Appendix C. Pertinent Correspondence

Herbert Hoover Dike
Dam Safety Modification Study

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C.1 National Environmental Policy Act (NEPA) Scoping

A NEPA scoping letter dated February 15, 2013 was mailed to stakeholders soliciting comments for this action. The scoping letter was used to invite comments from Federal, State, and local agencies, affected Indian Tribes, and other interested private organizations and individuals. Comments were accepted through March 18, 2013. Public scoping meetings were held February 26, 2013 in Clewiston, Florida and February 28, 2013 in Okeechobee, Florida. A Notice of Intent (NOI) to prepare the Environmental Impact Statement (EIS) for the Herbert Hoover Dike Dam Safety Modification Study was published in the Federal Register (78 FR Volume 11164-11165) February 15, 2013.

C.1.1 NEPA Scoping Letters

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

FEB 15 2013

To Whom It May Concern:

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a National Environmental Policy Act assessment for the Herbert Hoover Dike (HHD) Rehabilitation Project and Dam Safety Modification Study. The project is located in south central Florida within Glades, Hendry, Okeechobee, Palm Beach, and Martin Counties. This study will focus on the 143 miles of HHD embankment surrounding Lake Okeechobee. A Dam Safety Modification Study has been initiated for the HHD and will be focused on a system wide risk reduction approach as required for safety modifications to dams. The purpose of the study is to identify risk reduction measures that can be implemented to reduce risks in the HHD system.

On July 8, 2005, the Corps issued a Final Supplemental Environmental Impact Statement (EIS) and Record of Decision for the Major Rehabilitation actions proposed for Reach 1 of the HHD. Several additional EISs and Environmental Assessments (EAs) have been completed for Reach 1 of the HHD, including installation of a seepage cutoff wall. The EISs for Reach 1A, Reach 1B, 1C, and 1D, and Reaches 2 and 3 have been retracted by notice in the **Federal Register** on February 5, 2013 (78 FR 8118-8119). Most recently, an EA was completed in January 2012 evaluating impacts of an Alternative Rehabilitation Plan pilot test. The purpose of this pilot test, to be constructed in the southern portion of the HHD, is to seek lower cost solutions supporting the overall risk reduction strategy. Information gained from the pilot test will be used during the Dam Safety Modification Study.

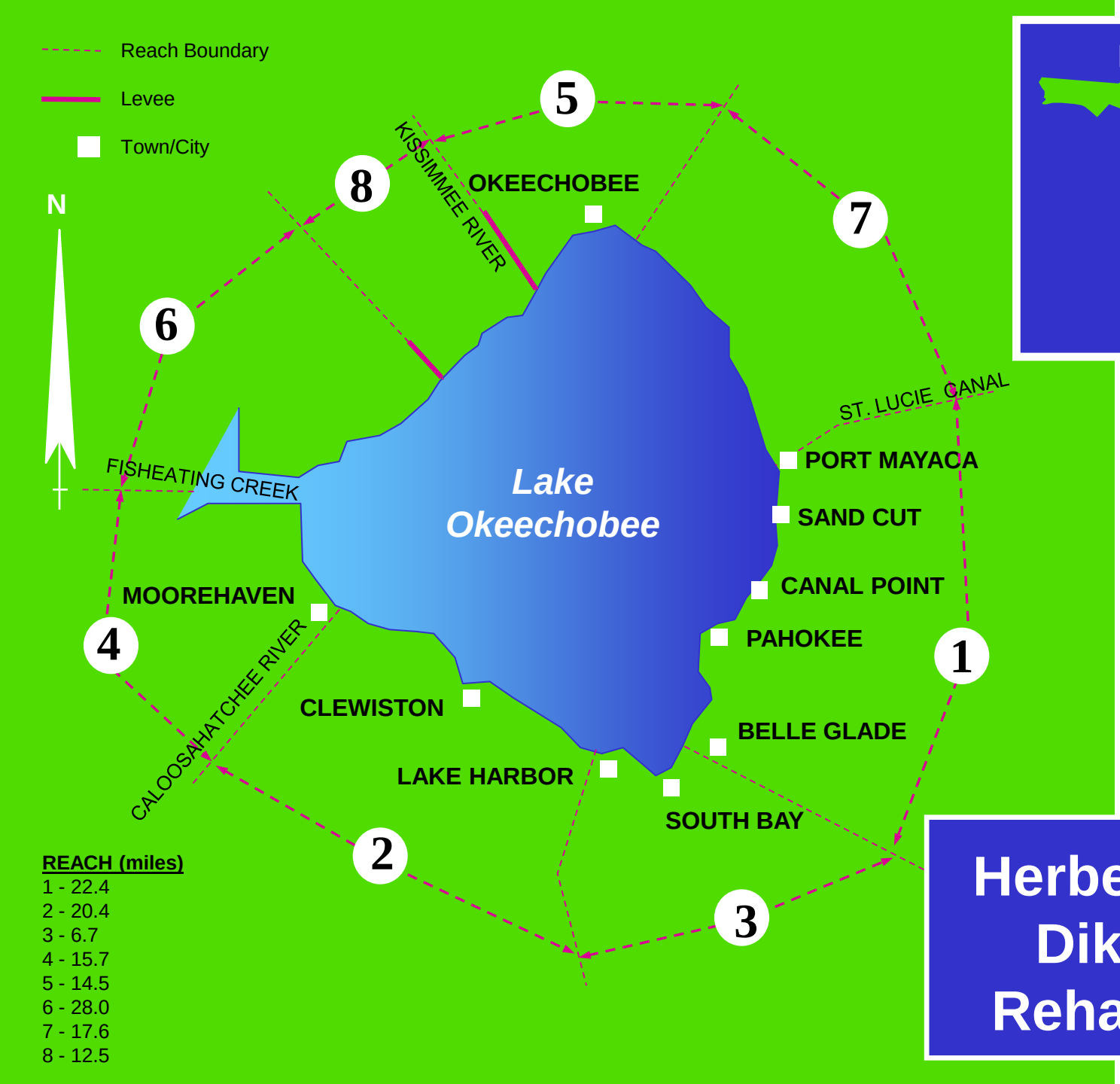
The Corps will hold a Public Scoping Meeting, including a project update, February 26, 2013 from 6:30 to 8:30 p.m. at the John Boy Auditorium, 1200 South W.C. Owen Avenue, Clewiston, Florida and February 28, 2013 from 6:30 to 8:30 p.m. at the Okeechobee County Health Department Auditorium, 1728 Northwest 9th Avenue, Okeechobee, Florida.

We invite the participation of Federal and state agencies, Native American Tribes, local agencies, interested parties, and individuals interested in providing comments and identifying any issues or concerns. Please share this notice with any interested party. Send any comments you may have to the attention of Ms. Angela Dunn (904-232-2108) at the letterhead address or email HHDEnvironment@usace.army.mil within thirty (30) days of the date of this letter. All individuals who respond with comments will be included in future mailings. Others may be added to the mailing list by making a written request (postcard) to the same address or by email.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosure



Herbert Hoover Dike Major Rehabilitation

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

MAR 13 2013

Planning and Policy Division
Environmental Branch

Honorable James Billie
Chairman, Seminole Tribe of Florida
6300 Stirling Boulevard
Hollywood, Florida 33024

Dear Chairman Billie,

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a National Environmental Policy Act assessment for the Herbert Hoover Dike (HHD) Rehabilitation Project and Dam Safety Modification Study. The project is located in south central Florida within Glades, Hendry, Okeechobee, Palm Beach, and Martin Counties. This study will focus on the 143 miles of HHD embankment surrounding Lake Okeechobee. A Dam Safety Modification Study has been initiated for the HHD and will be focused on a system wide risk reduction approach as required for safety modifications to dams. The purpose of the study is to identify risk reduction measures that can be implemented to reduce risks in the HHD system.

The Corps respectfully requests to meet with you and your staff routinely throughout the planning process to ensure any issues or concerns the Tribe may have are identified and we received your input regarding development of this plan. The Corps is requesting a standing bimonthly (every other month) meeting with you and/or designated staff to discuss the Tribe's view on the HHD Dam Safety Modification Study. The rationale behind this request is to provide a standing opportunity for open dialogue and government-to-government consultation throughout the HHD Dam Safety Modification Study planning process.

On July 8, 2005, the Jacksonville District, U.S. Army Corps of Engineers (Corps) issued a Final Supplemental Environmental Impact Statement (EIS) and Record of Decision for the Major Rehabilitation actions proposed for Reach 1 of the HHD. Several additional EISs and Environmental Assessments (EAs) have been completed for Reach 1 of the HHD, including installation of a seepage cutoff wall. The EISs for Reach 1A, Reach 1B, 1C, and 1D, and Reaches 2 and 3 have been retracted by notice in the *Federal Register* on February 5, 2013 (78 FR 8118-8119). Most recently, an EA was completed in January 2012 evaluating impacts of an Alternative Rehabilitation Plan pilot test. The purpose of this pilot test, to be constructed in the southern portion of the HHD, is to seek lower cost solutions supporting the overall risk reduction strategy. Information gained from the pilot test will be used during the Dam Safety Modification Study.

We look forward to the opportunity to meet with you. Please contact Ms. Ingrid Bon, P.E., at 561-472-8888 at your earliest convenience to schedule these bimonthly meetings.

Sincerely,

Alan M. Dodd
Colonel, U.S. Army
District Commander

Copy Furnished:

Craig Tepper, Director of Water Resource Management, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, Florida 33024
Jim Shore, General Counsel, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, Florida 33024
Willard Steele, Tribal Historic Preservation Officer, Seminole Tribe of Florida, 30290 Josie Billie Highway, PMP 1004, Clewiston, Florida 33440

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

MAR 1 3 2013

Planning and Policy Division
Environmental Branch

Honorable Colley Billie
Chairman, Miccosukee Tribe of Indians of Florida
Post Office Box 440021, Tamiami Station
Miami, Florida 33144

Dear Chairman Billie,

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a National Environmental Policy Act assessment for the Herbert Hoover Dike (HHD) Rehabilitation Project and Dam Safety Modification Study. The project is located in south central Florida within Glades, Hendry, Okeechobee, Palm Beach, and Martin Counties. This study will focus on the 143 miles of HHD embankment surrounding Lake Okeechobee. A Dam Safety Modification Study has been initiated for the HHD and will be focused on a system wide risk reduction approach as required for safety modifications to dams. The purpose of the study is to identify risk reduction measures that can be implemented to reduce risks in the HHD system.

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On July 8, 2005, the Jacksonville District, U.S. Army Corps of Engineers (Corps) issued a Final Supplemental Environmental Impact Statement (EIS) and Record of Decision for the Major Rehabilitation actions proposed for Reach 1 of the HHD. Several additional EISs and Environmental Assessments (EAs) have been completed for Reach 1 of the HHD, including installation of a seepage cutoff wall. The EISs for Reach 1A, Reach 1B, 1C, and 1D, and Reaches 2 and 3 have been retracted by notice in the *Federal Register* on February 5, 2013 (78 FR 8118-8119). Most recently, an EA was completed in January 2012 evaluating impacts of an Alternative Rehabilitation Plan pilot test. The purpose of this pilot test, to be constructed in the southern portion of the HHD, is to seek lower cost solutions supporting the overall risk reduction strategy. Information gained from the pilot test will be used during the Dam Safety Modification Study.

We look forward to the opportunity to meet with you. Please contact Ms. Ingrid Bon, P.E., at 561-472-8888 at your earliest convenience to schedule these bimonthly meetings.

Sincerely,

Alan M. Dodd
Colonel, U.S. Army
District Commander

Copy Furnished:

Bernie Roman, Miccosukee Tribal Attorney, PO Box 440021 Tamiami Station, Miami, Florida 33144
Fred Dayhoff, Section 106 and NAGPRA Consultant, PO Box 440021 Tamiami Station, Miami, Florida 33144
James Erskine, Water Resources Director, PO Box 440021 Tamiami Station, Miami, Florida 33144
Rory Feeney, Miccosukee Wildlife Director, PO Box 440021 Tamiami Station, Miami, Florida 33144
Terry Rice, Colonel (Retired), PHD, PE, Miccosukee Everglades Consultant, 6526 South Kanner Highway, PMB 316, Stuart, Florida 34997

C.1.2 Notice of Intent

statutory or regulatory violation by Whalen or any admission by Whalen of the accuracy of any allegations made by staff.

16. Upon provisional acceptance of the Agreement by the Commission, the Agreement shall be placed on the public record and published in the *Federal Register* in accordance with the procedures set forth in 16 C.F.R. § 1118.20(e). If the Commission does not receive any written request not to accept the Agreement within fifteen (15) calendar days, the Agreement shall be deemed finally accepted on the 16th calendar day after the date it is published in the *Federal Register*, in accordance with 16 C.F.R. § 1118.20(f).

17. Upon the Commission's final acceptance of the Agreement and issuance of the final Order, Whalen knowingly, voluntarily and completely waives any rights it may have in this matter to the following: (i) an administrative or judicial hearing; (ii) judicial review or other challenge or contest of the Commission's actions; (iii) a determination by the Commission as to whether Whalen failed to comply with the CPSA and the underlying regulations; (iv) a statement of findings of fact and conclusions of law; and (v) any claims under the Equal Access to Justice Act.

18. The Commission may publicize the terms of the Agreement and the Order.

19. The Agreement and the Order shall apply to and be binding upon Whalen and each of its successors and/or assigns.

20. The Commission issues the Order under the provisions of the CPSA, and a violation of the Order may subject Whalen and each of its successors and/or assigns to appropriate legal action.

21. The Agreement may be used in interpreting the Order. Understandings, agreements, representations or interpretations apart from those contained in the Agreement and the Order may not be used to vary or contradict their terms. The Agreement shall not be waived, amended, modified or otherwise altered without written agreement thereto executed by the party against whom such waiver, amendment, modification or alteration is sought to be enforced.

22. If any provision of the Agreement or the Order is held to be illegal, invalid or unenforceable under present or future laws effective during the terms of the Agreement and the Order, such provision shall be fully severable. The balance of the Agreement and the Order shall remain in full force and effect, unless the Commission and Whalen agree that severing the provision materially affects the purpose of the Agreement and the Order.

Dated: January 1, 2013.

WHALEN FURNITURE MANUFACTURING, INC.

By:

Kenneth J. Whalen,

President, Whalen Furniture Manufacturing, Inc., 1578 Air Wing Road, San Diego, CA 92154.

Dated: January 1, 2013.

By:

Sheila A. Millar, Esquire.

Keller and Heckman, LLP,

1001 G Street, NW., Washington, DC 20001, Counsel for Whalen Furniture Manufacturing, Inc.

U.S. CONSUMER PRODUCT SAFETY COMMISSION STAFF

Mary T. Boyle,
Acting General Counsel.

William J. Moore, Jr.,

Trial Attorney, Division of Compliance, Office of the General Counsel.

Dated: January 3, 2013.

By:
Mary B. Murphy,

Assistant General Counsel, Division of Compliance, Office of the General Counsel.

UNITED STATES OF AMERICA

CONSUMER PRODUCT SAFETY COMMISSION

In the Matter of: WHALEN FURNITURE MANUFACTURING, INC. d/b/a Bayside Furnishings

CPSC Docket No.: 13–C0003

ORDER

Upon consideration of the Settlement Agreement entered into between Whalen Furniture Manufacturing, Inc. (''Whalen''), and the U.S. Consumer Product Safety Commission (''Commission'') staff, and the Commission having jurisdiction over the subject matter and over Whalen, and it appearing that the Settlement Agreement and the Order are in the public interest, it is

ORDERED that the Settlement Agreement be, and is, hereby, accepted; and it is

FURTHER ORDERED that Whalen shall pay a civil penalty in the amount of seven hundred twenty-five thousand dollars ($725,000.00) within twenty (20) days of service of the Commission's final Order accepting the Settlement Agreement. The payment shall be made electronically to the CPSC via *www.pay.gov.* Upon the failure of Whalen to make the foregoing payment when due, interest on the unpaid amount shall accrue and be paid by Whalen at the federal legal rate of interest set forth at 28 U.S.C. § 1961(a) and (b).

Provisionally accepted and provisional Order issued on the *31st* day of *January,* 2013.

BY ORDER OF THE COMMISSION:

Todd A. Stevenson,

Secretary, U.S. Consumer Product Safety Commission.

[FR Doc. 2013–02442 Filed 2–4–13; 8:45 am]

BILLING CODE 6355–01–P

DEPARTMENT OF DEFENSE

Department of the Army; Corps of Engineers

Cancellation of the Notice of Intent To Prepare a Draft and Final Supplemental Environmental Impact Statement for Reach 1A on the Herbert Hoover Dike Major Rehabilitation Project, Martin and Palm Beach Counties

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DOD.

ACTION: Notice; cancellation.

SUMMARY: The Jacksonville District, U.S. Army Corps of Engineers (USACE) hereby cancels its Notice of Intent (NOI) to prepare a Supplemental Environmental Impact Statement (SEIS) for Reach 1A on the Herbert Hoover Dike (HHD) Major Rehabilitation Project, as published in the **Federal Register**, March 9, 2009 (74 FR 10038).

The USACE issued a Notice of Availability (NOA) for the Draft SEIS on June 25, 2010 (75 FR 36386). A public meeting was held in Canal Point on July 22, 2010 to present the Draft SEIS.

The cancellation of the subject SEIS is necessitated due to a change in scope of the rehabilitation project. The initial focus of the HHD Major Rehabilitation Report (MRR) from 2000 divided the 143 miles dike into eight Reaches with the initial focus on Reach 1. This Reach by Reach approach is being replaced with a system-wide risk reduction approach as required for safety modifications to dams.

FOR FURTHER INFORMATION CONTACT: Questions may be forwarded to Ms. Angela Dunn, Environmental Branch, Planning Division, Jacksonville District, Corps of Engineers, Post Office Box 4970, Jacksonville, FL 32232–0019, Phone: 904–232–2108.

SUPPLEMENTARY INFORMATION: The supplemental MRR will be replaced with a system-wide Dam Safety Modification (DSM) Report. Environmental documentation will be prepared and coordinated in conjunction with the system wide DSM Report as required by the National Environmental Policy Act.

Dated: January 16, 2013.

Eric P. Summa,

Chief, Environmental Branch.

[FR Doc. 2013–02459 Filed 2–4–13; 8:45 am]

BILLING CODE 3720–58–P

DEPARTMENT OF DEFENSE

Department of the Army; Corps of Engineers

Cancellation of the Notice of Intent To Prepare a Draft and Final Supplemental Environmental Impact Statement for Reach 1B, C, and D on the Herbert Hoover Dike Major Rehabilitation Project, Martin and Palm Beach Counties

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DOD.

ACTION: Notice; cancellation.

SUMMARY: The Jacksonville District, U.S. Army Corps of Engineers (USACE) hereby cancels its Notice of Intent (NOI) to prepare a Supplemental Environmental Impact Statement (SEIS) for Reach 1B, C, and D on the HHD Major Rehabilitation Project, as published in the **Federal Register**, July 28, 2009 (74 FR 37190). The cancellation of the subject SEIS is necessitated due to a change in scope of the rehabilitation project. The initial focus of the HHD Major Rehabilitation Report (MRR) from 2000 divided the 143 miles dike into eight Reaches with the initial focus on Reach 1. This Reach by Reach approach is being replaced with a system-wide risk reduction approach as required for safety modifications to dams.

FOR FURTHER INFORMATION CONTACT: Questions may be forwarded to Ms. Angela Dunn, Environmental Branch, Planning Division, Jacksonville District, Corps of Engineers, Post Office Box 4970, Jacksonville, FL 32232–0019, Phone: 904–232–2108.

SUPPLEMENTARY INFORMATION: The supplemental MRR will be replaced with a system-wide Dam Safety Modification (DSM) Report. Environmental documentation will be prepared and coordinated in conjunction with the system wide DSM Report as required by the National Environmental Policy Act.

Dated: January 16, 2013.

Eric P. Summa,

Chief, Environmental Branch.

[FR Doc. 2013–02460 Filed 2–4–13; 8:45 am]

BILLING CODE 3720–58–P

DEPARTMENT OF DEFENSE

Department of the Army; Corps of Engineers

Cancellation of the Notice of Intent To Prepare a Draft and Final Supplemental Environmental Impact Statement for Reaches 2 and 3 on the Herbert Hoover Dike Major Rehabilitation Project, Palm Beach and Glades Counties, FL

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DOD.

ACTION: Notice; cancellation.

SUMMARY: The Jacksonville District, U.S. Army Corps of Engineers (USACE) hereby cancels its Notice of Intent (NOI) to prepare a Supplemental Environmental Impact Statement (SEIS) for Reaches 2 and 3 on the HHD Major Rehabilitation Project, as published in the **Federal Register**, August 9, 2006 (71 FR 45539). The USACE issued an NOA for the Draft SEIS on December 22, 2006 (71 FR 77013). A public meeting was held in Clewiston on January 10, 2007 to present the Draft SEIS.

The USACE issued a second NOI, published in the **Federal Register**, August 31, 2009 (74 FR 44828), due to a revision to the preferred alternative discussed and coordinated in the December 2006 Draft SEIS.

The cancellation of the subject SEIS is necessitated due to a change in scope of the rehabilitation project. The initial focus of the HHD Major Rehabilitation Report (MRR) from 2000 divided the 143 miles dike into eight Reaches with the initial focus on Reach 1. This Reach by Reach approach is being replaced with a system wide risk reduction approach as required for safety modifications to dams.

FOR FURTHER INFORMATION CONTACT: Questions may be forwarded to Ms. Angela Dunn, Environmental Branch, Planning Division, Jacksonville District, Corps of Engineers, Post Office Box 4970, Jacksonville, FL 32232–0019, Phone: 904–232–2108.

SUPPLEMENTARY INFORMATION: The supplemental MRR will be replaced with a system wide Dam Safety Modification (DSM) Report. Environmental documentation will be prepared and coordinated in conjunction with the system wide DSM Report.

Dated: January 16, 2013.

Eric P. Summa,

Chief, Environmental Branch.

[FR Doc. 2013–02458 Filed 2–4–13; 8:45 am]

BILLING CODE 3720–58–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Combined Notice of Filings

Take notice that the Commission has received the following Natural Gas Pipeline Rate and Refund Report filings:

Filings Instituting Proceedings

Docket Numbers: RP13–459–000.
Applicants: Trailblazer Pipeline Company LLC.
Description: 4Q 2012 Penalty Credit Revenue Report.
Filed Date: 1/22/13.
Accession Number: 20130122–5241.
Comments Due: 5 p.m. ET 2/4/13.

Docket Numbers: RP13–473–000.
Applicants: Algonquin Gas Transmission, LLC.
Description: Secondary Scheduling Priorities to be effective 4/1/2013.
Filed Date: 1/24/13.
Accession Number: 20130124–5072.
Comments Due: 5 p.m. ET 2/5/13.

Docket Numbers: RP13–474–000.
Applicants: Iroquois Gas Transmission System, L.P.
Description: 01/24/13 Negotiated Rates—Sequent Energy Management (HUB) 3075–89 to be effective 1/23/2013.
Filed Date: 1/24/13.
Accession Number: 20130124–5104.
Comments Due: 5 p.m. ET 2/5/13.

Docket Numbers: RP13–475–000.
Applicants: Iroquois Gas Transmission System, L.P.
Description: 01/24/13 Negotiated Rates—United Energy Trading (HUB) 5095–89 to be effective 1/23/2013.
Filed Date: 1/24/13.
Accession Number: 20130124–5106.
Comments Due: 5 p.m. ET 2/5/13.

Any person desiring to intervene or protest in any of the above proceedings must file in accordance with Rules 211 and 214 of the Commission's Regulations (18 CFR 385.211 and 385.214) on or before 5:00 p.m. Eastern time on the specified comment date. Protests may be considered, but intervention is necessary to become a party to the proceeding.

Filings in Existing Proceedings

Docket Numbers: RP13–110–001.
Applicants: Discovery Gas Transmission LLC.
Description: NAESB V2.0—2nd Compliance to be effective 12/1/2012.
Filed Date: 1/24/13.
Accession Number: 20130124–5100.
Comments Due: 5 p.m. ET 2/5/13.

Any person desiring to protest in any the above proceedings must file in

All written statements shall be submitted to the Designated Federal Officer for the Board of Regents, Uniformed Services University of the Health Sciences, and this individual will ensure that the written statements are provided to the membership for their consideration. Contact information for the Board of Regents, Uniformed Services University of the Health Sciences' DFO can be obtained from the GSA's FACA Database—https://www.fido.gov/facadatabase/public.asp.

The DFO, pursuant to 41 CFR 102–3.150, will announce planned meetings of the Board of Regents, Uniformed Services University of the Health Sciences. The DFO, at that time, may provide additional guidance on the submission of written statements that are in response to the stated agenda for the planned meeting in question.

Dated: February 12, 2013.

Aaron Siegel,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2013–03586 Filed 2–14–13; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Department of the Army

Intent To Grant an Exclusive License of U.S. Government-Owned Invention

AGENCY: Department of the Army, DoD.

ACTION: Notice.

SUMMARY: In accordance with 35 U.S.C. 209(e), and 37 CFR 404.7 (a)(1)(i) and 37 CFR 404.7 (b)(1)(i), announcement is made of the intent to grant an exclusive, revocable license to the invention claimed in U.S. Patent Application Serial No. 11/525,574, filed September 22, 2006, entitled ''Antibodies with Simultaneous Subsite Specificities to Protein and Lipid Epitopes,'' to Avanti Polar Lipids with its principal place of business at 700 Industrial Park Drive, Alabaster, AL 35007.

ADDRESSES: Commander, U.S. Army Medical Research and Materiel Command, ATTN: Command Judge Advocate, MCMR–JA, 504 Scott Street, Fort Detrick, MD 21702–5012.

FOR FURTHER INFORMATION CONTACT: For licensing issues, Dr. Paul Mele, Office of Research & Technology Applications, (301) 619–6664. For patent issues, Ms. Elizabeth Arwine, Patent Attorney, (301) 619–7808; both at telefax (301) 619–5034.

SUPPLEMENTARY INFORMATION: Anyone wishing to object to grant of this license can file written objections along with supporting evidence, if any, within 15 days from the date of this publication. Written objections are to be filed with the Command Judge Advocate (see **ADDRESSES**).

Brenda S. Bowen,

Army Federal Register Liaison Officer.

[FR Doc. 2013–03483 Filed 2–14–13; 8:45 am]

BILLING CODE 3710–08–P

DEPARTMENT OF DEFENSE

Defense Acquisition Regulations System

Policy on Contractor Profits

AGENCY: Defense Acquisition Regulations System, Department of Defense (DoD).

ACTION: Notice of meeting.

SUMMARY: DoD is hosting a public meeting to obtain the views of experts and interested parties in Government and the private sector regarding the profit guidelines in the Defense Federal Acquisition Regulation Supplement.

DATES: March 20, 2013, from 1:00 p.m.to 3:00 p.m., EST.

ADDRESSES: The public meeting will be held at General Services Administration (GSA), Central Office Auditorium, 1800 F Street NW., Washington, DC 20405. The GSA auditorium is located on the main floor of the building.

FOR FURTHER INFORMATION CONTACT: Ms. Patricia Foley, CPIC/DPAP, at 703–693–1145. Please cite NDAA FY 2013 Profit Policy Public Meeting.

SUPPLEMENTARY INFORMATION: DoD is interested in opening a dialogue with experts and interested parties in Government and the private sector about the requirements of section 804 of the National Defense Authorization Act for Fiscal Year 2013. Section 804, Department of Defense Policy on Contractor Profits, included a requirement for DoD to review its profit policy guidelines in order to identify any modifications to such guidelines that are necessary to ensure an appropriate link between contractor profit and contractor performance. The law also stated that, in conducting the review, the Secretary shall obtain the views of experts and interested parties in Government and the private sector.

Those planning to attend the meeting must FAX the following information to CPIC/DPAP, 703–614–1254, or email to *Patricia.Foley@osd.mil* by March 7, 2013:

- Company or organization name.
- Names of persons attending and applicable resumes summarizing expertise in this area.
- Identify if desiring to make a presentation; limit to a 10-minute presentation per company or organization.
- Last four digits of the social security number for anyone who is not a Federal Government employee with a Government badge, in order to create an attendee list for secure entry to the GSA building.
- Attendees are encouraged to arrive at least 30 minutes early to accommodate security procedures.

If you wish to make a presentation, please contact Ms. Patricia Foley, and submit a copy of your presentation 5 days prior to the meeting date, to CPIC/DPAP, 3060 Pentagon, Room 5E621, Attn: Patricia Foley, Washington, DC 20301–3060. Telephone: 703–693–1145. Submit electronic materials via email to *Patricia.Foley@osd.mil.* Please submit presentations only and cite NDAA FY 2013 Profit Policy Public Meeting in all correspondence related to the public meeting. There will be no transcription at the meeting. The submitted presentations will be the only record of the public meeting.

Special accommodations: The public meeting is physically accessible to people with disabilities. Requests for reasonable accommodations, sign language interpretation or other auxiliary aids should be directed to Patricia Foley at 703–693–1145, at least 10 working days prior to the meeting date.

The TTY number for further information is: 1–800–877–8339. When the operator answers the call, let them know the agency is the Department of Defense; the point-of-contact is Patricia Foley at 703–693–1145.

Manuel Quinones,

Editor, Defense Acquisition Regulations System.

[FR Doc. 2013–03575 Filed 2–14–13; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

Intent To Prepare a Draft and Final Environmental Impact Statement for the Herbert Hoover Dike Major Rehabilitation Project and Dam Safety Modification Study, Okeechobee, Glades, Hendry, Martin, and Palm Beach Counties

AGENCY: Department of the Army, U.S. Army Corps of Engineers, DOD.

ACTION: Notice of intent.

SUMMARY: The Jacksonville District, U.S. Army Corps of Engineers (Corps)

intends to prepare a Draft Environmental Impact Statement (EIS) for the Herbert Hoover Dike (HHD) Major Rehabilitation Project and Dam Safety Modification Study. Herbert Hoover Dike is the 143 mile embankment surrounding Lake Okeechobee in south central Florida. A Dam Safety Modification Study has been initiated for the HHD and will be focused on a system wide risk reduction approach as required for safety modifications to dams. The purpose of the study is to identify risk reduction measures that can be implemented to reduce risks in the HHD system.

