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U.S. ARMY CORPS OF ENGINEERS
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CECW-SAD RIT

21 October 2020

MEMORANDUM FOR Assistant Secretary of the Army (Civil Works)

SUBJECT: Modified Water Deliveries to Everglades National Park and Canal 111 South Dade Projects Combined Operational Plan Draft Environmental Impact Statement and Water Control Plan – Final U.S. Army Corps of Engineers (USACE) Response to Independent External Peer Review

1. An Independent External Peer Review (IEPR) was conducted for the subject projects in accordance with Section 2034 of the Water Resources Development Act of 2007, Engineering Circular (EC) 1165-2-217, and the Office of Management and Budget's Final Information Quality Bulletin for Peer Review (2004).
2. The IEPR was conducted by Batelle Memorial Institute. The IEPR panel consisted of four members with technical expertise in economics, water management, environmental science, hydrology and hydraulic engineering, and climate preparedness and resilience.
3. The enclosed document contains the approved final written responses to the issues raised and the recommendations made in the IEPR report. The IEPR report and the USACE responses have been coordinated with the vertical team and will be posted on the internet, as required by EC 1165-2-217.
4. If you have any questions, please contact me or have a member of your staff contact Bradd Schwichtenberg, Deputy Chief, South Atlantic Division Regional Integration Team, at (202) 761-1367.

A handwritten signature in black ink that reads "Alvin B. Lee".

ALVIN B. LEE
Director of Civil Works

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Modified Water Deliveries to Everglades National Park and Canal 111 South Dade Projects Combined Operational Plan Draft Environmental Impact Statement and Water Control Plan

US Army Corps of Engineers Response to Independent External Peer Review

June 2020

Independent External Peer Review (IEPR) was conducted for the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 South Dade Projects Combined Operational Plan (COP) Draft Environmental Impact Statement (DSEIS) and Water Control Plan (WCP) in accordance with the Department of the Army, USACE, Water Resources Policies and Authorities' Review Policy for Civil Works (Engineer Circular (EC) 1165-2-217, February 20, 2018), and the Office of Management and Budget's (OMB's) Final Information Quality Bulletin for Peer Review (December 16, 2004). The goal of the USACE Civil Works program is to always provide scientifically sound, sustainable water resources solutions for the nation. The USACE review processes are essential to ensuring project safety and quality of the products USACE provides to the American people.

The IEPR was conducted by Battelle Memorial Institute (Battelle), a non-profit science and technology organization with experience in establishing and administering peer review panels for USACE. The IEPR panel consisted of four members with technical expertise in economics, water management, environmental and National Environmental Policy Act (NEPA), and hydrology and hydraulics (H&H)/climate preparedness and resilience (dual role). The IEPR panel comments are documented in the Battelle report titled "Final Independent External Peer Review (IEPR) Report, for the Modified Water Deliveries to Everglades National Park and Canal 111 South Dade Projects Combined Operational Plan, dated 22 May 2020."

Twelve IEPR final comments were developed by the panel, one of which was identified as having high significance, two were identified as having high/medium significance, three were identified as having medium significance, four were identified as having medium/low significance and two were identified as having low significance. USACE concurred with ten comments and did not concur with two comments. There were 26 recommendations made by the IEPR Panel; one recommendation had four parts (a-d). Of the 29 total recommendations received, 18 were adopted and 11 were not adopted. The following discussion presents the USACE final response to the comments.

Comment 1, High: Differences of 0.5 foot or less identified in the assessment of alternatives using the life safety model may not be accurate due to biases present in the model calibration and validation.

This comment includes one recommendation for resolution with four parts (a-d). Parts a, b and c were adopted, Part d was not adopted. The IEPR Panel concurred with the decision to not adopt Part d based on the explanation provided.

1. Explain how the Miami-Dade Regional Simulation Model (MDRSM) calibration to within ± 0.5 -foot accuracy affects:

a. The selection of the Preliminary Preferred Alternative over the other alternatives considered in the COP DEIS.

USACE Response: Adopted

Action Taken: MDRSM calibration is reasonable based on consideration of underlying parameter uncertainty and consideration of error tolerances used for other south Florida modeling applications of similar scope and scale. Additional explanation was added within Appendix H, Annex 6 (8.5 Square Mile Area (8.5 SMA) evaluation), Section H-6.2 and Section H-6.4. Plan selection is based on evaluations and constraint checks conducted using both the Regional Simulation Model - Glades Lower East Coast Service Area Application (RSM-GL) and MDRSM, based on relative comparisons between the alternatives and base conditions, not based on absolute model predictions.

b. The modeled flood risk and flood duration under the Preliminary Preferred Alternative in areas including the 8.5 SMA.

