Comment No.	Commenter	Question/Comment	District Response
Q&A Following Each Presentation and During Public Comment Periods at the May 29 Peer-Review Session			
1	Jim Vaughn	How is this going to clean the water?	**Matt Morrison**: The reservoir will deliver water to the stormwater treatment areas (STAs) to clean the water before it is delivered to the Everglades.
2	Anonymous Attendee	Can you further elaborate on where the 825,000 acre feet of water from the reservoir goes?	**Leslye Waugh**: All 825,000 acre-feet (ac-ft) during an average water year leaving the reservoir from the three identified structures to adjacent storage and treatment facilities goes to the Everglades.
3	Anna Upton	If 370,000 acre-feet of the 825,000 acre-feet goes to the Everglades, where does the rest of the water (455,000 acre feet) go?	**Lesley Waugh**: 825,000 ac-ft during an average water year is the amount of water that will be leaving the reservoir through the three structures to the storage facilities. It includes existing water and new water brought in by the reservoir. The 370,000 ac-ft average annually of additional water to the water conservation areas (WCAs) is above the existing water that is provided. So, having the reservoir, we are able to add, across that orange line, 370,000 ac-ft. That is not all the water that is going to the WCAs, that is water above what is going to the WCAs. All 825,000 ac-ft average annually (water year) leaving the reservoir from the three identified structures to adjacent storage and treatment facilities goes to the Everglades.
4	Shannon Estenoz	What is the process for determining the definition of "protection" in the state statute? Will it match restoration goals or could someone argue that protection is tied simply to some baseline which will be a much lower bar.	**Don Medellin**: Section 373.223(4), Florida Statutes (F.S.), requires that the water be reserved for the protection of fish and wildlife or for public health and safety. In this reservation effort, water is being reserved for the protection of fish and wildlife. Linkages between hydrology and ecology have been established using previous hydrologic modeling (completed under the Central Everglades Planning Program [CEPP]) and more recent ecological modeling from the United States Geological Survey (USGS; as part of the reservation process) to determine the anticipated benefits to fish and wildlife downstream in WCA-3 and Everglades National Park (ENP). Water discharged from the reservoir through the S-624, S-625, and S-626 structures is the water being protected under this prospective water reservation.
5	Dr. Nathan Dorn (Peer Reviewer)	In reference to Leslye's presentation, she mentioned too very large volumes or water at the end of her presentation, 825,000 acre-feet and 370,000 which is related to this project. Can she just explain those two numbers one more time?	**Leslye Waugh**: The 825,000 ac-ft average annually (water year) is the amount of water that will be leaving the reservoir through the three structures to the storage facilities. It includes existing water and new water brought in by the reservoir. The 370,000 ac-ft of additional water to the WCAs is above the existing water that is provided. So, having the reservoir, we are able to add, across that orange line, 370,000 ac-ft. That is not all the water that is going to the WCAs, that is water above what is going to the WCAs.

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6	Dr. Nathan Dorn (Peer Reviewer)	The 825,000 is already being added?	**Leslye Waugh**: The 825,000 ac-ft average annually (water year) is new water plus existing water that gets stored in the reservoir and released to the three structures to storage features. Of all the water sent to the WCAs, we are increasing that flow by 370,000 ac-ft.
7	Dr. Donald DeAngelis (Peer Reviewer)	That just means the reservoir turns over 3 times annually?	**Leslye Waugh**: The water levels will be going up and down, so every year it can discharge different volumes.
8	Celeste DePalma	I can't see other people's questions so I don't know if this was already asked but if the Everglades Agricultural Area (EAA) Reservoir annual flow will be 825k ac-ft, does that mean that only 370K ac-ft of water is for the Everglades out of the 825K?	**Leslye Waugh**: The 825,000 ac-ft average annually (water year) is the amount of water that will be leaving the reservoir via the three structures to the storage facilities. It includes existing water and new water brought in by the reservoir. The 370,000 ac-ft average annually of additional water to the WCAs is above the existing water that is provided. So, having the reservoir, we are able to add, across that orange line, 370,000 ac-ft. That is not all the water that is going to the WCAs, that is water above what is going to the WCAs. All 825,000 ac-ft average annually (water year) leaving the reservoir from the three identified structures to adjacent storage and treatment facilities goes to the Everglades.
9	Celeste DePalma	825-370=455…where does the remaining 455k ac-ft of water go?	**Leslye Waugh**: The 825,000 ac-ft average annually (water year) is the amount of water that will be leaving the reservoir to the three structures to the storage facilities. It includes existing water and new water brought in by the reservoir. The 370,000 ac-ft average annually of additional water to the WCAs is above the existing water that is provided. So, having the reservoir, we are able to add, across that orange line, 370,000 ac-ft. That is not all the water that is going to the WCAs, that is water above what is going to the WCAs. All 825,000 ac-ft average annually leaving the reservoir from the three identified structures to adjacent storage and treatment facilities goes to the Everglades.
10	Thomas Van Lent	Will there be a reservation for the water currently going to the EPA in addition to the increment related to CEPP?	**Jennifer Brown**: Historically, the District's water reservations have focused on reserving water associated with restoration projects. However, water that is presently in the WCAs is protected from increased allocations by the Lower East Coast Regional Water Availability Rule found in Section 3.0 of the *Applicant's Handbook for Water Use Permitting within the South Florida Water Management District.*

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11	Ansley Samson	My remaining question is whether there is additional new water in the 825K over the 370K. If so where is it going?	**Leslye Waugh**: The 825,000 ac-ft average annually (water year) is the amount of water that will be leaving the reservoir through the three structures to the storage facilities. It includes existing water and new water brought in by the reservoir. The 370,000 ac-ft average annually of additional water to the WCAs is above the existing water that is provided. So, having the reservoir, we are able to add, across that orange line, 370,000 ac-ft. That is not all the water that is going to the WCAs, that is water above what is going to the WCAs. All 825,000 ac-ft average annually (water year) leaving the reservoir from the three identified structures to adjacent storage and treatment facilities goes to the Everglades.
12	Celeste DePalma	I don't understand where the remaining 455,000 ac-ft of water goes. If it's not going to the Everglades, who gets that water?	**Lesley Waugh**: I can address it again when we get to the Q&A portion, but it all goes to the Everglades. There's already existing water that goes to the Everglades (some years over 1 million ac-ft.), but the EAA Project adds 370,000 ac-ft average annually above the existing flows to the Everglades. The 825,000 ac-ft average annually (water year) from the reservoir to the flow equalization basin (FEB) and STA is counting existing and new water. The additional flows of 370,000 ac-ft to the Everglades is just talking about new water.
13	Diana Umpierre	Can the modeling data (input and outputs) be put in South Florida Water Management District (SFWMD) FTP site? Thanks.	**Walter Wilcox**: Yes, for the hydrology and water quality data, it is the same material posted back in 2018 during the planning study. We can certainly repost it. Is your question restricted to hydrology, or ecology modeling also? **Fred Sklar**: The USGS ecological modeling data can be placed into a set of directories at the same FTP site Walter mentioned.
14	Anna Upton	Matt, thanks for replying. The discussion didn't answer my question. I understand that 370,000 ac-ft of the total 825,000 ac-ft goes to the Everglades. Where does the rest of the water go?	**Leslye Waugh**: The 825,000 ac-ft average annually (water year) is the amount of water that will be leaving the reservoir through the three structures to the storage facilities. It includes existing water and new water brought in by the reservoir. The 370,000 ac-ft average annually of additional water to the WCAs is above the existing water that is provided. So, having the reservoir, we are able to add, across that orange line, 370,000 ac-ft. That is not all the water that is going to the WCAs, that is water above what is going to the WCAs. All 825,000 ac-ft average annually (water year) leaving the reservoir from the three identified structures to adjacent storage and treatment facilities goes to the Everglades.

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15	Diana Umpierre	Why not extend the period of simulation to latest data (more recent years than 15 years ago) given climatic changes that are changing rate of precipitation and drought?	**Walter Wilcox**: Extending the model simulation period is a significant work effort (includes updates to many models, boundary conditions, and climate drivers) and is being finalized for the 1965-2016 period by the Interagency Model Center for the upcoming Lake Okeechobee Systems Operating Manual effort.
16	Matthew Schwartz	During wet years when massive amounts of water are being dumped to the northern estuaries, there is no shortage of water in either the STAs or the WCAs. In fact, they're full. How will you push more water into the STAs during these periods to decrease discharges to the estuaries? STAs are not "inline filters" and dirty water must sit in them to be cleaned.	**Matt Morrison**: During wet years, water will be directed to available storage and treatment. Depending on the extreme of wet conditions and available downstream storage and treatment capacity, some releases to the northern estuaries may still occur. Also note that water does not sit in STAs unless it is extremely dry and we are trying to keep the vegetation hydrated. During normal and wet STA operation, water moves through the STAs for treatment. The storage in the system allows for the metering of steady constant flow across the STAs and helps minimize pulses that occur without storage, which improves treatment capabilities.
17	Diana Umpierre	What's the accuracy of topographic data over the WCAs? Last I recall Light Detection and Ranging (LiDAR) doesn't do well in the WCAs.	**Walter Wilcox**: Topographic data sets used in the various models do not rely on LiDAR, but rather are composite data sets using information from a variety of sources. A general rule of thumb related to topographic accuracy in the Everglades is ±0.5 ft.
18	Anna Upton	Lesley, I see your response to Celeste and appreciate you answering it during Q&A. I understand why, as water managers, you're distinguishing what is "new" water, but if 370,000 acre-feet of the 825,000 acre-feet is going to the Everglades, I would still like to know where the rest of the water (455,000 acre-feet) leaving the reservoir goes.	**Leslye Waugh**: The 825,000 ac-ft average annually (water year) is the amount of water that will be leaving the reservoir through the three structures to the storage facilities. It includes existing water and new water brought in by the reservoir. The 370,000 ac-ft average annually of additional water to the WCAs is above the existing water that is provided. So, having the reservoir, we are able to add, across that orange line, 370,000 ac-ft. That is not all the water that is going to the WCAs, that is water above what is going to the WCAs. All 825,000 ac-ft average annually leaving the reservoir from the three identified structures to adjacent storage and treatment facilities goes to the Everglades.
19	Dr. Nathan Dorn (Peer Reviewer)	The colored hydroperiod map Walter just presented, is that an update from the map in the Tech Doc we reviewed earlier?	**Dong Yoon Lee**: Yes, the map presented by Walter Wilcox is different from ones presented in the draft Technical Document. The map in the Technical Document shows selected years representing average, dry, and wet years, while the Walter's map is a grand mean of the entire model simulation period (1965 to 2005). We will put this new map in the Technical Document you reviewed earlier.
20	Dr. Donald DeAngelis (Peer Reviewer)	Are there any upper limits on phosphorus concentrations that will be coming out of the STAs?	**Walter Wilcox**: During planning, STAs are sized and operated to meet a long-term flow-weighted mean average of 13 parts per billion (ppb) phosphorus. The water quality-based effluent limitation (WQBEL) standard for STA operations allows individual years to exceed this value, up to 19 ppb in a single year.

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21	Diana Umpierre	Have the Comprehensive Everglades Restoration Plan (CERP) "goals" been revisited/re-analyzed by RECOVER since 2005? We have more historic and prediction data in the past 15 years.	**Fred Sklar**: CEPP used the most updated information at the time. The Restoration, Coordination, and Verification program (RECOVER) performance measures used to find the "best" restoration plan for CEPP are also used here in our discussion of the need for a reservation. Most RECOVER "goals" were based on predicted ecology using the Natural System Model (NSM).
22	Celeste DePalma	Thank you Leslye. I'm still confused, so if you can break it down even more that would be best. So, we have 825k ac-ft annual average flow (sometimes higher, but let's stick with the 825,000 total for now). If 370,000 out of the 825,000 is new water flowing to the Everglades, what is the 455,000 remaining? Please break down what is existing water in the 455,000 ac-ft and what is still new water out of that remaining 455,000 ac-ft. Thanks.	**Leslye Waugh**: The 825,000 ac-ft average annually (water year) is the amount of water that will be leaving the reservoir through the three structures to the storage facilities. It includes existing water and new water brought in by the reservoir. The 370,000 ac-ft average annually of additional water to the WCAs is above the existing water that is provided. So, having the reservoir, we are able to add, across that orange line, 370,000 ac-ft. That is not all the water that is going to the WCAs, that is water above what is going to the WCAs. All 825,000 ac-ft average annually leaving the reservoir from the three identified structures to adjacent storage and treatment facilities goes to the Everglades.
23	Jeremy McBryan	Do the modeling results presented today assume the 2008 Lake Okeechobee Regulation Schedule (LORS2008) and the Lake Okeechobee Watershed Restoration Project (LOWRP) in effect?	**Matt Morrison**: The existing conditions baseline (ECB) and future without project are LORS2008. The project does not include the LOWRP, only authorized projects as of 2018.
24	Diana Umpierre	Dong Yoon Lee is doing a beautiful job explaining. Thank you!	**Dong Yoon Lee**: Thank you for your comment.
25	Dr. Donald DeAngelis (Peer Reviewer)	Concerning seaside sparrow, you said the reservoir would improve conditions in subareas C and F. Can you clarify? Concerning the subpop A, under the Everglades transition plan there was some flexibility in how water could be routed through A and B to protect the sparrow during their breeding period. Will that be continued under this new plan?	**Dong Yoon Lee**: Subpopulations C and F are located in eastern marl prairies where reduced hydroperiod and increased frequency and intensity of drought conditions have increased invasion of exotic woody tree species, large fire frequencies, and ultimately vegetation shifts. Under Alternative C240, extended hydroperiods in this highly over-drained region would decrease the potential for large fires and invasion of exotic trees. The Cape Sable seaside sparrow (CSSS) model output also suggests an increase of hydrologic and ecological connectivity between the CSSS critical habitats in eastern marl prairies. **Walter Wilcox**: Regarding Subpopulation A and the Everglades Restoration Transition Plan operations, yes – seasonal closures of the S-12 structures are still used in CEPP operations.

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26	Dr. Nathan Dorn (Peer Reviewer)	Going back to the hydrologic contrast for the different regions....first thank you putting this in here, it's a major improvement. If I understand correctly, for WCA-3A East and WCA-3A South the average max goes down but the average depth goes up a couple tenths due to more water, is that correct? The maximums come down but not the average?	**Dong Yoon Lee**: Correct. Seasonal maximum depth and annual hydroperiod decrease in eastern and southern WCA-3A under Alternative C240 compared to the ECB, likely due to increased water flow under the Alternative C240. However, annual average water depths increase about 0.1 to 0.2 ft in those regions.
27	Dr. Nathan Dorn (Peer Reviewer)	Shark River Slough seems to see the greatest improvement. In Shark River Slough, you can make maybe of 3.5 to 4 mos. of water there. You're not going to make much improvement for crayfish with that amount of water. The majority comes from the north and north Shark River Slough, but the northern WCA-3A both East and West will see the most improvement for crayfish. For wading birds however, the reason this isn't larger...is it because of small losses in the system?	**Dong Yoon Lee**: We agree with the reviewer that crayfish density would increase more in northern WCA-3A than in eastern Shark River Slough (SRS) because of a longer hydroperiod in northern WCA-3A. However, the abundance of foraging habitat for white ibis increases by a similar extent (10% to 32%) in both northern WCA-3A and eastern SRS. It is difficult to know exactly why increased water flow and likely crayfish density do not result in larger improvements in foraging habitat abundance of white ibis in northern WCA-3A than SRS. This model output is a product of a complex interaction between hydrologic variables and species-specific optimal hydrologic conditions. Therefore, improved prey abundance alone, although it is a very important factor, would not result in a linear, predictable change in foraging habitat abundance.
28	Dr. Nathan Dorn (Peer Reviewer)	So, lots and lots of small negatives over the entire landscape, including Big Cypress?	**Dong Yoon Lee**: Not just negative, but any values between -10 and +10 are included in yellow areas, which occupy most of Big Cypress and coastal Everglades areas.
29	Dr. Nathan Dorn (Peer Reviewer)	About wading bird responses then, why the orange along the L-67 A? What is causing the loss, more than 10% foraging loss? A slight increase in average depth but a decrease in max. Are these areas getting a little deeper? Your ecological evaluations are also hydrologic evaluations, why is it negative?	**Dong Yoon Lee**: A marginal increase in annual average depth likely indicates an overall decline in the accessibility to shallow water, especially for small white ibis, and in prey availability for all wading birds.
30	Dr. Nathan Dorn (Peer Reviewer)	Could we go to the alligator response? The southern WCA-3A response, where it goes negative along L67A, if you look at the left side under existing conditions, that area is marginal for alligators, and it is really deep and becomes a little worse. Why is that? Is it becoming shallower? That needs to be determined. When I look at where the orange/red pattern is, I think we need to understand what causes that. It takes away from how good this water reservation project will be for taxa.	**Dong Yoon Lee**: A long-term average of hydroperiod map presented by Walter Wilcox (which will be added in Figure 4-2) indicates that the southern boundary region of WCA-3A experiences a decrease in hydroperiod between 30 and 60 days under Alternative C240 relative to the ECB. This change likely results in a reduction of the alligator habitat suitability score in the region.

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31	Dr. Nathan Dorn (Peer Reviewer)	As far as the alligator model is concerned it is pretty complex so it will be difficult to figure out what causes the orange areas.	**Dong Yoon Lee**: We will add the new (long-term) hydroperiod map in Figure 4-2. This new map will help explain the ecological model output.
32	Dr. Donald DeAngelis (Peer Reviewer)	For wading birds, there is a paper by (3 authors he mentioned in Restoration Ecology)... is there any connection between what they used and what is being used here?	**Dong Yoon Lee**: The paper is Beerens, Trexler, and Catano (2017). This paper simulated the wading bird foraging index under the full (CERP) and partial (scaled-back CERP) restoration relative to the ECB. They simulated the ecological model over a 36-year period, while we have a longer (41 years) simulation period.
33	Matthew Schwartz	I wasn't accurate when I said water sits in an STA - but the water cannot move through rapidly. Both for the ability to clean it and the ability to retain the vegetation that does the work. But if we look at the wet years when the massive discharges are taking place, I would be interested to hear where "available downstream storage" exists. My own experience in the area - e.g. 4 feet of water in WCA-3A - shows there's is no room for additional input of water south. And there's a struggle to get water out of the WCAs into the canal along Tamiami Trail. If the discharges to estuaries are going to continue during wet years - the district should be accurate in letting the public know how much will continue. Especially since one of the key selling points of the reservoir is its ability to significantly reduce discharges to the estuaries.	**Walter Wilcox**: You are correct that in the current system, there are significant constraints to flow south, and the STAs can experience undesirable high flow conditions. In the future, when the EAA Reservoir and CEPP are constructed, many of the downstream constraints will be reduced (increased capacity at Tamiami Trail, in the EAA canals, etc.), and the flow regimes modeled and contemplated in the EAA project operation of the STAs may be large over the course of the year but are actually reduced during extreme events because of the reservoir and conveyance improvements. All this means that the benefits to the northern estuaries are indeed expected to be realized in the future.
34	Timothy Breen	Matt…so ECB here does not include COP, correct? Thanks.	**Brenda Mills**: Correct. The Combined Operational Plan water control plan was developed after planning for the EAA Reservoir was finished.
35	Heather Tipton	Will copies of these slides be available?	**Toni Edwards**: Yes, the presentation will be posted to our water reservation webpage by the end of next week.
36	Dr. Nathan Dorn (Peer Reviewer)	The NSM suggested that you need something different to maintain ridge and slough systems and tree islands?	**Walter Wilcox**: The NSM identifies a variety of characteristics for the ridge and slough landscape, including depth regimes, sheetflow timing, distribution, magnitude, and extended hydroperiods. These hydrologic characteristics are consistent with many of the indicators for maintaining or avoiding impacts to tree islands, such as avoiding prolonged tree island inundation. Where landscapes have been drastically altered, care is needed to transition over time from the current over-drained landscape to a fully restored ridge and slough landscape to avoid impacts to tree islands as water depths are increased.

