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Please Respond to:

October 19, 2007

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Florida Department of Agriculture and Consumer Services' Comments on the Caloosahatchee River (C-43) West Basin Storage Reservoir Project Final Integrated Project Implementation Report and Environmental Impact Statement

The Florida Department of Agriculture and Consumer Services (FDACS) appreciates the opportunity to comment and requests the following concerns be addressed in the review of the Corps' Caloosahatchee River (C-43) West Basin Storage Reservoir (BSR) Project Final Integrated Project Implementation Report (PIR) and Environmental Impact Statement (EIS). FDACS has submitted comments formally at the agency level and to the Project Delivery Team (PDT) throughout the project development process and during public review periods. The review issues that we consider as remaining to be addressed are summarized below and detailed in the "FDACS Staff Comments" attachment.

The Final PIR and EIS do not acknowledge the Yellow Book's original "source switch" function for the C-43 reservoir project, rather it rewrites the project's conceptual history to match the current outcome. An accurate account should be included of the original plan to switch basin irrigation demand from Lake Okeechobee to the basin run-off captured in the proposed C-43 reservoir as opposed to the current PIR's plan to capture excess basin run-off and Lake Okeechobee regulatory releases for estuary use exclusively. This change has implications beyond this particular project because other CERP projects use planning conditions based on the original concept of restricting Lake Okeechobee irrigation releases for agricultural water demand in the C-43 Basin. The Final PIR/EIS Annex B – Draft PIR Comment Matrix (page B-82) responds to an earlier FDACS comment on this issue, but merely confirms the change: "The reservoir proposed in this project allows estuary demands to be supplemented by reservoir storage during the dry season, thus relieving some dry-season demands on Lake Okeechobee allowing more water within the lake to be used system wide." While not stating that these system wide uses include C-43 basin irrigation demand, it is not apparent how the irrigation demand would otherwise be met.

Annex C contains an analysis that identifies the volume of water made available by the project for the natural system. The amount identified under the Initial Operating Regime (IOR) is anticipated to be substantially more than the amount that will ultimately be available for the natural system as identified in the Next Added Increment (NAI) analysis. Under the driest conditions, the IOR amount is approximately 50% greater than the NAI amount (Table C-3: Identification of the Volume of Water (Ac-Ft/Year) Made Available for the Natural System to Achieve the Benefits of the Project, Page C-24, Annex C, Caloosahatchee River (C-43) West Basin Storage Reservoir (BSR) Project Final Integrated PIR and EIS). The larger amount identified in the IOR is recommended to be reserved for the natural system under Florida law. The recently released "Revised Final Draft CERP Guidance Memoranda - GM #4: Identifying Water Made Available for the Natural System and for Other Water Related Needs" refers to changing water reservations in response to changing conditions as more CERP projects are completed. The language of GM #4 appears to address the incorporation of additional water made available and not subsequent reductions in water made available. FDACS is concerned that it may be difficult to maintain an accurate accounting of the water made available for the natural system by the Caloosahatchee (C-43) West BSR relative to reductions in that amount that result when other projects are implemented. Moreover, the prospect of "rolling back" an already established reservation raises some significant legal questions, and underscores the need to carefully account for "water made available" by this project and to consider how the potential future reductions in "water made available" will be dealt with. The USACE did not provide a response in the Final PIR/EIS Annex B – Draft PIR Comment Matrix to an earlier FDACS comment that raised this issue.

Our remaining concern is the lack of an evaluation tool to determine if the Caloosahatchee (C-43) West BSR will create a greater demand on the Caloosahatchee River with an associated greater demand on Lake Okeechobee during drought years. Consequently, meeting the Savings Clause requirements for an existing legal source as of December 11, 2000, consistent with Federal law, is still an open question for the Caloosahatchee River (C-43) West BSR Project Final Integrated PIR and EIS. While we agree with the USACE that the possibility of significant negative impacts to existing users in the area of the project is minimal, we are not convinced that an adequate analysis of impacts to water supply during drought years has been performed or that the methodology described in "Revised Final Draft CERP Guidance Memoranda GM #3: Savings Clause Requirements" has been followed. It is not clear whether the system wide effect of an additional demand on Lake Okeechobee was considered at all. We believe that the information and analyses provided do not address this issue and are not adequate to provide the assurances required by state or federal law.

The underlying issue for all our concerns is that the modeling conducted for the Caloosahatchee (C-43) West BSR relied upon delivery of a specific volume of water from Lake Okeechobee, and it is not clear what system wide impacts this demand on the lake will have, particularly under drought conditions. First, there is a potential conflict with the original Yellow Book assumption that the project would restrict deliveries to the C-43 basin and consequently with the planning assumptions for other CERP projects.

