Filtration (filtration), microfiltration, UV, plus nutrient removal. Other stream with RO.	RFS to be modified to match recommended treatment proposed in CERP Reuse Pilot technology report. Other stream with RO	NA	NA
RO Reject Stream	FDEP - Need to look at disposal requirements. SFWMD - defer to FDEP regulations DERM - Concur with FDEP	FDEP				FDEP will follow-up to determine WQ conditions under permit. L. Horne will look further into the requirements for RO reject.	TBD	L. Horne, FDEP
Outcomes	Water quality endpoints or outcomes should be defined to determine levels of treatment					Confirm that all agencies are in agreement with end point treatment	NA	MDWASD to continue coordination with FDEP, SFWMD, and DERM

**MDWASD Reuse Feasibility Study Update  
Comment Review and Issue Resolution Matrix**

Page4 of 6

<b>Pilot Studies/BBCW</b>				
<b>Need for Pilot Studies</b>		<b>Action Items</b>		
<b>Discussion Points</b>	<b>Conclusions discussed at 9/18/04 workshop and 10/02/06 meeting</b>	<b>Item</b>	<b>Due Date</b>	<b>Responsible</b>
Aquifer recharge/high level treatment	Proceed with pilot	None at this time	NA	NA
RFS terminology: pilot	Determine the terminology to be used in the Reuse Feasibility Study (pilot projects vs. phase project) DERM requested addressing projects as Phase I rather than pilots	None at this time	NA	NA
<b>Integration of BBCW in Reuse Study</b>		<b>Action Items</b>		
<b>Discussion Points</b>	<b>Conclusions discussed at 9/18/04 workshop and 10/02/06 meeting</b>	<b>Item</b>	<b>Due Date</b>	<b>Responsible</b>
How to incorporate full scale project given uncertainties (volume, pilot)	MDWASD as a local sponsor will deliver reclaimed water, additional refinement needed to determine volume. SFWMD suggest MDWASD develop an agreement with USACE. Current volume for Acceler8 project is 200 cfs (129 MGD).	MDWASD to coordinate meetings with CERP, Acceler8 (timelines, goals), BNP, and other stakeholders. Need to determine how to incorporate project in RFS given current unknowns.	TBD	MDWASD to coordinate follow-up
Delivery system expectations for Miami-Dade County, CERP, Acceler8	Delivery system not under MDWASD's commitment as a local sponsor. Clarification needed on the responsibilities for the deliveries of reclaimed water for the BBCW	MDWASD to coordinate meeting with CERP and Acceler8 to determine the delivery requirements	TBD	MDWASD to coordinate follow-up
Permitting strategy: Wetlands Rehydration Demonstration Project and BBCW full-scale project	Permitting strategy yet to be defined.	Develop permitting strategy to expedite implementation of full scale project (permit for full scale project, phased project?)	TBD	MDWASD in coordination with FDEP and DERM as part of ongoing planning efforts
RFS direction	No conclusion reached on how to integrate the BBCW wetlands project with the rest of the projects in RFS. Also allocation towards BBCW yet to be determined.	Clarification needed to determine how the reuse projects in the SDWWTP will be formulated (allocate all capacity to BBCW, keep the projects identified in the SDWWTP?) and how the final alternatives will be.	TBD	MDWASD to coordinate follow-up with FDEP and SFWMD