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ADDRESSES: U.S. Army Corps of Engineers, Planning Division, Environmental Branch, P.O. Box 4970, Jacksonville, FL 32232–0019.

FOR FURTHER INFORMATION CONTACT: Ms. Angela Dunn at (904) 232–2108 or email at *Angela.E.Dunn@usace.army.mil.*

SUPPLEMENTARY INFORMATION: *Scoping:* A scoping letter will be used to invite comments from Federal, state, and local agencies, affected Indian tribes, and other interested private organizations and individuals. A scoping meeting will be held February 26, 2013 from 6:30 to 8:30 p.m. at the John Boy Auditorium, 1200 South W.C. Owen Avenue, Clewiston, Florida and February 28, 2013 from 6:30 to 8:30 p.m. at the Okeechobee County Health Department Auditorium, 1728 Northwest 9th Avenue, Okeechobee, Florida.

Coordination and Public Involvement: The Corps will serve as the lead Federal agency in the preparation of the Draft EIS. The Corps intends to coordinate and/or consult with an interagency team of Federal, state, and local agencies as well as affected Indian Tribes during scoping and preparation of the Draft EIS. All alternative plans will be reviewed under provisions of appropriate laws and regulations, including but not limited to the Endangered Species Act, Fish and Wildlife Coordination Act, Clean Water Act, and National Historic Preservation Act. The Draft EIS is expected to be available for public review early summer 2014.

Dated: February 5, 2013.

Eric P. Summa,

Chief, Environmental Branch.

[FR Doc. 2013–03482 Filed 2–14–13; 8:45 am]

BILLING CODE 3720–58–P

DEPARTMENT OF EDUCATION

[Docket No. ED–2012–ICCD–0055]

Agency Information Collection Activities; Submission to the Office of Management and Budget for Review and approval; Comment Request; DC Choice Evaluation

AGENCY: Department of Education (ED), Institute of Education Sciences (IES).

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. chapter 3501 *et seq.*), ED is proposing a reinstatement with change of a previously approved information collection.

DATES: Interested persons are invited to submit comments on or before March 18, 2013.

ADDRESSES: Comments submitted in response to this notice should be submitted electronically through the Federal eRulemaking Portal at *http://www.regulations.gov* by selecting Docket ID number ED–2012–ICCD–0055 or via postal mail, commercial delivery, or hand delivery. Please note that comments submitted by fax or email and those submitted after the comment period will not be accepted. Written requests for information or comments submitted by postal mail or delivery should be addressed to the Director of the Information Collection Clearance Division, U.S. Department of Education, 400 Maryland Avenue SW., LBJ, Room 2E105, Washington, DC 20202–4537.

FOR FURTHER INFORMATION CONTACT: Electronically mail *ICDocketMgr@ed.gov*. Please do not send comments here.

SUPPLEMENTARY INFORMATION: The Department of Education (ED), in accordance with the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3506(c)(2)(A)), provides the general public and Federal agencies with an opportunity to comment on proposed, revised, and continuing collections of information. This helps the Department assess the impact of its information collection requirements and minimize the public's reporting burden. It also helps the public understand the Department's information collection requirements and provide the requested data in the desired format. ED is soliciting comments on the proposed information collection request (ICR) that is described below. The Department of Education is especially interested in public comment addressing the following issues: (1) Is this collection necessary to the proper functions of the Department; (2) will this information be processed and used in a timely manner; (3) is the estimate of burden accurate; (4) how might the Department enhance the quality, utility, and clarity of the information to be collected; and (5) how might the Department minimize the burden of this collection on the respondents, including through the use of information technology. Please note that written comments received in response to this notice will be considered public records.

Title of Collection: DC Choice Evaluation.

OMB Control Number: 1850–0800.

Type of Review: Reinstatement with change of a previously approved information collection.

Respondents/Affected Public: State, Local, or Tribal Governments.

Total Estimated Number of Annual Responses: 3,057.

Total Estimated Number of Annual Burden Hours: 1,009.

Abstract: This information collection requests clearance approval from the Office of Management and Budget (OMB) for the collection of data under the Evaluation of the Effectiveness of the Scholarships for Opportunity and Results (SOAR) Act Program. In particular, we are requesting approval for: (1) parent, student, and principal surveys, and (2) records abstraction from DC Public School (DCPS), from the District of Columbia Public Charter School Board, and private school administrative files. The study design, data collection plan, instruments, and levels of burden are consistent with forms clearance packages approved by OMB for the previous evaluation of this program (#1850–0800).

The Scholarships and Opportunities for Results (SOAR) Act H.R. 1473 (Pub. L.112–10), signed into law on April 15, 2011, reauthorized the DC School Choice Incentive Act and provided for

NEWS RELEASE

U.S. ARMY CORPS OF ENGINEERS | Jacksonville District **BUILDING STRONG**®

Release No.: NR 13-009 **For Release:** Feb. 20, 2013

Contact: John Campbell **Phone:** (904) 232-1004

Email: john.h.campbell@usace.army.mil

FOR IMMEDIATE RELEASE

Corps to host public meetings on dike study

The U.S. Army Corps of Engineers, Jacksonville District, will host two public meetings to discuss the initial phases of a Dam Safety Modification Study (DSMS) that is underway on Herbert Hoover Dike.

The Corps is conducting the DSMS to determine the final phase of rehabilitation projects for the dike, a 143-mile earthen structure that encircles Lake Okeechobee in south Florida. The Corps has been engaged in projects since 2007 to address concerns with the dike's integrity.

"The results of the Dam Safety Modification Study will be used to define the finish line for this major project," said Tim Willadsen, Herbert Hoover Dike Rehabilitation Project Manager. "We will continue to reduce risk by replacing water control structures around the lake through 2018; this study will be the guiding document for projects we execute in the future."

The meetings will be held in two locations in south Florida:

- Feb. 26—John Boy Auditorium, 1200 South W.C. Owen Ave., Clewiston, FL.
- Feb. 28—Okeechobee County Health Dept 1728 NW 9th Ave., Okeechobee, FL.

Both meetings will begin with an open house at 6:30 p.m. followed by a presentation at 7 p.m. After the presentation, all interested stakeholders will have an opportunity to comment. These meetings will also serve as scoping meetings as required by the National Environmental Protection Act (NEPA).

Prior projects at the dike include installation of a partially penetrating cutoff wall between Port Mayaca and Belle Glade, filling in a quarry near Belle Glade, and replacing water control structures near Port Mayaca and Moore Haven.

For more information on the Herbert Hoover Dike project, visit the Jacksonville District website at

http://www.saj.usace.army.mil/Missions/CivilWorks/LakeOkeechobee/HerbertHooverDike.aspx

-30-

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C.1.3 NEPA Scoping Comment Response Matrix

Table C.1.3-1. CEPP NEPA Scoping Comment Response Matrix – Public Meetings

SCOPING COMMENTS	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
NEPA Scoping Meeting February 26, 2013 Clewiston, FL		
Citizen 1 - 1	Everglades Park is dehydrating, Biscayne Bay, Florida Bay needs water. We need to think a little bigger. And I think one of the ways to think bigger is to think about an emergency spillway, so that we have the opportunity to hold water a little longer in the lake, without having to dump in anticipation of a storm. And to have, in worst-case scenario, someplace for that water to go that is managed. We are not talking about a devastating breach of the Dike, but a managed emergency flow way, and that needs to be on the table for what we are discussing.	Thank you for your comment. All risk management measures, structural and non-structural will be looked at during plan formulation for the HHD Dam Safety Modification Study.
Citizen 1 - 2	And then there's another 800 pound gorilla. We all know that we have got 300 square miles, a couple of feet deep of sick mud on the bottom of the lake. And if it stayed there, that would that would be fine, but what happens when we get a storm is it all of a sudden get re-suspended, and it comes down those estuaries and close to the EAA and that water quality almost precludes us meeting the Court mandated standards that are necessary to move water around.	Thank you for your comment. Water quality will be evaluated for all alternatives according to the NEPA process.
Citizen 1 - 3	So most of the solutions we are talking about these days are 200,000 acre feet. Let's start thinking about 2 million acre feet, and let's plan to move and store as much water as mother nature is willing to give us, but do it in an ecologically friendly way and provide an opportunity for us to do minimal damage to all of our eco-systems.	Thank you for your comment.
Citizen 2-1	I would just ask that for all future works around the levee, we do consider the local economies of those areas that are being impacted by the loss of that convenient and very important health aid to the local community, as well as the financial health.	Thank you for your comment.
Citizen 3 - 1	When will the next section of cutoff wall	The earliest that we are looking at any

SCOPING COMMENTS	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	come out to bid, and when will the test areas for the new cutoff wall come out for bid?	sort of a fix, other than through water control structures would be 2017.
Citizen 4 - 1	One of the things that happens here every year now, for the last 21 years, is the annual Big O hike event. Every year we hike nine days, and hike all the way around doing a segment a day. This event brings in a lot of people. Sometimes it's families, there might only be one or two members there to hike, but those families are using your local campgrounds.	Thank you for your comment.
Citizen 4 – 2	Some of our people actually camp out at the local mom and pop hotels, as well as the chains in Clewiston, and the reason I'm bringing this up is that, again, the revenue, bringing the money into your local economy. Whether we are just buying donuts from your local shops or going into your various restaurants, including the Clewiston Inn. This is why some of your cities, Okeechobee, Pahokee, Clewiston, are what we call gateway communities to the Florida Trail.	Thank you for your comment.
Citizen 4 – 3	Now, the last couple of years, segments, as we refer to them, have been shut off to public hiking. We understand it's a matter of safety. We have construction traffic going onto and off, you know, on top of the levee. We don't want the public walking through there. And we have been able to work very closely with the Corps of Engineers and also Water Management District for where we are and where we are not to be, and we hope to continue in that light for many, many years to come.	Thank you for your comment. Coordination during construction will continue.
Citizen 4 – 4	Of course, if you look 20 years down the line, turn around and look back to see how things are going. But I'm hoping to still be hiking around the lake at that time and enjoying your environment, your ecology, and your towns here.	Thank you for your comment.
Citizen 5-1	I'm going plead to the Corps to please pave back the top of the levee the way it has been paved with the taxpayers money. I	Thank you for your comment. The HHD rehabilitation authorization does not allow funds to be used to replace

SCOPING COMMENTS	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	cannot believe after billion dollars, after spending all this money, you are going to leave the levee without that protection. The protection the levee from erosion, from all kind of -- and it facilitates the economy of the area, riding bicycles, motorized vehicles, again, I think it should be part of this project and shouldn't be ignored.	the asphalt paving on the LOST after construction is completed. The USACE is pursuing Section 111 Chief of Engineer's discretionary funds to replace the asphalt paving. If not approved, the pavement would not be replaced, and the LOST would be graded and graveled for continued use. Paving does not add any additional protection from erosion to the levee.
Citizen 6-1	At what point in time do you reassess the Dike safety? And when you reassess it, do you reassess it using the lowest stages or the stages that we held the lake at prior? There's a Dike assessment that says we are in Category 1 dike. What point do we reassess to see if we are still at DSAC 1?	As we implement these risk reduction measures that would be part of the study. The study itself will hopefully let us know, measures X, Y and Z or whatever are required to be able to lower that DSAC rating.
Citizen 6-2	As that DSAC rating is lowered, does that mean that we are able to raise the stage of the lake back up to what it was, or is it being related using the lower stages that were the temporary lower stages that we have today? Because the embankment is in danger, we have lowered the level of the lake.	That's a completely separate process in discussion. Our focus is strictly on the embankment and the fixes that are needed. Currently, we are operating under the LORS. There were two triggers under the Lake Okeechobee Regulation Schedule that will allow the Corps to re-evaluate the lake stage. One of those triggers was completion of the CERP or Comprehensive Everglades Restoration Plan, Band One projects, which are still in progress, or the rehabilitation of Reaches 1, 2 and 3.
Citizen 7-1	There's some work being done at the Hendry County by FEMA on a restudy of the entire county, and there's been some discussion that due to the condition of the Herbert Hoover Dike, that the flood classification for the area within Clewiston may change to a category that requires insurance, versus one that doesn't require insurance whether that be in place. Do you have any information on how that will affect the FEMA mapping classification?	Thank you for your comment. We do not have any information on the effects on the FEMA mapping classification. We will refer the flood insurance rate mapping questions to FEMA.
Citizen 8-1	My question is, does that therefore mean that you will continue the replacement of the culvert under a separate program and	That is our plan.

SCOPING COMMENTS	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
	this modification study is not going to impact that schedule?	
NEPA Scoping Meeting February 28, 2013 Okeechobee, FL		
Citizen 1-1	You said that you pulled back some of your previous studies. Why, and what's the goal? What's the purpose of changing it or modifying it or what? What's occurred to cause that?	We are moving forward with a risk-based approach, and the Reach 2 and 3 Environmental Impact Statement, as well as the 1-A Environment Impact Statement don't necessarily fit with the current study that we've engaged in. The cutoff wall component is what we're proceeding with and completed because it fits that risk reduction approach. But the land side berm component is not necessarily the right solution, so we're better served to pull that document back, because if there's anything in addition in the future that would be needed on the land side, it will be addressed in this new study.
Citizen 2-1	Your abandonment at Lock 7, we call it lock 7 here locally, but culvert 7, is that going to be construction intensive, or is it a pretty benign process?	The components included would be no greater than what you see now for the cutoff wall construction, so it would be work on the top of the embankment, and then there would be some work on the land side facing the embankment.
Citizen 2-2	Snail kites have been nesting earlier and nesting longer. You might want go ahead and initiate some early discussion with Vero Beach and the service, if they'll give you exclusion since it's totally a land operation, but I can very likely see the potential of some of those nests setting up in that limited activity fall on that structure.	Coordination with US Fish and Wildlife Service on the HHD DSMS has been initiated and will continue throughout planning, design and construction.
Citizen 3-1	One of the items just up for discussion was utilities, existing utilities, water, sewer, mostly force main and electrical conduits existing in the levee and proposed future maintenance, just how would those be addressed.	All utilities will be addressed in the report with relocations as needed.

Table C.3.1-2. CEPP NEPA Scoping Comment Response Matrix – Letters

LETTER	AGENCY/PUBLIC COMMENT	CORPS RESPONSE
Public		
Citizen 1 - 1	Winter guests come every year from October to April every year. Our population triples its normal size and out road traffic is triple its normal loads. So for work times on the repairs to the dike, they are best done from May to September.	Thank you for your comment. Coordination during construction will continue.
Citizen 1 - 2	Reach area # 5, culverts 7 and 9. They are no longer functional, will they be replaced or removed?	Culvert 7 and Culvert 9 are planned to be further abandoned to reduce the risks at their locations.
Citizen 1 - 3	How do I know when a printed copy of reports get to our local libraries so I can get one?	The Notice of Availability of the Draft EIS will be published in the Federal Register. Letters will be sent to the recipient list of when and where copies of the report will be available. You have been added to the recipient list.

C.1.4 NEPA Scoping Letters/Comments

From:	Barnett, Anita
To:	Dunn, Angela E SAJ
Cc:	Loretta Sutton; NPS WASO EQD ExtRev
Subject:	ER-13/0093 NPS - No Comment
Date:	Wednesday, March 13, 2013 10:11:40 AM

Ms. Dunn:

The National Park Service has reviewed ER-13/0093 Notice of Intent to prepare an Environmental Impact Statement for the Herbert Hoover Dike Major Rehabilitation Project and Dam Safety Modification Study in Okeechobee, Blades, Hendry, Martin, and Palm Beach Counties, Florida, and we have no comments. Thank you for the opportunity to review and provide comments. If you have any questions please call me at 404-5070-5706.

--
Anita Barnett
Environmental Protection Specialist
Planning and Compliance Division
National Park Service
Southeast Region
404-507-5706
678-883-4770

1 MARCH 2013

DEAR ANGELA DUNN:

WAS NICE TO MEET YOU AND THE REST OF TEAM. FOR YOUR INFORMATION, AND AS A 30 YEAR CITIZEN OF OKEECHOBEE, FLORIDA. I CAN TELL YOUR OUR WINTER GUEST COME TO SEE US. EVERY YEAR FROM OCTOBER OF SAY 2012 AND STAY UNTIL APRIL 2013, AS A EXAMPLE.

SO AS YOU SEE OUR POPULATION GOES TO TRIPPLE IT'S NORMAL SIZE. OUR ROAD TRAFFIC IS TRIPPLE IT'S NORMAL LOADS. SO FOR WORK TIMES ON THE REPAIRS TO DIKE. THEY ARE BEST DONE BETWEEN THE ABOVE TIME FRAME. SAY MAY OF ONE YEAR THRU SEPTEMBER OF OTHER YEAR ARE GOOD WORK TIMES FOR REPAIRS.

I HAVE BEEN AFTER OUR STATE OF FLORIDA, EVER SINCE YEAR 1989 UP TO NOW 2013. TO IMPROVE WATER QUALITY TO LAKE OKEECHOBEE. BUT UP TIL NOW HAVE SEEN NO IMPROVEMENT.

AS I TOLD YOUR BOSS, I WAS A OLD ARMY AIRBORNE 82ND AIRBORNE AND A FULL QUALIFIED GREEN BERET, U.S. ARMY SPECIAL FORCES MAN. I GUESS IT NOW, IN MY RETIREMENT YEARS ABLE TO SEE PROBLEMS.

I HAVE TWO QUESTIONS FROM METTING FEB 28 2013. (#1) REACH AREA #5 CULVERTS 7 AND 9. THEY ARE NO LONGER FUNCTIONAL, WILL THEY BE REPLACED OR REMOVED. (#2) HOW DO I KNOW WHEN A PRINTED COPY OF REPORTS GET TO OUR LOCAL LIBRARIES, SO I CAN GET ONE.

I WOULD LIKE TO GIVE YOU SOME ADVISE. WHEN DEALING WITH THE GOOD OLD BOYS HERE IN OUR OKEECHOBEE GOVERMENT PEOPLE. REMEMBER THEY CONTROL EVERY THING DONE HERE. AND THEY OWN THIS COUNTY. (COWBOYS RULE)

[redacted]

Robert M Norton
ECOSYSTEM WATCH
LAKE OKEECHOBEE

U.S. ARMY CORPS OF ENGINEERS

HERBERT HOOVER DIKE

REHABILITATION PROJECT

Project Update and NEPA Scoping Meeting

Transcript of Proceedings

February 26, 2013

John Boy Auditorium

Clewiston, Florida

Barnes Reporting
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Phone: (863)675-7600
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APPEARANCES:

Ingrid Bon, P.E.,
Project Manager Forward Page 3

Timothy Willadsen,
Project Manager Page 4

Angela Dunn,
Planning Division, Environmental Page 13

John Campbell,
Corporate Communications Office

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Andy Tilton	29
Silvia Alderman	31

P R O C E E D I N G S

MS. BON: Good evening. My name is Ingrid Bon, I'm the project manager forward for the Herbert Hoover Dike project. And we are here tonight to provide information and ask for your input on potential environmental issues regarding future work at the Herbert Hoover Dike.

Before we begin, I would like to thank you all for taking time out of your busy schedules to get involved with the planning process. This is meeting is being held in accordance with the National Environmental Policy Act, also known a NEPA, for the sole purpose of listening to you.

I would like to remind you of the importance of filling out these cards, which you received if you signed in. These cards serve two purposes. First, they let us know you are interested in the project, so we can keep you informed; and second, to provide us with a list of individuals who wish to speak tonight.

If you did not fill out a card, they are available at the registration table. All of

your comments will be taken into consideration as we move forward with our planning on the future work on the Herbert Hoover site.

Before we begin the presentation, I'd like to introduce to you who is with me tonight. From the Corps of Engineers, we have Angie Dunn, who is our Environmental point of contact. And also, Tim Willadsen, who is the Project Manager. And at the center table is John Campbell from our Corporate Communications Office.

In a few minutes, I will turn this over to Tim Willadsen, who will provide you with a brief overview of the Herbert Hoover Dike Rehabilitation Project. And that will be followed by a presentation from Angie Dunn and she will explain the National Environmental Policy Act.

Ladies and gentlemen, I'd like to introduce you to Tim Willadsen.

MR. WILLADSEN: Thank you. Thank you for coming tonight. I see a lot of familiar faces, so it's always good to feel at home again. Tonight I'm going to give you a

brief overview of the HHD, the problems that we have to address here, the solutions that we are working on.

The construction update, as you all pretty well know, that we have been in construction for a significant period of time. We'll touch on the Dam Safety Modification Study, which is why we are here, to discuss NEPA. And I'll turn it over to Angie to give you the NEPA overview that we are required to.

Herbert Hoover Dike, as you all well know if you are local from here, is a rather large lake. 720 square miles, the basin is 5,600 square miles in size, and reaches all the way up to just south of Orlando. So it's a rather large basin.

The concern that we have, the biggest concern is the fact that that basin can take a rainfall event and it can influence the lake itself, in such three, four feet, if you had a rainfall event over the entire basin. And the biggest issue is we cannot release water from the lake faster than it can come in. So containment is key. We

don't have an emergency overflow spillway for the system.

AUDIENCE MEMBER: But we could.

MR. WILLADSEN: Yeah, that's true, but we don't want to see that, do we? The Congress first authorized work on Herbert Hoover Dike in 1930, and that was following events that we had, hurricane events, in both 1926 and 1928, where there was significant loss of life and economic impacts through the local communities. And that authorization allowed for the construction of 68 miles of berm to the south, and about 16 miles on the north shore lake.

There's been subsequent authorizations that lead us to where we are today. The configuration includes the full 143 miles of embankment that surrounds the lake, with the exception of an opening out on the west end. That includes also 32 federal culverts that we are addressing right now, as far as a risk reduction measure. There's additionally five spillway inlets, five spillway outlets, nine navigation locks and

pump stations all the way around the facility.

Again, we don't have any overflow capabilities, but we could. It also notes when this Dike was built, it just doesn't meet today's construction standards. Everybody is pretty well aware of that. So, we have to deal with the problems.

And those problems, primarily, we consider them potential failure modes, but what they really are is the seepage or the water flowing through the embankment and through the foundation. And the concern is that this water, if not controlled, can lead to internal erosion, which is considered to be piping. And that flows through the embankment and through the foundation, and each one of those scenarios can lead to an embankment failure, if it moves enough material through it.

Also, in addition to that, we have the culvert structures, and with the same internal erosion problems you also add on potential failure modes that lead to erosion, both to the structure itself and

along the conduit or the actual culvert barrel.

So this has led to Herbert Hoover Dike being classified under the Dam Safety Action Classification of Level 1, which is the highest level that can be given to it, and it basically means that we have to address it. It's not something that we can just put aside and we'll do it later. We have to address this, and we must reduce our risk failure in order for us to lower that DSAC rating. It's very important that we continue with progress that we have been doing with these risk reduction measures.

Now, originally in 2000, we came out with the Major Rehabilitation Report, and that is what divided the embankment up into eight reaches. Many of you are familiar with the Reach One, and that was our initial phase or focus was initially on Reach One. We developed the Reach One Rehabilitation Plan, and that did include the combination of cutoff wall, a seepage berm, and of course replacing the culvert structures within that reach, as well.

We have subsequently switched to what we consider a risk-based approach, and that includes a system-wide risk assessment. So we have to analyze the entire risk to the entire system, prioritize the implementation of that. The good thing is that the cutoff wall and the culverts that we are planning on doing and doing right now, they all fit within that same risk-based approached. So we are not doing things we wouldn't already normally be doing in this effort.

As a far as our construction update, the Reach One cutoff wall that we have been constructing since 2007, the actual installation was completed late last year. And the contracts associated with that installation, they should be finished and closed out later this year in 2013.

We have begun the water control structure replacements and removals. Culvert 14 was the first one that was completed, and that itself was a removal. We currently have six structures that are being or under contract for replacement. You'll see 11 and 16 are under one contract,

1 and 1A are under one contract, and 4A and 3 are under one contract.

And we've recently awarded the, we call it the abandonment for 7, 9, and Taylor Creek. Those culverts have been previously abandoned; however, we are going back and we are making them safer. We are addressing those failure modes that still are relevant there. So, we are not going to remove them, we still consider them to be abandoned, even though they are not operational today.

As far as our planned construction, we have -- we are currently working toward another six culverts that should be ready to go within the near term, this next year or two, and that being 10 and 12, 5A and 5, 8 and 13. We have the Seepage Management Pilot Test, which again, if you've been to these meetings before, we have been talking about this test facility for some time.

We have recently taken that back in-house, we have made some adjustments to the scope of the project, and we still plan on putting that back out for procurement later on this year. And then the remaining

16 federal culvert structures that are planned for replacement, we plan to have them done by the year 2018. So, if everything continues on down the track we are going, we'll get to our goal.

With respect to the Dam Safety Modification Study, again, this is a system-wide risk reduction approach. And again, it is -- our goal is to lower the DSAC rating. We identify and address the highest risk in this study. And to be plain, it's a matter of us being able to keep the water in the lake. We've got to keep the embankment from failing, and that's what this comes down to.

So this study will identify all of those features that are going to be needed in these select areas. And again, you know, this is a large area, 143 miles. You are not going to have one solution fits all. There's going to be different solutions for different areas, so the study is going to take us a little time to get it done.

Now, as we spoke about the Reach One and the Reach One the cutoff wall itself, that

is a major risk reduction measure, it's good that we have completed that work. And again, the culvert removals and replacements, those are also considered major reduction, major risk reduction features, so we'll continue on down that path, as well.

And in the pilot test, as I mentioned, that is to help the study team in evaluating an alternative, say to the cutoff wall or to basically just to be able to address the seepage and piping issues that we have with the embankment and the foundation itself.

So, if everything goes well with that, we'll get that out, we'll get the results that we are looking for, we'll be able to incorporate them into the study.

The modification study, like I mentioned, includes the entire Dike itself, the entire system. There are multiple alternatives that are being developed, and they both include variations of cutoff wall, variations of seepage collection, filter systems. All of them, again, address the seepage and piping.

We will have the NEPA document, will include all of these alternatives, so when it is available to you, you'll be able to review them and make comments as well. We're drafting that NEPA document right now, we anticipate that to be ready for public review in the summer of 2014. So basically next summer, we'll have gone far enough down in our process to be able to really have a better understanding of what the future will look like, as far as our rehabilitation efforts go. And we plan on having that study complete and approved in 2015, so then we can proceed on to the implementation and construction of those features.

So, I'll turn it over to Angie and she'll give you the scoop on the NEPA.

MS. DUNN: Good evening. The National Environmental Policy Act is the other reason we are here tonight. Not just to give you the update on the project, but because we are getting ready to start a new report. And at the beginning of the February, the Corps issued a notice canceling the two previous draft EIS's that have been

released. One of those was released in December of 2006, and that was the draft EIS for Reaches 2 and 3. And then we also cancelled the draft EIS that was published in July of 2010 for Reach 1A, and that would include the seepage berm.

So we have canceled those two EIS's and are moving on with the Dam Safety Modification Study. The Dam Safety Modification Study, as I mentioned, will address all 143 miles of Herbert Hoover Dike.

So the goals of NEPA, it is a Federal Law that was enacted in 1970, and it requires Federal Agencies to consider the environmental impacts of the proposed project. So we have to look at all features of the environment, including the economic, the environmental, and we consult with Federal, Tribal, the state and local governments. We solicit input from the public. We are hoping to get comments from you tonight, so that we can identify other issues that we may need to address in our NEPA document. And this, the goals of NEPA

also allows other agencies that have overlapping regulatory concerns with the Corps to provide comment and input on our report.

So under NEPA we are required to provide documentation on the effects of the environment based on our proposed project. And there are three such documents that we would provide. One is a Categorical Exclusion (CAT-EX), which mainly applies to normal operations and maintenance activities that the Corps completes. There is also Environmental Assessment (EA). We have produced two of those: Most recently, one for the culvert replacements in 2011; and then also, for the Seepage, excuse me, Seepage Management Pilot Test last year.

And then tonight, we are here because we anticipate with the Dam Safety Modification Study that we may have a significant impact to the environment. And we want to be able to address all of those concerns through the scoping process and through our planning process.

The NEPA requires us to evaluate ten

significant factors in each of our reports, whether it's an EA or a Environmental Assessment or the Environmental Impact Statement (EIS). And these ten areas are listed on the screen, and includes the various Federal, state and local laws, effects on scientific, cultural or historical resources.

We also have to look at cumulative effects. We have to take into account other projects in the area, and how our proposed project may effect those projects. Other areas are degree of controversy and unique characteristics of the geographical area. We know from previous reports that we have a lot of prime and unique soil in the area. We also have endangered and protected species in the area. So we have to take into account all of those factors.

I'm going to go ahead and turn it over to Tim in just a moment, but we just want to make sure everybody tonight has the opportunity to provide us input and let us know what your concerns might be, or if there's an area along the Dike that you

think that the study should pay attention to, please take this opportunity tonight to let us know by using the comment card or coming up and speaking. We have a court reporter here to make sure we get your comments down accurately and we can address those with the NEPA report.

MR. WILLADSEN: Thank you, Angie. Again, just to reiterate our implementation timeline. We discussed the Reach One cutoff wall and its completion is near. The water control structures, we plan on continuing that effort through the year 2018. And in the meantime, we are working on this Dam Safety Modification Study. And again, the NEPA document or the draft document for public review, we plan on having that available the summer of 2014, and with the approval of the study itself in 2015.

And again, this all leads to the future risk reductions which, you know, the next phase would be the implementation in 2017. So, we need to identify, prioritize and implement. And I believe this is the point where if folks would like to come up and do

public comment. Are we going to call them up, John?

MR. CAMPBELL: Yes. The first is Deke Washington. Pete Quashus.

MR. QUASHUS: My name is Pete Quashus, I'm the president of the Caloosahatchee River Citizens Association, runs from Moore Haven to Sanibel. So I've got a diverse lot of years in membership. I'm also a full-time for Audubon, the chapters of Southwest Florida, so I have real concern about our wildlife and all the rest.