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37	Dr. Nathan Dorn (Peer Reviewer)	Was there no way to move water through the northern part of WCA-3B to Shark River Slough?	**Walter Wilcox**: This option was explored as one of the alternatives in the original CEPP study, but the Blue Shanty Flow-way option was a better performing option and helped overcome the large seepage gradient east of WCA-3B.
38	Dr. Nathan Dorn (Peer Reviewer)	Is there a target for marl prairies beyond the seaside sparrow?	**Fred Sklar**: The target for the marl prairie model is solely for the CSSS. However, it does not have a numeric target for the sparrow. It is a habitat suitability index. It uses the hydrologic requirements for the CSSS nesting plus the hydrologic requirements for the growth of Muhly grass to predict the ability of the hydrologic cell to support CSSS.
39	Thomas Van Lent	If my previous question was answered, I think I missed it. So, let me repeat it in a different way. The ecological results were predicted on the cumulative flows and operations for the entire Central and Southern Florida Project (C&SF) including CEPP and the EAA reservoir. However, the reservation apparently is only for outflows for the EAA reservoir. If the simulations were done with only this water, the outcomes would presumably be different. How is the reservation made that will protect the ecological responses shown here, which is for much larger amounts than just the outflows from three EAA reservoir structures?	**Jennifer Brown**: The goal of this reservation is not to protect all the water driving the ecological responses, but rather to protect the water sent through this specific project feature for the benefit of fish and wildlife (i.e., the EAA reservoir outflows structures). Other state rulemaking already protects the other elements of the water budget through restricted allocation rules.
40	Diana Umpierre	Just checking if I understand, is the water reservation being proposed 370K ac-ft on average annual?	**Don Medellin**: The scope of this reservation includes the water discharged from the S-624, S-625, and S-626 structures from the EAA Reservoir. The annual average water year discharge from these three structures is predicted to be 825,000 ac-ft. This is the water needed for the protection of fish and wildlife.
41	Matthew Schwartz	Other question I had has to do with the reservations of water - someone said that existing water use won't be impacted. So, for example, a city like Pembroke Pines in Broward has a consumptive water use permit of about 16 million gpd. If we're in a low water period, the districts' Basis of Review document allows the district to allocate a CERP project for the public water supply. Will that be happening with water in the reservoir during the low water periods which are a regular part of South Florida's climate.	**Don Medellin**: Consistent with the statute, the modeling associated with this project takes into account existing legal users (all use classes) through a wide variety of climate conditions (both wet and dry) during the period of record. Slide #6 from my first presentation indicates that water reservations do not "drought-proof" the natural system. In accordance with the District's water shortage plan, the District's Governing Board can implement water shortage cutbacks during a declared drought. Existing legal users would be required to reduce their uses depending on the severity of the drought and the phase of water restriction (Phases 1 to 4). Some CERP projects are designed to provide water to the natural system as well as to reasonable-beneficial uses. When such CERP projects are constructed and have been determined operational by the Governing Board, water may be available to meet reasonable-beneficial uses.

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42	Diana Umpierre	On my end, I was just thinking of the hydro and water quality (WQ) modeling data, but there's value to also see the eco models. Also, I wasn't sure if there were any new runs since the draft Environmental Impact Statement (EIS) was posted on FTP back in March 2018. Thanks. (P.S. The link to modeling results is no longer valid...goes to an old ftp site.) httsp://www.sfwmd.gov/our-work/cerp-project-planning/eaa-reservoir.	**Walter Wilcox**: Okay, we will get it uploaded again. The FTP site is not permanent, but the hydrologic and water quality data have been uploaded to the Statewide Model Management System available on the SFWMD site.
43	Jim Vaughan	How is the STA cleaning the water with the volume that is coming in?	**Walter Wilcox**: The project STAs are constructed wetlands and are sized and operated to meet a long-term flow-weighted mean average of 13 ppb phosphorus. Checks are made with the Dynamic Model for Stormwater Treatment Areas (DMSTA) to ensure proper sizing across a wide range of hydrologic conditions, including wet years when large volumes of inflow are treated.
44	Diana Umpierre	Follow up question to my DEM question, is the latest DEM from USGS being used for the EDN DEM updated in 2011? See below https://sofia.usgs.gov/eden/models/groundelevmod.php.	**Walter Wilcox**: I believe that this is correct for the ecological models. It would be best to verify with the Joint Ecosystem Modeling group (www.jem.gov).
45	Nyla Pipes	With so many people upset about the releases to the Northern Everglades, many believe that the EAA Reservoir is going to stop those releases. Can you please clarify how much relief will be gotten from the estuaries from the EAA Reservoir ALONE without all the other authorized projects?	**Walter Wilcox**: No one project will fully address the problem of Lake Okeechobee releases to the northern Everglades estuaries. A combination of many projects (e.g., Indian River Lagoon South, the C-43 Reservoir, the EAA Reservoir/CEPP, LOWRP) will be needed to significantly improve conditions, and even those actions will not stop all releases. Using information from the CEPP Post Authorization Change Report (PACR), the CERP goal is to reduce Lake Okeechobee high-discharge months by 80% relative to current conditions. Already authorized projects (e.g., Indian River Lagoon South, C-43 Reservoir, original CEPP) could achieve a 39% reduction. With the addition of the EAA Reservoir, this is improved to an overall 55% reduction. Other projects like LOWRP can continue progress toward the CERP goal.
46	Timothy Breen	Will water from the reservoir be used to maintain canals in the EAA and will that water be used for water supply? If so, how much of the water?	**Don Medellin**: Yes, as described in the PACR, the S-628 structure may periodically provide discharges into the inflow/outflow canal to help stabilize water levels in the North New River and Miami canals. This water is available to existing legal users.
47	Diana Umpierre	Re-phrasing my follow up question (had bad grammar). Is the latest DEMs used in models using the latest from USGS EDN DEM updated in 2011? Per the link below? https://sofia.usgs.gov/eden/models/groundelevmod.php	**Walter Wilcox**: The Everglades Depth Estimation Network (EDEN) digital elevation model is what is largely used in the ecological models. The hydrologic models used the SFWMD digital elevation models informed by the USGS High-Accuracy Elevation Dataset (same basis as for EDEN).

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48	Jim Vaughan	How much is this going to cost? And why can't we spend a fraction of that and clean Okeechobee and get to the heart of the problem then send it south.	**Brenda Mills**: Beyond the scope of this meeting.
49	Diana Umpierre	I'm sorry I am still so confused…my apologies. I understand the tech doc says water from S-624, 625, and 626 is proposed to be reserved, but not from S-628, but that still does not say how MUCH water from those 3 structures would be reserved…can you clarify again?	**Don Medellin**: The water discharged from the S-624, S-625, and S-626 structures is 825,000 ac-ft of water on an annual average basis. This is the water that is needed for the protection of fish and wildlife downstream. Please see slides 19 and 63 in the presentation material from the peer-review session.
50	Matthew Schwartz	We now have miles of completed bridging over Tamiami Trail. This wet season is predicted to be very active. Can we expect to see lowered water levels in the WCAs this - in support of the idea that there will be room to move additional water south?	**Brenda Mills**: Each month at the Governing Board meeting, John Mitnik, Assistant Executive Manager, gives a water conditions report. This is the best forum to hear how we have responded or plan to respond to water conditions.
51	Ansley Samson	Just trying to understand better the "protection plan" for the reserved water. I understand the regional water availability rules; are there additional protection mechanisms?	**Don Medellin**: Yes, this water reservation provides an extra level of protection above the existing Restricted Allocation Area rules to ensure the water is protected for fish and wildlife.
52	Diana Umpierre	Per Table 6-4 of the draft EIS (PACR) by SFWMD, the TSP only reduces high volume to St. Lucie estuary (above 2000 cubic feet per second) (cfs) by only 7 months (basically still predicting 49 months of high volume discharges). So, I guess to follow up on another question, what else in CERP will address those?	**Walter Wilcox**: Most of those events are basin runoff events, so they are handled by the Indian River Lagoon project. The remaining lake pieces after the EAA Reservoir will be improved by the LOWRP. **Leslye Waugh**: Diana, see Section 6.3 of the PACR and Table 6-7 that shows the effectiveness of the PACR and LOWRP in achieving the CERP goal for the Northern Everglades.
53	Dr. Donald DeAngelis (Peer Reviewer)	Tree islands - one place in the Executive Summary you say something about hydrologic improvements will restore habitats including tree islands, but you don't really say anything about tree islands in the body of the Tech Doc. Do you really mean "maintain" tree islands? You also say in central WCA-3A conditions are good. Does that reflect the situation now? Data on tree islands from 1940 to 1995 really shows a decline. If there is no creation of new tree islands proposed then is it really "maintaining" as opposed to "restoration" of tree islands?	**Fred Sklar**: Tree island protection and restoration is not part of this Technical Document because it is not directly pertinent to the discussion of fish and wildlife. None of the fish and wildlife models use tree islands to predict ecological response. Note: There is no performance measure for tree islands in CEPP, instead there is a threshold of depth and duration that is considered harmful to tree islands. In CEPP and the PACR, the ridge and slough performance measure was used as a surrogate for healthy and restorative tree island habitat.

Comment No.	Commenter	Question/Comment	District Response
54	Dr. Nathan Dorn (Peer Reviewer)	Staying on tree islands and Fred Sklar's response regarding adaptive management…is there uncertainty in terms of flow, the actual hydroperiods we will generate, ponding depths, etc. What are the options for adaptive management in the system?	**Fred Sklar**: No model is without uncertainty. The CEPP Adaptive Management Program has identified numerous management options associated with tree islands as well as sloughs and ridges that may need to be implemented if actual flows or ponding depths are neither protective nor restorative. These include incrementally increasing inflows and depths in WCA-3B to allows tree islands to acclimate to the deeper water needed for slough restoration and several construction options for plugging the Miami Canal with tree islands.
55	Dr. Nathan Dorn (Peer Reviewer)	Walter, you also explained in WCA-3B there is a lot of leakage to the east. Was that surprising and are there other places that are surprising in the system when you add 370,000 ac-ft of water?	**Walter Wilcox**: The WCA-3B dynamics were not surprising due to observations from past project efforts (including the Modified Water Deliveries project) that encountered these issues. Certainly, there are other areas of high uncertainty that will require careful monitoring as additional restoration flows enter the Greater Everglades. These include the interactions between central and western Everglades and the dynamics of overland flow between Northeast Shark River Slough (NESRS) and Taylor Slough.
56	Dr. Nathan Dorn (Peer Reviewer)	Dong Yoon in your presentation, you labeled the western Shark River Slough, getting close to the sparrow there, as "over wet". Are you saying this from a natural systems perspective or a sparrow perspective?	**Dong Yoon Lee**: When the regions in the table were coded with different colors, I labeled them from a natural systems perspective, not from a biological perspective. However, when I labeled western SRS, I mixed the two perspectives to emphasize the current hydrologic condition specifically on Subpopulation A. This point should have been explained during the presentation.
57	Dr. Nathan Dorn (Peer Reviewer)	Will this presentation be available to us while Dr. DeAngelis and I write the Final Peer Review Report?	**Don Medellin**: Yes, the presentation will be made available to you after the session.
58	Dr. Nathan Dorn (Peer Reviewer)	What is the best format for the Final Peer Review Report?	**Don Medellin**: The format and length is at the discretion of the peer-review panel as this is an independent, non-biased peer review.
59	Dr. Nathan Dorn (Peer Reviewer)	What should we expect to have from the District side before we can finalize the report? Today's presentation, Q&A from the public, and a matrix of responses to our written reviews?	**Don Medellin**: The District expects to provide the peer-review panel two deliverables: (1) a question and answer matrix that addresses each of the peer reviewers questions and comments along with responses from the public peer-review session today; and (2) a copy of the SFWMD's presentation material that addressed some of the panel's preliminary questions/comments. The SFWMD also will provide the panel a copy of all public comments (due June 12) received prior to the final report being published. All this information can be taken into account by the peer-review panel before the final peer-review report is completed.
60	Dr. Donald DeAngelis (Peer Reviewer)	How will this segment of today's session proceed?	**Don Medellin**: Keep your microphones open so we can hear the dialogue between you and Dr. Dorn, and if additional questions arise, SFWMD staff are here to answer them.

Comment No.	Commenter	Question/Comment	District Response
61	Matthew Schwartz	Tree islands are the base for terrestrial wildlife in the historic Everglades. Is it possible to restore tree islands without restoring sheetflow? Most of what we're discussing today is artificially moving water from one chamber of the system to another - via canals. Very different than sheetflow. All the science I've seen on tree islands says that the historical flow was as important as water levels now (too much or too little) - and that lack of flow has been responsible for much of the degradation of the tree islands.	**Fred Sklar**: Flow is responsible for distributing nutrients from the head to the tail of a teardrop-shaped tree island. It is thought that these nutrients help islands manage the stresses of very long hydroperiods. However, islands can do relatively well in low-flowing systems as long as depths and inundation rates are "healthy." The northern islands in WCA-3A can be restored if depths are increased, and the southern WCA-3A islands can be restored if hydroperiods are decreased. Despite these improvements, for long-term sustainability of the system, flows should increase.
62	Jim Vaughan	With Florida's hot temperature, what will keep this 23 foot deep reservoir from stratifying? Anaerobic conditions cause many negative water related issues alone.	**Fred Sklar**: The high turnover rate that was mentioned this morning and described by Walter Wilcox help to prevent stratification. In addition, the relatively shallow depth of the reservoir (even 20 ft) and high temperatures of South Florida reduce risk of stratification relative to other water bodies in other parts of the U.S. **Tom James**: Turnover can reduce the effects of stratification, especially if water levels change substantially. Wind-generated waves, due to the fetch and the summer afternoon increase in winds, will support water mixing and sediment resuspension. This is based on the dynamic ratio that is greater than 0.8 for this reservoir (see Havens, K.E., K.-R. Jin, N. Iricanin, and R.T. James. 2007. Phosphorus dynamics at multiple time scales in the pelagic zone of a large shallow lake in Florida, USA. Hydrobiologia 581:25–42). This dynamic ratio is calculated as the sqrt(area in km)/depth in meters. For example, assuming the EAA Reservoir is 10,100 acres (40.5 km^2) from scenario R240 (https://www.sfwmd.gov/sites/default/files/documents/pres_2017_1221_eaa_res_public_meeting.pdf) and the 20-ft (6.1-m) depth, sqrt(40.9)/6.1 = 1.05. With the prevailing afternoon winds and the high dynamic ratio, the potential for stratification, even at high temperatures during the summer, are relatively low.

Comment No.	Commenter	Question/Comment	District Response
Q&A During the *Summary of Preliminary Peer-Review Comments* Segment of the May 29 Peer-Review Session			
63	Dr. Donald DeAngelis and Dr. Nathan Dorn (Peer Reviewers)	Ponding Depths/Hydroperiods Comments and Questions: What are the targets?	**Walter Wilcox**: Related to the targets, from a ponding depth perspective, there is a ridge and slough RECOVER performance measure, and that's where this concept of NESRS comes in. In the development of that performance measure, the RECOVER landscape scientists looked through the available NSM data and, bringing other lines of evidence about the characteristics of the pre-drainage system as understood through observation and landscapes dynamic formation processes, identified a location in NESRS, which we call Indicator Region (IR) 129 as the most representative hydrologic time series of the type of conditions that would promote and sustain ridge and slough landscapes. So from a restoration perspective, because the Greater Everglades was a rather uniform, spatially homogeneous ridge and slough landscape over the WCAs as well as the ENP, the target for that particular ridge and slough performance measure is indeed the water depths that were observed in NESRS in the NSM data, but extrapolated across the entire system. So, essentially, we're looking for similar water depths as a full restoration target in southern, central, and northern WCA-3A as well as ENP. I'm not sure that comes across fully in the Technical Document. There were some questions related to that. I want to make sure that was in context of that target as one of the performance measures that gets combined with the others, including some of the ones I showed earlier: soil oxidation and sheet flow, distribution, timing, and magnitude. So, it's not a one size fits all. We're not just trying to make the water depths across the system as deep as the pre-drainage NSM data, but that is one of the considerations that goes into the composite picture of how we restore the Everglades. Those targets become kind of a shooting point, and I would say they are somewhere deeper than central WCA-3A in the current system. Maybe closer on average depth to what is in southern WCA-3A, but they don't have those extreme high peaks, as indicated by Dong Yoon's information, that are caused by the unnatural impoundment in southern WCA-3A. From the perspective of target depths, they are generally deeper than analogue locations like central WCA-3A in the current system, but they have somewhat less high depth variability to avoid inundation of tree islands and detrimental effects from excessive high water for long durations.

Comment No.	Commenter	Question/Comment	District Response
64	Dr. Nathan Dorn (Peer Reviewer)	Ponding Depths/Hydroperiods Comments and Questions: In the absence of that perspective of the NSM, I was sort of forced to think about this relative to existing analogue conditions in other parts of the system, as you said, and it looked to me like the projection is that you're going to get to the levels of the central Everglades WCA-3A, but not to southern WCA-3A. I guess what you're saying is the NSM that you were originally looking at suggested that you should be trying to make something even deeper to maintain ridge and slough systems and tree islands, is that correct?	**Walter Wilcox**: Yes, that is correct. The overall restoration target is still a little bit deeper than what the CERP program or the EAA Reservoir is able to fully achieve. So, we're almost at 100% of what CERP envisioned and we're significantly improved over the current system, but if you go by that ridge and slough target, defined by RECOVER, there is still some additional depth systemwide that would be beneficial to the landscape.
65	Dr. Nathan Dorn (Peer Reviewer)	Ponding Depths/Hydroperiods Comments and Questions: I think that covers most of my questions. I do have one last question, given you're not quite at the depth you wanted, was there no way to channel or move more water through the northern part of WCA-3B and bring it down into Northeast Shark River Slough, given that WCA-3B changes a little bit, but not at all in the north?	**Walter Wilcox**: Leslye mentioned earlier that there were a number of different plans looked at as part of the reservoir study. There also were several different plans looked at as part of the original Central Everglades study. There were four primary alternatives that handled WCA-3B in different ways. The one that we landed on is what you see in the plan as the Blue Shanty Flow-way, which kind of compartmentalizes WCA-3B, but there were other options that attempted to send water through WCA-3B or distribute water more across the landscape consistent with that natural flow pattern I showed. The challenge comes when you put water in WCA-3B in today's system. WCA-3B is significantly more degraded than other parts of the natural system, so you can't just return it to pre-drainage depths and expect to have successful outcomes. You have to go into some type of transition plan, and in addition to that, because of the manmade features, there's a pretty strong seepage gradient from west to east. So, when you put water in WCA-3B as much as the landscape indicates it should flow south into ENP, the reality is that a lot of that water is drawn to the east and toward developed areas that are kept at a lower water level for flood protection. So, there are significant challenges with fully restoring WCA-3B, and the Central Everglades is the first step in that transition process. The compromise was building the Blue Shanty Flow-way, restoring that portion of WCA-3B to something closer to a natural system target, and rehydrating the remainder of WCA-3B to begin the restoration process, but then setting up a subsequent planning effort that would have to further expand on those benefits.
66	Dr. Donald DeAngelis (Peer Reviewer)	Ponding Depths/Hydroperiods Comments and Questions: I think that covers Ponding Depths/Hydroperiods pretty well.	Acknowledged.

Comment No.	Commenter	Question/Comment	District Response
67	Dr. Donald DeAngelis and Dr. Nathan Dorn (Peer Reviewers)	Future Modeling Comments and Questions: Are there plans to extend the hydrologic simulations beyond 1965-2005?	**Walter Wilcox**: The short answer is yes, but not in this process. The Interagency Modeling Center supports the overall CERP program and has been working on a data extension update. We have models that now run from 1965 through 2016. They include many of the more recent years in the period of record, including some pretty substantial droughts, and the 2015 super El Niño event. That period of record will be used in upcoming planning work, including the development of the new Lake Okeechobee regulation schedule. From the EAA modeling perspective, I think that this plan has already been authorized, and there is no plan right now given limited resources to update the modeling for this project specifically. However, I would expect at some point in the future, as we continue developing restoration plans and with the additive nature of how we do it—we start with what is authorized then add another piece to the puzzle—that will facilitate at some point in the future extending these project features into the extended period of record. We'll have that information available, it just won't be done under the umbrella of the EAA Reservoir project. **Don Medellin**: Walter, when you say "authorized", you mean authorized by Congress? **Walter Wilcox**: Yes.
68	Dr. Donald DeAngelis and Dr. Nathan Dorn (Peer Reviewers)	Coastal Salinities/Mangrove Movement Comments and Questions: Are there quantitative estimates available on the possible effects on coastal salinities, which can counter mangrove inland movement? Can you use the MANTRA Model?	**Dong Yoon Lee**: So, for the first question about coastal salinities and mangrove inland encroachment, yes, in the CEPP PACR, the salinities for different locations in Florida Bay were estimated from a stage nonlinear regression and the model-predicted salinity should decrease on average by 1.5, reduce the possibility of seagrass die-off, may change the community composition in the area close to the coastal area, increase water flow, decrease land migration of the mangrove forest, and potentially slow down saltwater intrusion into the freshwater marsh. However, these data are not presented here because there are no models approved by the United States Army Corp of Engineers (USACE) to predict the effect of this on fish and wildlife in Florida Bay.
69	Dr. Donald DeAngelis (Peer Reviewer)	Coastal Salinities/Mangrove Movement Comments and Questions: I have no other questions about Coastal Salinities/Mangrove Movement. Dong Yoon's answer was a good one.	Acknowledged.