**MDWASD Reuse Feasibility Study Update  
Comment Review and Issue Resolution Matrix**

Page5 of 6

<b>Economic Analysis</b>				
<b>Incorporate additional baseline costs for WW system</b>		<b>Action Items</b>		
<b>Discussion Points</b>	<b>Conclusions discussed at 9/18/04 workshop and 10/02/06 meeting</b>	<b>Item</b>	<b>Due Date</b>	<b>Responsible</b>
Costs not necessarily the limiting factor.	May not have gotten across in the report, will be clearly stated in the report	Make appropriate revisions in the RFS	NA	
Discussion of what information will be	Baseline costs & requirements for outfall will be incorporated into report	Make appropriate revisions in the RFS	NA	
<b>Alternative Water Supplies Comparison</b>		<b>Action Items</b>		
<b>Discussion Points</b>	<b>Conclusions discussed at 9/18/04 workshop and 10/02/06 meeting</b>	<b>Item</b>	<b>Due Date</b>	<b>Responsible</b>
Part of Reuse Study or Water Master Plan	Will be addressed in the water master plan	None at this time	NA	NA
Level of Detail and Analysis	Issue will be addressed in the water master plan	None at this time	NA	NA
<b>Satellite Facilities</b>				
<b>Consideration of More Satellite Facilities</b>		<b>Action Items</b>		
<b>Discussion Points</b>	<b>Conclusions discussed at 9/18/04 workshop and 10/02/06 meeting</b>	<b>Item</b>	<b>Due Date</b>	<b>Responsible</b>
Multiple systems vs. centralized facilities	The benefit and ramifications of multiple satellite plants will be discussed in more detail and rationale for selection of a limited number of sites will be provided.	Make appropriate revisions in the RFS	NA	RFS consultant team/MDWASD
<b>Offsets</b>				
<b>Clarification of offsets</b>		<b>Action Items</b>		
<b>Discussion Points</b>	<b>Conclusions discussed at 9/18/04 workshop and 10/02/06 meeting</b>	<b>Item</b>	<b>Due Date</b>	<b>Responsible</b>
Efforts needed to confirm offsets/water use credits	Two types of offsets: demand offset - shift existing potable water demand to reuse (Direct offset), and resource based offset - decrease regional demands (aquifer/canal recharge). Resource based offsets are proportional to recharge. Locations closer to wellfields yield higher offsets.	SFWMD and MDWASD to further refine credits/offsets determination	ongoing weekly meetings	MDWASD/SFWMD
Recharge other wellfields	Site-specific evaluation, cooperative agreement opportunities may be considered.	MDWASD to coordinate with other utilities	ongoing	MDWASD
BBCW offset?	Considered a resource-based offset (Biscayne Bay, different from Everglades), impacts to Biscayne Bay must be assessed.	SFWMD and MDWASD to further refine credits/offsets determination	ongoing weekly meetings	MDWASD/SFWMD
Proposed Miami Heights wellfields	Need to quantify impacts by modeling effects to canals.	MDWASD to address impacts, develop model	ongoing	MDWASD

**MDWASD Reuse Feasibility Study Update  
Comment Review and Issue Resolution Matrix**

Schedule of Projects				
Relationship of Projects		Action Items		
Discussion Points	Conclusions discussed at 9/18/04 workshop and 10/02/06 meeting	Item	Due Date	Responsible
SDWWTP HLD	HLD may not satisfy treatment requirements for reuse projects identified. Need to identify recharge options at the SDWWTP to better define treatment upgrades and optimize design. FDEP - final deadline as defined by EPA	None at this time	ongoing	MDWASD
Water Facilities Master Plan	Deadlines pursuant to interim agreement.	None at this time	NA	NA
WW Facilities Master Plan	Feb 08 to complete study, May 08 submit to EPA	None at this time	NA	NA
Reuse Feasibility Study	Following meeting with regulatory agencies, RFS schedule may be better defined. Outstanding issues delaying completion of the RFS	MDWASD to pursue the resolution of issues in order to finalize the RFS	ongoing	MDWASD to follow-up with FDEP and SFWMD



Jeb Bush  
Governor

# Department of Environmental Protection

Marjory Stoneman Douglas Building  
3900 Commonwealth Boulevard  
Tallahassee, Florida 32399-3000

Colleen M. Castille  
Secretary

June 13, 2006

Mr. John Renfrow  
Miami Dade Water & Sewer Department  
Post Office Box 330316  
Miami, Florida 33233-0316

Dear Mr. Renfrow:

The Department of Environmental Protection (DEP) and the South Florida Water Management District (District) have reviewed the online version of Miami-Dade County's May 2006 Draft Reuse Feasibility Study Report Update.

This reuse study was originally commissioned in response to DEP's requirements for wastewater facilities and must meet certain regulatory requirements. In addition to the DEP requirements, the study is also relevant to the development of a long-term alternative water supply plan required by the Interim Consumptive Use Authorization and Agreement recently executed with the District. The District, DEP and Miami-Dade County each have a vested interest in charting a comprehensive course toward integrated water resource management to support South Florida's growing economy while protecting the natural resources that define the quality of life in the community. A comprehensive program to reuse water is an integral part of the development and growth of Miami-Dade County, both in terms of water supply and responsible wastewater management.