USACE Response: Adopted

Action Taken: The assessment of the 8.5 SMA flood mitigation constraint is based on a relative comparison between the MDRSM simulations of the 1983 Base Condition (represents the authorized flood mitigation level) and the Recommended Plan (MDRSM Alternative Qm), as documented in Appendix H, Annex 6.

Given recognition of the uncertainty with MDRSM model predictions and topography, further constraint checks at LPG-2 were conducted. Section H-6.7 was expanded to include information on MDRSM element resolution and LiDAR survey information considered by the USACE.

c. The modeled COP Round 3 alternatives having secondary events later in the wet season, where water levels temporarily rise above ground in response to moderate rainfall events due to the persistently higher groundwater stages.

USACE Response: Adopted

Action Taken: Persistently higher groundwater stage levels within the 8.5 SMA interior were identified during the original authorization for the MWD 8.5 SMA Flood Mitigation Project (USACE 2000 General Reevaluation Report), based on the MWD goals to increase freshwater inflows and stages within the adjacent ENP Northeast Shark River Slough. COP evaluations were conducted consistent with the COP evaluation methodology developed and coordinated with the interagency project delivery team (PDT) and COP flood risk sub-team prior to completion of the initial MDRSM modeling during Round 2 of formulation. The socioeconomics assessment in Appendix I indicates that flood risk management improvements are cumulatively evident for both scenarios, with some variability in performance evident

across the South Dade Conveyance System evaluation area. Additional documentation of the modeling tools was added to Appendix H, Annex 6 per IEPR response 1.a.

Based on consideration of model uncertainty, real-time flood mitigation tracking metrics were developed and are integrated within the COP WCP (refer to Appendix A Section 7.4.8.3.2 and Table 7.3 for C-357, which cross-references the 8.5 SMA monitoring plan in Part C.6 of Appendix C), informed by the successful application of these metrics during 2017-2019 field test operations and the 1983 Base Condition MDRSM modeling, to provide additional assurances for adherence to the flood mitigation constraint.

d. The modeled net additional flow volumes to the ENP, Florida Bay, and other areas to gain environmental restoration and/or flood risk mitigation benefits under the Preliminary Preferred Alternative.

USACE Response: Not Adopted

Action Taken: The modeled net additional flow volumes to the ENP, Florida Bay, and other areas under the Preliminary Preferred Alternative were quantified using the RSM-GL. Section 4 of the COP EIS details the significant ecological lift provided with implementation of COP Alternative Q+, compared to the No Action alternative that represents conditions without COP implementation (relative comparison). The 8.5 SMA Evaluations in Appendix H Annex 6 illustrate no significant effect from 8.5 SMA pumping operations. The MDRSM results provide no indication that COP inflows to ENP would need to be reduced for 8.5 SMA flood mitigation.

Comment 2, Medium/High: The COP DEIS does not support the assumption that the single selected wet year used in the life safety model (MDRSM) adequately represents the flood events necessary to assess how the COP changes extreme flood risk in the study area.

This comment includes two recommendations for resolution; both were adopted. The IEPR Panel concurred with the explanations provided for the two recommendations.

1. Provide information in the COP DEIS on how the period from May 2005 to April 2006 was selected as the wet year period for MDRSM.

USACE Response: Adopted

Action Taken: A document explaining the selection of Water Year 2006 as the wet period was added to the EIS, included in Annex 7 of Appendix H.

2. Provide documentation or data in the COP DEIS that supports the assumption that the May 2005 to April 2006 timeframe contains appropriate flood events to adequately investigate COP impacts to extreme flood risk in the study area.

USACE Response: Adopted

Action Taken: A document explaining why Water Year 2006 was chosen to investigate the flood risk in the study area was added to the EIS. Water Year 2006 had a total rainfall volume of 60 inches and a significant storm event in Hurricane Katrina that effected south Miami-Dade with 11.8 inches of rain over a three-day period (August 25 to 27). This information and a radar image of cumulative rainfall in south Miami-Dade County for the period of August 25 to 27, 2005 were included in Appendix H Annex 7.

Comment 3, Medium/High: It is unclear if the El Niño/La Niña process, which is recognized as a significant influence on the region’s precipitation patterns, was considered in the models.