I'm an out of work fishing guide for many years, mostly retired. But I still serve on the Foundation Board, and have concerns about our habitat and what it does for our quality of life and our economy. The Caloosahatchee and the lake have had a couple of really big problems. One of which were, or several of which were addressed in your comments earlier.

Normally, we get about a million acre feet of water down the Caloosahatchee. That's what we need for our ecological health. We need it at the right time. We

need it when our spawn is out, we need it in the spring when water is scarce for most people. The EAA gets about a million acre feet, that's what they need to have a vibrant agricultural community and that's part of our quality of life as well.

Our problem is, very often, an extra two million acre extra feet of water with no place to go, and either it -- most often it goes through to St. Lucie and the Caloosahatchee and causes devastating damage, not only to our quality of life, but our economy and to all of the wildlife that are involved in that system. Everything from the small-tooth sawfish to the manatee, all of those are factors that have to be coming into the planning of what we are going to do with the lake in the future.

I have friends in the audience who are going to argue long and loud that the Lake Okeechobee is an eco-system that must be managed for it's ecological health. It is not only a reservoir. And I emphasize the "only."

There's no question; however, it is also

a water supply that all of us are dependent upon, and how we can manage that successfully. My understanding of what we are talking about are bandaids to try and restore the system to what it was before, which was willfully inadequate to deal with the needs of the coastal interests and the south.

Everglades Park is dehydrating, Biscayne Bay, Florida Bay needs water. We need to think a little bigger. And I think one of the ways to think bigger is to think about an emergency spillway, so that we have the opportunity to hold water a little longer in the lake, without having to dump in anticipation of a storm. And to have, in worst-case scenario, someplace for that water to go that is managed. We are not talking about a devastating breach of the Dike, but a managed emergency flow way, and that needs to be on the table for what we are discussing.

And then there's another 800 pound gorilla. We all know that we have got 300 square miles, a couple of feet deep of hot

sick button on the bottom of the lake. And if it stayed there, that would be fine, but what happens when we get a storm is it all of a sudden get re-suspended, and it comes down those estuaries and close to the EAA and that water quality almost precludes us meeting the Court mandated standards that are necessary to move water around.

So most of the solutions we are talking about these days are 200,000 acre feet. Let's start thinking about 2 million acre feet, and let's plan to move and store as much water as mother nature is willing to give us, but do it in an ecologically friendly way and provide an opportunity for us to do minimal damage to all of our eco-systems. Thank you very much.

MR. CAMPBELL: Thank you. The next two indicated they might want to speak, so we'll ask them if they want to speak. Ramon Inglesias. Terry Gardner.

MR. GARDNER: Terry Gardner, local resident, taxpayer, interested in the economy of the town. And I'd just like to highlight the difficulties we are having now

on the trail due to the closure of the section of the Dike between Uncle Joe's and Moore Haven.

I was hoping that we would get that job finished earlier, but from my discussion with yourself, Tim, I understand why we are where we are. I would just ask that for all future works around the levee, we do consider the local economies of those areas that are being impacted by the loss of that convenient and very important health aid to the local community, as well as the financial health. Thank you.

MR. WILLADSEN: Thank you.

MR. CAMPBELL: The last gentlemen just had some questions. When will the next section of cutoff wall come out to bid, and when will the test areas for the new cutoff wall come out for bid?

MR. WILLADSEN: Well, currently, if we follow our plan, we have to complete our study. So the earliest that we are looking at any sort of a fix, other than through water control structures would be 2017. That's what it is.

MR. CAMPBELL: That's all that signed up. You can just open it up.

MR. WILLADSEN: Does anybody else want to have a comment?

MR. JONES: Ladies and gentlemen, and that's a big assumption on my part. I'm Waylon Paul Jones, but as you perhaps see, I'm kind of following Terry up a little bit. I'm a member of the Florida Trail Association. Many years ago a good friend of mine told me to take a hike, and I followed his advice.

Florida Trails have been here in the state a little over 43 years now. It started in Ocala and ways develop Florida National Scenic Trail that many of you are familiar with, that actually slips and goes on both sides of the lake. This area sees money, revenues, coming in from hikers from not just Florida, but all over North America and beyond.

One of the things that happens here every year now, for the last 21 years, is the annual Big O hike event. Every year we hike nine days, and hike all the way around

doing a segment a day. This event brings in a lot of people. Sometimes it's families, there might only be one or two members there to hike, but those families are using your local campgrounds.

Some are camping with us in Lake Okeechobee, some camp over in Moore Haven at the RV park at the recreational area. We have been using the South Bay RV Park again, since FEMA released it after the '04/'05 hurricane season, and that became a big camp for them.

Some of our people actually camp out at the local mom and pop hotels, as well as the chains in Clewiston, and the reason I'm bringing this up is that, again, the revenue, bringing the money into your local economy. Whether we are just buying donuts from your local shops or going into your various restaurants, including the Clewiston Inn, I think we did dinner in the last couple of years, the gas stations. This is why some of your cities, Okeechobee, Pahokee, Clewiston, are what we call gateway communities to the Florida Trail.

Now, the last couple of years, segments, as we refer to them, have been shut off to public hiking. We understand it's a matter of safety. We have construction traffic going onto and off, you know, on top of the levee. We don't want the public walking through there. And we have been able to work very closely with the Corps of Engineers and also Water Management District for where we are and where we are not to be, and we hope to continue in that light for many, many years to come.

I know the literature is out there, but the aspect of the ecology is very important to Florida Trail members, too. We wear a lot of different hats. Some of us are Audubon members. Some of us are members of the Native Plant Society. Some go out on pro hiking tours.

There's an aspect that I just wanted to share with you all, and I'm hoping I'm not the last person to speak tonight. I kind of wanted to volunteer a few people for that, but I'm hoping that things will continue to improve and we are learning from our

mistakes going back from the foundation of our country as to how to best manage the water, the land.

And with the Corps of Engineers, I know it's very hard trying to do and it is accomplishing here and there. Of course, if you look 20 years down the line, turn around and look back to see how things are going. But I'm hoping to still be hiking around the lake at that time and enjoying your environment, your ecology, your towns here. So with that, that's kind of the Florida Trail's point of view. If you have any comments of what I said, it came from me personally, okay. So with that I'll release the microphone.

MR. WILLADSEN: Thank you. Do we have any other comments?

MR. LOPEZ: I'm Pepe Lopez, I'm a local resident. I'm an engineer. And I live in Clewiston for 33 years, and I'm gonna plead to the Corps to please pave back the top of the levee the way it has been paved with the taxpayers money. I cannot believe after billion dollars, after spending all this

money, you are going to leave the levee without that protection.

The protection the levee from erosion, from all kind of -- and it facilitates the economy of the area, riding bicycles, motorized vehicles, again, I think it should be part of this project and shouldn't be ignored. Thank you.

MR. WILLADSEN: Okay.

MR. PERRY: I'm Tommy Perry, I turned in a card, so you have my name. At what point in time do you reassess the Dike safety? And when you reassess it, do you reassess it using the lowest stages or the stages that we held the lake at prior?

MR. WILLADSEN: Are you referring to the study itself?

MR. PERRY: No. There's a Dike assessment that says we are in Category 1 dike.

MR. WILLADSEN: DSAC rating. Yes.

MR. PERRY: What point do we reassess to see if we are still at DSAC 1?

MR. WILLADSEN: As we implement these risk reduction measures that would be --

that's part of the study. The study itself will hopefully let us know, measures X, Y and Z or whatever are required to be able to lower that DSAC rating.

MR. PERRY: As that DSAC rating is lowered, does that mean that we are able to raise the stage of the lake back up to what it was, or is it being related using the lower stages that were the temporary lower stages that we have today?

MR. WILLADSEN: That's a completely separate process in discussion. Our focus is strictly on the embankment and the fixes that are needed.

MR. PERRY: Maybe I didn't -- I think you are maybe misunderstanding my question. Because the embankment is in danger, we have lowered the level of the lake.

MR. WILLADSEN: Currently, we are operating under the LORS.

MR. PERRY: So we should be able to go up more.

MR. WILLADSEN: I think Angie is probably better at this.

MS. DUNN: So there were two triggers

under the Lake Okeechobee Regulation Schedule that will allow the Corps to re-evaluate the lake stage. One of those triggers was completion of the CERP or Comprehensive Everglades Restoration Plan, Band One projects, which are still in progress, or the rehabilitation of Reaches 1, 2 and 3.

So, dependent upon the Dam Safety Modification Study and the order in which we are constructing these fixes, once we rehabilitate Reaches 1, 2 and 3, we will be able to look at the regulation schedule again.

MR. PERRY: Thank you.

MR. WILLADSEN: Thank you. Additional comments? Well, I thank everybody for coming and participating. Sir, do you want to comment?

MR. TILTON: Question. Andy Tilton for the record. There's some work being done at the Hendry County by FEMA on a restudy of the entire county, and there's been some discussion that due to the condition of the Herbert Hoover Dike, that the flood

classification for the area within Clewiston may change to a category that requires insurance, versus one that doesn't require insurance whether that be in place. Do you have any information on how that will affect the FEMA mapping classification?

MR. CAMPBELL: I've not heard it in Hendry County. I think FEMA has told us they were going to take a look at Palm Beach and Martin County. It's my last understanding that may happen as soon as this summer that they may have some new flood maps, but I think the information you are hearing sounds accurate that FEMA won't give credit for the Dike being here.

MR. TILTON: Okay. And the refilling of the Reach 2 probably won't happen for another four, five, six years?

MR. WILLADSEN: If we look at our timeline, the completion would not be before our 2017 time frame from when we can actually do some more implementation. So it's going to be a few years out.

MR. TILTON: Thank you.

MR. WILLADSEN: Yes, ma'am.

MS. ALDERMAN: Hi, I'm Silvia Alderman, I just have a question. I was looking at your handout that was on the table back there, and it says "While work is ongoing to replace water control structures, the Corps is determining the best solutions for the remainder of the Dike. To adequately address the problems and develop alternatives, the Corps is conducting an evaluation known as the HHD Dam safety Modification Study.

Okay. My question is, does that therefore mean that you will continue the replacement of the culvert under a separate program and this modification study is not going to impact that schedule?

MR. WILLADSEN: That is our plan.

MS. ALDERMAN: Okay. Thank you.

MR. WILLADSEN: Additional comments? Questions? Thank you all for coming. I really appreciate it. We are going to hang around here for a little while after to do some more interaction because I think that that's a good thing. Thank you all for coming.

(Whereupon, the stenographic record was completed at 7:35 p.m.)

C E R T I F I C A T E

STATE OF FLORIDA }
COUNTY OF HENDRY }

I, Renee' R. Miller, Certified Court Reporter and Notary Public in and for the State of Florida, do hereby certify that I was authorized to and did stenographically report the foregoing proceedings in shorthand, which were thereafter reduced to typewritten form by me or under my direction and supervision, and that the foregoing transcript is a true and accurate record of the testimony given, to the best of my understanding and ability.

I FURTHER CERTIFY that I am neither counsel for, related to, nor employed by any of the parties to the action in which this proceeding was taken; and, further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially interested, or otherwise, in the outcome of this action; and that I have no contract with the parties, attorneys, or persons with an interest in the action.

This _____ day of _____, 2012.

_____
Renee' R. Miller

U.S. ARMY CORPS OF ENGINEERS

HERBERT HOOVER DIKE

REHABILITATION PROJECT

Project Update and NEPA Scoping Meeting

Transcript of Proceedings

February 28, 2013

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LTC. GRECO: All right. Good evening. I think we'll get started. All right. Well, good evening. My name is Lieutanant Colonel Tom Greco of the U.S. Army Corps of Engineers, Jacksonville district, and I'll be presiding over tonight's update on the Herbert Hoover Dike and the public scoping meeting regarding potential environmental impacts as the Corps of Engineers looks to undertake future work on the dike. For those of you who don't know me, I'm the Deputy District Commander for South Florida, and as such, am representing Colonel Alan Dodd, the district commander.

We're here tonight to provide information and ask for your input on potential environmental issues regarding future work at the Herbert Hoover dike. Before we begin, I'd like to thank you all for taking time out of your busy schedules to get involved in the planning process. This meeting is being held in accordance with the National Environmental Policy Act for the sole purpose of listening to you.

I'd like to remind you of the importance of filling out comment cards, which are located

in the back of the room. These cards serve two purposes. First, they let us know that you're interested in the project so that we can keep you informed, and second, to provide me with a list of individuals who wish to speak tonight. If you did not fill out a card, they are available, as I mentioned, in the rear of the room on the registration table.

All of your comments will be taken into consideration as we move forward with our planning for future work at Herbert Hoover Dike.

Before we begin the presentation, let me introduce the team with me tonight. From the Corps of Engineers, Mr. Tim Willadsen, project manager; Ingrid Bon, project manager forward; Angie Dunn, environmental, and John Campbell, corporate communications, in the back of the room.

In a few minutes I will turn the floor over to Tim Willadsen who will provide you with a brief overview of the Herbert Hoover Dike rehabilitation project. He will be followed by Angie Dunn, who will explain the NEPA process.

Once the presentation is complete, I will then open the meeting to public comments.

Ladies and gentlemen, Tim Willadsen.

MR. WILLADSEN: Thank you. Can everybody hear me okay? I'm going to try this first, if you can't hear me, let me know and I'll go ahead and get the microphone.

Tonight I'd like to give you a quick overview of HHD, and we'll discuss our problems, our solutions. I'll give you a quick construction update. We'll touch on the Dam Safety Modification Study, which is primarily the reason why we're here today. Like Colonel said, Angie will give you the NEPA overview.

Lake Okeechobee, if you just watched the video that we've been replaying, I always think this is interesting because Lake Okeechobee is 720 square miles, but the video said it was 730 square miles; it's kind of relative to the lake stage, so one of those interesting things. It is a rather large lake. Most of you live around here, so you understand the importance of it as well, but you may not know that the drainage basin that runs into the lake is over 5600 square miles, and that extends virtually all the way up to Orlando.

The things that concern us is if that

drainage basin receives say a foot of rainfall, twelve inches, it has an effect on the lake and can raise the lake anywhere from three to four feet, so that's a concern, specifically since we don't have the ability to release water faster then its inflow, roughly six times, so containment is key, we have to be able to contain these events.

Congress first authorized Herbert Hoover Dike in 1930. That was following hurricanes both in '26 and '28 where we had significant life loss and tremendous economic damage in the area. There was multiple authorizations that followed, but the initial one is what built the embankment, the 68 miles on the south shore, and of course all up here in Okeechobee, 16 miles on the north side of the lake.

The subsequent authorizations have led us to where we are today, which is 143 miles of embankment, and that includes the system overall, includes the 32 federal culverts that we'll discuss a little bit more about tonight, as well, in addition, five spillway inlets, five spillway outlets, nine navigation locks, nine pumping stations. You can see it's a

rather complex system.

But critical to the containment issue we talked about, we do not have any overflow capability, so we don't have an emergency spillway, and what's partially driving our problem is when they built this dike back in the day, the construction techniques they used would not be considered useable today, it just doesn't meet our today standards.

The problems that we have at Herbert Hoover Dike are basically the way that the water flows through the embankment; seepage can lead to piping, and what that means is both through the embankment and through the foundation, if the water that's flowing through there picks up material and starts carrying that material away from the embankment itself, that process can lead back to the lake, and in doing so, cause basically a catastrophic embankment failure. We refer to them in the Corps as potential failure modes, and the two for the embankment are through embankment and through foundation, seepage and piping.

In addition to that, we also have concerns at the -- specifically the 32 federal culvert

locations, and you add to that the two additional failure modes, and that would be the erosion into the structure and the erosion around the structure, and that basically means you could actually have material that falls into the structure, washes away under these extreme events, and you can also have erosion that occurs right along the pipe itself.

So that led to Herbert Hoover Dike, in 2006, being classified as a Level 1 under the Dam Safety Action Classification. Herbert Hoover Dike is one of the few dams in the Corps' inventory that is a DSAC 1 dam, and what that means is it requires us to take action on it, which we are doing, and we must reduce this risk of failure for us to be able to lower that DSAC rating.

The solutions for these problems, back in 2000 a major rehabilitation report, and that took 143 miles of embankment and subdivided it into eight reaches, with the initial focus on Reach, 1. And that Reach 1 rehabilitation plan did include a component of cutoff wall, a landslide seepage berm, and again, replacing the conduits or the culverts

within that stretch as well.

We subsequently have changed to what we consider a risk-based approach, and that's also done Corps wide, and what that means is we basically have to look at the entire system as one unit, therefore we would be able to prioritize implementation of risk reduction features, and that I guess in a nutshell tells you we get the biggest bang for the buck, rather than invest a tremendous amount of money in select areas where you still have higher risk in some other areas, identify and quantify that risk all the way around the entire system, and you may find there's other areas that need to have something done to it sooner than where you are putting money right now.

The cutoff wall we actually completed installing in Reach 1, and the culvert replacements all fit within this risk-based approach.

As far as the construction update, I just mentioned the Reach 1 cutoff wall. The actual installation of the wall has been completed since I believe October of last year. The

construction contracts are ongoing and will be finished and closed out sometime in 2013.

21.4 miles is a significant amount of cutoff wall, it's a significant effort, and I don't know how to say this, it's doing its job. It really has reduced the risk in these immediate areas in Reach 1 and the water control structures.

As we moved through this in 2011, we began working on them with culvert 14, which was completed in May of 2012. In addition, we currently have six culverts under contract for replacement, and we have three previously out of service culverts that we're properly abandoning them now in the contract, and actually all three of them are up here in the Okeechobee area, 11 and 16 down on the east side, 1 and 1-A are down on the southwest side, and 4 and 4-A are in the direct southern part.

We still plan to work what we call a pilot test facility or a pilot test, as it's been referred to; that should go out later on this year, and this particular project is going to help us in the modification study to determine if indeed we can find a more

economical solution or what is the right solution for the embankment, you know, addressing the seepage and piping issues that we have.

The data that we receive from this pilot test will be utilized in the mod study and for the future determination of how we are going to proceed with additional embankment rehabilitation.

We also have currently C-10, C-12 down on the east side, C-5, C-5A out on the west, and C-8, which again, is up here on the north, and C-13 on the east side. Those are all near term; hopefully later on this calendar year, early 2014 at the latest, those should be out under contract as well. And then the remaining 16 federal culverts, we plan to have them all awarded and completed by the year 2018. So we're aggressively going after this. It's a tremendous amount of work for us and for the district, and it just goes to show what a high priority and what the country as a whole, they provide the resources necessary for us to accomplish our goals.

With respect to the Dam Safety Modification

Study, again, that's system-wide, it addresses that system-wide risk reduction approach, and as I said before, the goal is to reduce that DSAC rating to basically address the high risk areas so we can lower the probability of failure, identify and address the highest risks first through this study. And again, the Reach 1 cutoff wall fits within this system-wide approach, as well as the culvert replacements and removals.

I touched on the seepage management test facility, we call it the pilot test, we did recently take it back, if any of you are contractors you noticed we pulled it from solicitation, and that was to modify the scope of work slightly to ensure that it meets the intent of the test itself, so that should be back on the street, hopefully sooner than later.

Then the Dam Safety Modification Study itself, it does include the 143 mile embankment and the structures within it, so it is the complete system as a whole. There's multiple alternatives on the table and being developed and analyzed that will reduce this risk.

There's not one solution that fits all, and

there's so much variation in geology when you go around this embankment, and that kind of drives multiple -- you know, all the different ways in which you could address these issues, so there's a tremendous amount of work that's underway right now in order to get us to the right solution.

Of course the NEPA document that we're kicking off tonight with the comments will include these alternatives within it, so you'll be able to see everything that we've been looking at and how we derived or how we came to the solutions that we're selecting to move forward with. And that draft, that NEPA document itself, should be available, or it's planned to be available by the summer of 2014, and then we hope to have the study approved in 2015, so then we can proceed on down with construction of these features. That should occur in 2017. About the time we start finishing up with the culverts, we continue on with further risk reduction measures, as will be identified.

Now I'll turn it over to Angie.

MS. DUNN: Thank you. Like Tim said, if

you can't hear me, just let me know and I can move over to the microphone as well.

I'm here tonight because we are going to be putting together another NEPA document, and we -- at the beginning of February we issued a cancellation for two previous draft Environmental Impact Statements that were out on the street for Herbert Hoover Dike. One of those was from December of 2006, and it was for Reaches 2 and 3 of the Herbert Hoover Dike; and the other environmental impact statement we cancelled was the draft EIS for Reach Reach 1-A in the landside rehabilitation.

Just recently we mailed out a scoping letter, and we issued a notice of intent to prepare a new environmental impact statement for the Dam Safety Modification Study, and that's why we're here tonight, to solicit more input from the general public and other state and federal local agencies that are interested in providing us additional information.

So what are the goals of NEPA? NEPA is a federal law that requires federal agencies to consider all environmental impacts of a proposed project. We have to do -- we have to follow

NEPA for any federal action. It requires us to consider all environmental consequences before we make a final decision and move forward with the project. As it says here, we solicit and consider public views on each of the proposals, we consult with the federal, the state, the local governments, as well as the tribe and the interested public.

And NEPA also provides a mechanism for the Corps to interact with other agencies that may have a regulatory interest on part of our projects.

Under NEPA, the federal agency must prepare a detailed statement addressing the potential environmental impacts, and there are three different documents. One is the categorical exclusion, and generally applies to normal operations and maintenance activities that the Corps may be involved in.

Another is an environmental assessment, and that's generally for a project that we determine has no significant impacts. Most recently we completed an environmental assessment on the culvert repairs, as well as the pilot test that Tim spoke of.

The third is an environmental impact statement. Those are generally written because we have determined that there is a significant impact on the environment.

Also on this slide is just the process that we go through, and right now we are in the scoping process as we prepare the draft EIS.

NEPA requires a federal agency to look at ten significant factors when we're looking at the intensity of potential impacts. These different factors are listed on the screen. They include whether or not we are in violation of federal, state or local laws, effect on endangered species and their critical habitat. Also, effects on scientific or cultural resources, including historical structures. Degree of controversy, effects on public health and safety. And then also you may have a significant effect, but it's a beneficial effect. So those are things that we look at.

I'm going to turn it over now to Colonel Greco to talk our implementation, but I would really like to solicit everybody's input, if you know of any kind of resource in the area or something that you want to make sure that we

are going to address in this NEPA document, so please let us know tonight, or you can grab a comment card from the back of the room and write down your thoughts and mail it to me as well, and we'll put the address up on the screen in just a moment.

LTC GRECO: This is just a recap of the system-wide approach that Tim discussed earlier, basically shows where we've been, where we are, where we are going.

Foremost at the top, Reach 1, cutoff wall, part of those risk reduction features, construction, as Tim mentioned, will be completed officially this year.

Water control structures. Again, risk reduction features; construction on those will be ongoing through 2018.

The Dam Safety Modification Study, which is primarily what we're looking at tonight, this is required for future dam modifications, and the NEPA document, which we are scoping, beginning scoping tonight, is going to be included in this particular study. We're looking at an approved study by 2015, in 2015.

Future risk reduction measures. They'll be

identified and prioritized through the Dam Safety Modification Study, and certainly as Tim mentioned before, we plan on implementing construction in 2017 for those.

Now, as Angie mentioned, and I will solicit comments in a few moments, there are several ways to contact us. For this particular meeting, this particular scoping process, comments will initially be due March 18, 2013. You can fill out a comment card in the back of the room, or you can also e-mail comments to Angie or mail them to her via the postal service, several ways to state your concerns or provide your comments for this particular process.

So like I said, in a few moments I'm going to solicit your comments, but they will be comments, it will not be an interchange.

Basically we'll be taking your comments for the record, but before we do that, I encourage folks to answer or ask any questions they have of Angie or Tim that may clarify any of the information that was provided earlier in the briefing, before we go on to public comment

Yes, sir?

UNIDENTIFIED SPEAKER: You said that you pulled back some of your previous studies. Why, and what's the goal? What's the purpose of changing it or modifying it or what? What's occurred to cause that?

MS. DUNN: As Tim mentioned, we are moving forward with a risk-based approach, and the Reach 2 and 3 Environmental Impact Statement, as well as the 1-A Environment Impact Statement -- how do you want to answer that?

MR. WILLADSEN: I would just say that they don't necessarily fit with the current -- the study that we've engageed in, so the components that addressed the 1-A, Reach 1-A rehab plan, the components, the cutoff wall component is what we're proceeding with and completed, because it fits that risk reduction approach. But the land side berm component is not necessarily the right solution, so we're better served to pull that document back, because if there's anything in addition in the future that would be needed on the land side, it will be addressed in the new study.

MS. DUNN: And we did receive significant comments during the Reach 1-A notice of

availability for that draft report, and there were a lot of concerns over impacts to real estate, and so while we were bringing that back in and readdressing it, we also got the new guidance on the sample Dam Safety Modification Study.

MR. FOX: Donald Fox, FWC. Your abandonment at Lock 7, we call it lock 7 here locally, but culvert 7, is that going to be construction intensive, or is it a pretty benign process? Well, actually there are two reasons. That's a major recreational use area right here, and yet you have to cross that culvert to get to one of the high public use area boat ramps, so if there's the ability on the timing on that, to do that during the -- you know, the off tourist season.

And I think (inaudible) last night, and we have two (inaudible) right now set within 100 yards of being within the limited activities out there, so that's something you may want to think about in the future, also. I don't know how the service will address -- because since it's a land-based operation, but if there's -- not knowing what that process

involves, if there's some way to do that in the summer period, early fall period, on the -- working on that where it won't impact the tourist industry coming into the community, it would be very beneficial.

MR. WILLADSEN: I can't speak for the timing of the contract, but I can tell you, though, that the components include -- it would be no greater than what you see now for the cutoff wall construction, so it would be work on the top of the embankment, and then there would be some work on the land side facing the embankment. The lake side, which is where your biggest concern is --

MR. FOX: The road actually goes over the main culvert there, to get to the access road to the boat ramps.

MR. WILLADSEN: It does come up the side of the embankment, but it doesn't come all the way to the crest, I don't believe.

UNIDENTIFIED SPEAKER: It doesn't.

MR. FOX: Pretty close.

MR. WILLADSEN: That was one thing I was going to take back and look at myself.

MR. FOX: Everybody would appreciate it if

there's some way to work around that on the timing thing, it would be most appreciated.

MR. WILLADSEN: We have Ingrid Bon, and I think there needs to be some communication here. I'll go back to Jacksonville, get a set of the plans, talk to the engineers and see exactly how that's going to be addressed.

MR. FOX: And as far as the snail kites there, they've been nesting earlier and nesting longer, and it just -- you might want to start, you know -- that's one -- probably the major in the area on the lake right now, so, you know, you might want to go ahead and initiate some early discussion with Vero Beach and the service, if they'll give you exclusion since it's totally a land operation, but I can very likely see the potential of some of those nests setting up in that limited activity fall On that structure.

LTC. GRECO: Any other questions? Okay. So with that in mind, we'll go into the public comment period, but I do want to remind you that a transcript of this public meeting will be prepared, and the record will remain open. Written comments may be submitted until March

18th, as I mentioned earlier, to the addresses, e-mail or postal, that are shown up there. All comments will receive equal consideration.

Individuals speaking tonight will be called to the microphone. Please come forward to the microphone and state your name and, if applicable, what organization you represent. I ask that you keep your comments pertinent to the Herbert Hoover Dike rehabilitation project effort. If you have comments outside the scope of this meeting, I'll be happy or one of the team members will be happy to meet with you immediately following the meeting.

The first and so far only individual tonight is Mr. Marcos Montes De Oca.

MR. MONTES DE OCA: I was going to say you addressed my comments before.

LTC. GRECO: If you would like to express that comment again for the record.

MR. MONTES DE OCA: Okay. Marcos Montes De Oca tonight representing City of Belle Glade, residents of Okeechobee County.

One of the items just up for discussion was utilities, existing utilities, water, sewer, mostly force main and electrical,

conduits existing in the levee and proposed future maintenance, just how would those be addressed. I don't know if you want to do an official response, but --

LTC GRECO: We'll let it into the record and provide comments on it through the process.

Are there any other comments? Okay. Like I said, we'll be sticking around for a while, and if you would like to talk to anyof us, you're more than welcome, but I'd like to take this opportunity to thank everyone for coming out; I know everyone has busy schedules, and I hope everybody has a safe drive home.

So thank you.

(Hearing concluded.)

C E R T I F I C A T E

STATE OF FLORIDA }
COUNTY OF HENDRY }
.

I, Elizabeth Barnes, Registered Professional Reporter and Notary Public in and for the State of Florida, do hereby certify that I was authorized to and did stenographically report the foregoing proceedings in shorthand, which were thereafter reduced to typewritten form by me or under my direction and supervision, and that the foregoing transcript is a true and accurate record of the testimony given, to the best of my understanding and ability.

I FURTHER CERTIFY that I am neither counsel for, related to, nor employed by any of the parties to the action in which this proceeding was taken; and, further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially interested, or otherwise, in the outcome of this action; and that I have no contract with the parties, attorneys, or persons with an interest in the action.

This _____ day of _____, _____,

_____
Elizabeth Barnes

C.2 Draft EIS

The Draft Environmental Impact Statement was published in the Federal Register on December 24, 2015. The public review period is from December 24, 2015 through February 23, 2016.

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C.2.1 Coordination Letters

Miccosukee Tribe of Indians of Florida
Seminole Tribe of Florida
Notice of Availability - General Public
Notice of Availability - Florida State Clearinghouse
Notice of Availability - Libraries

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 San Marco Boulevard
JACKSONVILLE, FLORIDA 32207-8175

REPLY TO
ATTENTION OF

DEC 15 2015

Planning and Policy Division
Environmental Branch

Honorable Roy Cypress
Chairman, Miccosukee Tribe of Indians of Florida
Post Office Box 440021
Tamiami Station
Miami, Florida 33144

Dear Chairman Cypress:

On March 13, 2013, Colonel Dodd sent you a letter regarding the Corps initiating preparation of a National Environmental Policy Act assessment for the Herbert Hoover Dike (HHD) Dam Safety Modification Study (DSMS). The purpose of the study is to identify risk reduction measures that can be implemented to reduce risks in the HHD system. I have enclosed our draft Environmental Impact Statement (EIS) for your review and continuation of our consultation on the work proposed. The work proposed within the draft EIS would occur within the HHD system on Lake Okeechobee, located in south central Florida, in Glades, Hendry, Martin, Okeechobee, and Palm Beach Counties. Public review of this document will begin on December 24, 2015.