We hope that you will address the comments contained in this letter promptly and work with us to develop a revised study, acceptable to both agencies that can be presented to your commission for approval. Once the report is acted upon by the Miami-Dade County Commission, DEP will then consider it a final submittal in the context of permitting or the DEP's South District Wastewater Treatment Facility Consent Order, OGC File #03-1376. A final, acceptable study report is critical, not only as a stand alone document, but also as a part of the master planning required by the consent order and for consideration under the DEP's State Revolving Fund program.

## The Need for Reuse of Reclaimed Water

Miami-Dade faces serious water supply and wastewater management issues. With limited availability of historical supplies of water from Lake Okeechobee, the Everglades and the Biscayne Aquifer, Miami-Dade County must develop and implement alternative water supplies



such as water reuse, conservation, desalination and stormwater recycling to meet future needs. At the same time, federal and state treatment requirements for underground injection of wastewater are increasing and there is a growing desire to curtail ocean disposal to protect Southeast Florida's coral reefs and coastal water quality. While treatment costs for wastewater management and future water supplies will be higher, as a renewable resource the highly treated water will become a valuable commodity that can help meet future water demands.

The Florida Legislature has established water reuse as a state objective and it has become commonplace in most of Florida, which is recognized as a national reuse leader. Florida's reuse capacity now totals more than 1.2 billion gallons per day and some 40 percent of all wastewater is reused daily. Despite generating about one-fifth of Florida's wastewater, however, Miami-Dade County reuses a mere seven percent.

#### Public Acceptance of Reuse

The draft Reuse Feasibility Study contains a wealth of information and the DEP appreciates the consultant's discussion of reverse osmosis with ultraviolet/advanced oxidation treatment. However, the County may also want to consider substituting ozonation for UV/oxidation as recent work has demonstrated significant benefits associated with the use of ozone. The DEP also applaud the study's recommendation to implement two satellite water reclamation facilities and believe the County should extend this consideration to ground water recharge projects in the western county.

In spite of these positive elements, however, the study leaves significant doubts about Miami-Dade County's commitment to implementing quality water reuse programs. The emphasis on pilot studies to evaluate already proven technologies, in use throughout Florida and the rest of the country, is disconcerting. Even more problematic is the discussion of indirect potable reuse projects, incorrectly referred to as "direct" potable reuse in the study, as "toilet to tap," a term used only by reuse opponents. Miami-Dade County's longstanding opposition to reuse has prevented its citizens from learning about the benefits and safety of using reclaimed water, undermining public acceptance and making implementation more difficult.

#### Economic Analysis

The draft Reuse Feasibility Study's economic analysis is not sufficiently comprehensive or detailed. While it compares reuse options, it fails to put them in context with other potential water supply options. It is critical to explore the full range of water supply alternatives and their associated costs to make informed decisions. The cost analysis must include the various alternatives linked to the appropriate treatment and management requirements, including the



option of treating brackish Floridan Aquifer water. The study also needs to explain the requirements as they relate to each facility and reuse site to determine whether the evaluation is appropriate.

Given the growing concerns for effluent disposal in Southeast Florida, the feasibility analysis needs to be modified to anticipate reasonably expected future treatment requirements for ocean outfalls, including advanced levels of nutrient removal. It also must reflect the new federal and state requirements for Class I injection wells, with the addition of filtration and high-level disinfection for all injected flows. These are not now "additional costs," but baseline costs. Further, to comply with the Department's Guidelines for Reuse Feasibility Studies, detailed wastewater management cost estimates for collection, treatment, reuse/disposal, biosolids management and concentrate management must be included.

#### Reclaimed Water Quality Requirements

The State of Florida has comprehensive rules governing water resource management, water reuse, water supply and ground water protection, including wellhead protection. These rules have been publicly adopted and are designed to fully protect public health and the environment based on best-available science. Florida's reuse rules are consistent with national guidelines published by the United States Environmental Protection Agency and figured prominently in the development of those guidelines. Miami-Dade County's study should be modified to focus on treatment and disinfection needed to meet Florida's rule requirements. Additional costs attributable solely to local Department of Environmental Management (DERM) or Water and Sewer Department ordinances or policies must be identified separately from State requirements. In this context, the discussion of emerging pollutants of concern, including microconstituents, in the context of reuse is largely unsupported by science and does not appear to be rule-based. The DEP requests that the County re-evaluate this discussion and modify the study report accordingly.