Comment No.	Commenter	Question/Comment	District Response
70	Dr. Nathan Dorn (Peer Reviewer)	Cape Sable Seaside Sparrow Habitat Comments and Questions: Is there a target for marl prairies beyond the Cape Sable Seaside Sparrow or is that pretty much it? Is it a Cape Sable Seaside Sparrow target?	**Fred Sklar**: The marl prairie, of course, has ecological benefit, but the modeling is essentially done to predict suitable habitat for the CSSS. The modeling is not being done to evaluate potential habitat use, for example, for crayfish. Built into that model are some characteristics that would make it beneficial for the CSSS, including the number of dry days needed by the sparrow, but also the hydrologic requirements of the grass itself.
71	Dr. Donald DeAngelis and Dr. Nathan Dorn (Peer Reviewers)	Cape Sable Seaside Sparrow Habitat Comments and Questions: Changes in vegetation or timing of water depth during the Cape Sable Seaside Sparrow breeding season is not clear.	**Dong Yoon Lee**: Detailed water depth change can be found in the CEPP PACR, Appendix C.2.1, page 27. I can provide more information later. We will consider adding more data and figures to clarify this issue. We will also divide the current marl prairie section, as Dr. Dorn suggested, into two separate sections: one for the coastal marl prairie and one for the CSSS.
72	Dr. Donald DeAngelis and Dr. Nathan Dorn (Peer Reviewers)	Joint Ecosystem Modeling Comments and Questions: More detail needed to understand what the models are based on (habitat suitability, average yearly conditions, hydrologic structure, etc.)	**Dong Yoon Lee**: Agreed. We will add much more information, especially for wading birds. I will make sure all this information is included. **Fred Sklar**: I want everyone to realize that Dr. Lee was originally instructed to not duplicate everything that was in the CEPP PACR appendix on all the output associated with evaluating alternatives. The goal here was not to have a massive 200-page Technical Document that would give you all the detailed information. I just want him to know that, in the opinion of most people, he did an excellent job of capturing the highlights of the model output, and like he said, he will capture a bit more to satisfy the needs of the panel.
73	Dr. Donald DeAngelis and Dr. Nathan Dorn (Peer Reviewers)	Joint Ecosystem Modeling Comments and Questions: Consider using the crayfish model developed by the USGS.	**Dong Yoon Lee**: For the crayfish model, it is a very good suggestion, but this might not be possible because all the modeling for this water reservation rule should be consistent with the models that were used to get Congressional approval for CEPP and the CEPP PACR. So, it might not be possible to use another crayfish model.
74	Dr. Donald DeAngelis and Dr. Nathan Dorn (Peer Reviewers)	Difference Maps/Ecological Evaluations Comments and Questions: Synthesizing some of the ecological responses with the hydrological responses was challenging because of differences in evaluation periods. Is there a way to standardize?	**Dong Yoon Lee**: We understand the difficulty in comparing ecological outputs between the targeted species. Although inconsistent spatial and temporal domains would primarily cause this problem, the way we present the model output is consistent with the CEPP PACR. Clarifications will include narratives associated with selected rainfall years and justification for differences in the spatial or temporal domain of the model output.

Comment No.	Commenter	Question/Comment	District Response
75	Dr. Nathan Dorn (Peer Reviewer)	Difference Maps/Ecological Evaluations Comments and Questions: Actually, I think the evaluation he did here in the presentation was extremely helpful. I think the challenge just came in trying to synthesize some of the confusing responses. Obviously, those ecological models for the birds, for example, are much more complicated, but it gave me pause about exactly those spatial regions, which are not necessarily covered in detail in the hydrologic analysis, those regions where the birds declined. I think that is where a lot of the questions in my mind came up, and then a few of the evaluations jump between an average year vs. the average of the period. I spent a lot of time trying to figure out what the average year looks like, where a dry year, or if all the benefits come in dry years or if the benefits are coming in wets years, or something like that. I do think the presentation was a great improvement. I kind of agree with you, I don't know that I want all the detail of these models in another 40 pages of the Technical Document, but maybe a little bit more to try to explain where some of those spatially negative effects for the birds or other taxa might be coming from, what aspect of the hydrology that is drive that.	**Fred Sklar**: Yes, I agree, and we are going to do exactly that.
76	Dr. Nathan Dorn (Peer Reviewer)	Difference Maps/Ecological Evaluations Comments and Questions: Sometimes when there is a negative proportional effect, it is happening in an area that is already kind of bad, or the absolute effect is maybe not all that significant because the organism doesn't use the area anyway. I think the difference is a nice way to do it, but I think the change between average years, wet years, and dry years vs. the period of record made some of the responses challenging to understand.	**Dong Yoon Lee**: Yes, we will add a map presenting absolute density or index.

Comment No.	Commenter	Question/Comment	District Response
77	Dr. Nathan Dorn (Peer Reviewer)	Crayfish Suitability Model Q&A Comments and Questions: I think this has pretty much already been addressed, but I will say, seeing the hydroperiods, I think Dong Yoon showed us the hydroperiods for the eastern marl prairies, so I think we've seen that. It was close to what I was guessing it was from the map (Figure 4.2) although I think that map is going to change based on what was shown earlier as well, to an average for the period, or for a longer period. So, I think that has been evaluated. In terms of the western marl prairies, it sounds like that is primarily going to be an issue for western Everglades restoration based on what Walter Wilcox said. It would be nice to see some regions in the marl prairies because, of all those indictor regions that are in that map that has been used for evaluating the restoration, there is nothing in the marl prairies. All you can really read is down the middle of Shark River Slough, like it's a pipe, just to put it bluntly. However, there are wetlands all around in Everglades National Park that are never really evaluated. So, I think I know what roughly the eastern marl prairies where the expected benefit comes, I know what that is going to look like. So, I don't know if I'm amending my question or just suggesting for maybe the future that we have to think about that western marl prairie, but maybe not for this project.	**Walter Wilcox**: Just to give you an indication of one of the reasons why there is such a focus on going down the pipe in SRS, as you said, is because a number of the metrics defined by RECOVER are specific to the ridge and slough landscape. I think there is greater availability of graphics and data for some areas as opposed to other areas. If we're looking at information from the marl prairies, it will probably be a little different in look and feel because those IRs (e.g., IR 140) kind of flank the slough locations, but they don't typically generate the same types of graphics or metrics because you're not evaluating relative to a ridge and slough target, you're evaluating to other defined targets that are dominated by the marl prairie CSSS metrics that were discussed earlier. If we do something for the marl areas, it likely will be a little different and still have some challenges in cross-comparing.
78	Dr. Nathan Dorn (Peer Reviewer)	Crayfish Suitability Model Q&A Comments and Questions: So, Walter would you still be able to extract hydroperiod data from it?	**Walter Wilcox**: Yes, I think hydroperiods and unaltered or unnormalized ponding depths are pretty straight forward, and those come directly out of the model. The challenge comes when you look at something like the IRs with different assumptions for how you are normalizing, and then what you're reference elevation is for normalizing your depths, for example. That's where it gets a little apples to oranges, but in terms of raw hydrologic data, we can certainly show you what's happening in those areas and what to expect—it seems like you're most interested in median water levels, hydroperiod, and recession below ground characteristics—those can be summarized pretty easily.
79	Dr. Donald DeAngelis (Peer Reviewer)	Water Quality – Phosphorus Comments and Questions: I think these questions were sufficiently addressed.	Acknowledged.

Comment No.	Commenter	Question/Comment	District Response
Q&A on Peer-Review Panel Preliminary Written Reviews of the Technical Document (April 2020)			
80	Dr. Donald DeAngelis (Peer Reviewer)	What is meant by Flow transect (Figure 1-6)?	**Clay Brown** and **Walter Wilcox**: The CEPP flow transects in Figure 1-6 represent "simplified transition boundaries." Each flow transect helps water managers/planners quantify flow between compartmentalized areas and measure performance of proposed features/operational changes to the system. **Dong Yoon Lee**: The plan formulation strategy for CEPP consisted of multiple formulation phases. It started with a consideration of measures north of the Everglades in the EAA (red line) to capture, store, and deliver water south to the Everglades. The sequential formulation considered measures for redistributing water within WCA-3A (south of the red line), creating additional hydrologic connectivity between WCA-3A, WCA-3B (green line), and ENP (blue line), and effectively managing seepage along the eastern boundary of the Everglades (yellow line). More detailed information regarding the formulation, evaluation, and selection of the model is provided in the CEPP Project Implementation Report (PIR) (see CEPP_PIR_P81.pdf).
81	Dr. Donald DeAngelis (Peer Reviewer)	What is meant by Lake Okeechobee Service Area (LOSA) (Page 10)?	**Clay Brown** and **Walter Wilcox**: LOSA, on page 10, refers to permitted water users (typically agriculture or public water supply demand) that draw water from Lake Okeechobee for supplemental deliveries. The basins are geographically located near Lake Okeechobee (provided figure of LOSA showing the North Shore, Caloosahatchee, St. Lucie, and EAA basins). **Alberto Naya**: See two attachments (vol_iii_water_use.pdf and vol_iii_water_use-2.pdf), which cover the regulatory definitions for LOSA. The short definition (briefly summarized in the first attachment and expanded in the second) is that LOSA is the area served by withdrawals of surface water from Lake Okeechobee or its hydraulically connected systems. The second attachment is the LOSA Rule, which is a component of the recovery strategy for the Minimum Flow and Minimum Water Level (MFL) for Lake Okeechobee. The LOSA Rule describes the criteria required for permit applicants to demonstrate that requested allocations will not cause a net increase in the volume of surface water withdrawn from Lake Okeechobee over the base condition water use for each water use classification and potential offsets. In addition, it explains how the base condition was derived as a result of the LORS2008. Lastly, a regulatory map of LOSA is provided.

Comment No.	Commenter	Question/Comment	District Response
82	Dr. Donald DeAngelis (Peer Reviewer)	Pump station S-7 is not labelled in Figure 1-6, as far as I can see. It should be at the juncture of L5 and L6.	**Leslye Waugh**: Figure 1-6 depicts the components of CEPP. CEPP does not propose any changes to the S-7 pump station, so it is not shown as a feature on the map.
83	Dr. Donald DeAngelis (Peer Reviewer)	It is stated that "Alternative C240 achieved 97% of the CERP goal over the 36-year period of record available from RECOVER. Consistent with CEPP, Alternative C240 was modeled and analyzed over the longer 41-year period of record (1965 to 2005) to evaluate effects of the PACR. Alternative C240 provides an increase of approximately 370,000 ac-ft in average flow to the Central Everglades, exceeding the CERP goal of 300,000 ac-ft. That is a substantial difference. Are there any specifics on the changes under PACR that provided this improvement? On page 21 it is stated that "more refined modeling tools were used to evaluate Alternative C240." Does that mean that the increase in mean flow is simply a result of more accurate modeling?	**Walter Wilcox**: These are not differences due to accuracy in modeling, they are a reflection of different periods of simulation. The C240 scenario, when summarized over the simulation period from 1965 to 2000, sends just under 300,000 ac-ft more water per year (97% of the CERP goal) into the Greater Everglades compared to the current condition. The same C240 simulation, when averaged over the 1965 to 2005 period of simulation, shows an average annual increase of 370,000 ac-ft compared to the current condition. While this average annual increase is dramatic, it is explained by the fact that the additional simulation years are generally wet conditions with frequent hurricanes, and the delta to the baselines are more significant because the baseline cannot convey water south (no storage or conveyance capacity) while the CEPP and EAA condition can convey substantial volumes.
84	Dr. Donald DeAngelis (Peer Reviewer)	This is an accurate overview of existing conditions. However, it mentions only the effects of changes in hydrology on the current condition of the Central Everglades Watershed. It does not explicitly mention the detrimental effects that phosphorus inflow from the EAA has had in the changes that have occurred in vegetation.	**Sue Newman**: The effects of phosphorus on the Everglades are mentioned later in the document. **Naiming Wang**: Any amount of additional water discharged to WCA-3A would increase the total phosphorus load. But the long-term flow-weighted mean concentration of total phosphorus is expected to be below 13 ppb, which is comparable to natural background level. **Don Medellin**: The statutory authority granted to the SFWMD's Governing Board under Chapter 373.223(4), F.S., is limited to the protection of fish and wildlife and public health and safety.
85	Dr. Donald DeAngelis (Peer Reviewer)	Are there any future plans to extend the hydrologic simulations beyond 1965-2005? The 1965-2005 period is certainly long enough to encompass a variety of hydrologic conditions, but if there have been any long-term trends in environmental conditions, the inclusion of more recent years might be useful for forecasting.	**Clay Brown** and **Walter Wilcox**: For this project, there are no plans to extend the simulation beyond 2005 at this time. The period of simulation from 1965 to 2005 does capture extremes of the El Niño Southern Oscillation (ENSO), which is an important climate indicator. It captures the 1970-1975 droughts and the brief El Niño (wet period) in 1972. Other notable droughts captured in the period of record include: 1985, 1988, 1998-1999, and 2001. This period of record also captures significant rainfall events, including: 1969, 1983, 1994-1995, 1997 (the highest El Niño event on record), and the 2004-2005 hurricane season. For future planning efforts, including the upcoming Lake Okeechobee System Operating Manual update, the simulation period is being extended through 2016 by the Interagency Modeling Center.

Comment No.	Commenter	Question/Comment	District Response
86	Dr. Donald DeAngelis (Peer Reviewer)	This figure shows tremendous increase in flows into WCA-3B. Do the arrows pointing two ways represent that flow can go either way through L-29?	**Walter Wilcox**: Increased inflows to WCA-3B are expected because CEPP constructs three structures that will convey water into WCA-3B. The goal is not only re-hydrate a large portion of WCA-3B, but also to convey water through WCA-3B into northeastern ENP consistent with the historical flow path. **Raul Novoa** and **Sandeep Dabral**: Arrow direction represents the flow direction based on the annual average calculation. Structural flows can only go in one direction, as specified in the figure. For groundwater and levee seepage flows, it is possible, on a daily time step, for flows to go either direction, depending on the head difference. **Dong Yoon Lee**: We will consider revising the caption of Figure 4-11 according to the response from Raul Novoa and Sandeep Dabral.
87	Dr. Donald DeAngelis (Peer Reviewer)	Also, I have a question concerning the ponding depth and duration curves. Does "normalized" refer to division by the number of days in period of record?	**Clay Brown** and **Walter Wilcox**: In this context, a "normalized duration curve" refers to a duration curve relative to land surface elevation. The intent is to convey that the duration graphs are relative to land surface. Keep in mind that other duration graphs (e.g., Lake Okeechobee stage duration) can be relative to the vertical datum (i.e., stage). **Dong Yoon Lee**: We will add the definition of normalized duration curve on page 25 and in the Figure 4-6 caption.
88	Dr. Donald DeAngelis (Peer Reviewer)	It is stated that "[DYL: in WCA-3B,] ecologically significant increases in annual hydroperiods are not found despite the addition of 0.3 to 0.7 ft of water during ponded times." Is this related to the existing topography (there has been a loss of ridge-and-slough pattern) of WCA-3B, Blue Shanty area specifically?	**Fred Sklar**: It is not really a function of soil oxidation or ridge and slough degradation. The hydroperiod does not change very much in the Blue Shanty region because the inflows and outflows are relatively high and equal. Without Alternative C240, water levels drop to zero about 4% of the time because rainwater has no outlet. The region is compartmentalized. With Alternative C240, water levels drop to zero about 2% of the time because the inflows are high enough to prevent the region from almost ever drying out. **Dong Yoon Lee**: We will revise the paragraph to justify this conclusion.

Comment No.	Commenter	Question/Comment	District Response
89	Dr. Donald DeAngelis (Peer Reviewer)	Page 31. Northeast Shark River Slough. This states an increase in inflow from 73,000 to 794,000 ac-ft (Figure 4-15) to this area, which currently experiencing extremely dry conditions. This is significant, as NESRS has long been considered one of the key areas for Everglades restoration. There are 321,000 ac-ft from S-333, 67,000 ac-ft from S-356. Is the rest of the 794,000 ac-ft from flow from WCA-3B?	**Clay Brown** and **Walter Wilcox**: The average annual transect flows across T-18 are attributed to the features you mentioned, S-333 and S-356, and the remainder is due to several culverts and bridge flow-throughs along Tamiami Trail, in part fed by flow out of WCA-3B (the Blue Shanty Flow-way). It's more complicated than summing the flows from S-333, S-356, and culvert flows; when summed, those flows actually exceed T-18's average annual flow of 794,000 ac-ft/year. Keep in mind the L-67 extension levee is removed in the C240 simulation; therefore, some of the flow from S-333 moves southwest, as illustrated in Figure 4-4. Additionally, in the baseline, canal flow is not counted in the transect (overland) flow summary. To a lesser degree, some is lost to evapotranspiration (ET).
90	Dr. Donald DeAngelis (Peer Reviewer)	What is meant by Segment head (Figure 4-16)?	**Clay Brown**: Figure 4-16 is a stage duration curve representing the headwater at structure S-334. The vertical axis of the graph is canal stage in feet National Geodetic Vertical Datum of 1929 (NGVD29). The term "segment" is a modeling term that refers to the discretization of a real-world canal system into modeled "segments." Output for canal segments can be reported as flow or stage; the term "head" often is used in place of stage. **Dong Yoon Lee**: We will revise the caption of Figure 4-16 (segment head → canal stage).
91	Dr. Donald DeAngelis (Peer Reviewer)	There seems to be a minor misstatement regarding Figure 4-24. It is stated that "Alternative C240 will increase the time that water levels hover between 0 and 1". Actually, according to the figure, the time that water levels are between 0 and 1 will decrease relative to ECB. Instead C240 will increase the time water levels are above the level of 0.	**Dong Yoon Lee**: Will revise the sentence: …water levels above zero by approximately 21% compared to the ECB (Figure 4-24).

Comment No.	Commenter	Question/Comment	District Response
92	Dr. Donald DeAngelis (Peer Reviewer)	It is stated that the effect of C240 on vegetation in northwestern WCA-3A is only moderately beneficial. It will reduce the amount of time of water level below 0 but could lead to increased phosphorus and cattails through oxidation of soils. So, understandably, the overall effects on vegetation are difficult to predict. But it is also stated that northeastern WCA-3A will substantially improve due to decreased amount of time water levels go below zero (Figure 4-26), as C240 will promote peat accumulation. It is argued that northeastern will not suffer from the same negative effects of phosphorus release as northwestern WCA-3A. Can this assumption be backed up further? Also, the possibility of periphyton community change is mentioned in this region. It would be useful if more information on the possibility of switches in the periphyton community and its consequences are discussed.	**Sue Newman**: This section will be rewritten to note that northwestern and northeastern WCA-3A benefits are similar with regard to increased ponding and reduced amount of time water is below 0 ft. This revision will also note that all over-drained areas subject to soil oxidation have some risk of nutrient release upon rehydration. While we do not have recent spatial sampling to document changes in soil chemistry, the areas at greatest risk for phosphorus release are likely closest to central WCA-3A in close proximity to the Miami Canal, where increases in phosphorus per unit volume have occurred (Bruland, G.L., T.Z. Osborne, K.R. Reddy, S. Grunwald, S. Newman, and W.F. DeBusk. 2007. Recent changes in soil total phosphorus in the Everglades: Water Conservation Area 3. Environmental Monitoring and Assessment 129(1-3):379-395). **Don Medellin**: The statutory authority granted to the SFWMD's Governing Board under Chapter 3763.223(4), F.S., is limited to the protection of fish and wildlife and public health and safety.