The objective of this draft EIS is to consider effects to the human environment of implementing rehabilitation measures to address the system-wide seepage and piping concerns within the HHD. The HHD would continue to perform the required operational functions during construction.

Any comments you may have should be submitted in writing to the letterhead address by February 23, 2016. However, please feel free to contact our Tribal Liaison, Kim Taplin, at 561-801-0285 if you would like to schedule a consultation meeting prior to this date to discuss your concerns. Questions concerning the EIS can be submitted to Stacie Auvenshine at the letterhead address, email HHDEnvironment@usace.army.mil, or by phone at 904-232-3694.

Sincerely,

Jason A. Kirk, P.E.
Colonel, U. S. Army
District Commander

Enclosure

Copies Furnished:

Mr. Fred Dayhoff, NAGPRA Representative, Consultant to Miccosukee Tribe, HC 61 SR 68 Old Loop Road, Ochopee, FL 34141

Mr. James M. Erskine, Acting Water Resources Director, Miccosukee Tribe of Indians of Florida, P.O. Box 440021, Tamiami Station, Miami, FL 33144

Kevin Donaldson, Real Estate Services, Miccosukee Tribe of Indians of Florida, P.O. Box 440021, Tamiami Station, Miami, FL 33144

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 San Marco Boulevard
JACKSONVILLE, FLORIDA 32207-8175

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

MAR 10 2016

Mr. Fred Dayhoff, Tribal Representative
NAGPRA, Section 106
Miccosukee Tribe of Indians of Florida
HC 61 SR 68
Ochopee, Florida 34141

Re: Herbert Hoover Dike Dam Safety Modification Study, Draft Environmental Impact Statement

Dear Mr. Dayhoff:

As part of the Herbert Hoover Dike (HHD) Dam Safety Modification Study (DSMS), the U.S. Army Corps of Engineers (Corps), Jacksonville District is studying the environmental effects of rehabilitation of the HHD with an Environmental Impact Statement (EIS). The HHD is currently recognized as requiring urgent repairs to minimize risks to public safety and to provide a tolerable level of economic, societal and environmental security in the region. The objective of the DSMS and Draft EIS is to identify and recommend a cost effective alternative risk management plan that supports the expeditious reduction of risk from a breach of HHD.

As a result of the DSMS, an economically, environmentally, and socially efficient tentatively selected plan (TSP) is being recommended to reduce the overall risks attributed to a breach associated with HHD. The TSP consists of cost-effective structural measures that work in unison to reduce the likelihood of a breach at HHD and achieves the primary objective of protecting public safety. The TSP includes construction of risk reduction measures around the southern half of HHD and limited areas in the northwest sides of the dam, greatly reducing the potential for breach-related damages. The probability of experiencing a breach and incurring substantial impacts on ecological, cultural, and aesthetic resources would be greatly reduced with the implementation of the TSP.

As currently proposed, construction undertakings associated with the TSP are expected to occur within the previously disturbed Federal right-of-way. The area of potential effects (APE) for the actions proposed in the TSP (i.e. a cutoff wall, floodwall, and armoring) include the Federal right-of-way of HHD Common Inundation Zones B, C, and D (Figures 1-4).

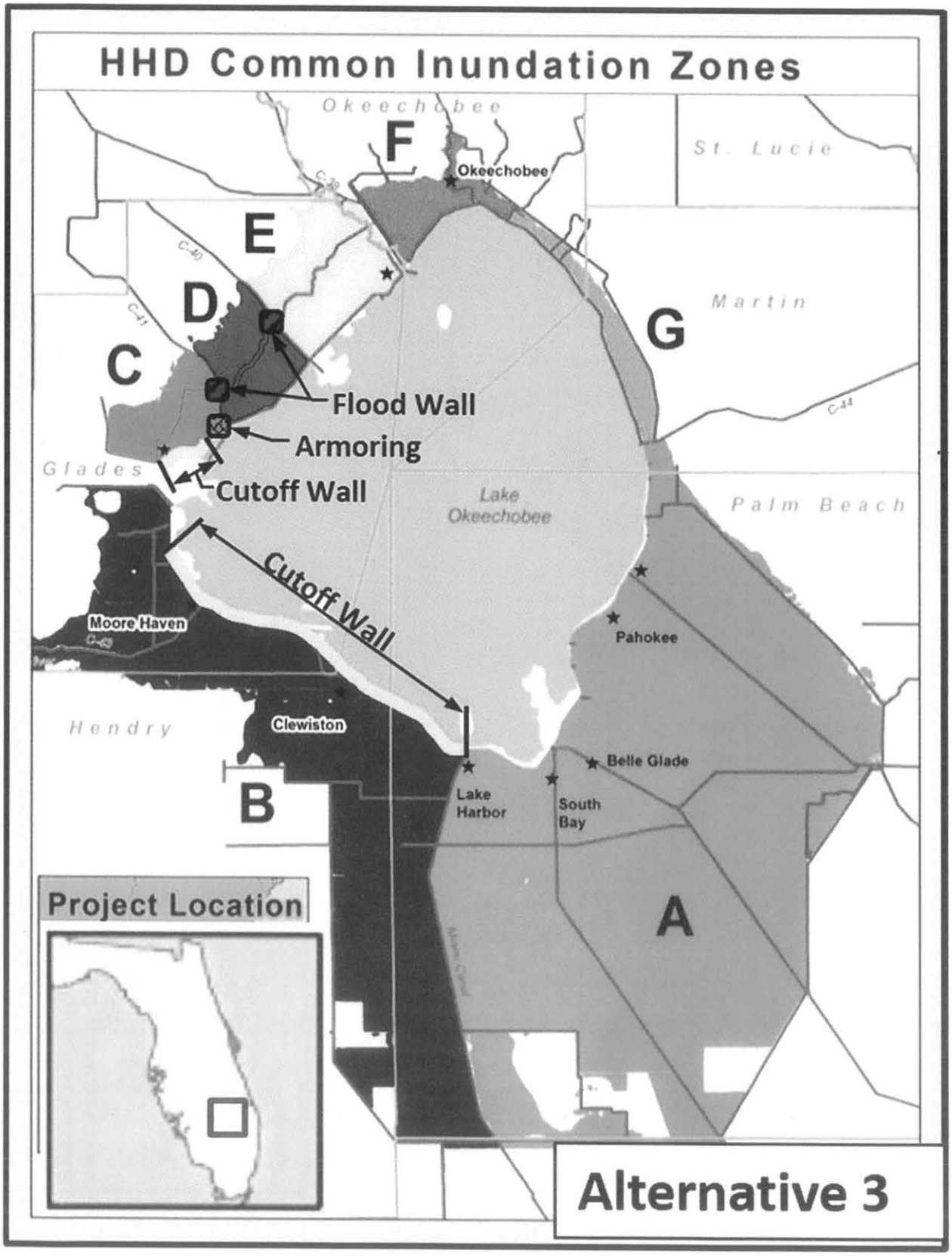
Due to the location of the project area within the previously disturbed HHD Federal right-of-way and based on similar projects previously completed as a part of HHD rehabilitation projects (i.e. cutoff Reach 1 and culvert replacements), it is not expected that the project will adversely affect historic properties listed or eligible for listing in the National Register of Historic Places. However, as the current study has not been subject to preliminary engineering and design, it is premature to request a review of any of the proposed undertakings, and therefore a determination of effects based on a precise APE cannot be stated at this time. However, each of the proposed undertakings will be subject to separate consultation with the Miccosukee Tribe of Indians and consideration of effects once the design has been finalized and prior to construction. Construction on these undertakings is schedule to begin in 2019 with an expected duration of 5 to 7 years.

Pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) and it's implementing regulations (36 CFR 800), and in consideration of the Corps' Trust Responsibilities, the Corps kindly requests continued coordination and formal consultation on the DSMS and the proposed undertakings related to the study. If there are any questions, please contact Ms. Meredith Moreno at 904-232-1577 or e-mail at Meredith.a.moreno@usace.army.mil.

Sincerely,

Jason J. Spinning
Acting Chief, Environmental Branch

Enclosure


HHD Common Inundation Zones
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South Bay
Project Location
Alternative 3

Figure 1.

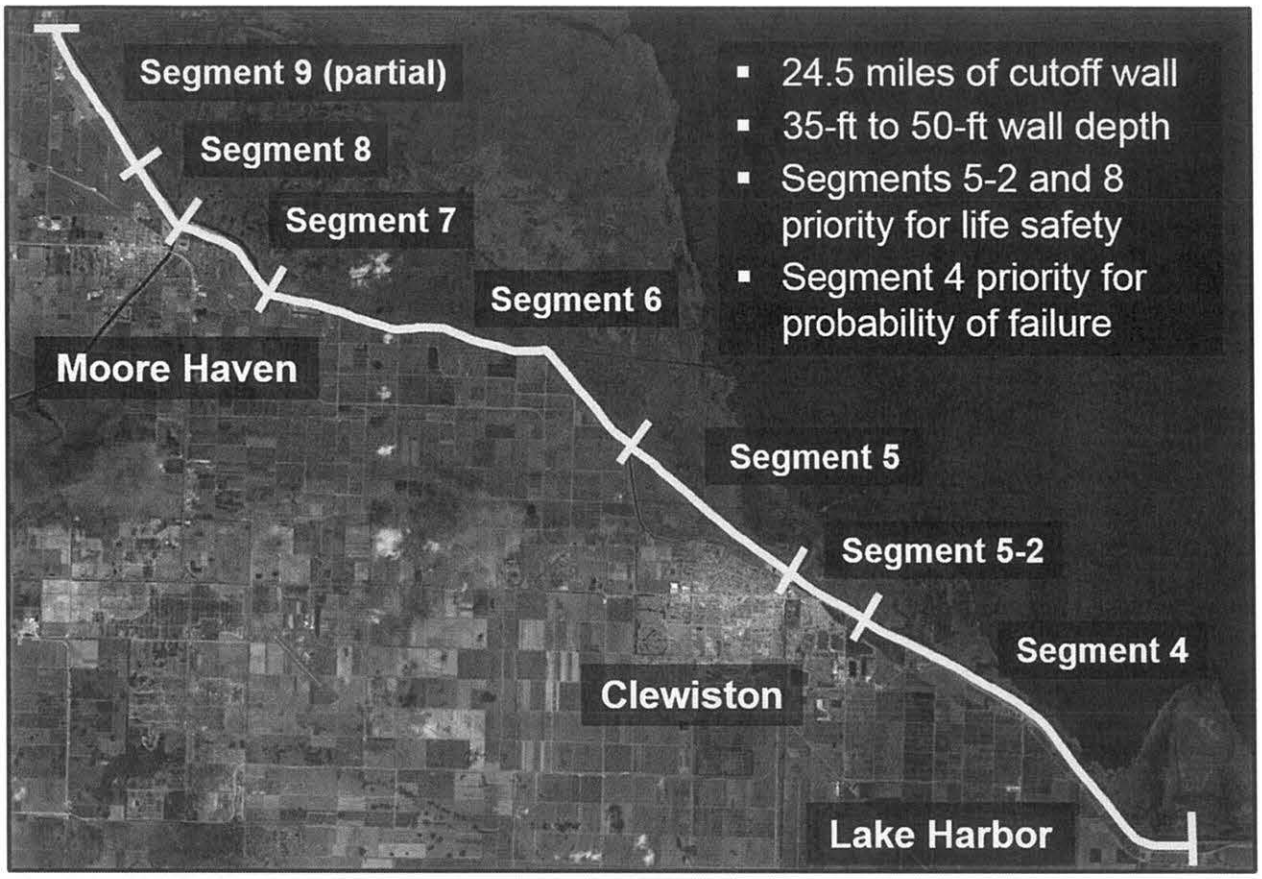

Figure 2. HHD Common Inundation Zone B proposed cut-off wall.

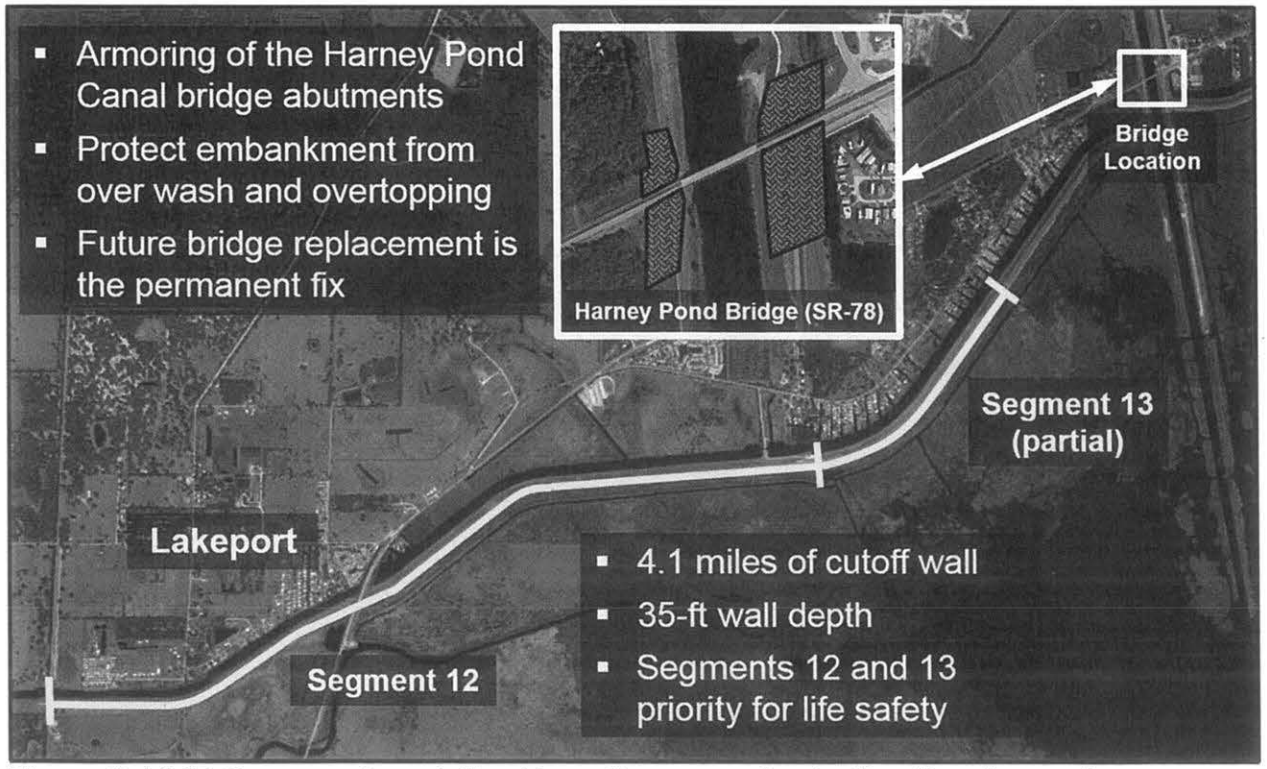

Figure 3. HHD Common Inundation Zone C proposed cut-off wall and armoring.

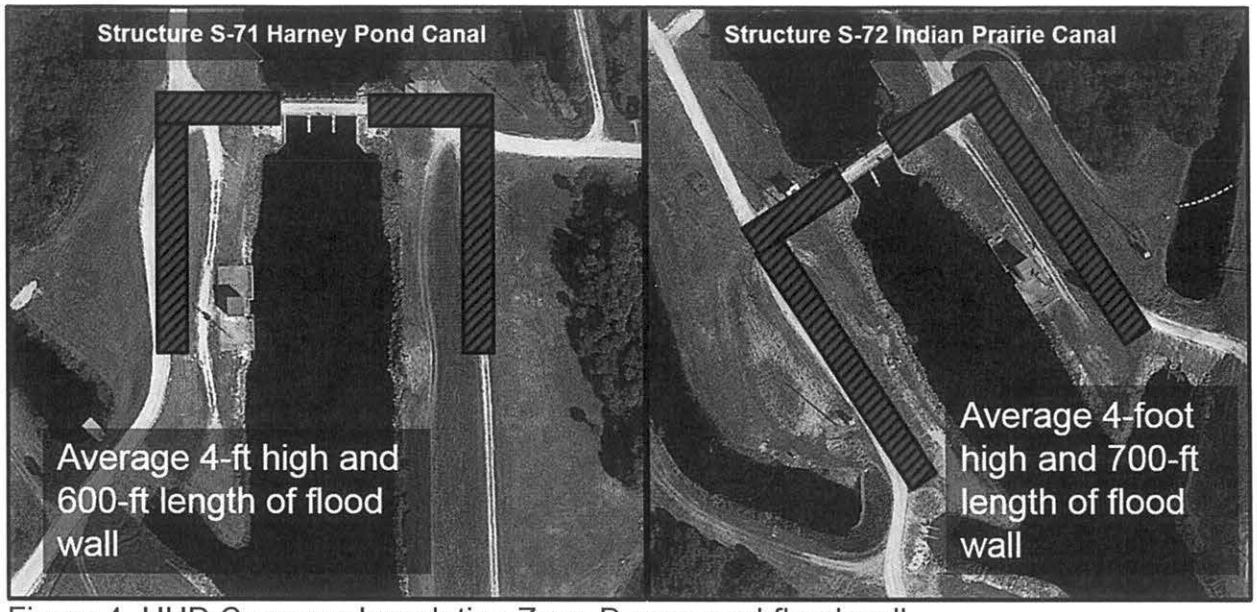

Figure 4. HHD Common Inundation Zone D proposed flood wall.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 San Marco Boulevard
JACKSONVILLE, FLORIDA 32207-8175

REPLY TO
ATTENTION OF

DEC 15 2015

Planning and Policy Division
Environmental Branch

Honorable James Billie
Chairman, Seminole Tribe of Florida
6300 Sterling Road
Hollywood, FL 33024

Dear Chairman Billie:

On March 13, 2013, Colonel Dodd sent you a letter regarding the Corps initiating preparation of a National Environmental Policy Act assessment for the Herbert Hoover Dike (HHD) Dam Safety Modification Study (DSMS). The purpose of the study is to identify risk reduction measures that can be implemented to reduce risks in the HHD system. The Corps met with representatives on November 23, 2015 to discuss the Tentatively Selected Plan. I have enclosed our draft Environmental Impact Statement (EIS) for your review and continuation of our consultation on the work proposed. The work proposed within the draft EIS would occur within the HHD system on Lake Okeechobee, located in south central Florida, in Glades, Hendry, Martin, Okeechobee, and Palm Beach Counties. Public review of this document will begin on December 24, 2015.

The objective of this draft EIS is to consider effects to the human environment of implementing rehabilitation measures to address the system-wide seepage and piping concerns within the HHD. The HHD would continue to perform the required operational functions during construction.

Any comments you may have should be submitted in writing to the letterhead address by February 23, 2016. However, please feel free to contact our Tribal Liaison, Kim Taplin, at 561-801-0285 if you would like to schedule a consultation meeting prior to this date to discuss your concerns. Questions concerning the draft EIS can be submitted to Stacie Auvenshine at the letterhead address, email HHDEnvironment@usace.army.mil, or by phone at 904-232-3694.

Sincerely,

Jason A. Kirk, P.E.
Colonel, U. S. Army
District Commander

Enclosures

Copies Furnished:

Seminole Tribe of Florida, Executive Director, Historic Resources Department, Tribal Historic Preservation Office, 34725 West Boundary Road, Clewiston, Florida 33440

Seminole Tribe of Florida, Dr. Paul N. Backhouse, Ph.D., Tribal Historic Preservation Officer, Ah Tha Thi Ki Museum, 30290 Josie Billie Hwy, PMB 1004, Clewiston, Florida 33440

Cherise Maples, Director, Environmental Resource Management, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, FL 33024

Patricia Powers, Bose Public Affairs Group, 2000 M Street, N.W., Suite 520, Washington, D.C. 20036

Cicero Osceola, Big Cypress General Council Office, Council Representative, 31000 Josie Billie Highway, Clewiston, FL 33440

Andrew J. Bowers, ESQ., Brighton Council Representative, Seminole Tribe of Florida Brighton Council, 500 Harney Pond Road, Okeechobee, FL 34974

Joe Frank, Big Cypress Board Representative, Seminole Tribe of Florida, Inc., Big Cypress Board Office, 31000 Josie Billie Hwy., Clewiston, FL 33440

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 San Marco Boulevard
JACKSONVILLE, FLORIDA 32207-8175

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

MAR 1 0 2016

Dr. Paul Backhouse, THPO
Seminole Tribe of Florida
Tribal Historic Preservation Office
30290 Josie Billie Highway
PMP 1004
Clewiston, Florida 33440

Re: Herbert Hoover Dike Dam Safety Modification Study, Draft Environmental Impact Statement, THPO # 0011642

Dear Dr. Backhouse:

As part of the Herbert Hoover Dike (HHD) Dam Safety Modification Study (DSMS), the U.S. Army Corps of Engineers (Corps), Jacksonville District is studying the environmental effects of rehabilitation of the HHD with an Environmental Impact Statement (EIS). The HHD is currently recognized as requiring urgent repairs to minimize risks to public safety and to provide a tolerable level of economic, societal and environmental security in the region. The objective of the DSMS and Draft EIS is to identify and recommend a cost effective alternative risk management plan that supports the expeditious reduction of risk from a breach of HHD.

As a result of the DSMS, an economically, environmentally, and socially efficient tentatively selected plan (TSP) is being recommended to reduce the overall risks attributed to a breach associated with HHD. The TSP consists of cost-effective structural measures that work in unison to reduce the likelihood of a breach at HHD and achieves the primary objective of protecting public safety. The TSP includes construction of risk reduction measures around the southern half of HHD and limited areas in the northwest sides of the dam, greatly reducing the potential for breach-related damages. The probability of experiencing a breach and incurring substantial impacts on ecological, cultural, and aesthetic resources would be greatly reduced with the implementation of the TSP.

As currently proposed, construction undertakings associated with the TSP are expected to occur within the previously disturbed Federal right-of-way. The area of potential effects (APE) for the actions proposed in the TSP (i.e. a cutoff wall, floodwall, and armoring) include the Federal right-of-way of HHD Common Inundation Zones B, C, and D (Figures 1-4).

Due to the location of the project area within the previously disturbed HHD Federal right-of-way and based on similar projects previously completed as a part of HHD rehabilitation projects (i.e. cutoff Reach 1 and culvert replacements), it is not expected that the project will adversely affect historic properties listed or eligible for listing in the National Register of Historic Places. However, a portion of the proposed floodwall within Common Inundation Zone C is located on the Brighton Reservation and consultation with the Tribal Historic Preservation Office regarding the APE must be undertaken before a determination of effects on this portion of the project can be stated (see Figure 4). As the current study has not been subject to preliminary engineering and design, it is premature to request a review of any of the proposed undertakings, and therefore a determination of effects based on a precise APE cannot be stated at this time. However, each of the proposed undertakings will be subject to separate consultation with the Seminole Tribe of Florida (STOF) and consideration of effects once the design has been finalized and prior to construction (similar to the current process utilized during HHD culvert replacements). Construction on these undertakings is schedule to begin in 2019 with an expected duration of 5 to 7 years.

Pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) and it's implementing regulations (36 CFR 800), and in consideration Corps' Trust Responsibilities and the Burial Resources Agreement between the Corps and STOF, the Corps kindly requests continued coordination and formal consultation on the DSMS and the proposed undertakings related to the study. The Corps will remain in contact with Ms. Anne Mullins to determine effects for those portions of the project that are located on reservation and Mr. Bradley Mueller and Mr. Andrew Weidman for off-reservation effects. If there are any questions, please contact Ms. Meredith Moreno at 904-232-1577 or e-mail at Meredith.a.moreno@usace.army.mil.

Sincerely,

Jason J. Spinning
Acting Chief, Environmental Branch

Enclosure

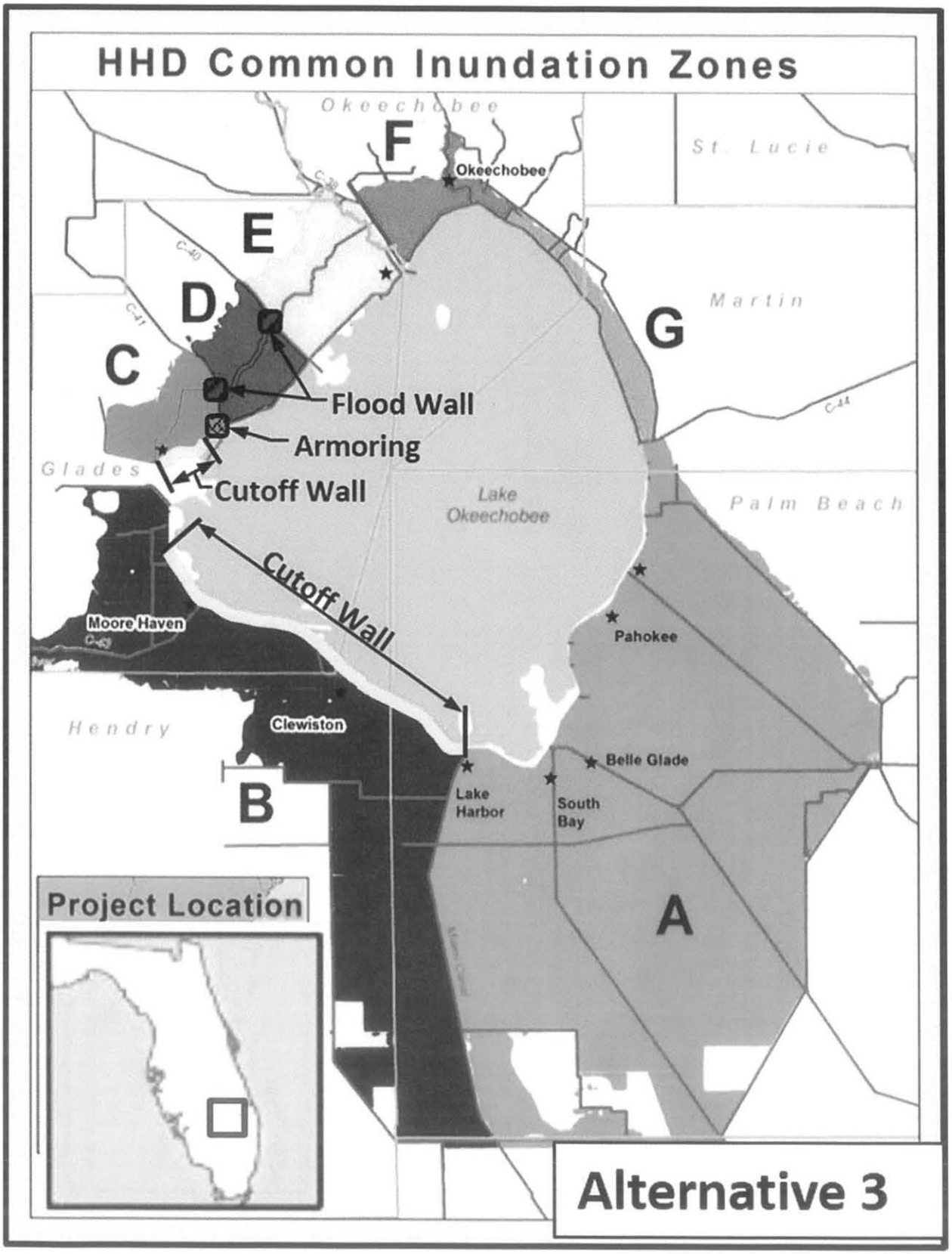
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Figure 1.

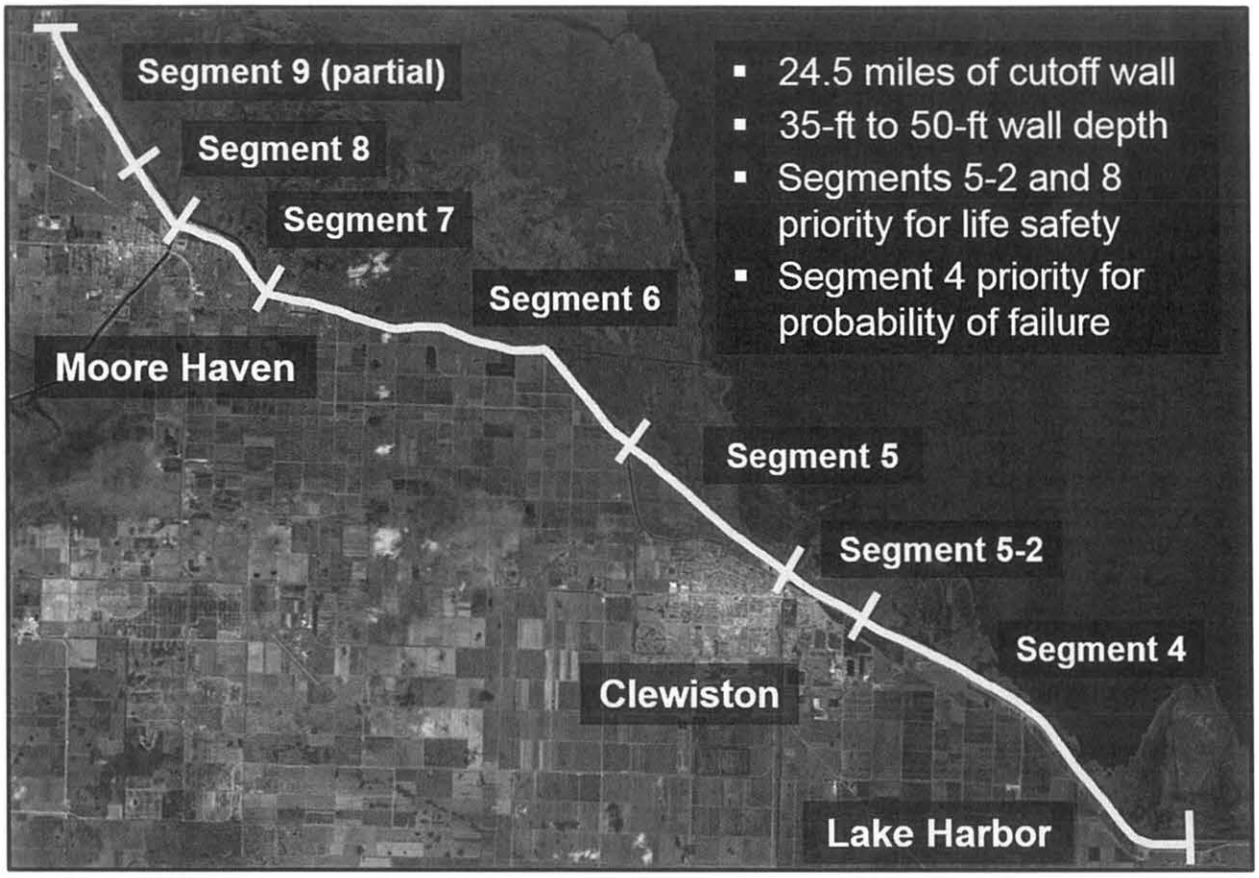

Figure 2. HHD Common Inundation Zone B proposed cut-off wall.