Second, the apparent anomaly between the water made available under the IOR scenario and the NAI scenario likely hinges on the discrepancy between potentially competing water demands from Lake Okeechobee. Finally, we are less concerned with Savings Clause assurances in the immediate project area than with a potential reduction in water supply availability outside the project area if the reservoir creates an additional demand on Lake Okeechobee. The enclosed attachment, "FDACS Staff Comments," provides additional details regarding our concerns.

Again, we appreciate the opportunity to comment on the Caloosahatchee River (C-43) West BSR Project Final Integrated PIR and EIS. Our level of concern with the issues we raise here is heightened by current system conditions, and we believe that a better understanding of the effect of this project under such conditions is needed. Moreover, we do not believe that the Savings Claus analysis adequately addresses potential impacts outside the area of the project, nor do the PIR and EIS provide sufficient information to provide the assurances required under Florida law. If you should have questions regarding FDACS' comments, please contact Ray Scott at (850) 410-6714.

Sincerely,

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COMMISSIONER OF AGRICULTURE

W. Ray Scott
Conservation & Water Policy
Federal Program Coordinator

FDACS STAFF COMMENTS:

Review Comments for the Caloosahatchee River (C-43) West BSR Project Final Integrated PIR and EIS

The Yellow Book's Original " Source Switching" Conceptual Plan for the C-43 Reservoir has been Omitted from the Project's Background Information

During development of the conceptual plan for the Restudy, one of the main concepts of the regional storage components was to provide additional storage for water supply in the Caloosahatchee, St. Lucie and Kissimmee Basins which should ultimately reduce irrigation demands on Lake Okeechobee. Water could then be conserved in the lake and would be "...available for sustaining the health of lake and downstream natural areas ..." (Sections 6.4.2 and 6.4.1.2). The source for agricultural irrigation demands would be "switched" to the reservoirs as much as possible and be supplemented as needed by the lake. More lake water would be available for natural system needs.

Since the only purpose of the C-43 reservoir is now to meet estuary demands, and not to "switch sources" for local irrigation demands, that change from the Yellowbook concept needs to be acknowledged and the planning conditions for other projects need to be updated based on that change. At this time, urban and agricultural demands have all been removed from the alternative evaluation. How does this fit into the regional plan as developed by CERP for the capture of local basin run-off to meet existing demands in the "reservoir" basins (Caloosahatchee, St. Lucie, and EAA basins) and retaining Lake Okeechobee water for natural system needs. How will the difference in concepts be accommodated going forward?

FDACS maintains that the difference in the Lake Okeechobee boundary condition used by the Caloosahatchee River (C-43) West Basin Storage Reservoir and that used by other CERP projects is problematic and should be acknowledged in the PIR and addressed in the appropriate forum. The following examples from the Final PIR/EIS document illustrate the point.

In Appendix C on pages C-75 and C-76, nutrient load reductions of 29% to 38% are projected "due to the reduction in flow resulting from the implementation of CERP components other than the C-43 West Reservoir." It is inconsistent to evaluate the nutrient removal potential of Alternatives combined with implementation of the rest of CERP while ignoring how reductions in flows resulting CERP's full CERP implementation will impact water supply for existing legal users in the C-43 Basin.

NAI performance is 28% greater than the CERP System-wide Analyses performance. The NAI performance to CERP system-wide performance evaluation compares the benefits of the Caloosahatchee River (C-43) West Basin Storage Reservoir as a stand alone project to the performance achieved by the system-wide conditions anticipated by CERP implementation. The Final PIR/EIS, Section 7, page 7-25, describes some

potential reasons for this difference including "The first and most influential of these results from the rest of CERP's impact on the overall water budget provided to the Caloosahatchee River (C-43) basin. The system-wide analysis has a lower water budget than the NAI analysis, leading to diminished dry season conditions."

The full implementation of CERP predicts that the Lake Okeechobee releases will be minimal and that the C-43 Basin will be "off the lake". Phase I has not restricted the use of Lake Okeechobee water for irrigation. If this assumption changes to what is currently being used in all other CERP projects (restricted deliveries of Lake Okeechobee water to C-43), access to water currently available for existing legal users would be compromised and a Savings Clause violation for the full project implementation would occur in Phase II. The version of the model used during the Restudy used a surface water run-off volume in the C-43 Basin that has been determined to be too high. The Yellow Book C-43 project relied on the higher basin run-off to meet agricultural irrigation demands. This assumption has resulted in restrictions on deliveries to meet irrigation demands from Lake Okeechobee in current CERP modeling.