This comment includes three recommendations for resolution. Recommendation 1 was adopted; recommendations 2 and 3 were not adopted. The IEPR panel indicated that based on the information provided by the evaluators’ response there is no “statistical evidence” that the lack of an explicit integration of the El Niño/La Niña processes in the analysis will have an impact on the project. The panel concurred with the non-adoption of recommendations 2 and 3.

1. Describe how El Niño/La Niña forecasts are integrated into the H&H modeling.

USACE Response: Adopt

Action Taken: Instead of forecasting El Niño/La Niña events, 41 years of observed rainfall data were used to represent the expected range of rainfall conditions in the project area based on the RSM-GL. Applied 41 years of observed continuous rainfall data is assumed to adequately represent the expected range of rainfall events experienced in the project area during the period of implementation (approximately 4 to 10 years). In fact, two El Niño events simulated within the model POR, 1982/1983 and 1997/1998, were stronger than the most recent very strong El Niño event of 2015/2016. Four strong La Niña events were also observed in the 1965-2005 period. Annex 9 was added to Appendix H and indicates that there is not enough strong evidence of statistical non-stationarity to warrant consideration within the decision-making process.

2. Describe how El Niño/La Niña forecasts were integrated into the scenarios used to conduct the socioeconomic flood risk analysis.

USACE Response: Not Adopted

Action Taken: The flood risk assessment conducted for the project implementation report (PIR) included application of both the RSM-GL (41-year period of record), as well as application of the MDRSM to assess project-specific constraints. A report describing the selection process is included in Annex 7 of Appendix H. Considering that the observed data used in estimation of design storm intensities includes decades of records with multiple occurrences of El Niño and La Niña events, an additional consideration for multi-decadal oscillations is not needed. Recently added Annex 9 of Appendix H indicates that there is not enough strong evidence of statistical non-stationarity to warrant consideration within the decision-making process.

3. Describe how El Niño/La Niña forecasts are integrated into the COP Adaptive Management and Monitoring Plan (AMMP).

USACE Response: Not Adopted

Action Taken: COP AMMP is intended to develop management options for the uncertainties in identifying the system and its responses to the natural variables. A potential change in the nature of multidecadal oscillations was not considered as one of the uncertainties, and an El Niño/La Niña forecast was not explicitly integrated into the COP AMMP. Due to the fact that 41 years of continuous data record was used in RSMGL, and more than 30 years of observed data were used in the development of selected design storms, the effect of the multi-decadal oscillations is assumed to be implicitly included in the analysis. Recently added Annex 9 of Appendix H further discusses the non-stationarities and trends in climate hydrology in the project area. It is indicated that there is not enough strong evidence of statistical non-stationarity to warrant consideration within the decision-making process. Potential

uncertainties for the system's responses to a possible range of climatic condition combinations will be monitored as described in the WCP and AMMP.

Comment 4, Medium: It is unclear if the socioeconomic analysis fully evaluated impacts to residential and agricultural assets from flooding influenced by groundwater and surface water antecedent conditions that the COP system could experience.

This comment includes two recommendations for resolution. Recommendation 1 was adopted and Recommendation 2 was not adopted. The IEPR Panel concurred with the non-adoption of recommendation 2 based on the explanation provided.

1. Describe what antecedent conditions were considered in the development of the scenarios used in the socioeconomic analysis.

USACE Response: Adopted

Action Taken: The final version of the socioeconomic appendix includes a better explanation of the antecedent conditions that were vital to the flood risk analysis.

2. Describe what antecedent conditions, if any, may limit the ability of the COP operational changes to manage flood risk under the Preliminary Preferred Alternative.

USACE Response: Not Adopted

Action Taken: The PDT feels the analysis of flood risk demonstrated in this EIS and associated appendices more than sufficiently attains the goal of verifying the constraint. Further exploration of reducing flood risk is outside of the scope of COP and not in line with the objectives and authorized purpose of the project.

Comment 5, Medium: The effective use of adaptive management to make future timely operational decisions and to address identified uncertainties under COP may be limited.

This comment includes two recommendations for resolution. Recommendation 1 was adopted and recommendation 2 was not adopted. The IEPR Panel concurred with the non-adoption of recommendation 2 based on the explanation provided.

1. Update the COP DEIS, WCP, and AMMP to better summarize the intent of the COP AMMP, primary authority/parties responsible for operational decisions, processes in place to achieve the intended objective, the effective use of key trigger points in informing management actions, and the limitations of the COP AMMP in addressing uncertainties within the expected 10-year duration of the COP.