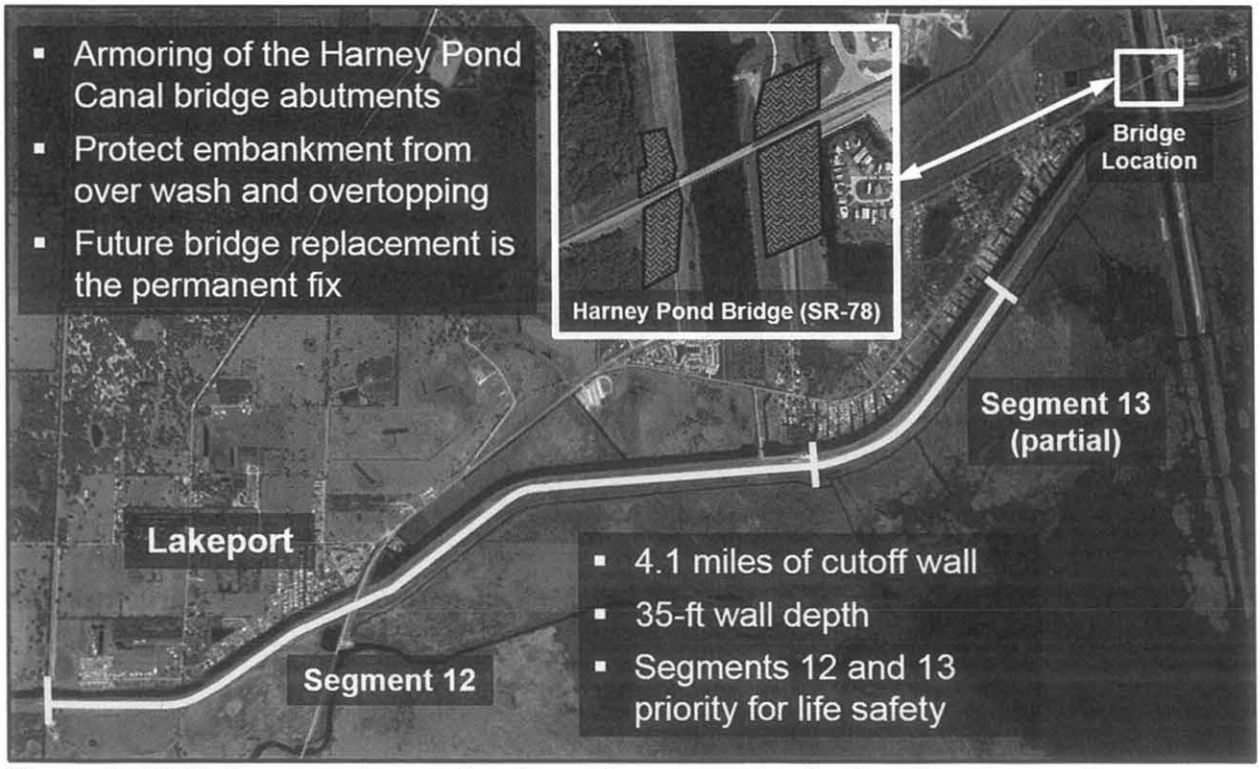

Figure 3. HHD Common Inundation Zone C proposed cut-off wall and armoring.

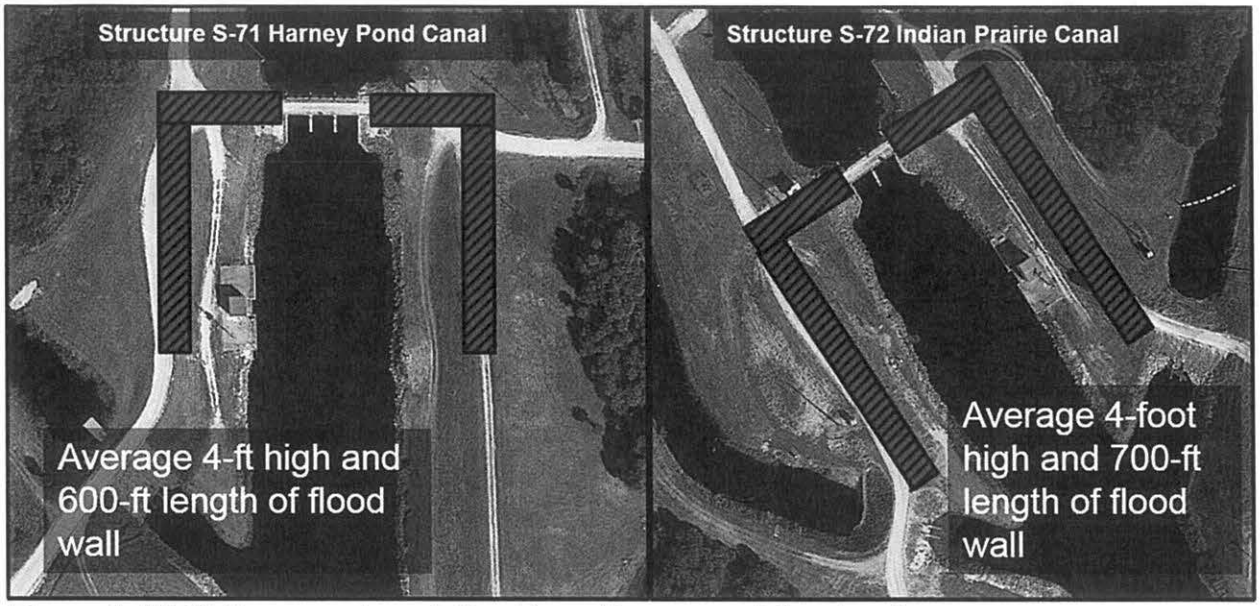

Figure 4. HHD Common Inundation Zone D proposed flood wall.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 San Marco Boulevard
JACKSONVILLE, FLORIDA 32207-8175

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

MAR 1 0 2016

Tim Parsons, Ph.D.
Interim Director, Division of Historical Resources
& Deputy State Historic Preservation Officer
Division of Historical Resources
500 South Bronough Street
Tallahassee, Florida 32399-0250

Re: Herbert Hoover Dike Dam Safety Modification Study, Draft Environmental Impact Statement

Dear Dr. Parsons:

As part of the Herbert Hoover Dike (HHD) Dam Safety Modification Study (DSMS), the U.S. Army Corps of Engineers (Corps), Jacksonville District is studying the environmental effects of rehabilitation of the HHD with an Environmental Impact Statement (EIS). The HHD is currently recognized as requiring urgent repairs to minimize risks to public safety and to provide a tolerable level of economic, societal and environmental security in the region. The objective of the DSMS and Draft EIS is to identify and recommend a cost effective alternative risk management plan that supports the expeditious reduction of risk from a breach of HHD.

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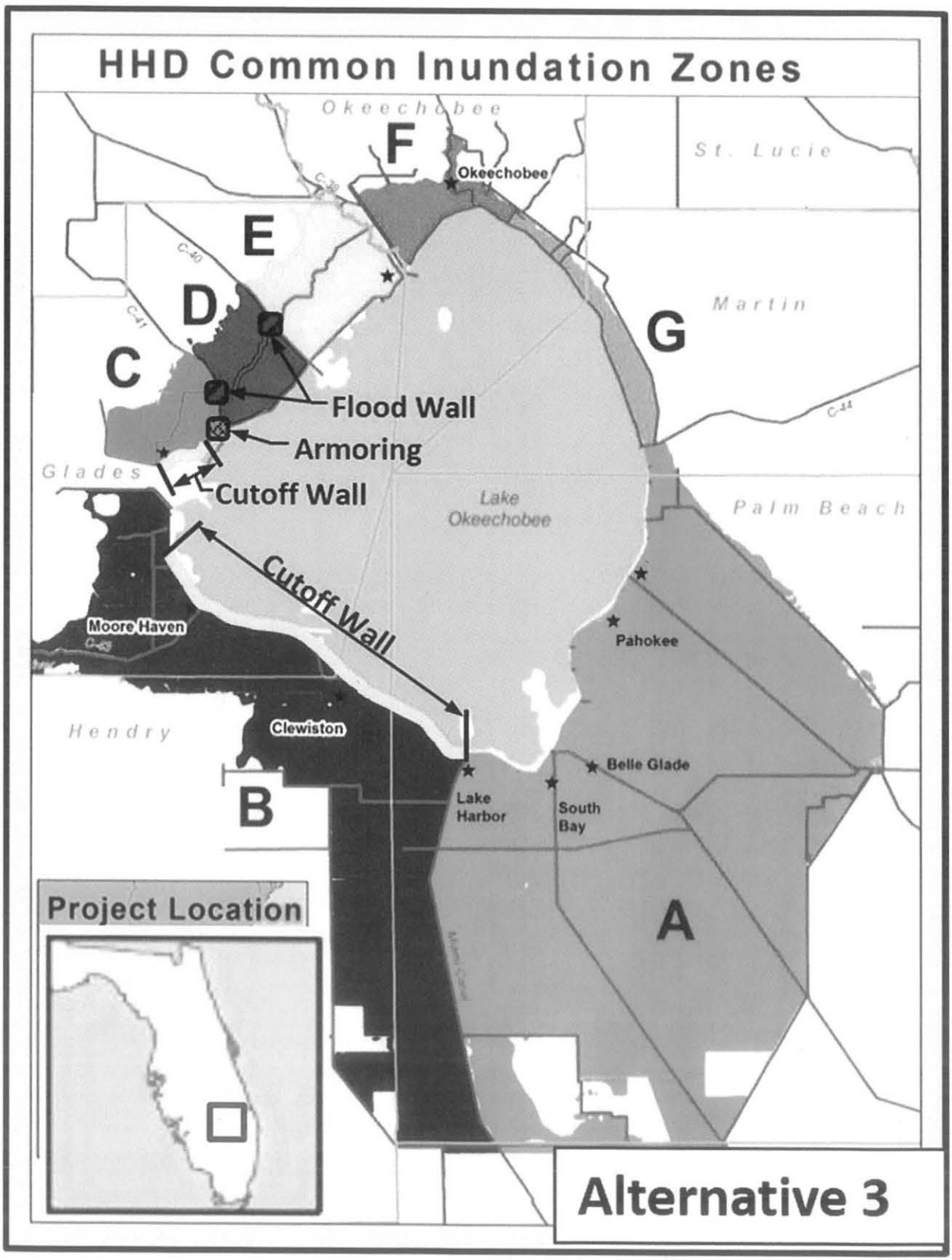
Due to the location of the project area within the previously disturbed HHD Federal right-of-way and based on similar projects previously completed as a part of HHD rehabilitation projects (i.e. cutoff Reach 1 and culvert replacements), it is not expected that the project will adversely affect historic properties listed or eligible for listing in the National Register of Historic Places (DHR File Nos. 2015-1618; 2011-00816). However, as the current study has not been subject to preliminary engineering and design, it is premature to request a review of any of the proposed undertakings, and therefore a determination of effects based on a precise APE cannot be stated at this time. However, each of the proposed undertakings will be subject to separate consultation with the Florida State Historic Preservation Officer and consideration of effects once the design has been finalized and prior to construction. Construction on these undertakings is schedule to begin in 2019 with an expected duration of 5 to 7 years.

Pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) and it's implementing regulations (36 CFR 800), the Corps kindly requests continued coordination and formal consultation on the DSMS and the proposed undertakings related to the study. If there are any questions, please contact Ms. Meredith Moreno at 904-232-1577 or e-mail at Meredith.a.moreno@usace.army.mil.

Sincerely,

Jason J. Spinning
Acting Chief, Environmental Branch

Enclosure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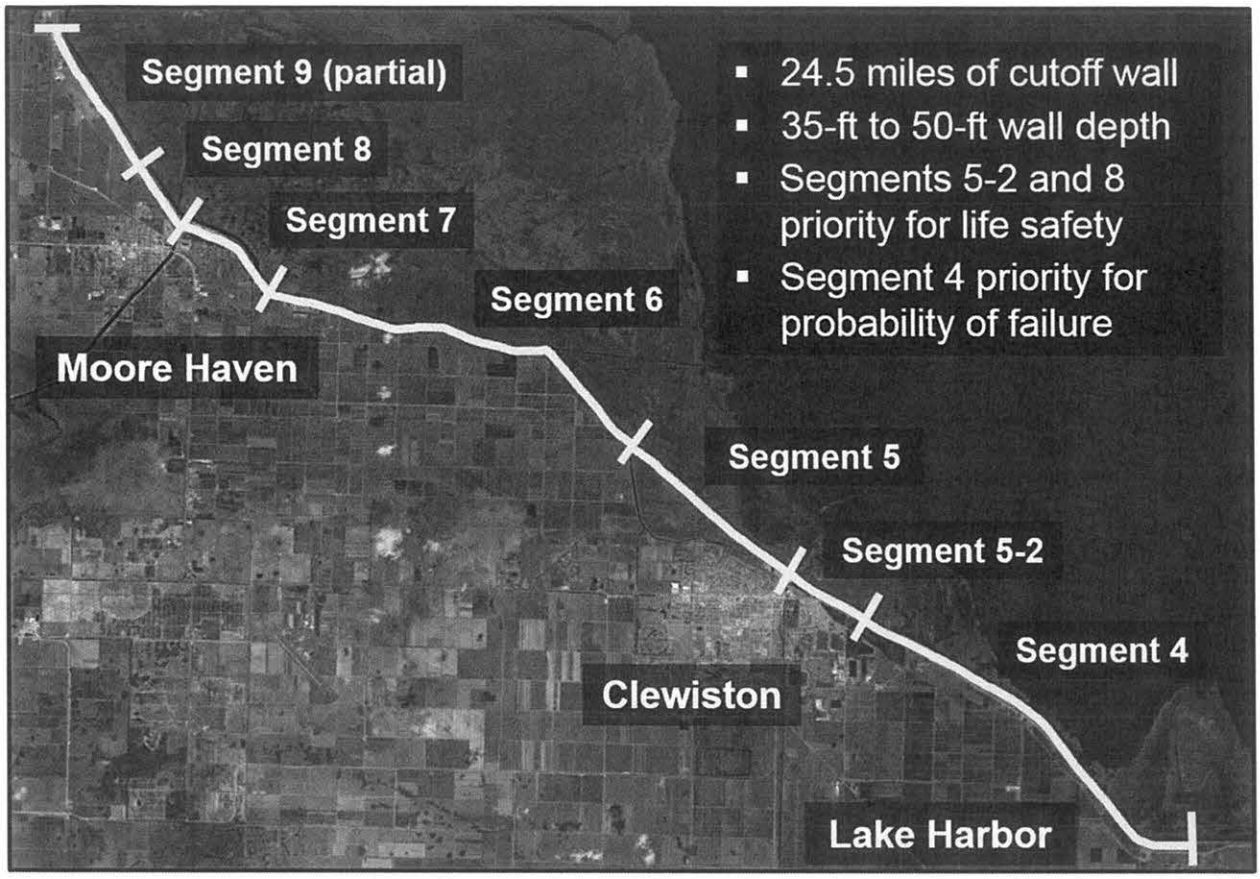

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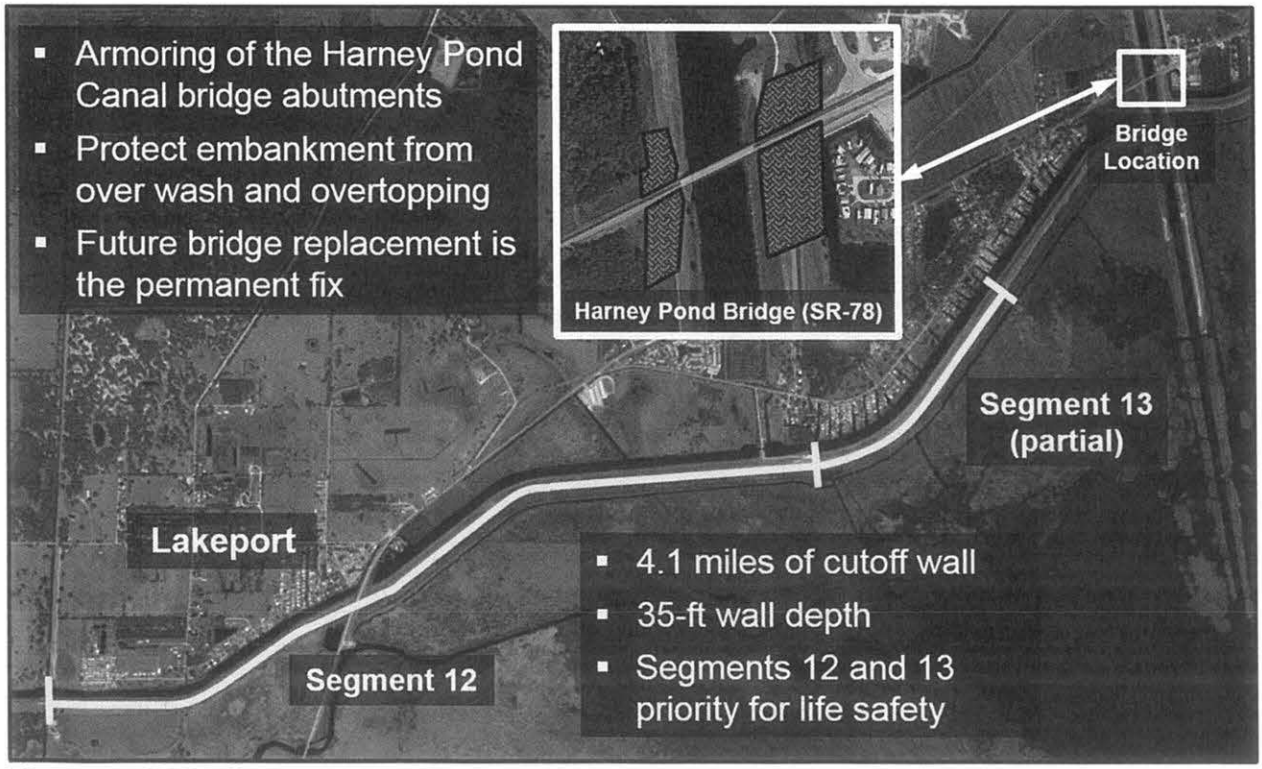

Figure 3. HHD Common Inundation Zone C proposed cut-off wall and armoring.

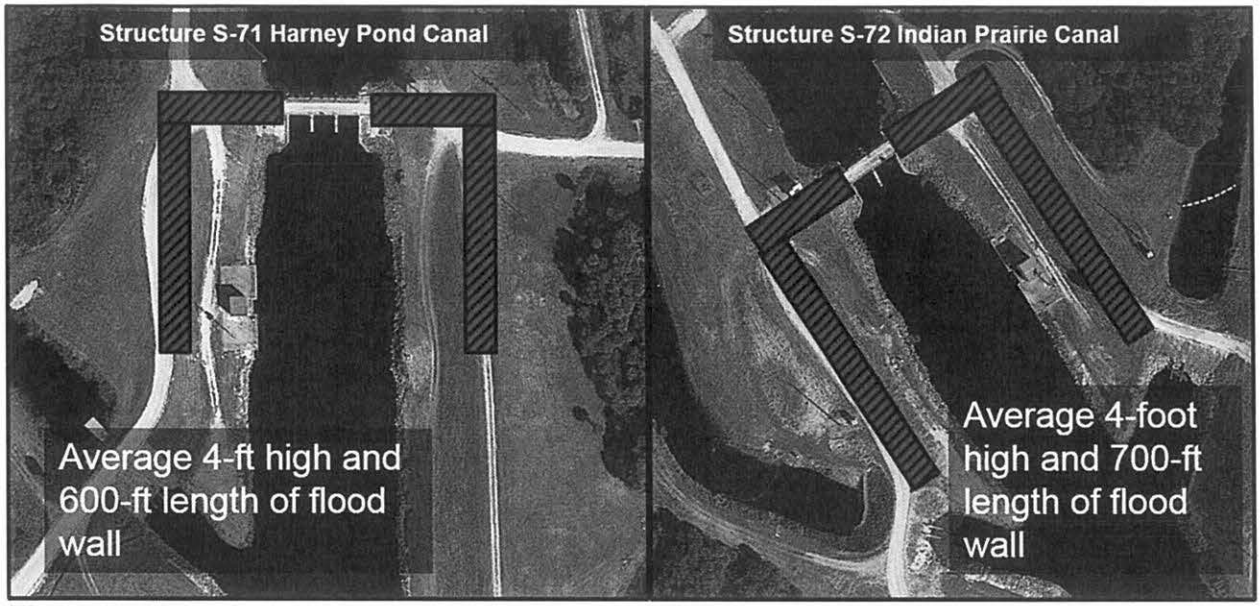

Figure 4. HHD Common Inundation Zone D proposed flood wall.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 San Marco Boulevard
JACKSONVILLE, FLORIDA 32207-8175

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

DEC 2 4 2015

To Whom It May Concern:

Pursuant to the National Environmental Policy Act and the U.S. Army Corps of Engineers (Corps) Regulation (33 CFR 230.11), this letter constitutes the Notice of Availability of the draft Environmental Impact Statement (EIS) for the Herbert Hoover Dike (HHD) Dam Safety Modification Study. The work proposed within the draft EIS would occur within the HHD system on Lake Okeechobee, located in south central Florida, in Glades, Hendry, Martin, Okeechobee, and Palm Beach Counties.

The draft EIS is available for your review on the Corps Environmental planning website, under Palm Beach County:

http://www.saj.usace.army.mil/About/DivisionsOffices/Planning/EnvironmentalBranch/EnvironmentalDocuments.aspx

Any comments you may have must be submitted in writing to the letterhead address within 60 days after the date stamped on this letter. Questions concerning the draft EIS can be submitted to Stacie Auvenshine at the letterhead address, email HHDEnvironment@usace.army.mil, or by phone at 904-232-3694.

Sincerely,

Eric P. Summa
Chief, Planning and Policy Division

A printed copy of the report is also available at the following libraries:

Glades County Library	201 Riverside Drive	Moore Haven	FL	33471
Hendry County Barron Library	461 North Main Street	LaBelle	FL	33935
Hendry County Harry T. Vaughn Library	120 West Osceola Avenue	Clewiston	FL	33440
Martin County Elisabeth Lahti Library	15200 SW Adams Ave	Indiantown	FL	34956
Martin County Blake Library	2351 SE Monterey Road	Stuart	FL	34996
Okeechobee County Public Library	206 SW 16th Street	Okeechobee	FL	34974
Palm Beach County Library, Main Branch	3650 Summit Blvd.	West Palm Beach	FL	33406
Palm Beach County Library, Belle Glade Branch	725 NW 4th Street	Belle Glade	FL	33430
Palm Beach County Library, Loula V. York Branch	525 Bacom Point Road	Pahokee	FL	33476
Palm Beach County Library, Clarence E. Anthony Branch	375 SW 2nd Avenue	South Bay	FL	33493

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 San Marco Boulevard
JACKSONVILLE, FLORIDA 32207-8175

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

DEC 2 4 2015

Mr. Chris Stahl
Florida Department of Environmental Protection
State Clearinghouse
3900 Commonwealth Boulevard, MS 47
Tallahassee, Florida 32399-3000

Dear Mr. Stahl:

Pursuant to the National Environmental Policy Act, enclosed for State agency review and comment are eight CDs of the draft Environmental Impact Statement (EIS) for the Herbert Hoover Dike (HHD) Dam Safety Modification Study.

Any comments you may have must be submitted in writing to the letterhead address within 60 days after the date stamped on this letter. Questions concerning the EIS can be submitted to Stacie Auvenshine at the letterhead address, email HHDEnvironment@usace.army.mil, or by phone at 904-232-3694.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosures

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 San Marco Boulevard
JACKSONVILLE, FLORIDA 32207-8175

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

DEC 2 4 2015

To Whom It May Concern:

Pursuant to the National Environmental Policy Act and the U.S. Army Corps of Engineers Regulation (33 CFR 230.11), this letter constitutes the Notice of Availability of the draft Environmental Impact Statement (EIS) for the Herbert Hoover Dike (HHD) Dam Safety Modification Study. The work proposed within the draft EIS would occur within the HHD system on Lake Okeechobee, located in south central Florida, in Glades, Hendry, Martin, Okeechobee, and Palm Beach Counties.

Any comments you may have must be submitted in writing to the letterhead address within 60 days after the date stamped on this letter. Questions concerning the draft EIS can be submitted to Stacie Auvenshine at the letterhead address, email HHDEnvironment@usace.army.mil, or by phone at 904-232-3694.

Sincerely,

Eric P. Summa
Chief, Planning and Policy Division

Enclosures

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 San Marco Boulevard
JACKSONVILLE, FLORIDA 32207-8175

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

DEC 2 4 2015

Dear Librarian:

Enclosed is a copy of the draft Environmental Impact Statement (EIS) for the Herbert Hoover Dike (HHD) Dam Safety Modification Study. The work proposed within the draft EIS would occur within the HHD system on Lake Okeechobee, located in south central Florida, in Glades, Hendry, Martin, Okeechobee, and Palm Beach Counties.

This draft EIS is being provided for public review pursuant to the National Environmental Policy Act. We request that you make the copy available for public viewing in the reference section of your library for a period of 60 days, after which it may be disposed.

Thank you for your assistance in this matter. If you have any questions or need further information, please contact Stacie Auvenshine at 904-232-3694.

Sincerely,

Eric P. Summa
Chief, Planning and Policy Division

Enclosures

C.3 Additional Correspondence

This portion of the Pertinent Correspondence is related information from prior HHD coordination that is pertinent to the Dam Safety Modification Study.

State Historic Preservation Office – Past correspondence

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FLORIDA DEPARTMENT OF STATE
Office of the Secretary
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Division of Corporations
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MEMBER OF THE FLORIDA CABINET
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Ringling Museum of Art
Division of Licensing
Division of Elections

FLORIDA DEPARTMENT OF STATE
Sandra B. Mortham
Secretary of State
DIVISION OF HISTORICAL RESOURCES

August 14, 1998

Mr. George Strain
Planning Division, Environmental Branch
Jacksonville District, Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

In Reply Refer To:
Scott B. Edwards
Historic Sites Specialist
Project File No. 985383

RE: Cultural Resource Assessment Request
Herbert Hoover Dike Rehabilitation
Palm Beach and Martin Counties, Florida

Dear Mr. Strain:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), we have reviewed the referenced project for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places*. The authority for this procedure is the National Historic Preservation Act of 1966 (Public Law 89-665), as amended.

We note that the Herbert Hoover Dike (8PB2028) is eligible for listing in the National Register. Because of the nature of the project, is the opinion of this office that the proposed project activities will have no adverse effect on the historic character of the Herbert Hoover Dike.

If you have any questions concerning our comments, please do not hesitate to contact us. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Laura A. Kammerer

for George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/Ese

DIRECTOR'S OFFICE
R.A. Gray Building • 500 South Bronough Street • Tallahassee, Florida 32399-0250 • (850) 488-1480
FAX: (850) 488-3353 • WWW Address **http://www.dos. state.fl.us**

☐ ARCHAEOLOGICAL RESEARCH
(850) 487-2299 • FAX: 414-2207

☑ HISTORIC PRESERVATION
(850) 487-2333 • FAX: 922-0496

☐ HISTORICAL MUSEUMS
(850) 488-1484 • FAX: 921-2503

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Siting Board
Division of Bond Finance
Department of Revenue
Department of Law Enforcement
Department of Highway Safety and Motor Vehicles
Department of Veterans' Affairs

FLORIDA DEPARTMENT OF STATE
Katherine Harris
Secretary of State

DIVISION OF HISTORICAL RESOURCES

Mr. James C. Duck
Planning Division, Environmental Branch
Jacksonville District, Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

August 20, 1999

RE: DHR Project File No. 995532
Cultural Resource Assessment Request
Draft Environmental Impact Statement for the Herbert Hoover Dike
Major Rehabilitation Evaluation Report

Dear Mr. Duck:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), we have reviewed the referenced project for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places*. The authority for this procedure is the National Historic Preservation Act of 1966 (Public Law 89-665), as amended.