#### Biscayne Coastal Wetlands Rehydration

The Rehydration of Biscayne Bay's Coastal Wetlands is an important project, which the County agreed to sponsor locally under the DEP's South District Wastewater Treatment Facility Consent Order in the context of the Comprehensive Everglades Restoration Plan. The associated pilot project is required by the District's Interim Consumptive Use Authorization and Agreement and will determine the level of treatment needed for the full scale project. The County's role in implementing the wetland rehydration project represents its assurance that the impacts to Biscayne Bay associated with the existing and future consumptive use withdrawals are offset. The options presented in the reuse plan do not adequately reflect the County's role as local

Mr. John Renfrow  
June 13, 2006  
Page Four

sponsor for the wetland rehydration project. If Miami-Dade County is no longer planning to offset freshwater flows to Biscayne Bay, the recently executed consumptive use agreement with the District will need to be revised.

The draft feasibility study appears to indefinitely postpone projects related to rehydrating coastal wetlands from the South District wastewater treatment plant largely because of DERM's perception of Outstanding Florida Waters (OFW) requirements. Reclaimed water can be used in proximity to OFWs, as it is in Pinellas County, where all surface waters are OFWs and where there are excellent urban and residential reuse systems immediately adjacent to those waters. Pinellas County reuses approximately 40 percent of its wastewater daily. The DEP will be happy to discuss the State's OFW requirements, including the need to address nutrients, so that the draft report can be modified.

#### Recharge and Consumptive Use Offsets

Essential to Miami-Dade County's ability to secure future consumptive use permits is the effective use of high-quality reclaimed water for ground water recharge, which will offset withdrawals. Thus, recharge projects should concentrate on areas that positively affect the regional wellfields. While pilot testing of treatment technologies in this context may be appropriate and prudent, the County should focus on meeting adopted public health-based water quality requirements and building public support. Various means for recharge, including direct injection and use of canals, including the method's cost-effectiveness, should be considered. The relevance of local ordinances or policies that unnecessarily prevent reuse projects should be re-evaluated and modified where appropriate.

The DEP agrees that the District should be consulted to determine the degree of offsets that will contribute toward Miami-Dade County's pending water use permit application. However, the offsets contained in the report have not been endorsed by the District. As stated in permit, correspondence and contained in the Interim Consumptive Use Authorization and Agreement, the District must approve the alternative sources plan for the permit to be issued. In reviewing such alternative water supply plans, the District will evaluate the impacts of the increased withdrawals as distributed among the County's wellfields and determine whether the proposed offsets by location and amount are sufficient to offset the impacts of the withdrawals. This study could not assess the location of the proposed increased withdrawals as they have not yet been determined and, therefore, the offsets may not be adequate to offset impacts associated with the growing demands of the County.



Mr. John Renfrow  
June 13, 2006  
Page Five

Quantity of Reclaimed Water

The draft feasibility study recommends implementation of the minimal reuse alternative (Alternative C), which projects 24 percent use of available domestic wastewater by 2027. While 96 million gallons per day of reclaimed water is a good start, it falls well below the current statewide average of 40 percent daily use and, more significantly, will not meet Miami-Dade County's anticipated water needs. The shortfall will depend on an agreement as to how much freshwater use is actually offset by the reuse projects to be implemented.

Conclusion

The Department and the South Florida Water Management District expects Miami Dade County to revise the Draft Reuse Feasibility Study Report Update to address our comments and provide a firm commitment to a higher level of reuse than is recommended in the current draft. We stand ready to assist Miami-Dade County in developing an effective and comprehensive water reuse and alternative water supply strategy.