Comment No.	Commenter	Question/Comment	District Response
93	Dr. Donald DeAngelis (Peer Reviewer)	In the caption there needs to be a definition of NSM462 (I think it refers to the Natural System Model) and that the IR numbers mean indicator regions. A fuller explanation of this figure would be helpful.	**Dong Yoon Lee**: We will revise the caption and graphics of Figure 4-31. 1) Include the definition of NSM; 2) Move the purple text on the bottom of the figure into the caption. We will revise the last paragraph on page 41 to include the interpretation of the NSM462 model output. Add under NSM, simulating the hydrologic response of a pre-drained Everglades system, the duration of drydown events is 13 weeks on average annually and ranges from 10 to 16 weeks along the longitudinal transect of SRS. Alternative... which more closely resembles a pre-drainage drought condition and is 3 weeks ... (Figure 4-31). **Clay Brown**: The figure is a comparison of three models that represents the number of weeks that are dry in NESRS from 1965 to 2005. Each of the three models and locations in NESRS are defined below. The first column in the figure represents the numbers of dry weeks for each IR in NSM462; summing the count of dry weeks for each IR results in 52 dry weeks. The sum of the number of dry weeks for IRs in the ECB (or EARECB) and Alternative C240 results in 63 and 50 dry weeks, respectively. Therefore, Alternative C240 has fewer dry weeks than EARECB; this achieves a goal of the project, which is to send more water to NESRS. In addition, Alternative C240 shows better performance than NSM462. NSM462 represents the model used for model comparison in Everglades restoration efforts. The NSM simulates the hydrologic response of a pre-drained Everglades system. The NSM does not attempt to simulate the pre-drained hydrology. Rather, more recent climatic data are used to simulate the pre-drained hydrologic response to current hydrologic input. The numerical designator “462” represents the latest version, which is 4.6.2. The EARECB represents a scenario that attempts to model assumed hydrologic conditions in 2017. Alternative C240 represents a scenario that models assumed hydrologic conditions in 2050 that includes the EAA Reservoir (240,000 ac-ft) and A-2 STA features. This scenario also includes all authorized CERP and non-CERP projects. An IR is a collection of model cells, identified by ecologists, that represents an ecological community of interest. This helps ecologists/managers/planners measure performance across alternatives. IRs 129, 130, 131, and 132 are located in NESRS within ENP.

Comment No.	Commenter	Question/Comment	District Response
94	Dr. Donald DeAngelis (Peer Reviewer)	What is meant by NSM462 and what do the IR129, etc. numbers mean (Figure 4-31)? (I am assuming NSM is the Natural System Model, but I am not sure what 462 and the IR symbols mean.)	**Clay Brown** and **Walter Wilcox**: "NSM" is the Natural System Model and "462" represents the version of the NSM that was used; this is the typical version used for model comparison in Everglades restoration efforts. "IR" represents an indictor region, which is a collection of model cells, identified by ecologists, that represents an ecological community of interest. This helps ecologists/managers/planners measure performance across alternatives. IR129 is located in NESRS within ENP. **Dong Yoon Lee**: IRs are groups of adjacent cells within the model grid that together represent a particular region of the Everglades. The cells within an IR are intended to be homogeneous in soil type, vegetative structure, and topography and, therefore, were expected to show similar responses to hydrologic changes. Figure 4-1 shows the location of gauges, IRs, and flow transects.
95	Dr. Donald DeAngelis (Peer Reviewer)	Are any quantitative estimates available on the possible effects on coastal salinities, which can counter mangrove inland movement? (Florida Bay, salinity)	**Fred Sklar**: The added fresh water to SRS and Taylor Slough will lower the rate of saltwater intrusion along the mangroves of the southwestern coast and Florida Bay. This is expected to improve the ability of mangroves to migrate inland without significant degradation due to peat collapse. However, the SFWMD cannot quantify the rate of mangrove migration because we do not possess a landscape-scale mangrove succession model and because there is a large amount of groundwater uncertainty in these areas. **Dong Yoon Lee**: We will revise the first paragraph on page 43 to explain the potential improvement (explained by Fred Sklar) associated with increased water flow in Taylor Slough and SRS.

Comment No.	Commenter	Question/Comment	District Response
96	Dr. Donald DeAngelis (Peer Reviewer)	Northeast Shark River Slough will receive increased sheetflow, which is one of the basic goals of Everglades restoration. Increasing water flow to the wet marl prairies of ENP will substantially improve alleviate some of the problems of woody plant invasion of Cape Sable Seaside Sparrow habitat. But the picture for CSSS habitat overall is mixed. It looks from Figure 4-34 like there will be some improvement to northwestern subpopulation habitat, but reduction in habitat suitability in the southeastern areas. Can more detail be given on what the specific effects of C240 will be; changes in vegetation or timing of water depth during the CSSS breeding season. Can any tweaking of the careful timing of releases be used to decrease negative effects of high water? There is another potential issue. It appears from the pattern of increases and decreases in suitability of CSSS habitat that the areas of good habitat in the northwest and good habitat in the southeast will become separated by greater distances. This would reduce dispersal between different subpopulations, which might make each subpopulation more vulnerable to extinction.	**Mark Cook**: The concern about increased distance between the west and east subpopulations is valid given the probable limited dispersal capacity of this species. However, any loss of connectivity between east and west might be offset by the projected increased connectivity (improved habitat) among the different subpopulations east of SRS. **Walter Wilcox**: Operations for the C240 scenario were informed by hydrologic targets defined in consultation with the United States Fish and Wildlife Service to identify desirable marl prairie hydroperiods and CSSS recession characteristics to maximize breeding potential. Not every year can achieve the targets due to hydrologic variability, but overall outcomes are similar to the baseline by design (despite the spatial shifts identified in the comment). Regarding Subpopulation A and the Everglades Restoration Transition Plan operations, seasonal closures of the S-12 structures are still used in CEPP operations. **Dong Yoon Lee**: We will consider expanding our discussion about the potential change in marl prairie habitat for the CSSS in this section. Replace Pearlstine (2013) with Pearlstine, L., A.L. Galbo, G. Reynolds, J.H. Parsons, T. Dean, M. Alvarado, and K. Suir. 2016. Recurrence intervals of spatially simulated hydrologic metrics for restoration of Cape Sable seaside sparrow (*Ammodramus maritimus mirabilis*) habitat. Ecological Indicators 60:1,252-1,262.
97	Dr. Donald DeAngelis (Peer Reviewer)	It is stated that the comparisons ECB and C240 (Table 4-1) are based on “fish and wildlife simulations” by JEM (except crayfish, which was not modeled). The description should be more specific. Are these all based on habitat suitability indices. More specifics should be given; for example, are they based on average yearly conditions, or do they take into account the hydrologic structure within years? Similar models were developed for the Restudy by USGS and SFWMD. It would be useful to know if the models have also been used with Natural System Model output as well as ECB and C240.	**Dong Yoon Lee**: Not all models are based on suitability or habitat indices. For example, apple snail and small fish models are based on a regression analysis and provide population density. We agree with the comment and will provide a more detailed methodology, description, and citation for each model.

Comment No.	Commenter	Question/Comment	District Response
98	Dr. Donald DeAngelis (Peer Reviewer)	Small fish are a critically important food base and the increases (130% for the whole period) are impressive. It appears from Figure 4-37 that the ECB estimates are based on data from a large number of sampling sites. Within each of these sampling sites are the population density estimates based on regressions against hydroperiod used to project for C240 conditions?	**Dong Yoon Lee**: Trexler and Goss (2009) developed a logistic population growth model to predict small fish densities between the time of sampling and re-wetting of the site after the most recent drying event. High densities of small fish characterized the pre-drainage Everglades ecosystem; therefore, maximizing densities is an objective of Everglades restoration. Because prey fish dominate the prey community in both biomass and abundance, they are an important energy source for higher trophic levels, such as wading birds, alligators, and larger fish. Thus, the estimations of prey fish can be used as a general measure of trophic conditions within the Everglades. We will consider adding the absolute fish density map under the two models (instead of just presenting the difference map between the models). The following citations will be added: Trexler, J.C. and C.W. Goss. 2009. Aquatic fauna as indicators for Everglades restoration: Applying dynamic targets in assessments. Ecological Indicators 9S:S108-S119. Donalson, D., J. Trexler, D. DeAngelis, and A. Logalbo. 2010. Prey-based freshwater fish density performance measure (Greater Everglades aquatic trophic levels). DECOMP Performance Measure Documentation Sheet. United States Army Corps of Engineers, Jacksonville, FL.
99	Dr. Donald DeAngelis (Peer Reviewer)	It is stated that "the Joint Ecosystem Model Program does not have a crayfish model." However, a crayfish model (both slough and Everglades crayfish) was developed by USGS during the Restudy. It is fairly simple and could be applied if needed but it appears that the estimates in Table 4-1 are reasonable.	**Mark Cook**: We were limited to using the models from the original CEPP PIR, which did not examine crayfish responses.
100	Dr. Nathan Dorn (Peer Reviewer)	ES-1 does not include any summary about the primary expected hydrological shifts or ecological benefits to the central Everglades.	**Walter Wilcox**: Agreed. Adding text to reflect these benefits will be considered. **Don Medellin**: This summary will be added with the next revision to the Technical Document.
101	Dr. Nathan Dorn (Peer Reviewer)	The label of NESRS should be moved east into the eastern corner. The label is centered in Shark River Slough right now.	**Brenda Mills**: Figure 1-1 will be adjusted in the final Technical Document.

Comment No.	Commenter	Question/Comment	District Response
102	Dr. Nathan Dorn (Peer Reviewer)	What does it mean that the full storage water depth is 22.6 ft? How is the depth measured for this A-2 Reservoir? On page 56 you called 22.6 ft (NGVD29) the maximal storage capacity but on this page you called it normal full stage capacity? Is that the same thing? So, it will be managed typically at maximal stage with 12.6 feet of water (soil elevation appr 10 ft)?	**Brenda Mills**: Agreed. There are inconsistencies in how the depth versus elevation of water stored is described. These will be addressed in the final Technical Document. The normal full capacity is 22.6 ft deep. The reference on page 56 is an error and will be fixed in the final version.
103	Dr. Nathan Dorn (Peer Reviewer)	The definition of the South Florida Ecosystem in relation to the Everglades should be defined or else the restoration areas (in acreage) do not match up nicely. On page 6 the restoration is supposed to restore 2.4 million acres, but the Everglades only has 1.54 million acres according to Fig. 1-4. I can only guess that when you wrote the South Florida Ecosystem you were including Lake Okeechobee and perhaps the Kissimmee River and other connected wetlands.	**Brenda Mills**: Agreed. This will be clarified in the final Technical Document.
104	Dr. Nathan Dorn (Peer Reviewer)	Does some of the EAA basin runoff currently discharge to the northern estuaries (as implied in the first paragraph on the EAA)? Perhaps I'm misreading that, but the sentence should be clarified because it can be read as though the basin runoff goes east and west into the rivers.	**Brenda Mills**: Agreed. This will be clarified in the final Technical Document.
105	Dr. Nathan Dorn (Peer Reviewer)	From this document I cannot understand the engineering of the gated spillway associated with the L29 canal. It is unclear how connected the L29 will be to the Blue Shanty Flow-way. How will those features interact? Will the wetland be flowing right into and across the canal? In that case the canal will have to be managed for high enough water to allow for southerly water flow or else? This should be briefly clarified somewhere and maybe include a citation to an engineering design document or online explanation.	**Raul Novoa**: The sheetflow of water occurs from WCA-3A/3B through the Blue-Shanty Flow-way to ENP. The Blue Shanty Flow-way receives water from WCA-3A through structures S-345F and S-345G. It is important to note the western portion of the L-29 levee, from S-333 to the terminus of the Blue Shanty Flow-way levee, has been removed to allow water to sheetflow through the western bridge (the elevated portion of US 41). In addition, structure S-355W (on the L-29 levee) at the terminus of the Blue Shanty Flow-way levee is normally closed to allow sheetflow to move south to ENP; however, it will discharge to the eastern section of L-29 if the water level is below 7.0 ft. Lastly, structure S-356 discharges into the L-29 (east of S-355W) and sheetflows south to ENP through the eastern bridge (the elevated portion of US 41).
106	Dr. Nathan Dorn (Peer Reviewer)	In figure 1-6 the font is too small to read the features. I'd suggest you include two expanded figures to describe these regions or move the focus southward, putting Lake O at the very top of the figure.	**Brenda Mills**: Agreed. Figure 1-6 will be adjusted in the final Technical Document.

Comment No.	Commenter	Question/Comment	District Response
107	Dr. Nathan Dorn (Peer Reviewer)	The third paragraph seems out of place? What does the LOSA water have to do with the lower east coast protective levee? From the way it reads I think the LOSA water has more to do with the canal levels and section 5.1.1.	**Walter Wilcox**: Agreed. The text will be clarified.
108	Dr. Nathan Dorn (Peer Reviewer)	What does the "original" CEPP mean? Is this the second phase of CEPP or an amended CEPP? Or is this proposal the original CEPP? Same adjective (original) is used on page 21 (section 4 intro).	**Brenda Mills**: The original CEPP refers to the project described in the PIR completed in December 2014. Its Chief of Engineers report was signed on December 23, 2014, and authorized by Congress in Section 1401(4) of the Water Infrastructure Improvements for the Nation Act of 2016 (Public Law 114-322). The text will be clarified.
109	Dr. Nathan Dorn (Peer Reviewer)	Regarding bullet #7. I do not understand the meaning of "benefits of overland flow to central SRS are a continuum of the flows under Tamiami trail in the natural system" Perhaps you mean "a continuation of the flowing water" and in the "free-flowing system."? What do you mean by continuum? What do you mean by natural system?	**Brenda Mills**: Agreed. This will be clarified in the final Technical Document.
110	Dr. Nathan Dorn (Peer Reviewer)	Why should there be more levee seepage and groundwater flow with lower ponding depths under C240?	**Raul Novoa**: Based on Figure 4-13, the southern part of WCA-3B has higher ponding depths under Alternative C240 than the ECB.
111	Dr. Nathan Dorn (Peer Reviewer)	It is unclear how much water will be used to manage canal stages for users along the New River and Miami canals. In other words, no volumes or fractions of available A-2 reservoir water are mentioned. As far as I can tell all of the water that comes out of the south end (S624, S625, S626 structures) is for wildlife in the Everglades. It is all one reservoir and I cannot tell how much is expected to move from those structures and how much will move out of the S628 for canal management. Importantly, in a low water year how will those outflows be managed (i.e., how will the A2 EAA water be allocated)?	**Clay Brown**: The EAA Reservoir will release an average of 82,000 ac-ft/year (long-term average 1965-2005) to the Miami and North New River canals to meet water supply demands of existing permitted users in the EAA. This amount represents only 12% of the outflows from the EAA Reservoir and still meets the CERP goal. The EAA Reservoir will release an average of 655,000 ac-ft/year to STA-3/4, STA-2, and the A-1 FEB. **Don Medellin**: A total of 82,000 ac-ft of water will be discharged on average per water year from structure S-628 into the New North River and Miami canals. This was designed to improve the canal stages and will be available for existing legal users. The allocations associated with withdrawing water must be consistent with existing permits. Slide 64 shows the area evaluated for existing legal users (red circle). Section 5 of the draft Technical Document provides additional information regarding seven existing permitted users in the EAA.

Comment No.	Commenter	Question/Comment	District Response
112	Dr. Nathan Dorn (Peer Reviewer)	Section 4.1.2. Under the explanation of avoiding adverse impacts of high water I have more to say below, but it looks to me that the S-12 structures are pumping out a lot less water and are not part of the solution for protecting WCA-3A water levels. Their mention has nothing to do with this feature of the C240 plan unless you are planning to use them in some adaptive management fashion.	**Clay Brown**: There is less water sent to the S-12 structures because water is being sent through the new structures along L-67A to the Blue Shanty Flow-way. Although there is less water sent through the S-12 structures, water levels are being maintained for environmental purposes; this represents a timing shift in water availability. In addition, Section 4.1.2 shows improved water level depths in northwestern, northeastern, central, and southern WCA-3A.
113	Dr. Nathan Dorn (Peer Reviewer)	I did not understand the last sentence at the end of 4.1.1 and why the water moving into northern 3A from the L-4 spreader mechanistically produces decreased ponding depths in WCA-3B.	**Clay Brown** and **Walter Wilcox**: The last sentence of Section 4.1.1 is in reference to the EAA Reservoir's inflow from the Miami and North New River canals. These canals convey water from Lake Okeechobee and runoff from the EAA basin. The water is discharged into northwestern WCA-3A via the L-4 spreader canal to resemble flow patterns of the natural system. The decrease in ponding depths in northern WCA-3B results from the reduced water entering eastern WCA-3A (from WCA-2A) and the water routed through the Blue Shanty Flow-way to ENP as well as a flow timing shift. The timing shift refers to more water being stored for release during drier conditions. **Dong Yoon Lee**: The detailed description of changing flow pattern in WCA-3B will be added into the last paragraph on page 28.

Comment No.	Commenter	Question/Comment	District Response
114	Dr. Nathan Dorn (Peer Reviewer)	A.1. What are the targeted ponding levels? The projected ponding depths and hydroperiods for NESRS need to be clearly presented against other regions, not just against EARECB so that we know what kind of wetland landscape might be supported with the extra water. The two different sets of normalized ponding curves (IR and gage curves) provided somewhat conflicting impressions of the conditions that will be created by C240 when they are compared with central WCA-3A.	**Walter Wilcox** and **Clay Brown**: Target water depth is only one performance measure used to define hydrologic improvement and is considered along with other performance measures, including flow magnitude, flow timing, sheetflow, hydroperiod extension, and other metrics. The depth targets identified by RECOVER for the ridge and slough landscape are derived in the NSM from a location in NESRS. This location was selected as representative of a target ridge and slough landscape based on the correspondence between this location's hydrologic performance and information from independent lines of evidence on ridge and slough characteristics. Once identified, this target was used as representative of the Greater Everglades overall ridge and slough landscape, spatially. In other words, the same target applies in ENP and the WCAs. Relative to current conditions, this target is similar to southern WCA-3A in terms of overall depths, but avoids the extreme, damaging high-water conditions that cause excessive ponding in today's impounded system. **Fred Sklar**: A new table will be added to highlight how different regions of the Everglades will hydrologically respond to the additional water in comparison to other locations and our water management. Clarifications will include narratives associated with IR versus gauge locations, NESRS targets, and adaptive management options. A discussion of the difference between a target and a performance measure will help identify the regions where habitats are expected to improve for fish and wildlife.

Comment No.	Commenter	Question/Comment	District Response
115	Dr. Nathan Dorn (Peer Reviewer)	A.1. Continued -What are the targeted ponding levels? The projected depths for the NESRS and how they relate to depths in other sections of the intact or degraded Everglades are unclear from the analyses and gave me pause about the target (i.e., Exactly how deep are we trying to make NESRS?).	**Walter Wilcox** and **Clay Brown**: Target water depth is only one performance measure used to define hydrologic improvement and is considered along with other performance measures, including flow magnitude, flow timing, sheetflow, hydroperiod extension, and other metrics. The depth targets identified by RECOVER for the ridge and slough landscape are derived in the NSM from a location in NESRS. This location was selected as representative of a target ridge and slough landscape based on the correspondence between this location's hydrologic performance and information from independent lines of evidence on ridge and slough characteristics. Once identified, this target was used as representative of the Greater Everglades overall ridge and slough landscape, spatially. In other words, the same target applies in ENP and the WCAs. Relative to current conditions, this target is similar to southern WCA-3A in terms of overall depths, but avoids the extreme, damaging high-water conditions that cause excessive ponding in today's impounded system. **Fred Sklar**: A new table will be added to highlight how different regions of the Everglades will hydrologically respond to the additional water in comparison to other locations and our water management. Clarifications will include narratives associated with IR versus gauge locations, NESRS targets, and adaptive management options. A discussion of the difference between a target and a performance measure will help identify the regions where habitats are expected to improve for fish and wildlife.

Comment No.	Commenter	Question/Comment	District Response
116	Dr. Nathan Dorn (Peer Reviewer)	A.1. Continued - What are the targeted ponding levels? Are there feasible options for adaptive management of ponding depths once the flow-way is completed and we start to experience the impacts of deeper water on the wetlands in NESRS?	**Walter Wilcox** and **Clay Brown**: Target water depth is only one performance measure used to define hydrologic improvement and is considered along with other performance measures, including flow magnitude, flow timing, sheetflow, hydroperiod extension, and other metrics. The depth targets identified by RECOVER for the ridge and slough landscape are derived in the NSM from a location in NESRS. This location was selected as representative of a target ridge and slough landscape based on the correspondence between this location's hydrologic performance and information from independent lines of evidence on ridge and slough characteristics. Once identified, this target was used as representative of the Greater Everglades overall ridge and slough landscape, spatially. In other words, the same target applies in ENP and the WCAs. Relative to current conditions, this target is similar to southern WCA-3A in terms of overall depths, but avoids the extreme, damaging high-water conditions that cause excessive ponding in today's impounded system. **Fred Sklar**: A new table will be added to highlight how different regions of the Everglades will hydrologically respond to the additional water in comparison to other locations and our water management. Clarifications will include narratives associated with IR versus gauge locations, NESRS targets, and adaptive management options. A discussion of the difference between a target and a performance measure will help identify the regions where habitats are expected to improve for fish and wildlife.