We have reviewed the referenced draft environmental impact statement and note that the Herbert Hoover Dike (8PB2028) is eligible for listing in the National Register. We specifically reviewed sections 4.18 and 5.18, both dealing with Cultural Resources. We note that Alternative No. 3, which involves the installation of a seepage berm with relief trench along the leeward toe of the embankment, was selected as the preferred alternative. Therefore, it is the opinion of this office that the proposed project activities associated with Alternative No. 3 will have no adverse effect on the historic character of the Herbert Hoover Dike.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservation Planner, at 850-487-2333 or 800-847-7278. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Laura A. Kammerer

for George W. Percy, Director
Division of Historical Resources and
State Historic Preservation Officer

GWP/Ese

DIVISIONS OF FLORIDA DEPARTMENT OF STATE
Office of the Secretary
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Department of Veterans' Affairs

FLORIDA DEPARTMENT OF STATE
Katherine Harris
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Mr. James C. Duck
Planning Division, Environmental Branch
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

May 29, 2002

RE: DHR Project File Number: 2002-4932
Received by DHR: May 17, 2002
Project: Herbert Hoover Dike Major Rehabilitation
Glades, Palm Beach Counties, Florida

Dear Mr. Duck:

Our office received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and *36 C.F.R., Part 800: Protection of Historic Properties*. The State Historic Preservation Officer is to advise and assist federal agencies when identifying historic properties (listed or eligible for listing, in the National Register of Historic Places), assessing effects upon them, and considering alternatives to avoid or reduce the project's effect on them.

Based on a review of the information provided, it is the opinion of this office that this project could have an effect on the original design of the Herbert Hoover Dike, considered historically significant for its engineering design. However, it is the opinion of this office that the proposed necessary modifications will have no adverse effect on historic properties eligible for listing in the *National Register of Historic Places*.

If there are any questions concerning our comments, please contact Allison McCarthy, Historic Sites Specialist, by electronic mail at amccarthy@mail.dos.state.fl.us or at 850-245-6333 or 800-847-7278. Thank you for your interest in protecting Florida's historic properties.

Sincerely,

Janet Snyder Matthews

Janet Snyder Matthews, Ph.D., Director, and
State Historic Preservation Officer

DIVISIONS OF FLORIDA DEPARTMENT OF STATE
Office of the Secretary
Office of International Relations
Division of Elections
Division of Corporations
Division of Cultural Affairs
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Department of Revenue
Department of Law Enforcement
Department of Highway Safety and Motor Vehicles
Department of Veterans' Affairs

FLORIDA DEPARTMENT OF STATE
Katherine Harris
Secretary of State
DIVISION OF HISTORICAL RESOURCES

May 29, 2002

Mr. James C. Duck
Planning Division, Environmental Branch
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

RE: DHR Project File Number: 2002-4932
Received by DHR: May 17, 2002
Project: Herbert Hoover Dike Major Rehabilitation
Glades, Hendry, & Palm Beach Counties, Florida

Dear Mr. Duck:

Our office received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and *36 C.F.R., Part 800: Protection of Historic Properties*. The State Historic Preservation Officer is to advise and assist federal agencies when identifying historic properties (listed or eligible for listing, in the National Register of Historic Places), assessing effects upon them, and considering alternatives to avoid or reduce the project's effect on them.

Based on a review of the information provided, it is the opinion of this office that this project could have an effect on the original design of the Herbert Hoover Dike, considered historically significant for its engineering design. However, it is the opinion of this office that the proposed necessary modifications will have no adverse effect on historic properties eligible for listing in the *National Register of Historic Places*.

If there are any questions concerning our comments, please contact Allison McCarthy, Historic Sites Specialist, by electronic mail at amccarthy@mail.dos.state.fl.us or at 850-245-6333 or 800-847-7278. Thank you for your interest in protecting Florida's historic properties.

Sincerely,

Frederick P. Gaske, Deputy SHPO
for Janet Snyder Matthews, Ph.D., Director, and
State Historic Preservation Officer

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

MAR 0 1 2011

Planning Division
Environmental Branch

Mr. Scott Stroh, Director
Division of Historical Resources
State Historic Preservation Officer
500 South Bronough Street
Tallahassee, Florida 32399-0250

Dear Mr. Stroh:

As part of the Herbert Hoover Dike Major Rehabilitation, the U.S. Army Corps of Engineers, Jacksonville District is proposing to replace 28 federal culverts and remove five federal culverts in Okeechobee, Martin, Palm Beach, Hendry and Glades Counties as part of a risk reduction strategy for the Herbert Hoover Dike (HHD) system (Figure 1). The culverts to be replaced or removed are all located within the federal right-of-way. These culverts pose an immediate and significant risk of failure due to the loss of embankment material into and along the culverts. Action is required over the next 60 months as an immediate risk reduction measure, in conformance with dam safety requirements, to reduce the risk of catastrophic failure. These major maintenance actions are required to reduce this unacceptable risk due to the high probability of failure with associated loss of life.

The following 28 culverts will be replaced with new culverts: culvert 1, 1A, 2, 3, 4A, 5, 5A, 6, 8, 10, 10A, 11, 12, 12A, 13, 16, HP-1, HP-2, HP-3, HP-5, HP-6, HP-7, FC-1, IP-1, IP-2, IP-3, KI-1, and KI-2. Culverts 7, 9, 14, HP-4, and TCC (Taylor Creek Culvert) are proposed to be removed completely (Table 1).

Constructed from 1933 to 1936, the culverts in Herbert Hoover Dike (1,1A, 2, 3, 4A, 5, 5A, 6, 7, 8, 9, 10, 10A, 11, 12, 12A, 13, 14, 16, and Taylor Creek Culvert) have been recorded in an architectural survey titled "*Herbert Hoover Dike Documentation and Assessment, Lake Okeechobee, Hendry, Glades, Okeechobee, Martin, and Palm Beach Counties, Florida*" by New South Associates, Inc. This report recommended these culverts as contributing elements to the National Register of Historic Places (NRHP) eligibility of Herbert Hoover Dike for agricultural development; however, the culverts are not independently eligible. Additionally, New South Associates, Inc. deemed that recording the culverts adequately mitigated their loss and that their removal will have no adverse effect on the NRHP eligibility of Herbert Hoover Dike.

The Corps has determined no adverse effect on the NRHP eligibility of Herbert Hoover Dike for the removal and replacement of these culverts and that the aforementioned report has sufficiently recorded these culverts to mitigate their loss.

The tributary culverts (HP-1, HP-2, HP-3, HP-4, HP-5, HP-6, HP-7, FC-1, IP-1, IP-2, IP-3, KI-1, and KI-2), were constructed from 1962 to 1966 and are located outside the Herbert Hoover Dike on Canal 40, Canal 41, and the Kissimmee River. They are not associated with agricultural development but were constructed for drainage purposes only. The Corps does not wish to make a determination at this time on the significance of the tributary culverts and has determined that the removal and replacement of the tributary culverts will have no effect on the eligibility of the Herbert Hoover Dike.

I request your comments on these determinations. If there are any questions, please contact Ms. Wendy Weaver at 904-232-2137 or e-mail at wendy.weaver@usace.army.mil.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Figure 1. Herbert Hoover Dike Culverts Project Area.

Culvert	Year Built	Barrel type	Solution	NRHPStatus
Culvert C-11	1934	CMP	Replace	Contributing
Culvert C-16	1935	CMP	Replace	Contributing
Culvert C-14	1935	CMP	Remove	Contributing
Culvert 10A	1934	CMP	Replace	Contributing
Culvert 13	1935	CMP	Replace	Contributing
Culvert 10	1934	CMP	Replace	Contributing
Culvert 12A	1933	Concrete	Replace	Contributing
Culvert C-12	1934	CMP	Replace	Contributing
Culvert C-4A	1933	CMP	Replace	Contributing
Culvert C-3	1933	CMP	Replace	Contributing
Culvert 2	1934	CMP	Replace	Contributing
Culvert C-1A	1933	CMP	Replace	Contributing
Culvert C-1	1934	CMP	Replace	Contributing
Culvert 5A	1933	CMP	Replace	Contributing
Culvert 5	1933	CMP	Replace	Contributing
Culvert C-6	1936	CMP	Replace	Contributing
Culvert 7	1936	CMP	Remove	Abandoned
Taylor Creek (TCC)	1936	CMP	Remove	Abandoned
Culvert 8	1936	CMP	Replace	Contributing
Culvert 9	1936	CMP	Remove	Abandoned
Tributary Culverts				
Culvert HP-4	1963	CMP	Remove	No determination
Culvert HP-5	1963	CMP	Replace	No determination
Culvert HP-6	1963	CMP	Replace	No determination
Culvert HP-7	1964	CMP	Replace	No determination
Culvert IP-1	1962	CMP	Replace	No determination
Culvert IP-2	1962	CMP	Replace	No determination
Culvert IP-3	1962	CMP	Replace	No determination
Culvert KI-1	1966	CMP	Replace	No determination
Culvert KI-2	1966	CMP	Replace	No determination

*CMP-Corrugated Metal Pipe

Table 1. Culverts to be removed and/or replaced.

FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Mr. Eric Summa
Planning Division
Jacksonville Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

March 17, 2011

Re: DHR Project File No.: 2011-00816/ Received: March 6, 2011
Herbert Hoover Dike Culverts Project
Okeechobee, Martin, Palm Beach, Glades, Hendry Counties

Dear Mr. Summa:

Our office received and reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended and 36 CFR Part 800. The State Historic Preservation Officer is to advise and assist federal agencies when identifying historic properties (archaeological, architectural, and historical resources) listed, or eligible for listing, in the National Register of Historic Places, assessing the project's effects, and considering alternatives to avoid or minimize adverse effects.

Because of the nature of the project, this office concurs that no historic properties eligible for listing in the National Register will be affected.

If you have any questions concerning our comments, please contact Michael Hart, Historic Sites Specialist, by phone at 850.245.6333, or by electronic mail at mrhart@dos.state.fl.us. Your continued interest in protecting Florida's historic properties is appreciated.

Sincerely,

Laura A. Kammerer

Laura A. Kammerer
Deputy State Historic Preservation Officer
For Review and Compliance

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Ms. Wendy Weaver
USACE, Jacksonville District, PD-EP
701 San Marco Blvd.
Jacksonville, Florida 32207

April 07, 2015

RE: DHR Project File No.: 2015-1618/ Received by DHR: April 07, 2015
Project: *Herbert Hoover Dike Major Rehab - Cut off wall and drainage ditch along Reach 3*
County: Palm Beach

Dear Ms. Weaver,

Our office received and reviewed the project in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended and the *National Environmental Policy Act of 1969*. The State Historic Preservation Officer is to advise and assist federal agencies when identifying historic properties (archaeological, architectural, and historical resources) listed, or eligible for listing, in the National Register of Historic Places, assessing the project's effects, and considering alternatives to avoid or minimize adverse effects.

This office notes that the Herbert Hoover Dike (8PB02028) has been identified as eligible for the *National Register of Historic Places*. However, based on the information provided, it is the opinion of this office that the proposed project will have no adverse effect on this historic property.

For any questions concerning our comments, please contact Mary Berman, Historic Sites Specialist, by phone at 850.245.6333 or by electronic mail at Mary.Berman@dos.myflorida.com.

Sincerely,

Robert F. Bendus, Director
Division of Historical Resources
and State Historic Preservation Officer

C.4 Public and Agency Comment Response Matrix

COMMENT	AGENCY/PUBLIC COMMENT	CORPS RESPONSE & LOCATION OF CHANGE IN REPORT IF NECESSARY
FEDERAL		
UNITED STATES ENVIRONMETAL PROTECTION AGENCY (EPA)		
EPA-1	Based on the EPA' s review of the project, the Preferred Alternative will result in reducing the risk of adverse impacts on surrounding communities and the environment by lowering the risk of a potential breach in the embankment. We also note that no air quality permits are required, regardless of the selected alternative, and that no wetlands would be impacted by the preferred Alternative. The project would not impact the water quality of Lake Okeechobee. Therefore, we rated the DEIS's Preferred Alternative as Lack of Objections (LO). The enclosed Summary of Rating Definitions provides a detailed explanation of the EPA' s ratings.	Thank you for the LO rating.
EPA-2	We recommend that updated information be included in the Final EIS (FEIS) regarding threatened and endangered species, environmental justice, and coordination activities regarding historic preservation. In addition, the EPA encourages continued government-to-government consultation with the Seminole Tribe of Florida and Miccosukee Tribe of Indians of Florida at all levels of decision-making. The FEIS should include updated information regarding consultation and coordination with the aforementioned tribes.	Consultation will continue with the tribes. We received concurrence from the USFWS on the Biological Assessment and the findings that are in the EIS.
EPA-3	The EPA concurs with the need to repair the HDD, and with the objectives of ensuring continued public safety, lowering the probability of experiencing a breach, and avoiding impacts to ecological, cultural, and aesthetic resources and the Everglades ecosystem from a potential breach. We also appreciate your efforts to minimize project impacts during construction.	Thank you for your comment.
EPA-4	*Climate Change and Greenhouse Gases (GHGs)* Executive Order 13653, Climate Change Considerations (EO 13653), requires Federal agencies to review the effect of climate change on their programs. Tables 5-2-5-4 in the DEIS estimates emissions resulting from the construction of the project alternatives, including the Preferred Alternative. The DEIS also states that climate change is likely to affect water management operations of Lake Okeechobee, which is contained within the Herbert Hoover Dike. In the future, the ability of water managers to keep the lake level within the target parameters is likely to be affected because climate change could increase or decrease the frequency and magnitude of large storm events, alter the frequency and characteristics of rainfall patterns, and influence evapotranspiration from the lake and upstream basins. The DEIS states that the effectiveness of the dike renovation efforts may be adversely impacted by potential climate change impacts associated with increased frequency and magnitude of large	A paragraph related to minimizing GHG emissions has been added to the document in section 5.9 of the document. The use of high efficiency equipment and locally sourced construction materials are two ways to minimize GHG emissions. The Corps value engineering review will also likely result in lower GHG

COMMENT	AGENCY/PUBLIC COMMENT	CORPS RESPONSE & LOCATION OF CHANGE IN REPORT IF NECESSARY
	storm events, which could result in more extreme high lake stage events, thereby, potentially placing more stress on the dike. The lake levels are engineered and controlled and, therefore, each alternative for the rehabilitation of the embankment would not be directly affected by sea level rise. However, if storms become stronger, rehabilitation of the embankment would provide more stability for community safety and resource protection. We also note that, depending on the effects of climate change (temperature and rainfall specially), plant community structure within the littoral zone of Lake Okeechobee may change. ***Recommendations:*** We recommend that the FEIS include discussions and analysis of reasonable alternatives and/or practicable mitigation measures to reduce project-related GHG emissions. The FEIS should make clear whether commitments have been made to ensure implementation of design or other measures to reduce Greenhouse Gas (GHG) emissions or to adapt to climate change impacts. The EPA further recommends that the Record of Decision (ROD) commits to implementation of reasonable mitigation measures that would further reduce or eliminate project-related GHG emissions.	emissions through optimizing design.
EPA-5	*Threatened and Endangered Species* The U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) have designated certain species of reptiles, birds, mammals, gastropods, and plants and lichens in 3 Glades, Hendry, and Palm Beach counties as threatened or endangered, and the DEIS notes that several of these listed species have been observed within the vicinity of the HHD. The DEIS states that the Preferred Alternative is not likely to adversely affect the threatened and endangered species and their critical habitat in the project area, and that these species would not be directly affected by the construction of a cutoff wall or internal drainage system. However, the DEIS also states that there is a potential for disturbance to the species during construction activities, and page 5-23 describes impacts to protected species as minor and temporary. ***Recommendations:*** The EPA defers to the Federal and the state wildlife agencies on these issues, and recommends that the FEIS provide updated information regarding coordination and consultation with these agencies regarding the protection of threatened and endangered species in the context of the proposed project. Impacts should be avoided to the maximum extent feasible, and unavoidable impacts should be mitigated.	We received concurrence from the USFWS on the Biological Assessment and the findings that are in the EIS. All consultation information will be included in the FEIS.
EPA-6	*Water Quality*	Thank you for your comment, any temporary

COMMENT	AGENCY/PUBLIC COMMENT	CORPS RESPONSE & LOCATION OF CHANGE IN REPORT IF NECESSARY
	The DEIS states that the Preferred Alternative would not result in impacts to wetlands. However, incidental temporary impacts may occur in association with staging or site access, and the DEIS states that these impacts would total less than half an acre. Therefore, a Section 404(b)(1) evaluation was not prepared as part of the DEIS. ***Recommendations:*** Temporary impacts resulting from construction-related activities, such as staging or site access, should be avoided or minimized to the extent feasible.	impacts will be avoided to the maximum extent practicable.
EPA-7	*National Pollutant Discharge Elimination System (NP DES)* Section 402(b) (2) requires that a NPDES construction activities permit be acquired for construction activities that disturb more than one acre of land. The Florida Department of Environmental Protection (FDEP) issues these permits, which would be acquired prior to initiation of construction of this project. The DEIS states that full compliance with the Clean Water Act (CWA) will be achieved with issuance of a Water Quality Certification under Section 401 from the State of Florida (page 6-1). ***Recommendations:*** Impacts resulting from construction-related activities should be avoided or minimized to the extent feasible. The FEIS should include a listing of permits that are required for this project, and the planned schedule for these permits.	Impacts resulting from construction-related activities will be avoided or minimized to the extent feasible. Additional text regarding the water quality permits has been added to the text in Section 6.
EPS-8	*Environmental Justice (EJ)* Pursuant to Executive Order 12898, an assessment of the potential for disproportionately high and adverse health and environmental impacts was included in the DEIS. This assessment concluded that while a significant low-income population resides within the study area, this project is not expected to have disproportionately high and adverse human health or environmental impacts on minority or low income populations. 4 Communities may experience both benefits and burdens associated with construction. The DEIS identifies potential benefits to minority and low-income populations such as improved safety for community residents in the event of a project failure, but fails to identify potential impacts (page 6-4). In regards to project-related impacts, the EPA notes that a distinction is made between temporary construction impacts and longer-term impacts. However, the DEIS does not specify the construction period. If the construction is likely to be underway for a long period, these impacts may be considered significant for local communities. According to the DEIS, two public scoping meetings were held in February, 2013 prior to the required public meetings in January 2016 for the proposed rehabilitation of the HHD. It is unclear what specific efforts were made to meaningfully engage	The demographics of the surrounding HHD area are located in the economics section of the EIS. All impacts within the EIS are not significant and are discussed in their respective sections (i.e. noise, economics, etc.). The notice for the public meetings were sent out via mailing list, email, and a Press Release. Additional language was added to Section 6, page 6-4 to expand the discussion.

COMMENT	AGENCY/PUBLIC COMMENT	CORPS RESPONSE & LOCATION OF CHANGE IN REPORT IF NECESSARY
	minority and low-income populations within the project area throughout the decision-making process. ***Recommendations:*** The EJ analysis should include demographic data, and a summary of impacts on affected minority and low-income populations, including Native American tribes and populations that are dependent on subsistence resources. Issues regarding traffic congestion, socioeconomic impacts, noise, construction impacts and other issues that directly concern the local communities, as well as operational impacts related to these matters, should also be fully clarified in the FEIS. The EPA's EJ and mapping tool, EJSCREEN (www.epa.gov/ejscreen), utilizes standard and nationally consistent data to highlight areas that may have environmental burdens and vulnerable populations, and may assist in determining any project-specific impacts to minority and low-income populations.	
EPA-9	The EPA encourages a comprehensive public outreach strategy. This should include, but is not limited to, targeted outreach campaigns to neighbors, informational literature, and updated websites. The FEIS might also include information about the outreach towards, and anticipation of, minority and low-income populations that may have limited English proficiency. In addition, a summary of any EJ comments or concerns and their resolution should be included in the FEIS. Traffic impacts and emergency preparedness measures are particular topics that should continue to be addressed and coordinated with local communities. The EPA encourages continued coordination with the communities that will be impacted by the construction of the proposed project in an effort to meaningfully involve them throughout the decision-making and construction process.	Construction on all phases of HHD rehabilitation have been coordinated with the public. Emergency preparedness activities such as sirens and traffic patterns are under the authority of the local government to provide to the communities, while the Federal government is proposing to reduce risk by implementing the Recommended Plan. Tribes and communities will continue to be involved through the construction process.

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EPA-10	*Tribal Coordination and Consultation* The DEIS states that the Seminole Tribe would probably continue to use the HHD for hunting and fishing (Section 3, Existing Conditions). The DEIS also documents previous communication with tribes regarding the proposed project. The EPA encourages continued government-to-government consultation with the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida at all levels of decision-making. The EPA works closely with both tribes on Everglades-related matters, and is committed to working with other Federal partners to prioritize the tribes' water quality and water management concerns. ***Recommendations:*** The FEIS should include updated information regarding consultation and coordination with the tribes regarding the proposed project. Finalized decision documents should be included, if available.	All consultation with the tribes will be updated within the FEIS. Updated consultation letters are provided in Appendix C.
EPA-11	*National Historic Preservation Act (NHP A), Section 106* The Corps of Engineers has determined that there will be no effects to historic properties' area of potential effect (APE) if activities take place within the Federal right-of-way. In 2005, the Corps determined that the cutoff wall for Reach 1, constructed within the Federal right-of-way, would not affect the National Register of Historic Places (NRHP) eligibility of the dike, and the Florida State Historic Preservation Officer (SHPO) concurred. The DEIS provides that the remaining reaches would be expected to attain this determination and subsequent SHPO concurrence. Any actions outside of the Federal right-of-way may have the potential to affect historic properties within the APE, and further consultation with the Florida SHPO and federally-recognized tribes would be conducted in this event. The DEIS notes that consultation is ongoing with the SHPO and federally-recognized tribes (page 6-3). ***Recommendations:*** Compliance with Section 106 of the National Historic Preservation Act (NHPA) should be documented as the project progresses. The FEIS should include an update of coordination activities with the SHPOs and tribes, along with the finalized decision documents pursuant to Section 106 of the NHPA, if available. The EPA defers to-the SHPOs and tribes on these issues, and encourages continued government-to-government consultation with the Seminole Tribe of Florida and Miccosukee Tribe of Indians of Florida at all levels of decision making.	The HHD project has continued to have open communication with the tribes during all phases. Updated consultation letters are provided in Appendix C.
UNITED STATES DEPARTMENT OF INTERIOR (DOI)		

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DOI-1	The United States Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement (DEIS) for the Herbert Hoover Dike Dam Safety Modification Study. We have no comments at this time.	Thank you for your review.
DOI-2	We will assess the need for a more detailed and comprehensive report after review of the Corps Draft EIS describing the planning process, comparison of alternatives, selection of the Tentatively Selected Plan (TSP), and construction associated with the TSP. Upon completion and receipt of the Final EIS, the Department will further assess potential impacts associated with the selected plan and, if needed, prepare a Final FWCAR.	Thank you for your review.
DOI-3	<u>Specific Comments</u> Page x, List of Figures: Figure 3-8. Caracara nests and observations (from 1992-2014) around Lake Okeechobee. Source: USFWS 2015 – date should be 2014. Figure 3-9. Snail Kite Critical Habitat - no source given for this information; source should be USFWS 2014. Figure 3-10. Snail kite nest locations from 2010-2015 (*active nests only). Source: USFWS 2015 – date should be 2014. Figure 3-11. Wood stork colonies (2005-2015) near HHD and Lake Okeechobee. Source: USFWS 2015 – date should be 2014. Figure 3-12. Florida panther zones in South Florida – no source given for this figure; source should be USFWS 2014.	The reason the source is 2015 from USFWS is because that is when the maps were received from FWS. Edited the caption to say, Obtained from USFWS 2015.
DOI-4	Page 3-24, Under 3.8 THREATENED AND ENDANGERED SPECIES, last sentence of paragraph, sentence states – "Additional detail can also be found in the USFWS draft Fish and Wildlife Coordination Act Report (CAR) included in Appendix E." The sentence should state "…can also be found in the Draft Interim Fish and Wildlife Coordination Act Report...." and should include a date of 2014.	Added the word Interim and the date of 2014.
DOI-5	Page 3-27: Cites "USFWS produced map with a date of 2015." Should have a date of 2014 if the source of this map is the U.S. Fish and Wildlife Service's 2014 Draft Interim FWCAR.	The date was changed to 2014. The map was obtained through email from FWS, not from the draft CAR.

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DOI-6	Page 3-28: States "Figure 3-8. Caracara nests and observations (from 1992-2014) around Lake Okeechobee. Source: USFWS 2015." The date for the source should be 2014.	The reason the source is 2015 from USFWS is because that is when the maps were received from FWS. Edited the caption to say obtained from USFWS 2015.
DOI-7	Page 3-31: States "Figure 3-10. Snail kite nest locations from 2010-2015 (*active nests only). Source: USFWS 2015." The date should be 2014 if the source is the 2014 Draft Interim FWCAR. If not the source, please provide the source of the map in references cited.	The reason the source is 2015 from USFWS is because that is when the maps were received from FWS through email.
DOI-8	Page 3-34: States "Figure 3-11. Wood stork colonies (2005-2015) near HHD and Lake Okeechobee. Source: USFWS 2015." The date should be 2014 if the source is the 2014 Draft Interim FWCAR. If not the source, please provide the source of the map in references cited.	The reason the source is 2015 from USFWS is because that is when the maps were received from FWS through email.
DOI-9	Page 3-35: States "Figure 3-12. Florida panther zones in South Florida." The source of the figure should be included with the figure description.	The source was added to this figure.
DOI-10	Page 3-36: States "However, the principal habitat in the area for these wading birds is within the littoral zone of Lake Okeechobee (USFWS 2001)." The USFWS 2001 reference is not included in the list of references for the Draft EIS. This reference should be provided in Section 9. References of the Draft EIS.	This source was added to the references section.
DOI-11	Page 6-1: Under 6.0 ENVIRONMENTAL COMPLIANCE**;** ENDANGERED SPECIES ACT OF 1973, AS AMENDED, it states the following: "The Corps sent a letter to the USFWS on December 24, 2015 that provided an opinion that the project remains "not likely to adversely affect" threatened and endangered species." This sentence should state the following: The Corps sent a letter to the USFWS on December 24, 2015 that provided a determination that the project "may affect, but not adversely affect" threatened and endangered species provided conservation measures outlined in	The sentence was revised as requested. Also added the following: A letter was received from the USFWS on February 22, 2016 that concurred with the Corps' determinations.

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	the 2014 Draft Interim Coordination Act Report are implemented and adhered to during preconstruction, construction, and after construction phases of the project.	
DOI-12	Page 9-3: The following reference is included twice in the list of references cited (Section 9.0 References): USFWS. (2013, November 25). Retrieved from Species Profile: http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=C044#candidate	The second entry of this reference was deleted.
DOI-13	Under Section 9.0 References, the 2014 U.S. Fish and Wildlife Service Draft Interim Coordination Act Report (South Florida Ecological Services Office, Vero Beach, Florida) cited several times in the document and included in the Appendices for the Draft EIS, should be included as a cited reference.	This reference was added to Section 9.0.
FEDERAL FARM BUREAU ASSOCIATION (FFB)		
FFB-1	Although the Florida Farm Bureau Federation was not formally on the list of recipients to review the subject document we appreciate the opportunity to comment on the Draft Environment Impact Statement (EIS) for the Herbert Hoover Dike (HHD) Dam Safety Modification Report dated December 2015. We endorse the comments submitted by the Florida Department of Agriculture and Consumer Services (FDACS) on February 12, 2016 concerning this draft EIS report. Our focus, in align with FDACS, is to review and comment on recommendations and decisions regarding such important projects that may impact farming operations as well as rural agricultural communities around Lake Okeechobee and throughout the State of Florida.	Thank you for your review.
FFB-2	In Section 3.3 of the report, the statement identifying the major agricultural uses in the area is grossly inaccurate. We suggest working with FDACS to more accurately reflect agricultural land uses throughout the project area. Comments in Chapter 4, concerning water quality, identify agriculture as a significant source of pollution to Lake Okeechobee. We would urge the USACE to also include a paragraph on best management practices (BMPs) noting that agriculture has been implementing BMPs north and south of the Lake for the last three decades resulting in improvements in water quality runoff into Lake Okeechobee and south into the Water Conservation Areas. Improvements in water quality due to implementation of agricultural BMPs have been documented from data collected by the South Florida Water Management and the Florida Department of Environmental Protection.	In section 3.5 a discussion of BMP implementation and reduction in backpumping into the lake has been added.

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FFB-3	We also agree with FDACS concerning changes in the saltwater interface in the Common Inundation Zone (CIZ) B and a need for a more comprehensive monitoring plan to determine whether or not this is an impact due to the shallow cutoff wall. Likewise we feel there is no substantial scientific information that supports a hydrologic relationship between EAA canal operations and salinities in the surficial aquifer along the perimeter of the Lake from Port Mayaca south to Moore Haven.	The Corps has a comprehensive monitoring program that includes continued monitoring of 5 wells in Reach 1, periodic monitoring of the wells FDACS recommends (GL-332, PB-1822, and HE-1145), and new wells constructed in Reaches 1, 2, and 3. The current plan is to monitor these wells through 2018 and then evaluate the data and determine if ongoing long-term monitoring is warranted. The Ghyben-Herzberg principle relates the depth of the saline water interface to the elevation of the overlying freshwater lens in an unconfined aquifer with saline groundwater below the freshwater. In this case, the overlying groundwater elevation has been reduced through drainage and the likely aquifer response has been a shallowing of the freshwater/saline water interface. This phenomena has been observed at many

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		coastal locations with aquifer conditions analogous to the surficial aquifer in the southeast portion of the Lake Okeechobee basin. This explanation has been added to the text.
FFB-4	Lastly agricultural communities have experienced economic benefits from visitors and residents using the paved portions of the Lake Okeechobee Scenic Trail. We encourage the USACE to pursue funding to replace the paved portions on the Levee using Section 111 Chief of Engineer's discretionary funds.	The U.S. Army Corps of Engineers will attempt to avoid or minimize impacts to the paved portion of the Lake Okeechobee Scenic Trail (LOST) to extent possible and consistent with the Herbert Hoover Dike project authorization.
TRIBAL		
SEMINOLE TRIBE OF FLORIDA (Seminole)		
Seminole-1	*A. lake Okeechobee Regulation Schedule (LORS)* The Seminole Tribe relies on the delivery of water from Lake Okeechobee for its water rights entitlements for the Brighton Seminole Indian Reservation and the Big Cypress Seminole Indian Reservation. While the DEIS does not address and study potential operational changes for Lake Okeechobee, the DEIS does discuss the possibility of a regulation schedule change in the future if the proposed modifications address the dam safety concerns. The Seminole Tribe was pleased to hear in the consultation meeting with the USACE and again in the public hearings that the USACE had on the DEIS that the USACE will make incremental changes in operations to store more water in the Lake as you make the dike repairs. As the USACE knows the Seminole Tribe was very concerned with the prior changes to the LORS to store less water in the Lake. The LORS was to have been for a temporary time period which has extended long beyond the anticipated timeframe. The reduction of Lake levels puts the Seminole Tribe's water rights at significant risk especially during water shortage events. The Seminole Tribe supports the initiation of NEPA for a lake regulation schedule modification as soon as possible and to proceed while the HHD	Government-to-government consultation will occur if operational changes are to be considered for Lake Okeechobee. Any change to operations could begin to be evaluated after the DSMR is approved, but could be concurrent with construction activities. New operations would need to be evaluated under a subsequent NEPA document.