Sincerely,



Colleen Castille  
Secretary



Carol Ann Wehle  
Executive Director  
South Florida Water Management District

cc: Scott Burns, SFWMD  
Mimi Drew, DEP  
Mark Elsner, SFWMD  
Carlyn Kowalsky, SFWMD  
Kevin Neal, DEP  
Mike Sole, DEP

**MDWASD Reuse Feasibility Study  
Responses to June 13<sup>th</sup>, 2006 Comments from FDEP and SFWMD  
Revised September 29, 2006**

1. FDEP/SFWMD Comment: Despite generating more than about one-fifth of Florida's wastewater, however, Miami Dade County reuses a mere seven percent.  
*Response: Miami-Dade County is committed to reusing wastewater and is ready to make significant financial investments.*

*Changes to Reuse Study: No changes needed.*

2. ...the DEP appreciates the consultant's discussion of reverse osmosis with ultraviolet/advanced oxidation treatment...the County may also want to consider substituting ozonation for UV/oxidation as recent work has demonstrated significant benefits associated with the use of ozone.  
*Response: A combination of UV and ozonation was considered in the reuse feasibility study and included as a recommendation for the alternatives that require higher levels of treatment. Using the combination of UV and ozone, based on literature research, is also considered part of the "best available" treatment train for treatment of the EPOCs evaluated to date.*

*For the other reuse options where high-level disinfection is required, but the other EPOC treatment components are not, the study proposes to expand the existing chlorination capacity at each of the WWTPs rather introducing new disinfection systems.*

*Changes to Reuse Study: None required*

3. The DEP also applaud the study's recommendation to implement two satellite water reclamation facilities and believe the County should extend this consideration to ground water recharge projects in the western county.  
*Response: The benefit and ramifications of multiple satellite plants needs to be carefully considered. Based on conversations with the regulatory agencies, it is our understanding that a further discussion describing rationale for selection of a limited number of sites for satellite facilities.*

*Changes to Reuse Study: To be determined*

4. ...the study leaves significant doubts about Miami-Dade County's commitment to implementing quality water reuse programs. The emphasis on pilot studies to evaluate already proven technologies, in use throughout Florida and the rest of the country is disconcerting.  
*Response: The study proposes only two pilot studies to ensure the technical and environmental feasibility of implementing relatively new technologies prior to*

*larger scale reuse and are required by the SFWMD's Interim Consumptive Use Authorization and Agreement. Based on discussions with the regulatory agencies, the pilot efforts are deemed necessary to determine the most efficient treatment, potential effects, and implementation of reuse for aquifer recharge and Biscayne Bay Coastal Wetlands Rehydration.*

*Changes to Reuse Study: The study will maintain the existing pilot studies with the understanding that the pilot efforts are the first step in the implementation of a comprehensive reuse plan that includes aquifer recharge and coastal wetlands rehydration..*

5. Even more problematic is the discussion of indirect potable reuse projects, incorrectly referred to as "direct" potable reuse in the study, as "toilet to tap", a term used only by reuse opponents.

*Response: Since it appears that the discussion in the report may create a negative impression, which is not our intention, it will be removed.*

*Changes to Reuse Study: Text "toilet to tap" to be deleted.*

6. The...Study's economic analysis is not sufficiently comprehensive or detailed...it fails to put them in context with other potential water supply options...The cost analysis must include the various alternatives linked to the appropriate treatment and management requirements, including the option of treating brackish Floridan Aquifer water.

*Response: The report will be revised to include future capital costs associated with the entire wastewater system, as well as related expenses.*

*Changes to Reuse Study: Alternative water supply issues will not be incorporated into this report, since a more detailed effort is underway as part of the Water Master Plan.*

7. The study also needs to explain the requirements as they relate to each facility and reuse site to determine whether the evaluation is appropriate.

*Response: Please clarify meaning of comment. Does this pertain to alternative water supply components at each facility or location? If so, is it more appropriately addressed in the Water Master Plan?*

*Changes to Reuse Study: To be determined*

8. ...the feasibility analysis needs to be modified to anticipate reasonably expected future treatment requirements for ocean outfalls, including advanced levels of nutrient removal.

*Response: This will be added to the economic analysis of the report. However, see also the discussion in number 10, below.*



*Changes to Reuse Study: Applicable changes to be made.*

9. It must also reflect the new federal and state requirements for Class I injection wells, with the addition of filtration and high-level disinfection for all injected flows.

*Response: This will be added to the economic analysis of the report for the SDWWTP but not the NDWWTP. A study is currently underway at the NDWWTP to determine if cross contamination is occurring and additional filtration and high-level disinfection may or may not be required.*

*Changes to Reuse Study: Applicable changes to be made.*

10. These are not now “additional costs,” but baseline costs. Further, to comply with the Department’s Guidelines for Reuse Feasibility Studies, detailed wastewater management cost estimates for collection, treatment, reuse/disposal, biosolids management and concentrate management must be included.