USACE Response: Adopted

Action Taken: Section C.2.6 of the COP AMMP describes the processes and institutional structure through which adaptive management will be implemented. The COP AMMP adequately outlines the forums in which potential effects of the COP on the existing system will be discussed. As referenced in Section C.2.6, the COP PDT+ will be stood up to integrate information discussed across these forums

during semi-annual/annual meetings with the intent to develop task teams to address problems that require additional simulations, scientific development, and/or NEPA compliance.

Language has been added to the COP AMMP in Section C.1 and Section C.2.6.2 of the COP Final EIS to reflect that this is the first time an adaptive management process is being considered for operations and that it is anticipated that staff from the implementing agencies (the USACE, ENP, and the South Florida Water Management District (SFWMD)) will coordinate a kick-off meeting immediately following the implementation of the COP to develop the framework for implementation of the COP AMMP.

Language has also been added to Section C.1 and Section C.2.6.2 to reflect the timeframe associated with the implementation of COP, noting that the COP AMMP will only be able to address uncertainties that occur as a result of naturally varying climate during the period in which COP is the governing operational strategy. Because the natural system exhibits high interannual variability in rainfall, the project team has tried to integrate monitoring for COP into our long-term system-level monitoring in as much as possible. Many uncertainties with system performance can be enhanced through the implementation of CERP projects, and that is the primary driver of system enhancements moving forward. Continuing to implement CERP projects and to integrate these projects into system operations is among the most important tactic for addressing the uncertainties associated with COP.

2. Provide additional clarity regarding the mechanism, processes, timing, and limitations to implement AM options under Categories 2 (Not in the WCP or supported by COP DEIS) and 3 (Not under authority of COP) in the COP AMMP.

USACE Response: Not Adopted

Action Taken: The COP AMMP was developed consistent with the methodologies used in CERP projects which includes the above referenced adaptive management options. Consistent with prior AMMP developed in support of CERP, the project team did not want to limit development of adaptive management options to those with sufficient detail that are currently identified and incorporated into the WCP (i.e. Uncertainty 12b and Uncertainty 16b). If a Category 2 or Category 3 uncertainty appears to need development, the PDT+ team can suggest forming a task team to scope the challenge and recommend a strategy to obtain authority under a separate project and/or document NEPA compliance to agency leadership.

Comment 6, Medium: No analyses were performed to evaluate how the COP will be applied in cases of increases in precipitation, evaporation, temperature, and salinity related to climate change.

This comment includes two recommendations for resolution. Recommendation 1 was adopted and recommendation 2 was not adopted. The IEPR panel concurred with the non-adoption decision of recommendation 2 based upon the explanation provided.

1. Describe how climate change can affect the COP operation, benefits, and risks.

USACE Response: Adopted

Action Taken: Climate change related to future changes in precipitation, evaporation, temperature, and salinity intrusion would equivalently affect operations of the WCAs, ENP, and the South Dade Conveyance System under the existing WCP (ERTP 2012) and the proposed COP. The total habitat

function is higher with the COP in place under any Sea Level Change scenario and timeframe when compared to the no action condition (i.e. the 2012 ERTWP WCP).

Table 4-51 of the Draft EIS included a qualitative description of risks resulting from changed climate conditions in the future. The table shows the major project feature, the trigger event (climate variable that causes the risk), the hazard (resulting dangerous environmental condition), the harms (potential damage to the project or changed project output), and a qualitative assessment of the likelihood and uncertainty of this harm. This level of detail is consistent with current USACE Climate guidance.

The vulnerability assessment that was conducted for the COP, including literature review and hydrologic tool application, has been added as a new annex: Climate Change Assessment, Annex 9 of Appendix H. An expanded summary of key findings from the vulnerability assessment has been added to an expanded Section 4.21.2 of the main EIS.

The Sea Level Change climate assessment (Section 4.21.1) has been updated to include a Sea Level Tracker plot and discussion of interannual variability for the Key West gage; additional summary conclusions were added within Section 4.20.1 of the main report, with expanded text added to the Appendix H - Hydrology and Hydrology as a new annex (Annex 9).

2. Consider concurrent climate change-induced increased precipitation and sea level rise in the application or refinement of the COP AMMP.

USACE Response: Not Adopted

Action Taken: The impacts of future climate change and resulting ground water levels are not fully quantified at this time, but will be addressed more robustly in future studies as climate science and evaluation tools advance.

Through the COP AMMP (Appendix C, specifically Uncertainty #7), COP implementation will continue to monitor evolving science, programmatic efforts outside of COP and observed change conditions.