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	construction occurs so that the storage capacity of the Lake can be made available contemporaneously with dike repairs. The Seminole Tribe requests that the USACE initiate formal government-to-government consultation when appropriate with the Tribe to discuss such a regulation schedule change so that there can be a full understanding of the Seminole Tribe's interests. Some of the issues to be addressed in subsequent consultation include: the nature of the incremental operational changes that could be made by the USACE and timeframe for same; and the nature and timing of a full regulation schedule modification.	
Seminole-2	*B. Access* The Seminole Tribe's members have historically utilized the study area for the HHD DEIS for hunting, fishing, and recreational activities. While the DEIS recognizes these existing uses and states that access will continue it is not clear how that will be coordinated and provided for during construction. The Seminole Tribe is also concerned with the statement in the DEIS that " ... the floodwall would reduce aesthetics and would potentially change where access to fishing would occur around the structures." The Seminole Tribe would like to engage in further consultation with the USACE in order to understand this access issue better so that we can collaboratively develop measures to ensure access for Seminole Tribal members.	The Corps will coordinate during the design and construction phase in order to ensure there is the least amount of impact as possible to the tribal members.
Seminole-3	*C. Consultation* The Seminole Tribe appreciates the USACE's consultation with the Seminole Tribe on the HHD DEIS. We respectfully request that formal consultation on the construction related impacts to tribal access continue in a timely fashion. The Seminole Tribe also looks forward to consultation on the incremental operational changes and the potential for a LORS schedule modification. The Seminole Tribe is committed to its consultation relationship with the USACE and looks forward to this project being funded so that the USACE can move forward with the project and re-establish the storage that has been lost in Lake Okeechobee. The Seminole Tribe understands that these consultations are an on-going process. The Seminole Tribe appreciates your consideration of the foregoing comments, and we look forward to working through these issues with the USACE. The Seminole Tribe's comments from the Tribal Historic Preservation Office will be submitted separately.	Thank you for your review and consultation.
Tribal Historic Preservation Office		

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THPO-1	In the section of the document entitled Environmental Consequences of the Tentatively Selected Plan (found within the documents Executive Summary) no mention is made of possible adverse effects to cultural resources (including burial resources) or Tribal resources. While we recognize that this is just a brief summary of the documents conclusions we feel that it is important to mention early on that cultural and Tribal resources were taking into consideration.	Statement added to page vi-vii: The TSP is not expected to adversely affect historic properties listed or eligible for listing in the National Register of Historic Places due to the location of the project area within the previously disturbed Federal right-of-way. Any actions outside of the Federal right-of-way may have the potential to affect historic properties.
THPO-2	It seems to be a standard practice in NEPA documents when describing existing conditions for cultural resources (see Section 3.18 Cultural Resources) to focus on what is currently known, that is, to focus on previously recorded sites and resources. This is reasonable since it does describe current or existing conditions but it also tends to predispose people to assume that if there aren't any known resources in an area it is unlikely that any resources exist there. Clearly this is not the case, and we caution against relying too heavily on utilizing the number of previously recorded sites within an area as predicting whether or not any unrecorded/undiscovered resources are present. We believe that additional cultural resource investigations, possibly involving field surveys, may be warranted as the overall project proceeds.	While effects to historic properties are not expected, once the TSP has been subject to preliminary engineering design and prior to construction, the APE will be subject to separate consultation and consideration of effects with the Florida SHPO and appropriate federally-recognized tribes. New language added to page 3-52: The HHD and surrounding area has been subjected to

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		numerous cultural resources surveys, including a 2010 assessment and documentation of the dike and a 2011 Phase I survey of reaches 1B, 1C, 1D, 2 and 3. New language added to page 5-20: Within the Federal right-of-way, the remaining reaches would be expected to attain this determination and subsequent SHPO concurrence. However, as Alternative 1 has not been subject to preliminary engineering and design, a determination of effects based on a precise APE cannot be stated at this time. Additionally, any actions outside of the Federal right-of-way may have the potential to affect historic properties within the APE. Once the design has been finalized and prior to construction, the APE will be subject to separate consultation and consideration of effects with

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		the Florida SHPO and appropriate federally-recognized tribes.
THPO-3	The Seminole Tribe believes that its history in Florida predates the time frame stated in the DEIS (see page 3-14). While the federal government's recognition of the Seminole Tribe of Florida is of a relatively recent origin, the Tribe views those indigenous populations who resided in Florida 12,000 (or more) years ago as ancestors.	New language added to page 3-53: There are two Federally recognized tribes (Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida) that are located within the region of the project area. Both tribes have historically utilized the project area and maintain a strong connection to the region through continued use and regard the indigenous populations of Florida as their ancestors.
THPO-4	While the U.S. Army Corps of Engineers (USACE) has consulted with the STOF about the DEIS, consultation under Section 106 of the National Historic Preservation Act has not been initiated. Also, no consultation pursuant to the USACE-STOF Burial Resources Agreement (BRA) has occurred. In order to ensure that the Tribes cultural and historical resources are adequately considered and that possible impacts are fairly assessed, the STOF THPO stands ready to meaningfully engage in Section 106 and Burial Resource consultations with the USACE.	Letters requesting formal consultation regarding Section 106 of the NHPA and in consideration of the Corps' Trust responsibilities and the Burial Resources Agreement were sent to THPO on March 10, 2016. Appendix C updated.
THPO-5	Related to the preceding comment: At this time the STOF THPO believes that a considerable amount of Section 106 and BRA consultation is required in order to fully assess the possible impacts of whichever Alternative is finally chosen. We note that the preferred alternative involves	As the current study has not been subject to preliminary engineering and design

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	multiple undertakings (cutoff walls, filter and drainage blankets, armored embankments, floodwalls, etc.). Each of these construction undertakings will require consultation with the THPO and careful assessment of the nature of impacts to cultural and historical resources and how these impacts might be avoided or resolved.	(PED), it is premature to request a review of any of the proposed undertakings; however, each of the undertakings will be subject to separate consultation with the STOF during the PED phase and prior to construction (similar to the current process utilized during HHD culvert replacements).
THPO-6	Based on the Advisory Council on Historic Preservation's position that NEPA documents cannot be finalized (i.e., no Record of Decision rendered for an EIS) before Section 106 compliance has been completed, a Memorandum of Agreement would need to be prepared and executed.	We recognize the Tribe's interpretation with respect to the consultation requirements under Section 106 of the NHPA. However, we respectfully submit for clarification that the Corps does not interpret these requirements to mean that compliance equates to completion. Rather, the Corps is in compliance with the NHPA because it has adhered to all procedural requirements of the NHPA through the current phase of the proposed project. Once the HHD dam safety modification is authorized

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		and funded, consultation will be reinitiated and will continue until construction is complete. Any additional fieldwork needed to meet the requirements of Section 106 of the NHPA will be determined through consultation with parties of interest. It is the Corps' determination that the Section 106 consultation process allows for continued coordination and the development of legally binding documentation, such as a Memorandum of Agreement, to address any adverse effects to historic properties caused by HHD safety modifications as the planned feature designs and operations are refined. The Corps looks forward to continuing to work closely with the Seminole Tribe of Florida to reach future project goals. Again, we are committed to complying with all applicable laws, regulations and agreements

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		governing cultural resources throughout the HHD rehabilitation project.
THPO-7	Lastly, we respectfully request that as part of our anticipated BRA consultation, the USACE and the STOF develop "plan of action" to be implemented in the event of an accidental/unanticipated discovery of human remains.	The Corps maintains an Inadvertent Discovery Plan in the Jacksonville District's Specifications (General Requirements Section, Part 3 – Execution, Section 3.1.3 – Preservation and Recovery of Historic, Archaeological, and Cultural Resources), wherein all construction activities will cease and the STOF Tribal Historic Preservation Officer will be notified should cultural materials be identified during the course any undertaking.
STATE – FLORIDA STATE CLEARINGHOUSE		
FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES (FDACS)		
FDACS-1	FDACS supports the United States Army Corps of Engineers' (USACE) efforts to address the most vulnerable areas of the HHD as quickly as possible. The rehabilitation of the HHD with a minimum of delay is important to public health and safety, could enhance the use of the Lake Okeechobee Regulation Schedule 2008 (LORS 08) operational flexibility, and provides an opportunity to adopt a revised regulation schedule to better meet Lake Okeechobee's multipurpose objectives. Our review focused on the main report and aspects of the Draft EIS for the HHD DSMS which may impact private agricultural lands and agricultural operations. The comments below are specific to the topics addressed and do not constitute a review of the entire Draft EIS for the HHD DSMS and its supporting appendices.	Thank you for your review and support.

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FDACS-2	*Need to complete the rehabilitation of the HHD to meet all purposes* While acknowledging the need to complete the HHD remediation for all reaches and associated culvert improvements as determined necessary to lower the Dam Safety Action Classification (DSAC) rating from Level 1 without delay; the DSMS needs to be a rehabilitation plan that will optimize the dike's ability to meet all of the authorized purposes. After completing the currently proposed risk reduction features, the HHD will still be a dike at risk potentially with a rating of DSAC 2. This is not adequate to meet the future needs of the multi-purpose functions of the HHD.	The residual risk for HHD will be below tolerable risk guidelines for the entirety of the Dike upon completion of the proposed construction based upon the current risk assessment. The DSAC rating will be reevaluated after completion of the construction identified in the DSMS; it is unknown at this time what the DSAC rating will be. Any proposed changes to the Lake Okeechobee water control plan to address future demands on Lake Okeechobee will require a reassessment of the risk associated with any proposed changes. Depending on the magnitude of those changes further rehabilitation may be required. The remediation being proposed for the identified vulnerable sections of HHD will be robust and resilient, and from a solely risk based perspective could potentially accommodate

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		limited modifications to water control operations. The DSMS is based on the current operation schedule; however; sensitivity analysis was performed to verify that these measures would still be sufficient under previously used schedules.
FDACS-3	*Provide technical guidance in the HHD DSMS on what range of lake management could be available in the future.* There is a pressing need to begin the review of the LORS in hopes of finding a new approach that can reduce the impact on the estuaries and retain more water in the Lake for both economic and environmental needs. We know this report cannot promote any particular regulation schedule but it should provide some guidance on what range of lake level management could be available in the future. This is essential information if we are going to undertake a formal concurrent review of the schedule. It should not require another separate, time consuming risk evaluation study before the important next step of a LORS review can begin. With an expedited review of the LORS in mind, the HHD DSMS should indicate the level of protection expected with this plan and what interim flexibility will be available to make schedule adjustments once the structural changes are complete along the southern shore of the lake.	A new regulation schedule would need to be analyzed under a future NEPA document. The Corps cannot, at this time, speculate what the schedule might be until options are developed and discussed. The Lake Okeechobee Regulation Schedule can be begin to be evaluated once the DSMR is approved. The Corps will do what it can to expedite the formulation of a new regulation schedule.
FDACS-4	*Lake Regulation Schedule Information* We recognize the Draft EIS for the HHD DSMS and the study for a new Lake Okeechobee regulation schedule are distinct and separate efforts subject to their own development processes and National Environmental Policy Act (NEPA) requirements. However, the LORS08 information provided and use of the LORS08 regulation schedule for the 100 year future without condition has resulted in some uncertainty regarding the intentions of the USACE to be consistent with the commitment of the LORS Final EIS (USACE 2007) to "timely shift from the interim LORS to a new schedule with the intent to complete any necessary schedule modifications or deviations concurrent with completion of (1) or (2)." One of the reasons for the concern is that (2) has been	The Lake Okeechobee Regulation Schedule can begin to be evaluated once the DSMR is approved and will evaluate how to best achieve C&SF purposes in light of rehabilitation. This suggested language was

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	redefined from the LORS EIS "(1) completion of HHD seepage berm construction or equivalent dike repairs for reaches 1, 2 and 3" to the Draft EIS for the HHD DSMS "(2) completion of sufficient HHD remediation for all reaches and associated culvert improvements as determined necessary to lower the DSAC rating from Level l" It would be helpful if the Draft EIS for the HHD DSMS addressed the differences between the language used for the (2) criteria and describe if and why they are equivalent. There are also some inconsistencies in the document where some sections predict a future "LORS08-like" regulation schedule with little change and others predict significant changes. It would be helpful to remove any unnecessary predictions since the LORS08 regulation schedule is being used for the HHD DSMS Risk Assessment and that should suffice for the evaluation exercise. We recommend the USACE consider using some of the text provided in the public workshop power point presentation regarding the LORS throughout the document and also including it in the Executive Summary to address the indirect relationship of the DSMS to LORS08 in the "Areas of Controversy" section. The points presented at the public workshop that can clarify the relationship between the HDD DSMS and LORS08 are: • The DSMS Risk Assessment utilized the current LORS. • A study for a new regulation schedule could be undertaken concurrently while risk reduction features identified in the DSMS are constructed.	added to the executive summary on page v.
FDACS-5	*Changes in the Saltwater Interface* FDACS has concerns regarding the potential for changes in the salt water interface due to the installation of the shallow cut-off wall proposed in the Draft EIS for the HHD DSMS for Common Inundation Zone (CIZ) B. A comprehensive monitoring plan to determine whether or not the shallow cut-off wall is causing a saltwater interface shift needs to be included in the permit conditions. We acknowledge the proposed shallow cut-off wall probably has less potential to induce upwelling of the saline connate water than the Reach I deep cut-off wall. However, the data set currently available and used by the USACE is not adequate to assess the risk of future impacts to the groundwater.	Based on the ongoing USGS/Corps monitoring efforts, the Corps acknowledges that the freshwater/ connate water interface depth has changed in the direct vicinity of the levee where the cutoff wall was installed to a depth that is at or below the connate/freshwater interface depth. The proposed cutoff wall in Reach 3 will be 20 ft or more above the connate/freshwater interface depth. The Corps believes that a tip elevation 20 ft or more above the connate/freshwater

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		interface will not result in an adverse impact to water users in this area. This is based upon the minimal change in interface depth measured at the PB-1815 well which has a similar 15- to 20 ft distance between the tip of the cutoff wall and the depth of the connate/freshwater interface. The Corps has a comprehensive monitoring program that includes continued monitoring of 5 wells in Reach 1, periodic monitoring of the wells FDACS recommends (GL-332, PB-1822, and HE-1145), and new wells constructed in Reaches 1, 2, and 3. The current plan is to monitor these wells through 2018 and then evaluate the data and determine if ongoing long-term monitoring is warranted.
FDACS-6	Due to insufficient monitoring data, there are uncertainties regarding the influence of the previously installed Reach I deep cut-off wall. The USGS report "Changes in Saltwater Interface Corresponding to the Installation of a Seepage Barrier Near Lake Okeechobee, Florida, Open File Report 2014-1256" identified changes in the salt water interface up to 19 feet below the slurry wall along the eastern rim of the lake. FDACS does not believe that the installation of the cut-off wall in Reach I B can be ruled out as the primary cause for changes in the chloride concentrations in the surface water drainage/supply canals largely because the existing monitoring program is not adequate to make that determination. The proposed Draft EIS for the HHD DSMS cut-off wall should preclude such uncertainties by a monitoring program that can accurately assess the shift	The Corps has a comprehensive monitoring program that includes continued monitoring of 5 wells in Reach 1, periodic monitoring of the wells FDACS recommends (GL-332, PB-1822, and HE-1145), and new wells constructed in Reaches 1, 2, and 3. The current plan is to monitor these wells through 2018 and then evaluate the

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	of the saline interface should it occur. Please see the FDACS Clearinghouse comments submitted for the Draft Environmental Assessment (EA) for the HHD Supplemental Major Rehabilitation Report (MRR) dated April 28, 2015 for additional technical comments and references on this subject. A monthly review and report to Florida Department of Environmental Protection (FDEP) of the data collected is recommended as a permit condition to provide an early warning mechanism in the event problematic conditions are detected. While contingency plans for such a development are not included in the Draft EIS for the HHD DSMS, there should be some adaptive management considerations to lower the risk associated with the potential for changes in the saltwater interface.	data and determine if ongoing long-term monitoring is warranted. In addition to the monitoring program, the evaluation effort includes using the collected data to refine the density dependent groundwater models developed for Reach 1, 2, and 3. The monitoring and modeling results will be used to address the uncertainties and help plan for adaptive responses should they be needed.
FDACS-7	We also recommend a permit condition requiring that the USACE hold an annual interagency meeting to review the data collected in support of this project similar to the agency review currently required by permit for the C-111 West Spreader Canal Project. The meeting's purpose would be to provide interagency review of the data collected for the project and recommendations for the future.	The Corps will be coordinating any permitting actions through the Florida Department of Environmental Protection.
FDACS-8	*Characterization of the Everglades Agricultural Area (EAA) Operations Impact on the Surficial Aquifer Groundwater- page 4-8* The Draft EIS for the HHD DSMS proposes a hydrologic relationship between EAA canal operations that increases salinities in the shallow surficial aquifer groundwater along the perimeter of the lake from Port Mayaca southwest to Moorhaven. It is our understanding that no such relationship has been documented and there is no data to support this claim. Unless the authors can provide conclusive data demonstrating this relationship, we recommend any discussion of this hypothetical relationship be deleted.	Section 4.5 has been edited to include a description of the Ghyben-Hertberg effect on draining lands. The text has been edited to remove reference to ongoing shallowing of the freshwater/saltwater interface as this is likely not

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		significant since the shallow aquifer continues to provide freshwater supplies.
FDACS-9	*Lack of Acknowledgement of Reach 1 Deep Cut-Off Wall Connection to Acceleration of Upward Flow of Connate Groundwater - page 4-8* We recommend the text in this section include a reference to the USGS report "Changes in Saltwater Interface Corresponding to the Installation of a Seepage Barrier Near Lake Okeechobee, Florida, Open File Report 2014-125 6".	USGS reference added to report on page 4-8.
FDACS-10	*Need to Update and Revise Background Information* FDACS recommends the authors of the Draft EIS for the HHD DSMS reach out to state partners such as the South Florida Water Management District (SFWMD) and the FDEP in order to have text regarding state programs updated by subject matter experts. This includes rules, regulations, And programs such as environmental resource permits, consumptive water use, and water quality related to Lake Okeechobee.	The Corps coordinates with all of the mentioned agencies.
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP)		
DEP-1	Environmental Effects of the TSP Adverse effects associated with implementing the TSP are expected to be minimal to moderate. Many effects, such as noise levels, air quality and recreation, would be temporary during construction. Only aesthetics are expected to incur potential moderate effects due to the proposed floodwall, up to 6 feet above the crest of HHD, adjacent to Structures S-71 and S-72.	This is correct.
DEP-2	*Land Use* The proposed cutoff wall in the TSP within Segments 4 - 9 (CIZ B) and Segments 12 and 13 (CIZ C) may permanently alter seepage flows for agricultural use with the potential to moderately impact current land use. However, the Corps has determined that land use would have just minor impacts since other water sources are available to agricultural operators. The proposed flood walls and embankment armoring would have no effect on land use.	This is correct.
DEP-3	*Water Quality* Since 2011, the Corps and the U.S. Geological Survey (USGS) have conducted groundwater monitoring to assess potential impacts of the cutoff wall installed in Reach 1 (within CIZ A) and to collect baseline groundwater quality data in Reaches 2 and 3. This groundwater monitoring has shown impacts to shallow groundwater quality at locations where the tip of the cutoff wall is less	This is correct.

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	than approximately 15 feet above the underlying saline groundwater. The observed impacts include a reduction in the depth of the saltwater interface at which the groundwater quality transitions from fresh to saline. The proposed cutoff wall in Segments 4, 5, 7 and 9 is not likely to adversely affect shallow groundwater, because the maximum tip elevation is -30 feet NAVD which is approximately 15 to 20 feet above the saltwater interface. The proposed cutoff wall in Segments 5-2, 6 and 7 is not likely to degrade shallow groundwater quality because of the presence of clay layers that separate the base of the cutoff wall from the saltwater interface. The proposed cutoff wall within Segments 12 and 13 will have little to no effect on groundwater quality north of the Lake, because the predominant groundwater flow direction is from the north towards the Lake. The proposed cutoff wall in Segment 6 will have a maximum tip elevation of -30 feet NA VD within a thick (15 ft.) clay layer which extends from --15 ft. to -30 ft. NAVD. High chloride (500 mg/L) groundwater is believed to be confined below this clay layer. Thus, upper layers of fresh groundwater will not pass under the cutoff wall. No groundwater users are expected to be affected because there are no permitted wells within 2,500 feet of the HHD levee along this segment. Agricultural users are not likely to be affected because they primarily rely on surface water supplies. The proposed cutoff wall in Segment 8 will have a maximum tip elevation of -30 feet NA VD, while potable groundwater is believed to extend to at least -40 feet NA VD. The Corps believes that this cutoff wall will have minor effects to shallow groundwater quality, because the tip of the cutoff wall will be at least 10 feet above the saltwater interface.	
DEP-4	*Vegetation/ Wetlands* Wetlands in the Lake Okeechobee area, though greatly reduced in area and quality through human impact, still exist as valuable ecosystems both landward and lakeward of the HHD. Lake Okeechobee hydraulically feeds wetlands beyond the dike, providing freshwater for the Florida Everglades to the south and for the Water Conservation Areas in Palm Beach and Broward Counties. Low quality wetlands also occur in the toe ditches around the HHD. The majority of the wetlands appear to be outside of the TSP project footprint and occurring in the uplands. Proposed structural features would be constructed on or within the HHD embankment and construction/staging areas would be located in upland or previously disturbed areas. Please note, temporary impacts related to construction will be assessed in the regulatory permit application.	The Corps will avoid and minimize temporary effects to wetlands to the maximum extent practicable.

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	The Corps will be required to demonstrate that wetland impacts have been avoided and minimized to the maximum extent possible and practicable.	
DEP-5	*Threatened and Endangered Species* Many State and Federally listed plant and wildlife species are found within the vicinity of the HHD including areas of designated critical habitat for the Everglades Snail Kite *(Rostrahamus sociabilis plumbeus),* West Indian Manatee *(Trichechus manatus),* Green Sea Turtle *(Chelonia mydas),* and Johnson's seagrass *(Halophilajohnsonii).* For the TSP, species would not be directly affected by the long term effects of a cut off wall, however there is moderate, short term potential for disturbance to species during construction activities. The action may produce noise above ambient levels, however, mufflers and sound dampening equipment would be required during construction, along with preconstruction surveys. The Corps determined that the TSP may affect but is not likely to adversely affect the following Federally listed species: the Audubon's crested caracara, Eastern indigo snake, Everglades snail kite, Okeechobee gourd, West Indian manatee, wood stork, Florida panther, and the Florida bonneted bat. Additionally, there are state listed species expected to occur within the TSP project area such as the gopher tortoise and burrowing owl. Preconstruction surveys for gopher tortoise and burrowing owls would occur, with appropriate relocation permits obtained by the contractor if necessary. Overall, negligible adverse impacts are anticipated to State listed species as a result of this project.	This is correct, the USFWS concurred with the Corps determinations.
DEP-6	*Recreation* The Office of Greenways and Trails (OGT) prefers that the Lake Okeechobee Scenic Trail (LOST) is temporarily closed for construction, and not permanently closed. A paved trail is preferred to gravel. It is important to note that neither the Florida Department of Environmental Protection, Division of Recreation and Parks, Florida Parks Service nor the OGT manages this trail as a state trail/park. The OGT provides statewide leadership and coordination to establish, expand and promote the Florida Greenways and Trails System. The LOST is a Priority Land Trail in the state trail system, approved by the Florida Greenways and Trails Council in 2012.	This is correct.
DEP-7	Regulatory Approval The HHD rehabilitation is subject to Section 401 of the Clean Water Act, therefore the Corps is required and continues to obtain Water Quality Certification from the Department for planned repairs. Upon receipt of an Environmental Resource Permit application, the Department will review all submitted material and will require information related to groundwater quality. For	The Corps will provide information to DEP and obtain all necessary permits.

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	example, summaries and analyses of groundwater monitoring data and groundwater modeling results will be important to support the review/approval of the proposed cutoff wall. Also, the Corps should submit a robust groundwater monitoring plan to assess the potential impacts, if any, of the proposed cutoff wall on both groundwater and surface water quality.	
DEP-8	Hazardous, Toxic and Radioactive Wastes The Corps has conducted surveys along the HHD to identify Hazardous, Toxic and Radioactive Waste (HTR W) contamination. The Department recommends that the Corps continue to coordinate with the South Florida Water Management District and the Department's Waste Cleanup Section to ensure that potentially contaminated sites are properly assessed and remediated, if necessary, prior to construction of HHD repairs. **Specific Comments:** • The title of Figure 2-2 states that the Lake stage is 25 ft NOVO, while the first footnote states that the Lake stage is 25 ft NAVD at the time of a breach in the HHD. Please make the referenced vertical datum consistent. • Figure 2-15 shows that Alternative I includes a cutoff wall near Clewiston, while Section 2.4.1 on page 2-24 states that this alternative proposes a filter and drainage blanket for the U.S. Sugar Raw Water Intake pipes located within Segment 5-2 near Clewiston. Please address this discrepancy. • In Section 2.4.4 on page 2-29, please revise the sentence that states that Figure 2-18 depicts the location of the cutoff wall for Alternative 4, since this figure actually depicts a pumped internal filter system. • Table 2-4 shows the deepest bottom tip elevation of the cutoff wall as -30 ft NA VD for Alternative 3, while Section 2.6.1 on page 2-32 states the deepest tip elevation is -35 ft NAVD. Please reconcile this discrepancy. • In Section 1.9, please clarify that the proposed construction activity will require an Environmental Resource Permit (ERP) to be obtained from the Department, under the authority of Part IV of Chapter 373, Florida Statutes (F.S.). This construction activity will not be authorized under the Lake Okeechobee Protection Act (LOPA) or Northern Everglades and Estuaries Protection Program (NEEPP) (Section 373.4595, F.S.).	The Corps will continue coordination with the SFWMD and the Department. -The datum has been made consistent to NAVD. -The feature in Alternative 1 is a cutoff wall in the embankment. The filter and drainage blanket will only be at the Raw Water Intake pipe, not throughout the embankment. -The text was modified to address the correct features in Alternative 4. -Text in the paragraph was changed to reflect that the deepest wall would be -30ft NAVD. -ERP text was added to Section 1.9. Language suggested from a different comment on NEEPP was not added.

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DEP-9	The Department supports Alternative 3, the tentatively selected plan, and sincerely appreciates the opportunity to comment. Should you have any questions regarding our comments, please contact Natalie Barfield at 850-245-3197.	Thank you for your review and comments.
FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT)		
FDOT-1	1. Technical review of the potential for catastrophic failure of the HHD concluded that the current condition of the dam poses imminent risk to the people and environment of South Florida. The proposed project purpose and need is to identify and recommend a cost effective alternative risk management plan to reduce risk of breach in the HHD. Of four alternatives analyzed, Alternative 3 was identified as the preferred alternative, or tentatively selected plan (TSP). The TSP proposes the construction of a reinforcement cutoff wall along segments where the probability of a dike breach is intolerable. The majority of these segments are located in FDOT District One. As noted in the DEIS, U.S. Highway 27/State Road 80 is a potential emergency and hurricane evacuation route, a portion of which is located in close proximity to the area of greatest instability of the HHD, and U.S. Highway 78 is also proximate to the project area. Transportation safety is a priority for FDOT. The goal of improving safety of the HHD is consistent with the mission of the FDOT to improve public safety on Florida's transportation system. U.S. Highway 27/ State Road 80 is part of the Strategic Intermodal System (SIS) which is the State's largest and most strategic system for moving people and freight throughout Florida, and outside of its borders. U.S. Highway 27 is a critical north-south freight corridor comprised of both highway and rail modes. The safety and security of all modes on the SIS remain a priority for the Department.	Thank you for your comment.
FDOT-2	2. The TSP would also involve the replacement of SR78 Bridge over Harney Pond Canal, Indian Prairie Canal, and the Kissimmee River. The DEIS proposes that recommendation be made to the FDOT for the reconstruction of the bridge to HHD design grades at the end of the bridge's service life at these locations, with armoring of the bridge's abutments in the interim. For any planned changes in future flow conditions due to the Army Corps project, the bridge hydrology for each referenced bridge will need to be re-evaluated and possible scour countermeasures installed or bridge replacement considered by the USA COE. The USACOE should perform the analysis and submit it to District One (James J. Jacobsen, P.E., District Structures Maintenance Engineer) for review. The Department performed a review of the bridges noted in the package and provide the following summary:	No changes in the flow conditions are proposed in the DSMS. Should changes that effect flow be proposed in the future, the USACE would evaluate scour impacts to these structures. The bridges are lower than the adjacent embankment

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	Bridge Number: #050054: SR78 over Kissimmee River Overflow Year Built: 1978 Bridge Type: Low level concrete bridge. Five spans. Deck elevation: Approx. 22.0 ft Scour Critical: No: Low risk, monitor during inspection. Condition summary: Overall in Good condition. The Department has no plans for bridge replacement based on condition in the foreseeable future. Channel: There is minor deterioration of the slope protection which is maintainable by the FDOT. If there are planned changes in future flow conditions due to the Anny Corps project, the bridge hydrology will need to be re-evaluated and possible scour countermeasures installed or bridge replacement considered by the USA COE. The USACOE should perform the analysis and submit it to the Department for review. Bridge Number: #910009: SR78 over Kissimmee River Year Built: 1964 Bridge Type: Low level concrete bridge with steel lift out span over channel. Nine spans total. Deck elevation: Approx. 39.5 ft Scour Critical: No: Low risk, monitor during inspection. Condition summary: Overall in Good condition. The Department has a planned project to replace the center span grating in FY2017 The Department has no plans for bridge replacement based on condition in the foreseeable future. Channel: There is minor deterioration of the slope protection which is maintainable by the FDOT. If there are planned changes in future flow conditions due to the Army Corps project, the bridge hydrology will need to be re-evaluated and possible scour countermeasures installed or bridge replacement considered by the USA COE. The USACOE should perform the analysis and submit it to the Department for review. Bridge Number: #050011: SR78 over Harney Pond Canal Year Built: 1960 Bridge Type: Low level concrete bridge. Seven spans. Deck elevation: Approx. 35.6 ft Scour Critical: No: Low risk, previous unknown foundation, monitor during inspection. Condition summary: Overall in Good condition. The Department has no plans for bridge replacement based on condition in the foreseeable future.	and could overtop from storm surge under certain reservoir/hurricane loading events. However the event that would cause overtopping is rare, the statistical return frequency of such an event warrants action to reduce risk associated with this failure mode.