Comment No.	Commenter	Question/Comment	District Response
117	Dr. Nathan Dorn (Peer Reviewer)	A.1. Continued - What are the targeted ponding levels? The two different sets of normalized ponding depth curves (gage and IR) for NESRS (IR 129 vs. gage NESRS_3) compared with other regions lead to different senses of the projected (and targeted) hydrologic conditions in NESRS. If I examine the gage projections as a guide of ponding then C240 projected conditions (Fig. 4-17) are in between the ponding depths for central WCA-3A (Fig. 4-9 EARECB) and SE WCA-3A (Fig. 4-10 EARECB), but they are notably closer to the ponded conditions in the overly deep SE WCA-3A where ridges and tree islands are being lost or have been lost (Fig. 3-4). But examining the IR projections (129 vs. 123 and 124 or Figures 4-30 vs. 4-26 and 4-27) then the ponding conditions look more similar to central WCA-3A which is well preserved ridge and slough with some remaining tree islands. Perhaps the difference between the ponding depth normalization curves is caused by the spatial averaging of the IR analyses (easterly conditions are probably shallower)? In any case, **the target depths for the NESRS and how they relate to currently intact vs. degraded ridge-slough systems is somewhat unclear from the analyses and should be presented in a way so that the reader can tell what the target is and whether the projections are giving us what we are targeting**. RECOMMENDATION: A similar comparative analysis of the ponding depths could be conducted with the normalized depth curves in NE and NW WCA-3A versus central WCA-3A and I suspect they would look favorable. The entire region was historically ridge-slough landscape and using central WCA-3A as a target at least shows how far we are returning towards ponding levels that sustained ridge and slough for the past 60 years.	**Walter Wilcox** and **Clay Brown**: Target water depth is only one performance measure used to define hydrologic improvement and is considered along with other performance measures, including flow magnitude, flow timing, sheetflow, hydroperiod extension, and other metrics. The depth targets identified by RECOVER for the ridge and slough landscape are derived in the NSM from a location in NESRS. This location was selected as representative of a target ridge and slough landscape based on the correspondence between this location's hydrologic performance and information from independent lines of evidence on ridge and slough characteristics. Once identified, this target was used as representative of the Greater Everglades overall ridge and slough landscape, spatially. In other words, the same target applies in ENP and the WCAs. Relative to current conditions, this target is similar to southern WCA-3A in terms of overall depths, but avoids the extreme, damaging high-water conditions that cause excessive ponding in today's impounded system. **Fred Sklar**: A new table will be added to highlight how different regions of the Everglades will hydrologically respond to the additional water in comparison to other locations and our water management. Clarifications will include narratives associated with IR versus gauge locations, NESRS targets, and adaptive management options. A discussion of the difference between a target and a performance measure will help identify the regions where habitats are expected to improve for fish and wildlife.

Comment No.	Commenter	Question/Comment	District Response
118	Dr. Nathan Dorn (Peer Reviewer)	A.2. Does this plan exacerbate the deep flooding (i.e., ponding problems) in SE WCA-3A? One apparent limitation of this plan is the continued degradation of SE WCA-3A and I became additionally concerned, after reading the entire document, that the impact of the A-2 reservoir (i.e., deep ponding depths) might actually cause an even deeper condition in parts of SE and E WCA-3A.	**Walter Wilcox** and **Clay Brown**: Target water depth is only one performance measure used to define hydrologic improvement and is considered along with other performance measures, including flow magnitude, flow timing, sheetflow, hydroperiod extension, and other metrics. The depth targets identified by RECOVER for the ridge and slough landscape are derived in the NSM from a location in NESRS. This location was selected as representative of a target ridge and slough landscape based on the correspondence between this location's hydrologic performance and information from independent lines of evidence on ridge and slough characteristics. Once identified, this target was used as representative of the Greater Everglades overall ridge and slough landscape, spatially. In other words, the same target applies in ENP and the WCAs. Relative to current conditions, this target is similar to southern WCA-3A in terms of overall depths, but avoids the extreme, damaging high-water conditions that cause excessive ponding in today's impounded system. **Fred Sklar**: A new table will be added to highlight how different regions of the Everglades will hydrologically respond to the additional water in comparison to other locations and our water management. Clarifications will include narratives associated with IR versus gauge locations, NESRS targets, and adaptive management options. A discussion of the difference between a target and a performance measure will help identify the regions where habitats are expected to improve for fish and wildlife.

Comment No.	Commenter	Question/Comment	District Response
119	Dr. Nathan Dorn (Peer Reviewer)	A.2. - Continued - Does this plan exacerbate the deep flooding (i.e., ponding problems) in SE WCA-3A? The lack of benefit to this SE WCA-3A was listed on page 40 with figure 4-28 and in a couple other areas, but needs to be plainly listed as a limitation that CEPP cannot reverse although it is ubiquitously listed as a degraded part of the system. Furthermore, **the full degree of the problem under C240 needs to be clarified and does not seem to be fully explored with the IRs and gages presented**.	**Walter Wilcox** and **Clay Brown**: Target water depth is only one performance measure used to define hydrologic improvement and is considered along with other performance measures, including flow magnitude, flow timing, sheetflow, hydroperiod extension, and other metrics. The depth targets identified by RECOVER for the ridge and slough landscape are derived in the NSM from a location in NESRS. This location was selected as representative of a target ridge and slough landscape based on the correspondence between this location's hydrologic performance and information from independent lines of evidence on ridge and slough characteristics. Once identified, this target was used as representative of the Greater Everglades overall ridge and slough landscape, spatially. In other words, the same target applies in ENP and the WCAs. Relative to current conditions, this target is similar to southern WCA-3A in terms of overall depths, but avoids the extreme, damaging high-water conditions that cause excessive ponding in today's impounded system. **Fred Sklar**: A new table will be added to highlight how different regions of the Everglades will hydrologically respond to the additional water in comparison to other locations and our water management. Clarifications will include narratives associated with IR versus gauge locations, NESRS targets, and adaptive management options. A discussion of the difference between a target and a performance measure will help identify the regions where habitats are expected to improve for fish and wildlife.

Comment No.	Commenter	Question/Comment	District Response
120	Dr. Nathan Dorn (Peer Reviewer)	A.2. - Continued - Does this plan exacerbate the deep flooding (i.e., ponding problems) in SE WCA-3A? As I looked through all of the evaluation tools it struck me that the CEPP C240 plan could be worse than the figures and document were plainly indicating. I simply could not tell for certain the degree of the problem. Figure 4-3 seems makes it look like areas that are blue (deeper) have turned green (shallower) under C240, while Fig. 4-10 (ponding depth for the WCA_3-28 gage) indicates no change and that >50% of the time the gage will be > 2 ft deep. For the same region Fig. 4-28 (IR 124) indicates that there will be no change in ponding depths of SE WCA3A – again, even though Fig. 4-3 looks like the over-deep eastern side will get shallower. Another thing somewhat misleading about Fig. 4-3 is that conditions in southeastern WCA3A (Fig. 4-10) are very deep compared with central WCA3A (Fig. 4-9) although they are all shaded in that same sweet range of 1-2 feet across all of Fig. 4-3. Later in the document when I examined the wading bird and alligator projections (Figs. 4-38 and 4-39) it appeared that that conditions in SE WCA-3A would become even deeper under C240 based on the projected decreases in alligator habitat suitability and wood stork/wading bird foraging conditions.	**Walter Wilcox** and **Clay Brown**: Target water depth is only one performance measure used to define hydrologic improvement and is considered along with other performance measures, including flow magnitude, flow timing, sheetflow, hydroperiod extension, and other metrics. The depth targets identified by RECOVER for the ridge and slough landscape are derived in the NSM from a location in NESRS. This location was selected as representative of a target ridge and slough landscape based on the correspondence between this location's hydrologic performance and information from independent lines of evidence on ridge and slough characteristics. Once identified, this target was used as representative of the Greater Everglades overall ridge and slough landscape, spatially. In other words, the same target applies in ENP and the WCAs. Relative to current conditions, this target is similar to southern WCA-3A in terms of overall depths, but avoids the extreme, damaging high-water conditions that cause excessive ponding in today's impounded system. **Fred Sklar**: A new table will be added to highlight how different regions of the Everglades will hydrologically respond to the additional water in comparison to other locations and our water management. Clarifications will include narratives associated with IR versus gauge locations, NESRS targets, and adaptive management options. A discussion of the difference between a target and a performance measure will help identify the regions where habitats are expected to improve for fish and wildlife.

Comment No.	Commenter	Question/Comment	District Response
121	Dr. Nathan Dorn (Peer Reviewer)	A.2. - Continued - Does this plan exacerbate the deep flooding (i.e., ponding problems) in SE WCA-3A? There are even deeper regions in eastern WCA-3A (i.e., immediately W and NW of the intersection of the Miami Canal and L67A) that were not addressed in this document, but they appear to be quite deep from the wading bird evaluation (Fig. 4-39). The water in those areas can already be well over 4 ft deep at times during the wet season. From what I see CEPP cannot do anything to address this, but might be making it deeper(?). **The depths in SE WCA-3A and east WCA-3A need to be clarified in the re-evaluation**.	**Walter Wilcox** and **Clay Brown**: Target water depth is only one performance measure used to define hydrologic improvement and is considered along with other performance measures, including flow magnitude, flow timing, sheetflow, hydroperiod extension, and other metrics. The depth targets identified by RECOVER for the ridge and slough landscape are derived in the NSM from a location in NESRS. This location was selected as representative of a target ridge and slough landscape based on the correspondence between this location's hydrologic performance and information from independent lines of evidence on ridge and slough characteristics. Once identified, this target was used as representative of the Greater Everglades overall ridge and slough landscape, spatially. In other words, the same target applies in ENP and the WCAs. Relative to current conditions, this target is similar to southern WCA-3A in terms of overall depths, but avoids the extreme, damaging high-water conditions that cause excessive ponding in today's impounded system. **Fred Sklar**: A new table will be added to highlight how different regions of the Everglades will hydrologically respond to the additional water in comparison to other locations and our water management. Clarifications will include narratives associated with IR versus gauge locations, NESRS targets, and adaptive management options. A discussion of the difference between a target and a performance measure will help identify the regions where habitats are expected to improve for fish and wildlife.

Comment No.	Commenter	Question/Comment	District Response
122	Dr. Nathan Dorn (Peer Reviewer)	A.2. - Continued - Does this plan exacerbate the deep flooding (i.e., ponding problems) in SE WCA-3A? Along with the question of the over deep eastern portions of WCA-3A that receive no benefit (at best) I am wondering if it was logistically infeasible to add more water movement capacity to the northern portion of 3B, raising those ponding depths (in a region that experiences no benefits except in dry years) and letting more water move east from the ponded parts of eastern WCA-3A against the L67A. This was an important drawback and I failed to see why more of this water could not be moved into northern WCA-3B to manage the ponding and associated ecological damage in E-SE WCA-3A. It appears to me there was almost no ecological benefit in WCA-3B in an absolute sense and if anything it might actually be further degraded by further drying of the northern portion where the sloughs have filled in (part B.4.). If the depths in eastern WCA-3A are actually worse under C240 and moving water to 3B is a logistical impossibility then explanations of both need to be provided in a re-evaluation. Although the net effect of CEPP alternative C240 for alligators and wading birds trends positive, the improvements in northern WCA-3A and NESRS appear to be considerably offset by the degradation in SE WCA3A and the negligible responses in 3B.	**Walter Wilcox** and **Clay Brown**: Target water depth is only one performance measure used to define hydrologic improvement and is considered along with other performance measures, including flow magnitude, flow timing, sheetflow, hydroperiod extension, and other metrics. The depth targets identified by RECOVER for the ridge and slough landscape are derived in the NSM from a location in NESRS. This location was selected as representative of a target ridge and slough landscape based on the correspondence between this location's hydrologic performance and information from independent lines of evidence on ridge and slough characteristics. Once identified, this target was used as representative of the Greater Everglades overall ridge and slough landscape, spatially. In other words, the same target applies in ENP and the WCAs. Relative to current conditions, this target is similar to southern WCA-3A in terms of overall depths, but avoids the extreme, damaging high-water conditions that cause excessive ponding in today's impounded system. **Fred Sklar**: A new table will be added to highlight how different regions of the Everglades will hydrologically respond to the additional water in comparison to other locations and our water management. Clarifications will include narratives associated with IR versus gauge locations, NESRS targets, and adaptive management options. A discussion of the difference between a target and a performance measure will help identify the regions where habitats are expected to improve for fish and wildlife.
123	Dr. Nathan Dorn (Peer Reviewer)	Figure 4-1. This figure has small font and is difficult to read. Some of the gages in 4-1a are not used and some of the IR in 4-1b are not evaluated. Perhaps you could make this two figures and place them after 4-4. Figures 4-2, 4-3, 4-4 – It would be helpful to outline (with a dashed line) the central Everglades (area of primary focus here).	**Dong Yoon Lee**: We will re-create Figure 4-1 and use a full page for Figure 4-1a and Figure 4-1b. Regarding Figures 4-2, 4-3, and 4-4, we are considering replacing the average rainfall year map with a long-term (1965-2005) average output.
124	Dr. Nathan Dorn (Peer Reviewer)	I believe that I am to read the results of the hydrologic analyses (4-2, 4-3, 4-4) as the outcome of all of the component parts of CEPP included in the evaluation - meaning with all parts in place that are listed in Figure 1-6 (e.g., A2 Reservoir, backfilled Miami Canal, Blue Shanty Levee, etc.). Is that correct?	**Walter Wilcox**: Yes, the reservation is necessary to protect the water that will be used by the full CEPP project, not just individual components or implementation phases.

Comment No.	Commenter	Question/Comment	District Response
125	Dr. Nathan Dorn (Peer Reviewer)	I might have missed the definition, but can someone please explain the exact meaning of "ponding depth" (as reported in fig. 4-3)? Is it just average water depth at the site for the year (including below-ground/negative depth values)?	**Clay Brown**: The modeled ponding depth in Figure 4-3 represents the average annual ponding depth for an average rainfall year (1978) and dry rainfall year (1989). The annual average ponding depth is computed using simulated daily water levels for each model cell only when the water level is above land surface (i.e., only positive values) and computed as follows: When water level is greater than land surface elevation, then ponding depth equals water level minus land surface. Note that land surface represents an average within each model cell. The ponding depth for the year indicated is computed by accumulating the daily ponding depth for the water year and dividing by the number of days (in the year) when the ponding depth is greater than zero. **Dong Yoon Lee**: We will add a brief method of ponding depth calculation in the figure caption.
126	Dr. Nathan Dorn (Peer Reviewer)	Can someone please explain the meaning of the vector colors and arrows in Fig. 4-4? I assume vector size and color indicate something about expected volumes but I guess they could also indicate something about confidence in the direction?	**Clay Brown**: The modeled surface vectors in Figure 4-4 represent the average annual surface vectors for an average rainfall year (1978) and dry rainfall year (1989). The size and color of vectors represent the magnitude of flow within a model cell relative to all other model cells – the magnitude is not associated with any value. The colors are grouped according to magnitude (arrow size); this is to help the reader identify changes in magnitude. The direction of the arrow represents an annual average direction of flow using vector data for the corresponding year. The intent of the vector plots is to provide the reader with overall flow directionality and magnitude relative to other model cells. The reader should not attempt to compute flow (i.e., transect flows). **Dong Yoon Lee**: We will include the information provided by Clay Brown.

Comment No.	Commenter	Question/Comment	District Response
127	Dr. Nathan Dorn (Peer Reviewer)	Fig. 4-5 and Fig. 4-11 and the evaluation of the water budgets. Are the arrows for the water budget indicating the approximate or nearly exact location of structures along the canals (e.g., in particular the S345 structures and other structures on the L67). I'm asking because it is difficult to look at that discharge into 3B (Fig. 4-5) and reconcile it with the expected 3B water flow in Fig. 4-4 and the ponding depths in 4-3. Water does not generally flow SW in 3B under C240 (Fig. 4-4) and lots of water is going in (Fig. 4-5 budgeted inflows across L67) and yet ponding depths are reduced across WCA-3B in an average year (4-3). Perhaps the structures are not located in the areas where they are listed? This just needs a little explanation.	**Raul Novoa**: The arrows do not always correspond to spatial location, they are meant to illustrate movement across the water budget control volume. Just to clarify, structures S-151 and S-345D discharge to WCA-3B north of the Blue Shanty Levee. S-345F and S-345G discharge into the Blue Shanty Flow-way. Average year does not imply that it represents the annual average of the period of record. **Dong Yoon Lee**: We will revise the captions of the water budget figures according to the information from Raul Novoa.
128	Dr. Nathan Dorn (Peer Reviewer)	Figs. 4-22 and 4-32 are exactly the same figure.	**Dong Yoon Lee**: We will delete Figure 4-32.
129	Dr. Nathan Dorn (Peer Reviewer)	Section 4.2.2. Page 44. The meaning of the last sentence is unclear: "which.." (what effect?) "…can cause a transition to wet prairie and slough/open-water marsh communities." Is the wet prairie a problem? If so, why include "and" in between wet prairie and slough? Which of those two are you hoping to avoid and what causes the transition?	**Dong Yoon Lee**: Agreed. We will clarify the sentence.

Comment No.	Commenter	Question/Comment	District Response
130	Dr. Nathan Dorn (Peer Reviewer)	Section 4.3. Throughout: what is the exact meaning of using 1978 as an "average year?" Was that an average precipitation year or an average water depth for the period of record? The start of the section (perhaps on page 47) could use a brief explanation of the limitations of the ecological and modeling evaluations (for some taxa we have no models) and explanation for the choices of evaluation periods or years (e.g., wet, dry, average).	**Clay Brown**: Analyses of rainfall data in Central and South Florida using normal and log normal probability distributions were fitted to annual rainfall for the entire District area. The results of the analysis indicate the District receives a regional annual average rainfall of 53 inches, a dry annual average of 44.3 inches, and a wet annual average of 62.5 inches. Using the above statistics as a guide, representative years corresponding to annual District rainfall were selected. In addition, the annual rainfall for the antecedent year was considered. In other words, the annual rainfall preceding the "selected" year should also be consistent. In summary, 1978 was selected to represent an average rainfall year, 1989 a dry year, and 1995 a wet year. Reference Documents: Alaa, A. and W. Abtew 1999. Regional rainfall frequency analysis for Central and South Florida. Technical Publication WRE #380. South Florida Water Management District, West Palm Beach, FL. Sculley, S.P. 1986. Frequency analysis of SFWMD rainfall. Technical Publication 86-6. South Florida Water Management District, West Palm Beach, FL. **Dong Yoon Lee**: We will add a brief explanation provided by Clay Brown. Also, we will explain the differences and limitations of the ecological model.
131	Dr. Nathan Dorn (Peer Reviewer)	This summary was generally helpful as far as it goes. The legend for Table 4-1 should be adjusted if you are including crayfish in the table because they are not listed as species (e.g., *Procambarus fallax*), nor are they state threatened. WCA-3B will not experiencing increased ponding that would help crayfish production and that should be removed from the table.	**Mark Cook**: We will re-evaluate the hydrologic responses in the over-drained regions of WCA-3B to determine if it will experience increased hydroperiods and improved conditions for crayfish. **Dong Yoon Lee**: Increased hydroperiods and ponding depths in WCA-3B would help crayfish production; these hydrologic improvements will be shown better in updated Figures 4-2, 4-3, and 4-4. (Suggested new table caption: Comparison of effects on Everglades species, including federally and state-listed threatened and endangered species, within the Central Everglades ecosystem under the existing conditions baseline and Alternative C240.)