The COP was developed based on hydrologic modeling of a comprehensive range of hydrologic/precipitation conditions experienced within the COP project area using a period of simulation from 1965 to 2005. Based on consideration of the current schedules for implementation of the Comprehensive Everglades Restoration Plan (CERP), the COP WCP will govern operations of the WCAs, ENP, and South Dade Conveyance System for 4 to 10 years. Future WCP updates for the CERP will consider new information and recommendations from the implementation of the COP AMMP.

Comment 7, Medium/Low: It is unclear if a plan to minimize high-volume discharges at S-197 has been fully considered, given the potential for ecological and economic impacts.

This comment includes three recommendations for resolution, none of which were adopted. The IEPR panel concluded that the explanations provided, which clarified where information requested was already included in the COP EIS, resolved the panel's concerns, and the panel concurred with the non-adoption of all three recommendations.

1. Document the importance of keeping the extreme high water level (EHWL) criterion and infrequent S-197 high-volume flows in the COP, if applicable.

USACE Response: Not Adopted

Action Taken: The requested information is provided in Section 7.4.8.1.3.2 of COP WCP (Appendix A of the EIS or Chapter 7 of System Operating Manual (SOM) Volume 4).

2. Describe the features of the COP that explicitly stop or minimize S-197 high-volume discharges, if any.

USACE Response: Not Adopted

Action Taken: The requested information is provided in Section 7.4.8.1.3.2 of COP WCP (Appendix A of the EIS or Chapter 7 of SOM Volume 4).

3. Document whether a plan to avoid EHWL and/or high-volume discharges at S-197 was developed. If there is a plan, describe the plan and the system capacity (if any) to store water during high-runoff periods for later release during the dry season.

USACE Response: Not Adopted

Action Taken: The requested information is provided in Appendix A or Chapter 7 of SOM Volume 4 (Appendix J).

Comment 8, Medium/Low: The COP DEIS does not fully describe the impacts of increased nutrient loading on water quality associated with pulse discharges from S-197, which could stimulate harmful algae blooms (HABs) in Barnes Sound and Manatee Bay.

This comment includes three recommendations for resolution, all of which were adopted. The IEPR Panel concurred with the responses provided.

1. Expand the discussion of past HAB events and related marine resource impacts, including references to applicable literature, in the COP DEIS.

USACE Response: Adopted

Action Taken: Section 4.10 (Water Quality) was updated to reference potential effects of nutrient loading on HABs.

Language was also added to Section C.2.2.9 in the COP AMMP.

2. Provide a more detailed assessment of the positive and negative direct and indirect impacts of S-197 discharges with specific focus on the frequency and duration of larger events (>500 cfs) between the baseline and Alternative Q+.

USACE Response: Adopted

Action Taken: Section 4.10 has been updated to reference potential effects of nutrient loading on HABs with a cross reference to Section 4.2.4.5 (Florida Bay) and Section 4.6.4 (Mangrove Wetlands and Seagrass Beds) to provide a more detailed assessment of the positive and negative direct and indirect impacts of S-197 discharges between the baseline and Alternative Q+.

3. Provide a statement regarding the anticipated long-term and cumulative impacts associated with operation of the S-197 under COP.

USACE Response: Adopted

Action Taken: Section 4.10 (Water Quality) has been updated to reference potential effects of nutrient loading on HABs. See above response to Recommendation 1. Furthermore, Section 4.22 (Cumulative Effects), Table 4-53 has been updated under the “Water Quality” Resource.

Comment 9, Medium/Low: Risk and uncertainty associated with operational malfunction of primary system components, and the degree to which other system components could compensate, have not been evaluated.

This comment includes three recommendations for resolution, all of which were adopted. The IEPR Panel concluded that ample explanation and evidence has been provided and the Panel’s concerns are eliminated.

1. Provide a qualitative description of OMRR&R as it relates to operability of the COP, particularly with respect to repair and or replacement of operable flow control structures.

USACE Response: Adopted

Action Taken: A reference to MWD and C-111SD Operation, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R) was added to Appendix J, Chapter 1 of SOM Volume 4, Section 1.3. Related Manuals and Reports.

2. Describe emergency power generation needed for the system central control as well as individual electrically driven infrastructure.