*Response: The County will revisit the baseline conditions for effluent disposal but as discussed on the conference call with FDEP and the SFWMD, that will not change the recommendations. The reassessment of baseline conditions may help demonstrate the change in rates from baseline to some degree of reuse is less than shown. This would be helpful if the recommendation hinged on the rate impact, but that was not the case. Although the study indicates that if costs for reuse can be spread to all Miami-Dade County water and wastewater customers, the feasibility of reuse is driven more by technical and environmental conditions and not costs, this point can be stressed more in the report. Further discussion is needed at the September workshop as to what will be included.*

*Changes to Reuse Study: Applicable changes to be made.*

11. Miami-Dade County’s study should be modified to focus on treatment and disinfection needed to meet Florida’s rule requirements. Additional costs attributable solely to local DERM or WASD ordinances or policies must be identified separately from State requirements.

*Response: The treatment discussed in the report balances FDEP rules, SFWMD desires and DERM’s position regarding reuse. Based on conversations with the regulatory agencies, Miami-Dade has specific hydrogeological features that warrant higher levels of treatment than the specified under the FDEP’s rules. It is apparent that for aquifer recharge projects, additional treatment such as RO is recommended due to the highly-porous nature of the Biscayne aquifer. In addition, determination of treatment levels for areas within sensitive receptors (Outstanding Florida Waters, canals, and coastal wetlands) will require a QBEL.*

*Changes to Reuse Study: Applicable changes to be made.*

12. In this context, the discussion of EPOC’s, including microconstituents, in the context of reuse is largely unsupported by science and does not appear to be rule-

based. The DEP requests that the County re-evaluate this discussion and modify the study report accordingly.

*Response: Treatment of EPOCs has been further discussed with the regulatory agencies. While consensus on the need for advanced treatment technology for certain reuse applications (as discussed in comment 11 above) has been reached, specific treatment trains are yet to be determined by pilot effort and continuing stakeholder communication.*

*Changes to Reuse Study: No changes to the discussion of EPOCs.*

13. The rehydration of Biscayne Bay's Coastal Wetlands (BBCW) is an important project...the associated pilot project is required by the District's Interim Consumptive Use Authorization and Agreement and will determine the level of treatment needed for the full scale project. The options presented in the reuse plan do not adequately reflect the County's role as local sponsor for the wetland rehydration project. If Miami-Dade County is no longer planning to offset freshwater flows to Biscayne Bay, the recently executed consumptive use agreement with the District will need to be revised.

*Response: The County intends to be the local sponsor for the wetland rehydration project. Please be aware due to underlying uncertainties, the implementation of full scale reuse for the Biscayne Coastal Wetlands or portion is contingent on the pilot studies' outcome. However, based on further discussions with the regulatory agencies, this project will be incorporated into all the reuse alternatives. Further refinement is underway to determine the volume required for the BBCW project and for the formulation of reuse alternatives that include the BBCW project while following the FDEP guidelines for reuse feasibility studies .*

*Changes to Reuse Study: The report will incorporate BBCW project to existing alternatives with the understanding that the final feasibility is contingent on the outcome of the Coastal Wetlands Rehydration Demonstration. Specific formulation of the alternatives is yet to be determined.*

14. The draft feasibility study proposes to postpone projects related to rehydrating coastal wetlands from the South District Wastewater Treatment Plant largely because of DERM's perception of Outstanding Florida Waters requirements.
- Response: The Coastal Wetlands Rehydration Demonstration project is proposed to be implemented in the first planning stage (0 to 5 years) with design efforts currently underway. This project is the first step in the implementation of reuse for the purpose of coastal wetland rehydration as it will define the required treatment and effects of a full scale project. Note, that the demonstration project will also serve to establish baseline conditions, which are essential in developing a successful environmental and ecological monitoring program to measure success.*