Comment No.	Commenter	Question/Comment	District Response
132	Dr. Nathan Dorn (Peer Reviewer)	B.1. Synthesizing responses. The profound challenge of synthesizing the spatially explicit hydrological changes with the ecological changes can be illustrated by considering the projected benefit to Wood Stork foraging in 3B (cited in Table 4-1, illustrated in Fig. 4-39). Storks eat fish. Fish populations are not projected to benefit from C240 in 3B except in a record dry year (Fig. 4-37b), nevertheless storks see a 30-year average improvement of foraging conditions in 3B (Fig. 4-39b). From the analyses of the ponding depths in 3B (Figs. 4-13, 4-29) it was judged that the ponding depths with C240 would provide negligible ecological benefits (page 28). Therefore, the responses are difficult to synthesize. Storks are either benefiting from better projected hydrological conditions or fish densities but obviously change much in 3B. If the benefit to storks is projected to come from fish production in record low water years I can hardly believe it would produce an average increase in habitat use over 30 years. It remains possible that storks are responding to some subtle change to the C240 hydropattern that cannot be captured in the normalized ponding curves (i.e., I realize the model includes other hydrological variables, including recession). I do not know what this means, but at any rate the projected response of the stork seems less certain in 3B. In contrast, the synthetic responses of birds, fish, and hydrologic shifts in northern WCA-3A appeared quite logical.	**Mark Cook**: The reviewer makes a good point: neither the hydrologic conditions nor the fish responses are sufficiently large enough in WCA-3B to account for the projected wood stork improvements. We will add wording in the text to this effect. **Dong Yoon Lee**: The updated map of hydroperiod (new Figure 4-2), a grand average of hydroperiod for the entire simulation period, shows increased hydroperiods in eastern WCA-3B where the wood stork model predicts a positive change (increases in the abundance of foraging habitat). We will add discussion describing a hydrologic linkage to the wood stork change. We will add two more citations: Beerens, J.M., E.G. Noonburg, and D.E. Gawlik. 2015. Linking dynamic habitat selection with wading bird foraging distributions across resource gradients. PLoS ONE 10(6):e0128182. Cook, M.I. and M. Kobza (eds.). 2009. South Florida Wading Bird Report. South Florida Water Management District West Palm Beach, FL. Revision suggestion: "The WADEM determines spatially explicit changes in high-quality foraging conditions for wading birds relative to baseline scenarios. WADEM uses a spatiotemporal species distribution model framework to evaluate the foraging responses of wading birds. Using a multi-model approach, a wading bird foraging index was produced from a spatial foraging conditions model (SFC) and a temporal foraging conditions model (TFC). The SFC predicts wading bird patch abundance over time at a fixed spatial scale (400 meters), and the TFC predicts daily abundance across space (patch quality). The resulting indices represent proxies for different components of patch dynamics: patch abundance is reflected by the SFC, and patch quality within suitable depths is reflected by the TFC. The product of these two indices is a foraging index to account for both processes." We will edit the Figure 4-39 caption using following information: Output/Metric: Foraging indices and landscape abundance Graphs: Wood Stork – percent change in mean daily foraging index (SFC × TFC) White ibis and great egret – percent change in mean daily individual abundance (TFC) (same as landscape abundance) Maps: Wood stork and white ibis – mean daily SFC values and percent difference of those means for March and April over all years. We will make a significant revision in the Technical Document.

Comment No.	Commenter	Question/Comment	District Response
133	Dr. Nathan Dorn (Peer Reviewer)	B.2. Section 4.2.3 Wet Marl Prairies. The benefits and losses to marl prairies are confusing in the document. The concept of positive and negative (benefits or losses) here is all mixed together. This section could be labeled "Cape Sable Seaside Sparrow" rather than marl prairie because the model does not really evaluate suitability of hydroperiods for marl prairie, but rather for prairies that support CSSS habitat. The evaluation started by stating there will be benefits of C240 to prairie vegetation, caused by increased hydroperiods (sentences 2-3), but then went on in most of the section to explain the marginal losses for the CSSS by making it wetter (Fig. 4-34). Is this a benefit or a loss? If you had a separate evaluation of the vegetation I would suggest you put the sparrow habitat projections in a separate section. I did not see notice a citation or hyperlink to a model in this section.	**Dong Yoon Lee**: This section will be divided into two sections: a marl prairie section and the CSSS. We are considering adding a duration curve supporting this vegetation section. Because there are no IRs in the eastern and western prairies, we would use a duration curve at ENP_G3437, representing the eastern prairies, and another curve at NP-205 (Figure 4-20), representing the western prairies (as was also used to represent CSSS Subpopulation A in the CEPP PIR). We will create a new CSSS section under the Section 4.3. We will make a significant revision in the new section explaining the marl prairie CSSS model. **Mark Cook**: The reviewer is correct, benefits to the CSSS brought about by a reduction in hydroperiod in the Subpopulation A region are not necessarily ecologically beneficial to the western marl prairies, which are currently over-drained and would benefit from increased hydroperiods.
134	Dr. Nathan Dorn (Peer Reviewer)	B.3. Section 4.3.2. Crayfish response. Fully evaluating benefits to crayfish will require additional hydrologic evaluation of the eastern marl prairies. The benefits to crayfish in northern WCA-3A (*P. fallax*) are likely, especially in NE WCA-3. Lack of benefit, even potential losses of production in western marl prairies are probably the most concerning (notes below and see B.5. – wading birds on SW coast). I previously worked on crayfish habitat suitability models for the JEM lab in 2009-2010 (Dorn 2010), but it was not ever translated to their new evaluation format. The situation for the slough crayfish (*Procambarus fallax*) is tricky because they tolerate long hydroperiods, but also grow after droughts (Dorn and Cook 2015). I would expect positive effects in northern WCA-3A (especially NE WCA-3A) based on the ponding depth curves produced for the northern WCA-3A where projected average depths are between 0.8 and 1.4 ft (assuming I am reading the curve correctly; the average should be around the 50% mark) with modest and occasional dry conditions which can be beneficial for *P. fallax* population growth. The model for Everglades crayfish (*P. alleni*) would have been a decent starting point for evaluation though the model had some weaknesses (most were caused by EDEN model inaccuracy). The importance of the response of Everglades crayfish	**Mark Cook**: The reviewer's comments are highly pertinent, and they highlight the likely limited or even negative impact of CEPP on crayfish populations, especially in the western marl prairies. We will make the suggested changes to reflect this. Unfortunately, the use of additional hydrologic and ecological (crayfish) models is not possible at this time.

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		(*Procambarus alleni*) should not be overlooked, however because explosive population growth of Everglades crayfish was probably most responsible for the ibis irruption in 2018 in SW ENP near the coast (see point made later under B.5.; Cook and Baranski 2019). Everglades crayfish generally do not persist in sites that stay perennially flooded (Dorn and Trexler 2007; Hendrix and Loftus 2000) so that sentence in section 4.3.2 should be changed. But results from some studies in ENP (Acosta and Perry 2000, 2002) indicated their population growth will also be limited by short hydroperiods (i.e., most likely improving from 5 to 9 months flooded). I find it likely that increases in hydroperiods in the eastern marl prairies (see section B.2. on wet marl prairies – benefits or losses?) will improve Everglades crayfish production. But in order to demonstrate as much a gage or IR in the eastern rocky glades/marl prairies should be established and included in this technical report and examined to determine how much the hydroperiods have lengthened. Examining altered hydroperiods of the eastern and western marl prairies should constitute an additional pair of Indicator Regions (IR) for re-evaluation. I believe it is possible to argue that crayfish productivity will likely improve in these over-dried wetlands if the hydroperiods are sufficiently improved. Without a spatial evaluation of the hydroperiod it is hard to tell, but Fig. 4-2 only shows a shift in hydroperiod at the edge of SRS and it appears subtle. The situation in the western Everglades is different and potentially more important and an IR should be established in the western marl prairie as well because I would guess that the hydroperiod is getting shorter in that region (consistent with CSSS habitat improvements - B.2.). NP-201 declines in hydroperiod by about 12% from 85% flooded to 73% flooded (Fig. 4-19). That difference may be negligible at the gage, but it will not lead to improvement and I would expect negligible or negative effects on Everglades crayfish when considering western ENP as a whole. Beerens et al. (2017) made model predictions for crayfish (both species) in ENP based on hydroperiod matching for the two species of crayfish that could possibly be used for evaluation, but their	

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		projections contained great deal of uncertainty that the authors acknowledged in the paper. Notably, although ibis feed heavily on crayfish when nesting (Boyle et al. 2014; Dorn et al. 2019) their model projected that ibis use would increase in ENP while they simultaneously predicted a decrease in production of crayfish. Their model predicted the opposite of what we observed in 2018 (see B.5.; Cocoves 2019, Dorn et al. 2019).	
135	Dr. Nathan Dorn (Peer Reviewer)	B.4. Section 4.3.3. Alligators. Moderate benefits for alligators appeared relatively clear. I see the benefit overall to the alligators, particularly in the north and in NESRS. I did not notice a citation or hyperlink to a model in this section. One response of the alligators in the model runs was surprising. I could not see why they should decrease in SE WCA-3A based on the run of the IR 124 which shows almost no change in ponding depths (Fig. 4-28). Looking at the map it appears the major decline of suitability for an average year with C240 happens against the L67A which suggests that the ponding depths are getting much deeper against the L67A levee (see Part A.2.). After examining the alligator output and considering about the suitability for alligators I realized IR 125 was not evaluated for ponding depth, but the alligator model output for an average year clearly shows a decrease in suitability in an average year in northern 3B (Fig. 4-38A). When the suitability map is paired with Figure 4-3 it is clear that this is because an average year in northern WCA-3B gets even drier than it currently is. Therefore, I can only conclude that the few remaining sloughs will slowly close up, even in average years (see Part A.2.).	**Dong Yoon Lee**: Updated Figure 4-2 (a long-term average hydroperiod) supports a predicted decline in alligator habitat suitability index scores in areas adjacent to the L-67 levee and southern WCA-3A. We will evaluate hydrologic changes at IR 125 (might replace Figure 4-35 [3B-29]) to explain a predicted decrease in alligator suitability index in northern WCA-3B. Also, updated Figure 4-3 will be used to indicate a predicted decrease in ponding depth, which, as the reviewer pointed out, would decrease the habitat suitability score in northern WCA-3B. Add a citation: Shinde, D., L. Pearlstine, L.A. Brandt, F.J. Mazzotti, M.W. Parry, B. Jeffery, and A. LoGalbo. 2014. Alligator Production Suitability Index Model (GATOR–PSIM v. 2.0): Ecological and Design Documentation. South Florida Natural Resources Center, Everglades National Park, Homestead, FL. Ecological Model Report. SFNRC Technical Series 2014:1.). We will make a significant revision in the Technical Document.
136	Dr. Nathan Dorn (Peer Reviewer)	B.5. Section 4.3.4. Wading birds. Some additional details of how the summaries were conducted would benefit this assessment (see below). Some clarity about the hydrologic responses in the eastern marl prairies would also help. Clear improvements to conditions seemed evident and clearly explained in northern WCA-3A; hydroperiods, fish, crayfish (probably), and wading bird foraging all seem to change and improve together in a logical fashion. This coalescence of responses should be mentioned in this section and perhaps in	**Dong Yoon Lee**: Any confusion or misunderstanding likely is driven by a lack of pertinent information about the Wading Bird Distribution Evaluation Model description. We will clarify the model output and add absolute foraging abundance maps. The southern marl prairies west of SRS are not compartmentalized because these wetlands are isolated from agricultural and human developments. Unlike the eastern short-hydroperiod marl prairies, the western counterparts escaped from lowered water table stressors but suffer from extended hydroperiods and dry season water level reversals drowning CSSS nests (Davie et al.

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		the summary of the document. The net loss of landscape abundance to Wood Storks, their enigmatic responses in 3B (see B.1.), and the lack of potential benefits to wading birds in southern ENP, made the system-wide response appear marginal. [new paragraph] I cannot see the improvements or reductions in landscape abundance for either the white ibis or the wood stork given the way the foraging condition scores were presented. The results presented suggest that storks should gain foraging habitat (+162K acres), but the conclusion was that they would lose 2.1% landscape abundance? I guess that means the habitat they gain is marginal foraging habitat? The details of this evaluation and the meaning of the net change to ibis foraging habitat and landscape abundance need to be clarified. [new paragraph] For the wading birds and the snails it would be helpful to see the change in absolute terms from EARECB to C240 for at least an average year. The relative gains and losses are interesting, but may mean relatively little. [new paragraph] To that point, I find it quite strange to consider the eastern marl prairies of ENP to be a point of primary habitat gain for both storks and ibis. What makes it strange is that it appears the wading bird model projects an increased use of the eastern marl prairies by White Ibis and Wood Storks (Fig. 4-39) while the hydroperiod map presented in Fig. 4-2 indicates that hydroperiods are still 0-60 days or perhaps 60-120 days (maximum of only 4 months) and they changed marginally between scenarios. Is this just the change from constantly dry (EARECB) to being flooded for 1-3 months (C240)? Although this would be a small amount of flooding it should be probably be illustrated. Again, providing a gage or an indicator region (IR) in the eastern marl prairies would specify any subtle change occurring and help understand the benefit. Perhaps the eastern marl prairies will just provide some early dry season foraging habitat. [new paragraph] Additional Note: In late 2017 and early 2018, thanks to Hurricane Irma, the western ENP and southern BCNP experienced perhaps the wettest conditions (most flooded conditions) in the past 30 years (gages NP-205, NP-201, BCA20). The deep conditions were preceded by dry marl	2005). Deliveries of managed water during a critical nesting period is caused by regulatory water releases from the S-12A and S-12B discharge structures of WCA-3A. Although the model output shows a decline in southern Subpopulation A, we might want to test the model differently from other subpopulations due to differences in environmental conditions these subpopulation are experiencing. We will make a significant revision in the wading bird section of the Technical Document. **Mark Cook**: While areas of Subpopulation A have indeed experienced extended hydroperiods because of their proximity to the S-12 structures, the vast majority of the western marl prairies have experienced the opposite fate and are now considerably drier than they were pre-drainage. It has become evident in recent years that these wetlands are disproportionally important for wading bird foraging and are critical for supporting the coastal supercolonies, one of the major objectives of restoration, yet CEPP will provide no improvements in this respect. We need to include additional wording in the text to this effect.

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		prairies in the previous dry season (a pre-requisite condition for good Everglades crayfish recruitment) and the deep conditions in early dry season were followed by almost perfect drying for bird foraging over the early spring. In the same dry season ENP hosted an enormous number of wading bird nests, the likes of which had not been observed in 87 years (>36,000 White Ibis nests and >1,900 Wood Stork Nests; Cook and Baranski 2019). The overwhelming majority of these nests were in the western Everglades near the coastal estuaries (Cook and Baranski 2019). The increased hydroperiods in the marl prairies were likely involved in the White Ibis response as the adults provisioned young extensively with Everglades crayfish early in the season (Cocoves 2019, Dorn et al. 2019), and as already stated in part B.3. [new paragraph] While I recognize the legal problem of managing a huge wetland ecosystem for the benefits of maintaining a variety of seaside sparrow we should also recognize that the 2018 nesting event in the southern Everglades was historically noteworthy and correlated with wet conditions in the western and southwestern Everglades and southern Big Cypress. Such flooded conditions will not become more common with the CEPP – A2 (Alt C240) management regime as presented here, which appears to dry the western Everglades slightly more than it is currently (Figs. 4-3, 4-19, 4-20). While questions remain about wading bird irruption near the coast of ENP in 2018, shunting of water further eastward to the Blue Shanty and away from the S-12 structures and the western Everglades will not improve hydroperiods or prey animal production or wading bird nesting in SW ENP.	
137	Dr. Nathan Dorn (Peer Reviewer)	The second paragraph in section 4.3.4., was more of a statement about a wish to move wading bird colonies back to the SW ENP. That goal would appear to gain almost nothing from C240. There is a small gain to fish production (Fig. 4-37) in southern SRS, but the western side of ENP will be slightly dried out for the sparrow and so I read this as no net benefit. I think the paragraph needs to be removed or simply indicate that there is little expected benefit to the SW Everglades (Fig. 4-39). Right now it does little more than list	**Dong Yoon Lee**: Agreed. Although southwestern ENP (IRs 131 and 132) see improvements in hydroperiod and water depth, ecological benefits are minor or nonexistant, depending on the modeled species. We will consider deleting the sentence or revising it to illustrate negligible ecological benefits in southern coastal areas.

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		a general interest in moving birds back to SW ENP. The projections of the models indicate nothing of the sort with most of the benefits coming up in northern WCA-3A or in NESRS.	
138	Dr. Nathan Dorn (Peer Reviewer)	This model output needs a citation (perhaps Darby et al. 2015?) and a hyperlink to the JEM model if available. It appears that hydroperiods will become improved for snails in the northern part of WCA-3A. It is not obvious how the evaluation of the difference came to be expressed in terms of square miles or acres of habitat. It seems that the evaluation of habitat gained must come from some other values (absolute densities) and not the ones shown in the figure. I cannot tell what it might mean from the evaluation of differences, but in the only region of the central Everglades that supports endangered kite nesting today (i.e., under EARECB) the average year under C240 was unchanged or slightly worse (Fig. 4-40a; southwest corner of WCA-3A). I'd guess that's a marginal response and would not take it too seriously. I cannot tell from the presented hydrologic analyses why that area should decline in predicted snail densities, but I'm also not convinced that a better analysis can be contrived given our current understanding of how this species responds to hydrologic variation. Further, a bigger unknown here for the kite is that the non-native snail (*Pomacea maculata*) response to these alterations remains unclear, but the kites have come to rely upon them as much or more than on the native snails.	**Dong Yoon Lee**: We will add a more detailed model description and citations and revise the figure caption. We also are considering presenting the model output separately for Alternative C240 and the ECB. We will add the following information: This size-structured population model simulates the response of apple snails to a range of water conditions that include timing, frequency, and duration, in addition to air temperatures (Darby et al. 2015). The numbers and size distribution of snails are simulated and can be calculated for any day of a year with input data. Adult snail population size during a given year is a product of egg production, and thus environmental conditions, from the previous year. The model was developed using EDEN and outputs begin starting in 1992. Results are shown for adult snails (>20 millimeters) during the spring (April 20), before that year's reproductive period. End of spring results are shown, as this is the population of snails of the size class consumed by the endangered Everglades snail kite. For a representative dry year (e.g., 2004), during the spring (April 20), adult apple snail population numbers increase in 454,000 acres of northern and central WCA-3A, WCA-3B, and SRS but decrease in 118,000 acres of eastern WCA-3A for Alternative C240 compared to the ECB.
Other Public Comments on Technical Document (April 2020)			
139	Siobhan Fennessy	Section 2.2 first paragraph, it is interesting that the results of this review process have been written into the document!	**Toni Edwards**: The draft Technical Document was originally written with future dates included as placeholders, including anticipated dates and outcomes for the peer review. It will be updated with the actual dates of occurrence for the steps in the water reservation development process, including the peer review, and reposted for public review as a May 2020 version.
140	Siobhan Fennessy	What is the fate of the portion of the Miami canal that will not be filled?	**Brenda Mills**: The northern portion of the Miami Canal that is not backfilled as part of CEPP will include conveyance features to move water into and through northwestern WCA-3A.

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141	Siobhan Fennessy	On page 12: it is not clear how these 2 outcomes differ: • In northwestern WCA-3A, CEPP will improve slough vegetation depths, reducing the time that water ponding depth in the sloughs falls below zero (i.e., fewer dryouts). • In northwestern WCA-3A, CEPP will provide longer durations (hydroperiods) when the CERP target ponding depths are achieved, which improves slough vegetation suitability.	**Raul Novoa**: In northwestern WCA-3A, CEPP will improve slough vegetation by reducing the time water ponding depths in the slough fall below zero (i.e., fewer dryouts). **Walter Wilcox**: Agreed. The statements are similar, but they illustrate two different, important outcomes: overall rehydration for landscape benefit (e.g., reduced soil oxidation, fire risk) and slough water refugia (e.g., for fish populations). **Fred Sklar**: Walter is correct. Creating a hydroperiod that is conducive for the re-establishment of a ridge and slough pattern is one performance measure. Reducing the occurrences of complete drydowns is relevant to the soil oxidation and peat fire performance measure.
142	Siobhan Fennessy	A future re-evaluation of the project could be aided by addressing the comments made above. For example, ecological indicators and performance targets could be used to assess the project's contributions to both the northern estuaries and the central Everglades region. This would be valuable to assess how well the water reservation is functioning, and point to adaptive management solutions if those are warranted.	**Fred Sklar**: You make a good point. The CEPP Adaptive Management Program has a suite of performance measures that are used to assess the degree of protection and restoration produced by drivers such as water reservations. This can lead to an evaluation of management options to improve the ecological benefits.
143	Siobhan Fennessy	The size of this figure is small yet it presents very detailed data on the vegetation communities. Its small size makes it difficult to detect any differences in dominant vegetation as indicated in the legend.	**Sue Newman**: These images are available at a higher resolution, and we can post them online and provide a link. In addition, we recently obtained new aerial imagery (2019) that once classified, will provide us further insight into vegetation changes.
144	Siobhan Fennessy	In addition, from Figure 4-1b and the associated text, it is not clear what the indicator regions are used for; adding some explanation on how the indicator regions are used in the analysis would be very helpful.	**Clay Brown**: IRs are a collection of cells that represent an area ecologic interest. IRs also represent multiple performance measure graphics (PMGs) and tables. It is important to note that all PMGs are not processed at all locations. The calculation method and locations where the PMG applies are defined by RECOVER. In summary, the IR maps provide a visual reference for multiple PMGs, but not every metric is applied to every location. For example, slough metrics are not applicable to marl areas.
145	Siobhan Fennessy	Figure 4-2. This figure shows the modeled hydroperiod under average and dry years for ECB and C240. As the figure is presented, it is difficult to make out the differences between the model results from this figure; in most cases the cells have the same color in each simulation. Perhaps a third panel could be to highlight the differences obtained for each cell. The same is true for Figure 4-3.	**Clay Brown**: In Figures 4-2 and 4-3, the regions with the most differences are in the northern portion of WCA-3A and NESRS. Other differences can be seen in the Blue Shanty Flow-way and WCA-2A. An improved way of displaying the information will be considered. **Dong Yoon Lee**: We will consider replacing the yearly average with long-term average maps.