Initial Operating Regime (IOR) Water Availability is Greater than Next Added Increment (NAI) Water Availability and the Greater Amount is Being Reserved

Annex C contains an analysis showing the identification of water made available by the project for the natural system. The amount identified under the IOR is anticipated to be more than the amount identified in the NAI, and the IOR amount is recommended to be reserved for the natural system under Florida law. FDACS is concerned it will be very difficult to maintain an accurate accounting of how much of the "C-43 project reservation amount" is included in the natural system amounts made available by other projects (e.g., the EAA Reservoir). The recently released "Revised Final Draft CERP Guidance Memoranda - GM #4: Identifying Water Made Available for the Natural System and for Other Water Related Needs" refers to changing water reservations in response to changing conditions as more CERP projects are completed. However, the wording indicates that this is to incorporate additional water made available and not to account for reductions in water made available.

One explanation for using the larger IOR volume for natural system reservation is that even if future operations divert water from the Caloosahatchee estuary and degrades the performance of the reservoir, that would be acceptable because the environmental benefits realized system wide by CERP would off-set the loss of benefits in the Caloosahatchee Estuary. Making this case to advocates for the Caloosahatchee Estuary will be difficult and sets the stage for water availability competition among CERP projects and potential legal complications related to the transfer of beneficial water to another basin.

Basin-wide and System-wide Savings Clause Analyses Not Performed According to Draft CERP Guidance Memoranda GM #3: Savings Clause Requirements Due to Inadequate Evaluation Tools

FDACS is concerned that the extensive changes in groundwater seepage and surface water dynamics resulting from the Caloosahatchee River (C-43) West Basin Storage Reservoir has the potential to impact water quantity and water quality in ways that may not be evident at the Pilot Test Cell scale. Construction and operation of the C-43 Part I Phase I Reservoir on the Berry Groves site will create a substantial change in the hydrodynamic interactions between groundwater, surface water, and water use in the vicinity of the reservoir that could impact water availability for existing legal users dependent upon the C-43 Canal and Lake Okeechobee for water supply.

The slurry wall will prevent seepage currently flowing north from properties south of the reservoir site from reaching the C-43 Canal along the historic path under the reservoir site. The C-43 Canal and the properties between the reservoir and the C-43 Canal will no longer be supplied by the historic groundwater seepage source. The C-43 Part I Phase I Reservoir operating plan uses perimeter canal seepage to maintain groundwater levels and water supply to existing legal users in the vicinity of the reservoir. Water will be pumped from the C-43 Canal to maintain the perimeter canal water levels and seepage during dry conditions when the reservoir can no longer be used to supply the perimeter canal.

An analysis comparing pre project and post project water volumes associated with "replacing" the historic ground water seepage flows into the C-43 Canal along the length of the reservoir and maintaining surface water levels of the perimeter canal throughout the period of record is needed. Ideally, a sub regional evaluation tool would be used to compare the pre project and post project water budget performance over the period of record between S-77 and S-79 using a time step not exceeding one month.

According to the Restoration Coordination and Verification (RECOVER) report provided in Annex E, the type of data needed to evaluate project alternatives for the system-wide performance measure "WS-1- Lake Okeechobee Service Area (LOSA) Water Supply" was not available and the water supply evaluation was incomplete. The RECOVER report (Section E.5.2) states, "In order to determine the full extent of predicted water supply impacts in the C-43 Basin, the severity and duration of any water restrictions above those that might be expected when drought levels exceed a 1 in 10 condition needs to be reviewed. In order to perform the Supply Side Management (SSM) based review, raw data or post-processed data that will allow the determination of monthly demand volume, number of days per month with cutbacks (demands not met), and volume of cutbacks (demand not met) per each month is required. Since this data is not readily available from MIKE SHE output, annual average volumes (AAV) were evaluated. It is important to note that the average annual number will not allow for a determination of differences in alternative performance regarding water supply deliveries."

SFWMD had intended to use the MIKE SHE Freshwater Caloosahatchee Model throughout the model's nine year Period of Record (POR) to determine the pre and post project water budget in response to FDACS' concerns about water supply assurances for existing legal users. Volumes between pre and post project when reservoir operations draw water from the C-43 for water supply purposes during dry conditions were to be

compared to determine if there is a reasonable assurance that existing users will not be adversely impacted by water supply demands via the perimeter canal operations. The results were to be included in the final State Compliance Report. However, because this pre and post volume comparison for water supply withdrawals was not made, no results were available and this information was not included in the report.

SFWMD in partnership with their consultant, DHI, worked diligently to provide FDACS with other additional information and analyses to demonstrate that the water supply assurances required under Florida law are being provided for existing legal users. While recognizing the minimal likelihood of significant adverse impacts within the area of the project, we remained unconvinced that an adequate analysis of impacts to water supply during drought years had been conducted. It was not clear whether the system wide effect of an additional demand on Lake Okeechobee was considered at all. In addition, a volume probability curve for the Caloosahatchee Basin, consistent with the methodology described in "Revised Final Draft CERP Guidance Memoranda GM #3: Savings Clause Requirements" was not provided. We believe that the information and analyses provided do not fully address the issue and are inadequate to provide the assurances required by state or federal law.