*We are under the impression that study is consistent with the current schedule in the CERP Project Management Plan (PMP) for the Wastewater Reuse Technology Pilot Project which includes the Biscayne Coastal Wetlands Pilot. The PMP for the full-scale Biscayne Coastal Wetlands Project noted that it might not be until year 2020 that the system would be operational but that schedule has slipped. Miami Dade County would implement their commitment to the project faster than the current CERP schedule.*

*Miami Dade County is committed as the local sponsor in the CERP Biscayne Bay Coastal Wetlands Project with the assumption that the USACE and the SFWMD will complete the rest of the CERP Project components. Currently the costs in the reuse study only reflect treatment plant upgrades for the Biscayne Coastal Wetlands Project and no other components.*

*Delivery requirements (volume and timing of deliveries) have not been clearly defined. Current efforts under the Acceler8 program include a Biscayne Bay Coastal Wetlands project that incorporates some of the components for coastal wetlands rehydration. However, the delivery requirements outside of this effort have not been defined.*

*Changes to Reuse Study: Final alternative formulation to be determined. The Coastal Wetlands Rehydration demonstration will not count towards reuse volumes for the reuse alternatives.*

15. ...recharge projects should concentrate on areas that positively affect regional wellfields...the County should focus on meeting adopted public health-based water quality requirements and building public support. Various means for recharge, including direct injection and use of canals, including the method's cost-effectiveness, should be considered. The relevance of local ordinances or policies that unnecessarily prevent reuse projects should be re-evaluated and modified where appropriate.

*Response: Direct injection via infiltration galleries and canal recharge were considered and included in the medium and high reuse scenarios. Due to the extremely permeable nature of the sole source aquifer, DERM has concerns about direct injection, but aquifer recharge upstream of the wellfields is included. Canal recharge was also evaluated and while many uncertainties remain, the regulatory agencies seem to agree that this may be feasible with appropriate water quality evaluations.*

*Changes to Reuse Study: Applicable changes to be made.*

16. The DEP agrees that the District should be consulted to determine the degree of offsets that will contribute toward Miami-Dade County's pending water use permit application. However, the offsets contained in the report have not been

endorsed by the District...the District must approve the alternative sources plan for the permit to be issued. In reviewing such alternative water supply plans, the District will evaluate the impacts of the increased withdrawals as distributed among the County's wellfields and determine whether the proposed offsets by location and amount are sufficient to offset the impacts of the withdrawals...the offsets may not be adequate to offset impacts associated with the growing demands of the County.

*Response: Comment noted. The offsets in the report are for informational purposes and are based on input from the SFWMD (recharges wellfield, reduces loss of groundwater flow to Biscayne Bay or replaces potable water supply). Only those projects that directly offset public water supply, had direct recharge in the wellfield, or were in close proximity to Biscayne Bay (infiltration galleries) were included. It is possible other offsets may be achieved, but additional input from the SFWMD will be needed to confirm all offsets. The SFWMD has provided some clarification on the credits or offsets, and additional input is still needed.*

*Changes to Reuse Study: None proposed. Comment is acknowledged and text states that offsets will require SFWMD input.*

17. The draft feasibility study recommends implementation of the minimal reuse alternative...it falls well below the current statewide average of 40 percent daily use and, more significantly, will not meet Miami-Dade County's anticipated water needs. The shortfall will depend on an agreement as to how much freshwater use is actually offset by the reuse projects to be implemented.

*Response: The County is aware that the 24% reuse does not meet the additional water supply needs, and that Miami-Dade County would have to rely on other alternative water supplies such as the Floridan Aquifer. This will be addressed in much more detail in the County's Water Supply Master Plan Project which has just commenced. The County has conducted meetings and workshops with the regulatory agencies to resolve a number of issues that would make other reuse opportunities possible. Based on these efforts, the recommended alternative will be shifted to include other projects, however, a final recommended alternative is yet to be formulated based on the comments presented above. Note, it is the County's intent to maximize the reuse opportunities at the SDWWTP to include reuse of 100% of the projected wastewater flow.*

*Changes to Reuse Study: To be determined.*

18. The Department and the South Florida Water Management Districts expects Miami Dade County to revise the Draft Reuse Feasibility Study Report Update to address our comments and provide a firm commitment to a higher level of reuse than is recommended in the current draft.

*Response: the Feasibility Study Report will be revised pursuant to the above comments and further discussions.*

*Changes to Reuse Study: Changes to be made as applicable.*