USACE Response: Adopted

Action Taken:

- A. SFWMD’s Operations Control Center has its own emergency power generation and is located in a hardened building that can withstand against hurricane force winds up to Category 5.
- B. Most gated structures have remote and manual operations. The SFWMD operators have portable power tools to open and close gates manually. The main units of pump stations in SDCS are diesel and smaller auxiliary units are electric. If a pump station goes down, then the following water management actions will be taken in the order of priority based on system conditions and forecasted rains.
 - i. Divert flows to the other structures within the canal system
 - ii. Reduce inflows from Water Conservation Area 3A (WCA-3A) to Northeast Shark River Slough (NESRS)
 - iii. Install temporary pumps

A reference was added to Section 9.2 of Chapter 9 of the SOM Volume 4 (Appendix J) to describe the local sponsor’s system central control and redundancy systems.

3. Document whether a public warning system exists if project failure were to jeopardize public safety.

USACE Response: Adopted

Action Taken: Yes, there is a public warning system maintained by local county emergency management agencies. Emergency preparedness and response is primarily a state and local responsibility. When

there is a potential high-water emergency due to either structure or levee failure that may affect public safety, SFWMD and USACE water managers will immediately notify their respective dam-and-levee safety officers and emergency management officers to start the upward reporting and coordination among Federal, State, and County emergency agencies. Section 7.10 of Chapter 7 describes emergency procedures and deviations. Sections 9.1.5, 9.2, and 9.2.5 of Chapter 9 of the SOM were expanded with additional references to state and local agency responsibilities and interagency coordination procedures.

Comment 10, Medium/Low: Use of multiple linear regression statistics to relate processes that increase water depths in SRS Taylor Slough with the conditions and processes that change salinity in Florida Bay may not be sufficient to quantify salinity decrease in Florida Bay.

This comment includes two recommendations for resolution, both were adopted. The IEPR panel was satisfied with the response provided.

1. Provide information to support the assertion that changes in Florida Bay salinity are predominantly caused by changes in freshwater flows from upland, and explain that other factors like winds and bay currents play a minor role in Florida Bay salinity changes.

USACE Response: Adopted

Action Taken: Section 4.6.4 of the COP Draft EIS states that salinity throughout Florida Bay depends on the relationship and interaction of several factors, such as weather patterns (e.g. temperature and precipitation), tides, connectivity/mixing with adjacent basins, freshwater groundwater input and freshwater surface flow. Additional references have been cited within Section 4.6.4 on Page 4-105 and added to Section 7 of the COP Final EIS to provide further justification for freshwater flows influencing salinity in Florida Bay.

2. Provide additional information to support the assertion that long-term, small salinity decreases or small decreases in annual salinity extremes cause ecologically significant impacts on Florida Bay water.

USACE Response: Adopted

Action Taken: Additional references have been cited within Section 4.6.4 and added to Section 7 of the COP Final EIS to provide further justification that long-term, small salinity decreases or small decreases in annual salinity extremes cause ecologically significant impacts on Florida Bay. Language has also been added to support this justification.

Comment 11, Low: The property and agricultural areas impacted and the level of flood risk that would remain after implementation of AtIQ+ are unclear.

This comment includes two recommendations for resolution, both were not adopted. The IEPR Panel concurred that the explanations in response to the Panel's two recommendations are reasonable.

1. Provide a map comparing the base and preferred plans showing the probabilities of flooding in 8.5 SMA by depth contour.

USACE Response: Not Adopted

Action Taken: A probabilistic map of flooding within 8.5 SMA would be an excellent feature if the goal of COP was to further reduce flood risk through a combination of operations and structural components. However, that approach would be more appropriate under a separate study and authority (e.g. feasibility study) where the goal would be to address flood risk beyond a pre-project constraint. For such a study, additional modeling tools and/or an expanded simulation period for the MDRSM would be necessary to provide the appropriate statistical sample size for probability map development.

2. Describe the impact of Alternative Q+ compared to the alternatives discussed.

USACE Response: Not Adopted

Action Taken: Multiple operational scenarios were modeled, as previously described and evaluated within Annex 6 of Appendix H, to effectively bracket the elements of Alternative Q+ pertinent to the flood risk assessments. Annex 6 has a detailed analysis specific to the cells with higher risk and provides a sufficient level of detail, combined with the socioeconomic appendix (Appendix I), to confirm the constraint.

Comment 12, Low: The tabulated percentage change for locations that result in a reduction in flood damage during the wet year have been listed as though they had an increase in flood damages.

This comment includes one recommendation for resolution which was adopted. The IEPR panel concurred with the changes made.

1. Correct the table entries as appropriate and consider any potential impacts that may have resulted from the use of the data in the table.

USACE Response: Adopted

Action Taken: Table has been changed in the appendix.