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146	Siobhan Fennessy	Please define the meaning of the color of the arrows their length.	**Clay Brown**: The modeled surface vectors in Figure 4-4 represent the average annual surface vectors for an average rainfall year (1978) and dry rainfall year (1989). The size and color of vectors represent the magnitude of flow within a model cell relative to all other model cells; the magnitude is not associated with any value. The colors are grouped according to magnitude (arrow size) to help identify changes in magnitude. Arrow direction represents an annual average direction of flow using vector data for the corresponding year. The intent of the vector plots is to provide overall flow directionality and magnitude relative to other model cells. The reader should not attempt to compute flow (i.e., transect flows). **Dong Yoon Lee**: We will edit the caption according to the information provided by Clay Brown.
147	Siobhan Fennessy	It is interesting that in the average year, conditions at the end of the flow path that runs to the southwest (SRS), appear to be nearly the same for the ECB and C240 simulation. It would be useful to comment on this in the text.	**Raul Novoa**: Figure 4-22 shows flow vector directions and is not a good indicator of ponding depths, hydroperiod, and flow volumes. Flows going across a transect at this location would be more conclusive. Please look at Transect 27 in Figure 4-22.
148	Siobhan Fennessy	This figure is difficult to read. Do the symbols within the box and whisker plots indicate a data point for the average duration (weeks) for each IR? How does the NSM462 differ from the ECB? This isn't discussed in the text. Finally, what are the RECOVER performance measures that are referenced at the bottom of the figure (in orange)– are these the targets for the distributions?	**Fred Sklar**: Not all performance measures come with discrete targets, especially habitat suitability performance measures. The performance measures indicate Alternative C240 and its associated additional 370,000 ac-ft of water will make a difference to the wildlife and fish and thus should be reserved. It also makes a significant difference to peat soil oxidation, slough restoration and landscape pattern, but these parameters are not the focus of this report.
149	Siobhan Fennessy	The text of the Document indicates that this is the water budget for WCA-3A, however the legend says WCA-3B. In addition, the water budget information for WCA-3A presented is difficult to make out, particularly when searching for a particular gate or structure number. Perhaps the structures discussed in the text could be highlighted?	**Dong Yoon Lee**: We will revise the caption.
150	Siobhan Fennessy	What methods were used to make these assessments of the effects on different federally and state listed species? Methods are not provided in the text in support of this table.	**Fred Sklar**: This table is based on a combination of the models presented in this Technical Document, model output from the CEPP PIR, an understanding of the biology and environmental requirements of each species and the best professional judgement of the federal and state ecologists working on Everglades restoration projects.

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151	Siobhan Fennessy	The level of detail in the Technical Document is appropriate in some places and lacking in others. If the Technical Document is designed to allow an evaluation of the basis on which the predictions about the performance of the water reservation and its contributions to fish and wildlife in the Everglades, then including more information in the Document is needed. The report is strong in presenting its case and presenting the results of the models that were used in the analysis, however, without more documentation on the methods, including information about the uncertainty associated with the model predictions, it is difficult to assess the results of the analyses. That said, the RSM is, as the report says, a "robust and complex regional scale model" that has been employed for a long time in Everglades restoration planning. The Technical Document provides information on the verification tests, the USACE validation procedure, and rounds of peer review that the RSM has undergone; this gives a high degree of confidence in the hydrologic predictions. The ecological models (which provide output of the United States Geological Survey's Joint Ecosystem Model Program) have also been under development for some time to be used in restoration planning. However, without some details on the structure and performance of the models, it is difficult to evaluate the predicted ecological benefits of the water reservation project that are described in the Document. More information could be provided on, for example, the approach used to validate or verify the models, the hydrologic inputs that were used in the ecological models, and what, if any, aspects of climate change projections were taken into account? It would also be helpful to provide details on any ecological indicators in use in the project, the relevant restoration performance targets that have been established, and how well the predictions of the ecological response as a function of the new hydrological conditions match those targets. Much of the information that was used to design and evaluate the water reservation project, including the data sources, the assumptions and methods applied are not described in detail in the report. For instance, there is no description of the data sources used.	**Walter Wilcox**: Agreed. The hydrologic modeling and use of RSM is well founded. In the original CEPP PIR (Appendix G, page 104), an exercise to propagate model calibration uncertainty through the performance measures and benefit modeling was performed. This analysis illustrated that the relative selections between modeled plan features were robust, even when accounting for error in the hydrologic modeling. **Leslye Waugh**: Reference(s) to the CEPP PIR and PACR, which include the requested details, can be added to the Technical Document.

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		This is understandable to some degree, it might be difficult to cover all of the work that went into the many aspects of this project in detail in a single report. This detailed information is undoubtedly in other reports, perhaps in the CEPP PIR and PACR. It may be that the level of detail isn't required or intended for this report, however, it if is meant to be a stand-alone, technical document as the question implies, then more detail will be needed to describe the data, analyses, assumptions, methods applied, and the interpretation and conclusions drawn from the analysis. If not, perhaps references to other documents would help to fill in the details.	
152	Siobhan Fennessy	There is a long history of research on water quality issues in South Florida, particularly the impacts of elevated phosphorus concentrations. The water of Lake Okeechobee is phosphorus rich, and the quality of water discharged from the lake must be improved before it can be "sent south." STAs have been created for the purpose of removing phosphorus and have been successful, and there is one planned in conjunction with the EAA Reservoir. The assumption made in the Technical Document is that the new STA (A-2) will remove phosphorus to the desired level; no contingency plans are presented about how the system will operate if P levels cannot be reduced to the low levels needed to meet water quality standards. This is a critical aspect for operations of the reservoir and the Technical Document presents no information on the anticipated capacity of the STA for phosphorus removal. The assumption is that the STAs will work, but there is not sufficient information presented to evaluate this assumption. Given the large volume of water that will move into the EAA Reservoir, and its average phosphorus concentration, has STA A-2 been sized properly so that it is large enough to handle to phosphorus leads? What level of treatment can be expected by this STA, either alone or in combination with the A-1 FEB and other, established STAs? Is it expected that the reservoir itself will remove phosphorus from the water that moves through it? Since the Reservoir is sited on former agricultural land, is there excess phosphorus in the soil that	**Sue Newman**: The CEPP Adaptive Management Plan considers management strategies such as changes in operational strategies (hydrologic pulsing, redirect flow, incremental increases in water levels), modifications to infrastructure, and vegetation management. Exactly which combination will be used will depend on Restoration Strategies performance. **Naiming Wang**: The process that led to the sizing of the EAA Reservoir and A-2 STA was presented in detail in the CEPP PACR and reviewed by the Assistant Secretary of the Army for Civil Works in 2019. In a nutshell, the DMSTA was used (Walker and Kadlec 2005). The DMSTA was developed and calibrated to information specific to South Florida to predict phosphorus removal performance of Everglades STAs and storage reservoirs. It was calibrated to data from 35 fully functional treatment cells with viable vegetation communities of various types. As the best available tool for simulating phosphorus removal performance of existing or planned storage reservoirs and STAs, the DMSTA is configured to allow integration with the SFWMD's regional hydrologic models (SFWMD 2005, 2012) and can be configured to simulate complex regional networks of STAs and reservoirs. The DMSTA is approved by the United States Environmental Protection Agency and the United States Department of the Interior, and it is a USACE-accepted model. It was peer reviewed and certified for CEPP use. Since 2005, the DMSTA has been commonly used by state and federal agencies for STA design and evaluation, including the Restoration Strategies Regional Water Quality Plan (2012), CEPP (2013), STA-1W Expansions (2014-2018), and others. The model assumptions implemented for the

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		might complicate operations? On Pg. 47 of the Document it states that phosphorus levels will be monitored, its potential effects will be evaluated, and options in the CEPP management plan will be implemented. What are those plans? Given the potential for issues with phosphorus, these are critical questions that should be discussed in the report (see also Mitsch 2019. Ecol. Eng138:155-159).	CEPP PACR follow those used in the Restoration Strategies Regional Water Quality Plan and CEPP, which are generally conservative. A maximum settling rate of 2.5 meters per year was assumed for the EAA Reservoir. It is equivalent to an effective steady-state settling rate of 1.0 meter per year. The annual removal rate of total phosphorus in the EAA Reservoir was estimated at 5%. According to data published by UF/IFAS (2012, https://edis.ifas.ufl.edu/pdffiles/SS/SS50300.pdf), EAA soils lead to an 28% increase in soil total phosphorus compared to uncultivated soils. Like other STA facilities built on previously farmed lands, the effects of legacy phosphorus are expected to be temporary. In fact, the A-1 FEB, which is adjacent to the EAA Reservoir, showed no net reduction of phosphorus during the first year of operation. The A-2 STA is not sized to treat all the additional water expected by the CEPP PACR alone. Proposed operation of the new A-2 STA and EAA Reservoir will efficiently integrate the new facilities with the existing facilities (i.e., the A-1 FEB, STA-2, and STA-3/4) and meet the WQBEL. As illustrated in Figure 1-7 for the timing of treated flows south into the Central Everglades under Alternative C240 compared to the ECB, the CEPP PACR Alternative C240 primarily uses available STA treatment capacity that exists in the dry season in STA-2 and STA-3/4. While peak flows in wet seasons are not increased, integration with the EAA Reservoir and A-2 STA provides additional flow attenuation and temporary storage capability, which results in improved water depth and flow conditions in STA-2, STA-3/4, and the A-1 FEB. The treatment efficiencies are expected to improve for STA facilities downstream to the EAA Reservoir. The estimated treatment total phosphorus removal rates per unit of area for these STAs and the A-1 FEB are between 0.56 to 0.84 $g/m^2/yr$ with an average 0.73 $g/m^2/yr$. “On page 47 of the Technical Document, it states that phosphorus levels will be monitored, its potential effects will be evaluated, and options in the CEPP management plan will be implemented. **Don Medellin**: The statutory authority granted to the SFWMD’s Governing Board under Section 373.223(4), F.S., does not give the SFWMD authority to regulate water quality under this water reservation effort.

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153	Siobhan Fennessy	In some places in the Document, it is not clear what the goals are for a particular portion of the project. For instance, on page 31 it says "Canal stages (L-29) exceed 8.5 ft NGVD29 during only approximately 5% of the simulation period within the eastern L 29 Canal segment under Alternative C240." Is there a target for how much time the stage should exceed 8.5 ft? Is this a favorable result? No indication of this is given.	**Walter Wilcox**: There is no specific target for the eastern portion of the L-29. The 8.5 ft refers to the current system Florida Department of Transportation constraint above which roadbed stability could be compromised; however, in the future, the road will be reinforced to allow stages up to 9.7 ft.
154	Siobhan Fennessy	The assumption is that the STAs will work, but there is not sufficient information presented to evaluate this assumption. Given the large volume of water that will move into the EAA Reservoir, and its average phosphorus concentration, has STA A-2 been sized properly so that it is large enough to handle to phosphorus leads? What level of treatment can be expected by this STA, either alone or in combination with the A-1 FEB and other, established STAs? Is it expected that the reservoir itself will remove phosphorus from the water that moves through it? Since the Reservoir is sited on former agricultural land, is there excess phosphorus in the soil that might complicate operations? On Pg. 47 of the Document it states that phosphorus levels will be monitored, its potential effects will be evaluated, and options in the CEPP management plan will be implemented. What are those plans? Given the potential for issues with phosphorus, these are critical questions that should be discussed in the report (see also Mitsch 2019. Ecol. Eng138:155-159).	**Sue Newman**: The CEPP Adaptive Management Plan considers management strategies such as changes in operational strategies (e.g., hydrologic pulsing, redirect flow, incremental increases in water levels), modifications to infrastructure, and vegetation management. Exactly which combination will be used will depend on Restoration Strategies performance. **Naiming Wang**: The process that led to the sizing of the EAA Reservoir and A-2 STA was presented in detail in the CEPP PACR and reviewed by the Assistant Secretary of the Army for Civil Works in 2019. In a nutshell, the DMSTA was used (Walker and Kadlec 2005). The DMSTA was developed and calibrated to information specific to South Florida to predict phosphorus removal performance of Everglades STAs and storage reservoirs. It was calibrated to data from 35 fully functional treatment cells with viable vegetation communities of various types. As the best available tool for simulating phosphorus removal performance of existing or planned storage reservoirs and STAs, the DMSTA is configured to allow integration with the SFWMD's regional hydrologic models (SFWMD 2005, 2012) and can be configured to simulate complex regional networks of STAs and reservoirs. The DMSTA is approved by the United States Environmental Protection Agency and the United States Department of the Interior, and it is a USACE-accepted model. It was peer reviewed and certified for CEPP use. Since 2005, the DMSTA has been commonly used by state and federal agencies for STA design and evaluation, including the Restoration Strategies Regional Water Quality Plan (2012), CEPP (2013), STA-1W Expansions (2014-2018), and others. The model assumptions implemented for the CEPP PACR follow those used in the Restoration Strategies Regional Water Quality Plan and CEPP, which are generally conservative. A maximum settling rate of 2.5 meters per year was assumed for the EAA Reservoir. It is equivalent to an effective steady-state settling rate of

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			1.0 meter per year. The annual removal rate of total phosphorus in the EAA Reservoir was estimated at 5%. According to data published by UF/IFAS (2012, https://edis.ifas.ufl.edu/pdffiles/SS/SS50300.pdf), EAA soils lead to an 28% increase in soil total phosphorus compared to uncultivated soils. Like other STA facilities built on previously farmed lands, the effects of legacy phosphorus are expected to be temporary. In fact, the A-1 FEB, which is adjacent to the EAA Reservoir, showed no net reduction of phosphorus during the first year of operation. The A-2 STA is not sized to treat all the additional water expected by the CEPP PACR alone. Proposed operation of the new A-2 STA and EAA Reservoir will efficiently integrate the new facilities with the existing facilities (i.e., the A-1 FEB, STA-2, and STA-3/4) and meet the WQBEL. As illustrated in Figure 1-7 for the timing of treated flows south into the Central Everglades under Alternative C240 compared to the ECB, the CEPP PACR Alternative C240 primarily uses available STA treatment capacity that exists in the dry season in STA-2 and STA-3/4. While peak flows in wet seasons are not increased, integration with the EAA Reservoir and A-2 STA provides additional flow attenuation and temporary storage capability, which results in improved water depth and flow conditions in STA-2, STA-3/4, and the A-1 FEB. The treatment efficiencies are expected to improve for STA facilities downstream to the EAA Reservoir. The estimated treatment total phosphorus removal rates per unit of area for these STAs and the A-1 FEB are between 0.56 to 0.84 $g/m^2/yr$ with an average 0.73 $g/m^2/yr$. **Don Medellin**: The statutory authority granted to the SFWMD's Governing Board under Section 373.223(4), F.S., does not give the SFWMD authority to regulate water quality under this water reservation effort.

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155	Siobhan Fennessy	The conclusion presented on page 28 about the Blue Shanty Flow-way is not well justified. Here it states that: "Within the Blue Shanty Flowway and the downgradient L-29 Canal, ecologically significant increases in annual hydroperiods are not found despite the addition of 0.3 to 0.7 ft of water during ponded times." Why is this the case? Is this because that part of the system typically has relatively deep water to begin with? If ponding depths are higher in the Blue Shanty flow-way (Figure 4-14), will this cause negative impacts to this part of WCA-3B, which was already considered to be impacted by excessive water depths?	**Fred Sklar**: WCA-3B has lost a great deal of its microtopography. As such, the large volumes of water, from three L-67A structures, that will be added to the Blue Shanty Flow-way have the potential to flood ridges and tree islands. The CEPP Adaptive Management Plan will facilitate the restoration of historical sloughs in this region. This is expected to increase sediment redistribution to tree islands and ridges. The hydroperiod does not change very much in the Blue Shanty region because the inflows and outflows are relatively high and equal. Without Alternative C240, water levels drop to zero about 4% of the time because the region is compartmentalized and rainwater has no outlet. With Alternative C240, water levels drop to zero only 2% of the time because the inflows are high enough to keep the sloughs hydrated year round (a critical performance measure). This is expected to improve conditions for fish and wildlife, especially during the dry season.
156	Siobhan Fennessy	There is a major assumption used in a conclusion presented on page 36 of the Document about the ecological response of the system. Here the Document states that "enhanced sheetflow (approximately 340% increase; Figure 4 25) will help restore and sustain the microtopography, directionality, and spatial extent of ridges and sloughs and improve the health of tree islands in the ridge and slough landscape." Are there any data or model outputs to support this statement? What are the minimum flow rates needed to restore and sustain the ridge and slough landscape and the associated tree islands, and will this hydroperiod generate those flows? Is there a quantitative understanding of the relationship between hydroperiod and flow that can be presented to support this conclusion? Without some evidence, this assumption hasn't been supported.	**Fred Sklar**: The results in CEPP that indicate significant slough restoration are the strongest support of this sentence. However, we agree that the sentence needs to be modified and, as such, will be changed to: "According to the flow experiments in the Decomp Physical Model (see the appendix to Chapter 6 of the 2019 SFER) enhanced sheetflow (approximately 340% increase; Figure 4-25) will help restore and sustain the microtopography, directionality, and spatial extent of ridges and sloughs and may improve the health of tree islands in the ridge and slough landscape (Wetzel et al. 2005)." Wetzel, P.R., A.G. van der Valk, S. Newman, D.E. Gawlik, T. Troxler-Gann, C. Coronado-Molina, D.L Childers, and F.H. Sklar. 2005. Maintaining tree islands in the Florida Everglades: Nutrient redistribution is the key. Frontiers in Ecology and the Environment 3:370-376.
157	Siobhan Fennessy	In another example, on page 38 it states: "The introduction of phosphorus into previously unimpacted areas (i.e., central and southern WCA-3A) might cause vegetation shifts, providing a minor adverse effect." How was it determined that this would be a minor effect? The impacts that are described in the next few sentences, for example, that elevated phosphorus levels can lead to sawgrass communities being replaced by cattails, do not seem minor.	**Sue Newman**: As currently worded, this text leads the reader to a more negative consequence than was intended. Our intent was to note that in enriched areas that are rehydrated, phosphorus can be released upon rewetting, which could translocate phosphorus downstream. However, the switch to cattail from sawgrass is something that occurs after extensive loading, following significant enrichment in the soils. The text will be revised to emphasize this.

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158	Siobhan Fennessy	There are other conclusions reached that need some supporting evidence. For example, it states on page 36 that central and southern WCA-3A will remain largely unaffected by Alternative C240; is this a neutral result since these areas are typically flooded under ECB? Similarly, on page 44 it states that there are vegetation trends within ENP in which slough/open water marshes switch to sawgrass marshes that are adapted to shorter hydroperiods. Is there a threshold for in hydroperiod length under which there is a transition to sawgrass? If that is known, does the transition back to slough/open water happen at the same hydroperiod length? The use of predictive ecological models based on this type of information would be useful in predicting the response to changing hydrology. This may have been done as part of the ecological modeling; if so it would be beneficial to include it.	**Fred Sklar**: Supporting evidence will be added.
159	Siobhan Fennessy	Will the increase in ponding depths in WCA-3B during all ponded times under Alternative C240 compared to ECB have a negative impact on the remnant ridge and slough, and tree island habitat in WCA-3B? Here the change in ponding depth is described as a negligible difference, but given the statements in the paragraph directly proceeding this one, the impacts could be substantial, particularly for a region that has suffered degradation. Of course, the EAA Reservoir can't meet all the hydrologic targets in the south Everglades system, but a statement on how the system might respond in this location would be a useful way to evaluate the project overall. A related issue arises page 41, where it says "Resumption of sheet flow and related patterns of hydroperiod extension will help restore pre-drainage water depth patterns;" this may be true, but how is this improvement quantified?	**Fred Sklar**: The modeling under Alternative C240 constrained the hydrology in WCA-3B to prevent tree islands from getting too inundated. The Adaptive Management option that might get implemented in WCA-3B will assess an incremental increase in ponding depths over a 15- to 20-year interval to allow sloughs, ridges, and tree islands to "build" microtopography.