Information provided by SFWMD to FDACS but not included as part of the Final State Compliance Report Caloosahatchee River (C-43) West Basin Storage Reservoir Project submitted to the Florida Department of Environmental protection (FDEP) or in the Caloosahatchee River (C-43) West BSR Project Final Integrated PIR and EIS Annex C are:

* Spreadsheet Model Results prepared for the draft PIR
* DHI Report on Analysis of MIKE-SHE results
* Acceler8 C-43 Water Storage Reservoir 60% design submittal – 30 May 07
* Stanley Consultants Technical memorandum – Townsend Canal Impacts for Various Pumping Scenarios at C43PS-1
* DHI Technical Memorandum – Comparison of Irrigation Applications in the C-43 Basin and C-43 Reservoir – FDACS Request

None of these provided a reliable quantification of the pre and post project water supply volumes for reasons detailed below.

Spreadsheet Model Results prepared for the draft PIR - The Spreadsheet Model only predicts flows over the S-79 Structure based on C-43 West BSR operations.

DHI Report on Analysis of MIKE-SHE results -The MIKE-SHE Model analysis only addresses flows over the S-79 Structure based on C-43 West BSR operations.

Acceler8 C-43 Water Storage Reservoir 60% design submittal – 30 May 07 - The 60% design submittal does not address water supply in drought conditions.

Stanley Consultants Technical memorandum – Townsend Canal Impacts for Various Pumping Scenarios at C43PS-1 - This modeling analysis only addresses canal flows and groundwater levels in the vicinity of the C-43 West BSR.

DHI Technical Memorandum – Comparison of Irrigation Applications in the C-43 Basin and C-43 Reservoir – FDACS Request - This technical memorandum provided two model evaluations for review. One identified Irrigation Command Areas (ICAs) throughout the basin and compared pre and post project irrigation delivery results. The other graphed Townsend Canal pumping rates pre and post project. The FDACS analysis of the results yielded no clear conclusion regarding basin-wide or system-wide impacts to water supply during drought years.

Irrigation Command Center Results

We have no confidence that the "Irrigation Command Areas (ICA)" data provided by the South Florida Management District from DHI, is of sufficient quality to allow for any meaningful conclusions.

The main reason for the lack of confidence is the perplexing result of impacts far away from the reservoir where no difference should be occurring. There is no mechanism-based process to explain why the ICAs away from the reservoir show any difference. The SFWMD technical explanation provided is that this is "within the model confidence limits" but the results are questionable and indicate poorly understood sub routines within the model.

Also, interpretation of results is ambiguous. Even between the FDACS reviewers there is a difference of opinion on whether more irrigation applications indicate a better or worse scenario for water users during water shortage conditions. As detailed below, there is a definite difference for the modeled irrigation applications pre and post project in drought years for ICAs near the reservoir. The implication of these differences is unknown.

The results as modeled and presented by DHI indicate that overall the irrigation applications between the with and without project scenarios is very similar throughout 1978 to 1985 with the exception of an increase in irrigation applications from the Caloosahatchee River in the '81-'82 drought years for ICA 122 and ICA 44. ICA 122 lies off the NE corner of the C-43 Reservoir, an area that will be supplied by the PS-4 via the perimeter canal when the reservoir is dry. ICA 44 lies just south of the C-43 Reservoir.

The increase in irrigation applications are significant for '81-'82 is because most of the ICAs and years modeled show the "with project" scenario as having less irrigation applications where as the ICA 122 and 44 drought applications go in the opposite direction. ICA 122 shows a 19 % (4.1") increase in '81 and a 12% (1.54") increase in '82. ICA 44 shows a 13% (2.43") increase in '81 and only a 1% (0.14") increase in '82.

Townsend Canal Pumping Results – no water volume quantification available

The Berry Grove Pump will be replaced by both the C-43 West BSR PS-1 and PS-4 pumps. The PS-4 is not directly comparable to the Berry Groves Pump. PS-4 is only used when the reservoir is dry to convey water from the Townsend Canal into the perimeter canal for water supply purposes.

The difficulty encountered is that the units reported are a withdrawal rate (cfs) and not a volume. The Berry Groves pump shows a much greater variety of pumping rates than the Duda Pump or PS-4 throughout the dry year of '78 and the '81-'82 drought. Visual inspection of the pumping rate graph was the only information available. This did not provide for a pre and post water supply volume comparison. The most relevant results for a determination of water supply impacts is the "without project" combined Berry Groves Pump and Duda Pump volumes compared to the "with project" combined PS-4 and Duda Pump volumes for each month in '78, '81 and '82. Volume information was requested, but the SFWMD was not able to provide that information.