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160	Siobhan Fennessy	In the discussion on the Cape Sable Seaside Sparrow (CSSS) on page 45, it states that there will be an increase in habitat are of 12,533 acres in Subpopulations A, northern AX, B, C, and F, while there will be a decrease of 13,759 acres in another area. Does this represent a net overall impact to this species? As the hydrology of the central Everglades is restored, there is expected to be shifts in suitable habitat for the CSSS, but in the short term will these potential impacts be detrimental to the CSSS populations?	**Dong Yoon Lee**: Increased water flow into SRS would increase depth and duration of this historically deep-slough ecosystem. This will reduce the extent of shallow-water edge in areas adjacent to SRS. An eastern shift of suitable habitat is expected in eastern marl prairies, while a northern shift of marl prairies is expected in Subpopulation A. The increased distance between Subpopulation A and other subpopulations in eastern marl prairies is predicted; however, we know very little about the behavior and capacity of inter-habitat dispersion of the CSSS. Increased connectivity between eastern critical habitat might be beneficial to the CSSS.
161	Siobhan Fennessy	Generally speaking, the Technical Document is sound, but it lacks some needed information on, for example, the ecological models used and quantitative analysis of the capacity of the STAs and FEB A-1 to deal with the volume of water planned to be discharged from Lake Okeechobee. Information could be provided on the relevant environmental indicators and performance standards that are being used as part of the restoration program. Clearly the EAA Reservoir will have substantial ecological benefits, but the lack of key information makes it difficult to fully assess the benefits of the project.	**Fred Sklar**: The FEBs and STAs associated with CEPP were simulated as part of the PIR and PACR. The constraint associated with these water management structures is based on maintaining a flow-weighted total phosphorus concentration of 13 ppb outflow. The DMSTA was used to constrain STA inflows so as to not exceed the required outflows. All indicators used in this Technical Document are the same as the performance measures used in the CEPP and PACR. It might be feasible to add an appendix with more detailed modeling information.
162	Siobhan Fennessy	It would be clearer to say “lost between 39% and 65% of its organic soils depth.	**Dong Yoon Lee**: We will revise the sentence according to the comment.
163	Siobhan Fennessy	Does the vegetation and patterning in central WCA-3A serve as a reference condition to set restoration targets with the new flows?	**Fred Sklar**: Central WCA-3A serves as a reference location where the ridge-slough-tree island landscape is the most preserved. The current hydrology in this location is similar to the hydrology predicted by the NSM and, as such, is more of a comparative reference site rather than a target.
164	Siobhan Fennessy	On page 53, the numbers presented on wood storks aren’t clear. Here it says: “Wood stork foraging conditions increase by approximately 297,000 acres (464 square miles) in northern WCA-3A, NESRS, and southeastern WCA-3B; however, wood stork foraging conditions decrease by 135,000 acres (211 square miles) in southeastern WCA-3A, resulting in an overall reduction of 2.1% in landscape abundance (1975 to 2005). Given that, should the overall effect of this be an increase in abundance?	**Dong Yoon Lee**: The wood stork model produces two different indices: the abundance of foraging habitat, which is presented in the figure, and a foraging index, which is a product of abundance and quality of foraging habitat indices. The latter was used to calculate the annual average (2.1%). Despite the relatively large areal increase in the foraging index, it results in an overall reduction (2.1%) because the foraging index in a large portion of coastal ENP is not improved by increased water flow. We will make a significant revision in this section of the Technical Document.

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Q&A During Public Comment Periods at the July 14 Rule Development Workshop #1, and Following the Workshop			
1	Diana Umpierre	I thought the final alternative was Alternative 3 (a revised USACE alternative from SFWMD C240A alternative). Can you clarify?	**John Mitnik**: Page ES-3 of the May 2020 Final Environmental Impact Statement (FEIS) gives a brief description of the differences. They consist of minor design refinements to Alternative C240 to reduce seepage. Additional details of the design refinements can be found within the body of the FEIS. A link to the FEIS is provided under Related Links/Planning and Authorization for the EAA Reservoir under the EAA Reservoir tab on the water reservations webpage at https://www.sfwmd.gov/our-work/water-reservations.
2	Diana Umpierre	Could you explain again the relationship between the EAASR project (incl the operation assumptions in the final USACE EIS) and the current LOSOM project going thru planning now?	**Leslye Waugh**: The current Lake Okeechobee System Operation Manual (LOSOM) Project process is expected to be complete in 2022 when the Herbert Hoover Dike rehabilitation is completed. LOSOM is being formulated for 2025, so it will include projects that will be completed in the next 5 years (e.g., C-43 and C-44). The EAA Reservoir is not expected to be completed until 2028, so the Lake Okeechobee schedule that accounts for the EAA Reservoir will be developed after the current LOSOM effort.
3	Diana Umpierre	Maybe it's a silly question, but could you clarify what species are included in the rule definition of "wildlife"? Does it mean both plant and animal species? Is it only for those animal and plant species that are threatened and/or serve as "indicators"?	**Dong Yoon Lee**: We have included ecological models for a list of indicator species such as wood stork, white ibis, alligator, apple snail, small fish, and Cape Sable seaside sparrow via marl prairie. We used our best judgment to determine crayfish distribution and abundance because no model exists. Small fish and apple snails are a major energy source for wading birds and alligators, whereas the higher trophic levels integrate the productivity of multiple trophic levels and design the landscape (referred to as architecture species).
4	Matthew Schwartz	I noticed that in the pre and post project simulations, that water flows were not expected to change much during the wet season - most changes were expected during the dry season. Referring to the graph with the blue and red lines (graph with curves). How does the EAA Reservoir decrease discharges to the estuaries if the flow south doesn't change during the wet season?	**Leslye Waugh**: With added storage in the EAA, the reservoir captures flow that otherwise would have been discharged to estuaries during the wet season and releases it during the dry season. Discharging south instead of east and west.
5	Matthew Schwartz	And when the reservoir is full - no capture correct?	**Leslye Waugh**: In short, yes. The EAA Reservoir does not just fill once and remain static. It's a very dynamic process of constant filling and emptying.
6	Scott Lindars	Does the recreation management plan intend to include waterfowl hunting opportunities?	**Don Medellin**: There are a number of recreational opportunities that are well suited for environmental purposes, bike riding, horseback riding, nature study, wildlife viewing, kayaking, fishing, and hunting. A detailed

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			response with listed recreational activities is located in the FAQ document on the water reservation webpage.
7	Matthew Schwartz	Was the EAA Reservoir ever compared in any document to other alternatives that used more land?	**Leslye Waugh**: As described in the Post Authorization Change Report (PACR), the District analyzed alternatives that included a 360,000 ac-ft reservoir. However, this alternative would have taken portions of the A-1 Flow Equalization Basin (FEB), which is presently a part of the District's Restoration Strategies Program. Alternative C240A was identified as the most cost-effective at 240,000 ac-ft, while maintaining the A-1 FEB, which serves an important water quality function, and provided the most benefits.
8	Matthew Schwartz	I meant not included in the footprint of the projects - additional sugar lands outside the current project footprint.	**Leslye Waugh**: Senate Bill 10 prohibited the use of eminent domain. Lands could only be acquired from willing sellers and there were no willing sellers adjacent to the project footprint in the analysis (A-2 lands and the A-2 expansion lands). The District's analysis conformed to the legislation. The PACR and FEIS contain information on the yellowbook alternative. Alternative C240A was selected as the most cost-effective plan.
9	Matthew Schwartz	Got it - so we went only with the limitations of the bill, and there was no in-depth science on what could have been achieved with more land?	**Leslye Waugh**: PACR process using law passed by Senate Bill 10. Essentially, we are given a "sandbox" to work in. Alternative C240A was the most cost-effective alternative.
10	Diana Umpierre	Just a comment, NOT a question: SB10 did NOT limit what could have been analyzed.	**Don Medellin**: Acknowledged.
11	Diana Umpierre	Could you include the PowerPoint presentation on the SFWMD website? Thank you Don. ;)	**Don Medellin**: The PowerPoint presentation will be available as a PDF document 2-3 working days after the workshop. Find it under the EAA tab on the water reservations webpage at https://www.sfwmd.gov/our-work/water-reservations.
12	Matthew Schwartz	Can you post a link to the draft rule?	**Don Medellin**: It's on our water reservations webpage, but I will provide a link in the next steps of the agenda.
13	Diana Umpierre	Quick question, just to clarify, the rule does not protect the amount of water itself, but from where the water is released from, correct?	**Don Medellin**: The way the rule is currently crafted, water would be released from the reservoir and discharged from structures S-624, S-625, and S-626. All three of these discharge structures deliver water that is being reserved to the Central Everglades for the protection of fish and wildlife. That is the water that is reserved under the draft rule criteria.
14	Matthew Schwartz	Was it in the packet of documents for this meeting?	**Don Medellin**: Not sure I completely understand what you mean by "packet of documents", but notifications were sent out that included the Zoom registration details and link to the water reservations website. This link provides information to a number of documents, such as the workshop agenda, draft rule language, technical document, final peer-review report,

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			etc. I will provide the link to our water reservations webpage further down in the presentation for easy access to that information.
15	Diana Umpierre	The rule was on the website.	**Don Medellin**: Yes, that is correct.
16	Jeremy McBryan	FYI - July 28 is a Tuesday (not Friday)	**Don Medellin**: The deadline for public comments is Tuesday, July 28.
17	Diana Umpierre	Thanks Don and rest of staff for the detailed info and all the Q&A docs.	**Don Medellin**: Acknowledged.
18	Matthew Schwartz	Based on the modeling for the EAA Reservoir that the district has conducted, is it the district's position that the new reservoir is not expected to change the amount of treated water going south during the wet season?	**Leslye Waugh**: Everglades restoration targets still require high wet season flows consistent with natural system behavior. While wet season flows may be similar on average, the reservoir and downstream infrastructure will still provide improvements relative to today's system: 1) Shorter term (daily, weekly or sub-monthly) peaks can still be attenuated; and 2) downstream conveyance (L-67s and Tamiami Trail) is enhanced, so this wet season flow will not necessarily cause high water conditions in the water conservation areas (WCAs).
19	Matthew Schwartz	I do have some follow-up with regard to the canal projects and conveyance out of the WCAs through the Miami Canal and the L67s. But feel that I still don't have the answer to the very narrow question I asked. Would like to work on that first. This is the graph that was presented at the last two workshops (graph on slide 23 of Workshop #1 presentation). It shows flows of treated water into the Central Everglades. The modeling shows no additional treated water moving into the Central Everglades from July through October - the height of the wet season. During drier times, there are greater flows. But I would like to know how SFWMD interprets this graph - i.e. the reason treated water flows don't increase during the wettest time of the year.	**Leslye Waugh**: While the question may be narrow, there's a lot of detail behind the data. The figure in the presentation shows the mean monthly flows over 36 years. Yes, the average in the wet season seems similar, but there is significant interannual variability among the years over the period of record. The key takeaway from the figure in the presentation was the additional flow provided by the project, especially in the dry season, provides hydrologic and ecological benefits to the Everglades. Here is some more detail behind the performance: 1) Performance is driven by natural system targets (defined by RECOVER and the project team) with consideration of constraints (canal capacity, high water stages, etc.). 2) On average, the graph shows the seasonal trends, but there is significant interannual (year-to-year variability). 3) In a difference calculation where positive values show months with more flow than current and negative numbers show months with less flow than current: a) "Wet" years like the late 1960s, late 1990s, and 2005 tend to send more wet season flow than current conditions (which help to improve Lake Okeechobee and both northern and southern estuaries); b) "Dry" years like the 1970s and 2001 tend to send less wet season flow and conserve the water for delivery in the dry season to avoid Everglades marsh drydown; and c. Because the trends are unique each year (driven by the targets and constraints in response to rainfall), the average performance shows "little"

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			difference in the wet season, but in reality, a more detailed review of the data provides more insight.
20	Matthew Schwartz	Leslye - I'm afraid I'm just not getting it. Even with the year to year variability, the modeling clearly shows increased dry season flows with the reservoir in place than without it. And believe the reason for that was explained during the science meeting. But the same modeling, taking into consideration the year to year variability, shows no difference in the flow of treated water south during the wet season. And that's also clear. My question is not about the net benefits of building the reservoir and the other associated projects. This particular question is, taking into account the year to year variability, the modeling shows no additional flows south during the three wettest months of the wet season - July to October. Why is that the case? Have a feeling that had I asked the reverse, i.e. why do the flows of treated water increase during the dry season, the question would have been answered already. The predictions of the model, in general, and averaged out over many years - more flows of treated water south during the dry season with the reservoir but no appreciable change in flows during the major part of the wet season - must have been considered by the SFWMD. And a reason for the difference in outcomes must have been considered as well.	**Leslye Waugh**: Acknowledged.
21	Matthew Schwartz	Putting aside the question of wet season flows, and with regard to the same graph we've been discussing, why does the district's modeling predict an increase in flows of treated water during the dry season? What factors does the district attribute those increased flows to?	**Leslye Waugh**: The increase in dry season flows is from the water stored in the reservoir that is carried over and released during the dry season.

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Q&A During Public Comment Periods at the August 6 Rule Development Workshop #2, and Following the Workshop			
1	Tom MacVicar	The water budget for the reservoir from the PACR model shows an average of 82 kaf released to the Miami and New River canals from the reservoir. This agrees with the number cited in the draft rule. However the model only shows 448 kaf going from the reservoir to the Everglades, for a total outflow of 530 kaf, not the 825 kaf stated in the rule. Can you please explain these numbers? Thank you.	**Leslye Waugh**: Based on the Alternative C240 model simulation for the PACR, the volume probability curves found in the technical document to support the water reservation, draft rule, and presentations given at the peer-review session and rule development workshops estimate the EAA Reservoir could discharge approximately 82,000 ac-ft during an average water year from the structure to the north back to the North New River and Miami canals and 825,000 ac-ft on average annually out of the other three structures to the adjacent storage and treatment facilities and south to the Everglades. I'm not sure where the 448,000 ac-ft and 530,000 ac-ft is coming from, but I will ask Walter Wilcox or Clay Brown from our modeling group to follow up with you on this question. **Walter Wilcox**: To answer your questions, I have attached the spreadsheet that calculates the flow exceedance curve in the EAA Reservoir Water Reservation technical document. As we have discussed in the past, the Regional Simulation Model (RSM) and Dynamic Model for Stormwater Treatment Areas (DMSTA) are used in parallel to fully represent the hydrologic and water quality performance of the reservoir. The spreadsheet has a README tab that explains the structure crosswalk and how the RSM Basins (RSM-BN) and DMSTA data are used to derive the EAA Reservoir outflows to the Everglades for water reservation purposes, which are higher than what is directly simulated in the RSM-BN.
2	Tim Breen	How and why was it determined that water released from S-628 to the Miami and New River Canals would not be reserved? Thanks.	**Jennifer Brown**: The water reservation is consistent with the analysis conducted in the PACR and authorized by Congress. The reservoir is a multi-use reservoir meeting natural system and other water-related needs. The PACR demonstrated that operating the EAA Reservoir consistently with how the Comprehensive Everglades Restoration Plan (CERP) envisioned Component G would capture more water that would otherwise be discharged to the northern estuaries and enable more water to be sent south to the Central Everglades. For more information, see the PACR posted on the District's website at https://www.sfwmd.gov/our-work/cerp-project-planning/eaa-reservoir.
3	Chris Johns	Could you please explain the relationship between the ~800 k ac-ft this rule would reserve and the ~370 k ac-ft identified in the PACR?	**Leslye Waugh**: The 825,000 ac-ft of water estimated to be discharged from the reservoir to adjacent storage and treatment facilities and sent south to the Everglades is existing and new water captured by the reservoir. The 370,000 ac-ft of additional water provided by the Central Everglades Planning Project (CEPP) as measured at the "red line", which

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			is the boundary between the EAA and WCAs is the new water above the existing or baseline condition provided by the project to the Everglades.
4	Gary Ritter	It was stated today that the 825K was existing water and new water. The new water part confused me because it was also stated 370K was new water. So is there new water above the 370K that would either go through the reservoir then south or just run south and not go through the reservoir?	**Leslye Waugh**: The reservoir will capture EAA basin runoff and water sent south from Lake Okeechobee. This includes existing and new water that can be captured by the additional storage and treatment of CEPP. The 825,000 ac-ft during an average annual water year is the amount of water that will be leaving the reservoir through the three structures to the adjacent storage and treatment facilities and then south to the Everglades. The 370,000 ac-ft average annually is the additional water above the existing condition at the "red line" (boundary between EAA and WCAs) due to the additional storage and treatment provided by CEPP.
5	Tommy Strowd (LWDD)	We are reviewing the work in the development of the Water Reservation Rule for the EAA Reservoir, and I'm hoping it's possible to obtain the calculation method used to derive the 825,000 ac-ft of water from the C240 modeling performed by SFWMD for the EAA Reservoir Section 203 Report?	**Walter Wilcox**: Attached is a spreadsheet that calculates the flow exceedance curve in the EAA Reservoir Water Reservation technical document. As we have discussed in the past, the RSM and DMSTA are used in parallel to fully represent the hydrologic and water quality performance of the reservoir. The spreadsheet has a README tab that explains the structure crosswalk and how the RSM-BN and DMSTA data are used to derive the EAA Reservoir outflows to the Everglades for water reservations purposes, which are higher than what is directly simulated in the RSM-BN. README tab: The RSMBN and DMSTA model are used together to help simulate the anticipated hydrologic and water quality performance of the EAA Reservoir (C240). While the RSMBN model has the ability to simulate daily hydrology, operations and routing, DMSTA is used to analyze longer term (i.e., annual) water quality outcomes. RSMBN leverages DMSTA flow targets to help inform its simulation of the STAs and while this approach ensures high correspondence between the two models at Lake Okeechobee and the "red line" inflow boundary to the WCAs, routing internal to the EAA associated with the STAs, A1FEB and EAA (A2) Reservoir may have differences. To most accurately quantify the water released from the reservoir to the downstream Everglades that provide the project's environmental benefits and needs to be reserved, a combination of RSMBN and DMSTA data represents the most accurate quantification. From a purely RSMBN perspective, the following crosswalk identifies the closest relationship between modeled outputs and EAA reservoir structures: A2RES to A1FEB: S624 = a2res2a1feb; A2RES to downstream STAs: S625 = a2res2umiami_S + a2res2Nnrhills_S; A2RES to A2STA: S626 = A2RES_to_ERSTA; A2RES to EAA water

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			supply: S628 = RES2miami + RES2NnrHillsBasin. RSMBN as applied for the EAA reservoir project will meet environmental flows (e.g. STA inflow targets) directly from available sources (e.g. EAA runoff) without ensuring a priority routing of source water through the upstream reservoir and FEB as DMSTA assumes. While this does not affect the regional water budget for the Lake or the Everglades, it can result in reduced utilization of the EAA reservoir in RSMBN. To help account for this modeling limitation, a post-processing exercise was performed to account for what RSMBN simulates as direct inflow into the STAs but DMSTA would have routed through the reservoir / FEB complex. The driving factor for this routing in DMSTA is the "A1 Demand from A2" term. This spreadsheet performs the necessary calculations to ensure that on an annual basis the volumes of water likely to pass through the EAA reservoir to the downstream Everglades (informed by both RSMBN and DMSTA) are quantified for the purposes of protecting these environmental releases through the EAA Reservoir water reservation. Prior to post-processing, the RSMBN identified ~471 kac-ft of average annual outflow from the EAA reservoir to the Everglades and after post-processing informed by DMSTA, this number increases to ~834 kac-ft on average annual basis. This volume represents a combination of EAA runoff and Lake Okeechobee discharges and is also a mix of existing and "new" water that is delivered by the A2 reservoir facility to meet the needs of the Everglades.
6	Kyle Grandusky	I'm reviewing the latest draft of the EAA Reservoir Water Reservation Technical Support Document and I'm looking for more information on the calculation methods used to derive the 825,000 acre feet of water from the C240 modeling simulation performed by the District for the CEPP PACR / Section 203 Report. Feel free to give me a call if it's easier to discuss what I'm looking for, or if my request should be directed to someone else.	**Walter Wilcox**: To answer your question, I have attached the spreadsheet that calculates the flow exceedance curve in the EAA Reservoir Water Reservation technical document. For the EAA project, the RSM and DMSTA are used in parallel to fully represent the hydrologic and water quality performance of the reservoir. The spreadsheet has a README tab that explains the structure crosswalk and how the RSM-BN and DMSTA data are used to derive the EAA Reservoir outflows to the Everglades for water reservations purposes, which are higher than what is directly simulated in the RSM-BN hydrologic model. It is important to note that this spreadsheet is intended to identify the most complete representation of reservoir outflows (as informed by all modeling efforts) and that 1) it utilizes the same modeling data used in the PACR and released in 2018, and 2) it in no way changes that project benefits (Lake Okeechobee or red line flows). I know that it can be confusing with multiple numbers in the dialogue (e.g., this calculation is consistent with, but different from the

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			"370,000 ac-ft additional flow" calculation), so please take a look and let us know if you have any follow-up questions.