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	Channel: There is minor ongoing minor maintenance of the slope protection which is maintainable by the FOOT. If there are planned changes in future flow conditions due to the Army Corps project, the bridge hydrology will need to be re-evaluated and possible scour countermeasures installed or bridge replacement considered by the USA COE. The USA COE should perform the analysis and submit it to the Department for review. Bridge Number: #050018: SR78 over Indian Prairie Canal Year Built: I 960 Bridge Type: Low level concrete bridge. Five spans. Deck elevation: Approx. 3 I ft Scour Critical: No: Low risk, previous unknown foundation, monitor during inspection. Condition summary: Overall in Good condition. The Department has no plans for bridge replacement based on condition in the foreseeable future. Channel: There is occasional minor maintenance of the slope protection which is maintainable by the FDOT. If there are planned changes in future flow conditions due to the Army Corps project, the bridge hydrology will need to be re-evaluated and possible scour countermeasures installed or bridge replacement considered by the USA COE. The USACOE should perform the analysis and submit it to the Department for review.	
FDOT-3	3. The State of Florida has recognized the importance of developing and maintaining nonmotorized trails as stated in 339.81, F.S. This authorized the creation of The Florida Shared-Use Nonmotorized (SUN) Trail Network and directs FDOT to use its expertise in efficiently providing transportation projects to develop a statewide system of paved non-motorized trails as a component of the Florida Greenways and Trails System (FGTS), which is planned by FDEP. The LOST is a major link in connecting South Florida with the rest of the state in the FGTS. The LOST provides important eco-tourism opportunities and is a vital component of economic development in the economically distressed Lake Okeechobee Region. The Department would appreciate that every effort be made to avoid damage to the LOST during construction of the cutoff wall and any future landside rehabilitation. If damage to the paved areas does occur, the Department requests that the USA COE provide for the reconstruction or funding of the asphalt paving.	The U.S. Army Corps of Engineers will attempt to avoid or minimize impacts to the paved portion of the Lake Okeechobee Scenic Trail (LOST) to extent possible and consistent with the Herbert Hoover Dike project authorization.
SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD)		

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SFWMD-1	SFWMD calls on Congress and the USACE to maintain funding momentum and construction progress on this at-risk structure, which is classified as a national priority for continued rehabilitation. The projected $800 million cost to complete the job must be committed in the coming years to assure that the HHD can perform as designed to store additional water, provide flood protection and assure water supply and safety for tens of thousands of families in communities surrounding the lake. Further, SFWMD strongly recommends a prompt initiation of the next modification of the current Lake Okeechobee Regulation Schedule (LORS 2008) so that completion of the two-year updating effort is concurrent with completion of culvert repairs and the new seepage wall. To achieve this, SFWMD will work collaboratively with USACE, other agencies· and interested citizens, with the goal of improving operating flexibillity of Lake Okeechobee while continuing to protect human health and safety, the regional economy and South Florida's environment.	Once the DSMR is approved, a new regulation schedule could be initiated concurrently with construction of the TSP. A new lake regulation schedule will take much collaboration.
SFWMD-2	In summary, the SFWMD requests that the United States Army Corps of Engineers (USACE) declare whether the Environmental Impact Statement (EIS) and recommended Tentatively Selected Plan (TSP) are adequate to meet the original Congressionally authorized design level of service, as well as previous operational schedules. The District also asks the USACE to confirm that the next Lake Okeechobee regulation schedule will allow adjustment in the Lake's upper elevation stages providing for an increase in storage, if the new operational plan recommends it.	The Corps will evaluate an array of alternatives, along with collaboration with other agencies and affiliations, when preparing the NEPA for a new lake regulation schedule. Any proposed changes to the Lake Okeechobee water control plan to address future demands on Lake Okeechobee will require a reassessment of the risk associated with any proposed changes. Depending on the magnitude of those changes further rehabilitation may be required. The TSP being

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		proposed for the identified vulnerable sections of HHD will be robust and resilient, and from a solely risk based perspective could potentially accommodate limited modifications to water control operations. The risk assessment was based on the current operation schedule; however; sensitivity analysis was performed to verify that the remediation identified in the EIS would still be sufficient under previously used schedules.
SFWMD-3	1. The draft EIS discusses the effects of the proposed changes to the hydraulics and hydrology of the system and concludes that negligible to no impact is expected for surface and groundwater hydrology as a result of implementing Alternative 3. The draft EIS also documents observed changes to the freshwater-connate water interface in monitoring wells at several locations adjacent to the Reach 1 seepage wall. The District supports the Corps effort to continue the current ground water monitoring and the expansion of the ground water monitoring network in Consequence Zones A and B. The data and ongoing analysis will aid in determining the spatial and temporal impacts upon the freshwater-saline interface and potential changes to freshwater seepage from the Lake to the shallow surficial aquifer.	Thank you for your support.
SFWMD-4	2. Section 3.8.1.8 The Florida bonneted bat is now listed as an Endangered species by the FWS under the ESA.	Thank you, this was changed in the table.
SFWMD-5	3. Page 1-15, Recommend replacing with the following language: "Acquisition of more than 100,000 acres of land needed for Kissimmee River Restoration and	Text was revised based on suggested revisions.

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	Headwaters Revitalization is substantially complete. This project is scheduled to be complete in 2029. Once restoration construction is complete, 40 square miles of Kissimmee River and floodplain ecosystem would be restored including almost 63,000 acres of wetlands (38,000 acres of riverine floodplain and 25,000 acres of lake littoral zone) and 40 miles of historic river channel. The restoration of the Kissimmee River is dependent on implementation of a headwater regulation schedule that provides dynamic storage in Lakes Kissimmee, Cypress, and Hatchineha and subsequent inflows to the Kissimmee River to meet restoration goals. Inflow volumes delivered to Lake Okeechobee from the restored Kissimmee River will remain mostly unchanged, with slight reduction due to increased evapotranspiration associated with reintroduced sheet flow across the floodplain. The timing of delivery will be attenuated by 1 to 2 months."	
SFWMD-6	4. Page 2-29: Is there a cutoff wall in Alternative 4? Test reads "Figure 2-18 depicts the location of the cutoff wall for Alternative 4".	Text has been revised, there is not cutoff wall in Alternative 4.
SFWMD-7	5. Page 3-7, paragraph 5, changes "Culverts S-2 and S-3" to "Pump Stations S-2 and S-3".	Text has been revised.
SFWMD-8	6. Page 3-11, second paragraph, should note that 298 Districts are only a portion of the agricultural lands served by Lake Okeechobee. The SFWMD also operates the gated spillways, S-351, S-352 and S-354 to provide supplemental irrigation deliveries to other agricultural lands.	Text was added as suggested on page 3-12.
SFWMD-9	7. Table 3-1: If the draft EIS assumes that the culvert replacements are completed, then this table should reflect that the culverts are no longer CMP but concrete box culverts.	Changed all in Table 3-1 to say concrete.
SFWMD-10	8. Table 3-2 through 3-5, recommend providing a statement that the risk analysis determined that the non-Federal structures were inspected and determined to not need replacement or risk reduction remediation.	The risk assessment evaluated all structures that penetrate the embankment. The structure periodic inspections performed by the owners were used in the risk assessment. The failure modes at these structures were not estimated to pose actionable risk.
SFWMD-11	9. Page 4-6, Kissimmee River Restoration (KRR) Project Complete	The Water Control Plan is part of ongoing studies,

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	a. Omit the following last sentence in paragraph 1 ... " Ongoing studies as part of the Kissimmee Basin Modified Water Control Plan to continue to develop flood operations for the anticipated future state of the KRR Project."	therefore the text was not omitted.
FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION (FWC)		
FWC-1	FWC staff understands the need for the physical repair of the dike and we appreciate the plans for avoidance and minimization of impacts, education materials for workers, and inclusion of conservation measures for listed species including the *Standard Manatee Conditions. for In-water Work* in the Fish and Wildlife Coordination Act Report (appendix E). The draft Environmental Impact Statement (DEIS) also identifies a number of ecological and recreational impacts that have been deemed temporary. Temporary impacts may include disruptions of recreational access during late November through January, which could coincide with periods of highest recreational use (i.e. for hiking) or with entire hunting seasons (i.e. for waterfowl) for the calendar year. We recommend considering the economic and societal value of recreational opportunities when planning for construction activities and contacting FWC staff to discuss alternatives that would avoid impacts to recreational users.	Potential impacts to recreation were part of the risk assessment. In fact, recreation benefits foregone were part of the total estimated economic risk of a dike failure. It is recognized that recreational access is an important part of the economy and society of this region. With regard to temporary impacts associated with construction, the Army Corps of Engineers will attempt to avoid or minimize impacts to recreational access to the extent possible and consistent with the Herbert Hoover Dike project authorization.
FWC-2	Additionally, the DEIS indicates the potential for the rehabilitated HHD to allow for higher lake stages under a new regulation schedule. Changes to the Lake Okeechobee Regulation Schedule (LORS) can have negative impacts to ecological conditions of Lake Okeechobee and the fish and wildlife resources dependent on the lake. For instance, recent evidence suggests that Lake Okeechobee plays a vital role in linking snail kites from the Everglades with those of the Everglades headwater lakes. The lake ecology has only recently recovered from the effects of high water management which has allowed snail kites to return to nesting on Okeechobee. FWC staff recommends the future planning and alternatives for LORS consider potential negative impacts on this and other fish and wildlife resources in the ecosystem. We further recommend coordinating	The Corps will coordinate/collaborate with all agencies when a new lake regulation schedule is being considered.

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	with FWC staff prior to proposing changes to the LORS so we can provide technical assistance in avoiding or offsetting potential impacts to fish and wildlife resources.	
FWC-3	We appreciate the opportunity to provide comments on this project and find it consistent with our authorities under Chapter 397, F.S. If you need any further assistance, please do not hesitate to contact Jane Chabre either by phone at (850) 410-5367 or by email at FWCConservationPlanningServices@MyFWC.com. If you have specific technical questions regarding the content of this letter, please contact Marissa Krueger by phone at (561) 882-5711 or by email at Marissa.Krueger@MyFWC.com.	Thank you for your review and comments.
STATE		
STATE HISTORIC PRESERVATION OFFICE (SHPO)		
SHPO-1	Thank you for providing the Florida State Historic Preservation Officer (SHPO) the opportunity to comment on the Draft Environmental Impact Statement (EIS) for the Herbert Hoover Dike (HHD) Dam Safety Modification Study. According to the Draft EIS, Alternative 3 is the preferred alternative. It is our understanding that many of the project activities will take place within the Federal Right-of–Way for the Herbert Hoover Dike, a National Register eligible cultural resource, while other project activities may occur outside of this area. We further note that there are many cultural resources that are eligible for the National Register of Historic Places or that have not yet been evaluated for eligibility that may fall within some areas of this project. We note that consultation with this office was initiated in July of 2013 and will continue through the completion of this project. We look forward to continuing to work with you.	Thank you for your review and comment.
SOUTH FLORIDA REGIONAL PLANNING COUNCIL – NO COMMENTS RECEIVED		
FLORIDA DEPARTMENT OF STATE – NO COMMENTS RECEIVED		
STATE/COUNTY		
Palm Beach County (PB)		
PB-1	(1) The purpose of the Herbert Hoover Dike (HHD) Dam Safety Modification Study is to identify and recommend a cost effective alternative risk management plan that supports the expeditious reduction of risk at HHD. While the primary purpose of the remediation of HHD is to ensure public safety, objectives of the project also include lowering the probability of experiencing a breach with incurring impacts on ecological, cultural, and	The preferred alternative reduces the risk to public safety to a “tolerable” level, which is defined in the document.

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	aesthetic resources (including the Everglades) that may result from a breach. The EIS spends considerably more time discussing the impact of the HHD construction on the habitat surrounding the lake, than it does defining the risk reduction associated with the construction projection public safety.	
PB-2	(2) Palm Beach County strongly supports achieving the goal of a safer dam for Lake Okeechobee. However, we are very concerned about the approach ACOE is taking in attempting to ensure that the dam is safe. The main concern the County has is the schedule for certifying the dam to meet dam safety standards. As we have pointed out many times in our discussions with the ACOE, the Federal Emergency Management Agency (FEMA) has revised the Digital Flood Rate Insurance Maps (DFIRMs) for Palm Beach County. These maps are used to establish insurance premiums for flooding after a storm that is of the 1 in 100 year magnitude. FEMA has told the County on numerous occasions that until the ACOE certifies the dam, they will analyze the HHD as if it will fail. The analysis done to date contemplates the Base Flood Elevations for the Tri-Cities (Pahokee, Belle Glade, and South Bay) within the Glades area at extremely high elevations due to the analyses results being based on a compilation of 18 different levee breaches along the portion of the HHD within Palm Beach County. This has resulted in homes and businesses in the Tri-Cities area that were previously above the "100 year flood stages" to being within an AO Flood Zone where flooding will occur up to three feet deep across the existing natural grade causing many homes and businesses to be flooded "on paper". This will require the affected residents and businesses to have to purchase flood insurance at catastrophic rates. This area is one of the most economically challenged areas within the County. Having the portion of the dam that has been completed within Palm Beach County certified by the ACOE will eliminate the assumption by FEMA to analyze the/dam as if it will fail. Therefore, it is the request of the County that the ACOE certify the dam as quickly as possible.	USACE is currently reviewing NFIP findings for all of HHD. The embankment will be split into separate leveed areas of common inundation under reservoir loading form the 1% event. Leveed areas that are considered sufficient to retain the 1% loading event will be recommended for accreditation by FEMA. Several gaps in the existing cutoff wall still exist around structures that penetrate the embankment in Palm Beach County. A contract to close these gaps is currently scheduled to be awarded this year. Additionally, several culverts are being replaced in this area. Recommendations to FEMA will be reviewed as these areas of higher vulnerability are repaired and risk reduction is complete for the complete leveed area.

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PB-3	(3) Palm Beach County shares the concerns of the Department of Agriculture and Consumer Services (DACS) in regard to the potential impacts of the introduction of high chlorides into the surficial aquifer that the farming community of the Glades area uses for their crop irrigation. Palm Beach County is the winter vegetable capital of the United States and a negative impact to that industry would have a detrimental effect on the economy of Palm Beach County. Therefore, we join DACS in requesting that the ACOE continue to monitor the induction wells that have been added along the perimeter of the HHD and add an additional array of monitoring wells to assess chlorides as construction proceeds around the south and west areas of the HHD.	The Corps has a comprehensive monitoring program that includes continued monitoring of 5 induction wells in Reach 1, periodic monitoring of the wells FDACS recommends (GL-332, PB-1822, and HE-1145), and new wells constructed in Reaches 1, 2, and 3. The current plan is to monitor these wells through 2018 and then evaluate the data and determine if ongoing long-term monitoring is warranted.
PB-4	(4) Palm Beach County also supports the concerns DACS has regarding the Lake Okeechobee regulation schedule. It does not appear that LORS08 Schedule is being addressed in this draft EIS. The ACOE, as part of that Schedule, was to address the lake levels within Lake Okeechobee in order to bring the water supply component from a level of service of 1 in 6 years to a state mandated level of service of 1 in 10 years. This review needs to be addressed so that Lake operations incrementally improve storage as repairs are made.	A new lake operating schedule would be collaboratively assessed and evaluated under a separate NEPA study and document.
MARTIN COUNTY BOARD OF COUNTY COMMISSIONERS (MARTIN)		
MARTIN-1	The safety of the Herbert Hoover Dike (HHD) is critical to Martin County. The current regulation schedule for the lake is limited, due to dike integrity. This situation contributes to extreme fluctuations between damaging freshwater releases to our estuaries and then to tide. Unfortunately we are experiencing massive lake discharges now into our St. Lucie River and Estuary and on to the Indian River Lagoon.	A new lake operating schedule would be collaboratively assessed and evaluated under a separate NEPA study and document.
MARTIN-2	The health, safety and welfare of south Florida residents are central to the need for federal funding assistance. Not only is the dike integrity crucial to the citizens of south Florida, but the inability to handle excess stormwater runoff has become an all too frequent catastrophe to the St. Lucie and Caloosahatchee Estuaries. The massive amounts of stormwater released from Lake Okeechobee carries pollutants, and such releases can upset the delicate salinity balance of our	Once the DSMR is approved, a new regulation schedule could be initiated concurrently with construction of the

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	coastal ecosystems. Therefore, we experience the destruction of environmentally significant plants and animals. The toxic blooms of blue green algae attack plants and marine life and force the posting of warnings by the State Health Department to avoid contact with our waterways. These discharges are disastrous to our economy and our environment.	Recommended Plan. A new lake operating schedule would be collaboratively assessed and evaluated under a separate NEPA study and document
MARTIN-3	We support the work of the US Army Corps of Engineers to rehabilitate the dike system, and we continue to advocate for robust funding for the HHD project. The HHD is critical to protecting surrounding communities from floodwaters, and it is the "liquid heart'' of a multi·billion dollar effort to restore America's Everglades. The HHD greatly contributes to the economy, environment, navigation, agriculture, water supply, and flood protection / public safety in all of South Florida. Most importantly to Martin County, a restored HHD can hopefully mitigate some of the devastating impact of freshwater releases on our fragile ecosystem. Therefore, the Martin County Board of County Commissioners strongly feels that the HHD must maintain a high priority status for funding until the rehabilitation project is completed. Further, it is essential that the Corps expedite the project as much as is possible.	Thank you for your support.
COUNTY COALITION FOR RESPONSIBLE MANAGEMENT OF LAKE OKEECHOBEE, ST LUCIE, AND CALOOSAHATCHEE ESTUARIES, LAKE WORTH LAGOON (CC)		
CC-1	As Chairman of the County Coalition that convenes this association of the sixteen counties that comprise the jurisdictional area of the South Florida Water Management District, I am writing to express our support for funding for the Herbert Hoover Dike and the importance of the dike's rehabilitation to the County Coalition.	Thank you for your support.
CC-2	The safety of the Herbert Hoover Dike (HHD) is critical to the County Coalition. The current regulation schedule for the lake is limited, due to dike integrity. This situation contributes to extreme fluctuations between damaging freshwater releases to our estuaries and then to tide. Unfortunately we are experiencing massive lake discharges now into the Caloosahatchee estuaries and St. Lucie River and Estuary and on to the Indian River Lagoon.	A new lake operating schedule would be collaboratively assessed and evaluated under a separate NEPA study and document.
CC-3	The health, safety and welfare of south Florida residents are central to the need for federal funding assistance. Not only is the dike integrity crucial to the citizens of south Florida, but the inability to handle excess stormwater runoff has become an all too frequent catastrophe to the St.	Thank you for your support. Construction would begin in 2018.

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	Lucie and Caloosahatchee Estuaries. We support the work of the US Army Corps of Engineers to rehabilitate the dike system, and we continue to advocate for robust funding for the HHD project. Each year, the County Coalition gathers representatives from these sixteen counties to develop a unified list of federal legislative priorities. The Coalition has long advocated that solutions rely on what we can agree on, and how we can move forward, together. Since the County Coalition began convening the 16 counties, the top priority has remained the Herbert Hoover Dike -increasing annual appropriation or rehabilitation of the HHD to accelerate project completion. The HHD is critical to protecting surrounding communities from floodwaters, and it is the "liquid heart" of a multi-billion dollar effort to restore America's Everglades. The HHD greatly contributes to the economy, environment, navigation, agriculture, water supply, and flood protection / public safety in all of South Florida. Therefore, the County Coalition strongly feels that the HHD must maintain a high priority status for funding until the rehabilitation project is completed. Further, the project should be expedited.	
LAKE WORTH DRAINAGE DISTRICT (LWDD)		
LWDD-1	In the event of HHD failure, it is likely that the reconstruction effort necessary to return the dike to a safe condition could take several years. During this period, it is unlikely that water levels in the Lake could be managed near the elevations required to provide adequate supplemental water supply to the Lake Okeechobee Service Area and other areas dependent on the Lake for a portion of their supplemental water needs. This would leave the Arthur R. Marshall National Wildlife Refuge as the only available source of regional water supply to LWDD, thereby increasing the risk that insufficient regional water inflow to LWDD would severely reduce well field protection and supplemental irrigation supply for both agricultural and urban uses. Likewise, increased water demand on the Refuge, along with severely reduced base flow from Lake Okeechobee, could cause significant impacts to the Refuge.	The purpose of the project is to prevent potential failure of the HHD.
LWDD-2	While HHD repairs are underway, LWDD requests the Corps initiate and complete a Lake Okeechobee regulation schedule modification study. This action will enable the Corps to be poised to implement a new Lake regulation schedule at the earliest possible moment and in light of the rehabilitated HHD. LWDD has repeatedly expressed concern about the inadequacy of water supplies provided pursuant to the current Lake regulation schedule, 2008 LORS. LWDD provides surface water, largely from WCA 1 as replenished by Lake Okeechobee during dry times, to its irrigation water users. Also, LWDD's canal network recharges the Surficial Aquifer in coastal Palm	A new lake operating schedule would be collaboratively assessed and evaluated under a separate NEPA study and document that could begin upon approval of the DSMR.

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	Beach County to maintain ground water levels, help prevent inland migration of the saltwater interface, and recharge public water supply utility wellfields. In 2007, LWDD commented on the Corps' draft Lake regulation schedule environmental impact study and its potential to exacerbate water shortages. Additional details concerning water shortages and use of permanent forward pumps to relieve supply problems at low Lake levels resulting from the then proposed regulation schedule were requested at that time. This regulation schedule, now known as 2008 LORS, was approved as an interim schedule nearly eight years ago. The 2008 LORS does not assure LWDD of adequate water supply to meet its above stated missions, thus it should be replaced with a new regulation schedule as soon as possible.	
LWDD-3	Additionally, the LWDD requests the Corps to operate Lake Okeechobee in light of the HHD repairs that have already occurred. The 2008 LORS recognized the burden this schedule placed on water supply interests and assured stakeholders of the potential to operate the Lake so as to improve storage as HHD repairs progressed. To date, the Corps has not undertaken operational changes. LWDD requests the Corps immediately implement these changes. Storing more water in Lake Okeechobee will benefit water supply users and will also provide much needed relief to the estuaries and even benefit the Lake's ecology.	A new lake operating schedule would be collaboratively assessed and evaluated under a separate NEPA study and document. The lake operating schedule cannot be changed until alternatives are analyzed and evaluated.
LWDD-4	In closing, LWDD appreciates the Corps' on-going effort to rehabilitate the HHD and recognizes the magnitude of this project. However, swift completion of HHD repairs is urgently needed, as is implementing a new Lake regulation schedule and taking advantage of improved storage made possible by the repairs accomplished to date. Your consideration of LWDD's concerns is appreciated.	Thank you for your comments.
FEDERAL EMERGENCY MANAGEMENT AGENCY		
FEMA-1	Page 7-1 Federal Emergency Management Administration should be Agency and not Administration.	This change has been made.
LOGAN M. CRAWFORD		
CRAWFORD-1	The purpose of this letter is to post public comment on the Herbert Hoover Dike rehabilitation project. As a concerned citizen, student and after going over the draft EIS, I've come to raise a few issues regarding the HHD rehabilitation project. I agree that the one of the primary purposes of the project should be to ensure public safety, as we don't want a reoccurrence of what has happened	USACE uses risk to evaluate the need for federal investment for infrastructure modification. The ability for

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	in the past. Although one issue I find to be pressing is to what standard the levee and HHD will be built to withstand on the Saffir-Simpson hurricane scale. Louisiana was decimated years ago because of a failed levee systems, and at that time theirs was only built to withstand a level 3 Hurricane, which proved devastating. In regards to public safety, to what degree on the Saffir-Simpson scale will the revitalized HHD and levees be built to withstand. With hurricane intensity on the rise and frequency staying roughly the same, it's important if infrastructure revitalization is taking place that we must take all available precautions to prepare for fiercer storms by building to higher standards.	the embankment to withstand storm surge from hurricanes is a function of both starting reservoir level and storm intensity. The risk analysis considered hurricane loading on the embankment, this included all categories of storms and all possible reservoir levels. The joint probability of wind and starting reservoir level showed that only 3 places on the dam exceeded USACE's tolerable risk guidelines.
CRAWFORD-2	Another issue with the HHD project is one of water quality. As a resident of Southwest Florida I find it to be of pivotal importance to alleviate the amount of water leaving Lake Okeechobee to the east and west, which are creating havoc on both the environment as well as economy because of polluted waters. Although the primary purpose of the remediation of the HHD is to ensure public safety, it is also their objective to reduce ecological impacts and aesthetic impacts, which both impact tourism and the economy. I believe that the HHD rehabilitation project should take into consideration an alternative route south through the EAA that may also play a role in the Everglades Restoration project. By facilitating more water south from Lake Okeechobee and into the Everglades, restoring sheet water flow as a means to filter out pollutants before reaching Everglades National Park is also a critical issue that needs to be addressed and an action that needs to be taken to ensure the health and wellbeing of our estuaries, and overall water quality of Southwest Florida.	The Central Everglades Planning Project addresses restoration of the Everglades with Flow Equalization Basins to improve water quality.
DREW MERTZLUFFT		
MERTZLUFFT-1	In the federal consistency statement section (Appendix D) for Chapter 370, Living Saltwater Resources, it is stated that, "The proposed project is located inland and would have no effect on	There could be indirect effects due to this project,

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	saltwater resources either directly or indirectly through discharge downstreams." It is highly unlikely, if not one hundred percent unlikely, to be able to claim the knowledge of such a project is so great that the Army Corps of Engineers can foresee every indirect effect from every aspect of the restoration of the Herbert Hoover Dike. It is *not* possible to have an indirect effect on anything in this world. Further research into indirect effects of inland construction into marine zones is obviously needed, since any and all fluid links to the ocean.	however, because the lake regulation schedule will not be altered due to this project, the amount of water leaving the project area would not change due to any of the alternatives.
MERTZLUFFT-2	Secondly, along the same lines, in Appendix D, Chapter 258, State Parks and Aquatic Preserves it is stated, "… This chapter is not applicable." In Chapter 258, it states that the federal action (Herbert Hoover Dike) must be consistent with any direct or indirect adverse effects of park property, natural resources, park programs, or management operations. It is baseless to claim that a construction restoration of the Dike will, again, not have *any* indirect effects on any of the mentioned park and aquatic preserve aspects. Everything is connected indirectly and more research into how construction sites may impact communities/ecosystems far and near is needed.	There could be indirect effects due to this project, however, because the lake regulation schedule will not be altered due to this project, the amount of water leaving the project area would not change due to any of the alternatives. The focus of this EIS is to analyze only effects due to the Recommended Plan.
AUDUBON FLORIDA (AUDUBON)		
AUDUBON-1	Due to its size and location, Lake Okeechobee is probably the single most important water feature in south Florida. All flow from the 2.6 million acre Northern Everglades watershed passes through the Lake on its way south. The Lake furnishes flood protection and water supply for humans and downstream ecosystems. It supports fisheries and wildlife habitat, navigation across the state and a tourism-based economy. The Lake also strongly influences rain and temperature patterns in central Florida. Recent concerns about the safety of the HHD however, have resulted in water management decisions being made primarily for precautionary reasons, which have interfered with many of these functions. With the repair of the HHD, more options will be available and many of Lake Okeechobee's values can be restored and maximized.	Thank you for your comment.
AUDUBON-2	Once remediation is complete, occasional higher water levels may be permissible in the Lake. We support the Corps' intention not to modify the LORS schedule until the entire remediation effort	Thank you for your comment. A new lake

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	is finished because allowing higher levels before the HHD were safe would be imprudent. However, once a new operating schedule is feasible, we caution that higher water levels create new issues. The "Stage envelope" performance measure for the Lake quantifies how often water levels are in an ideal range, which is considered within 6 inches of a dry season low of 12.5 feet and a wet season high of 15.5 feet. From 1978 until the early 2000s, water levels were maintained higher than the stage envelope most of the time and proved disastrous to the Lake's biota, and to estuaries who suffered massive releases from an often too-deep lake. The chronically deep levels also hastened the erosion of the HHD and any future schedule will have to weigh impacts of deep levels on the Lake, Estuaries, and the HHD itself. Although chronically deep levels are a concern, occasional deep water during wet period emergencies, could be a future part of management. To a point, the lake marshes and biota can withstand temporary deep water events with manageable harm. Were the HHD safer today, the Corps could contemplate reducing or halting the current disastrous releases to the estuaries for a period of time to benefit them, and resume releases later. With the HHD in its present condition, such an option is not feasible and is an example of how a safer Dike can allow improved management.	operating schedule would be collaboratively assessed and evaluated under a separate NEPA study and document.
AUDUBON-3	Acute high water events bring up the most important point about post-remediation HHD safety. Lake Okeechobee does not have nearly enough outlet capacity to keep up with inflows, meaning Lake levels can rise almost uncontrollably. The DSMS noted that LORS would allow a lake stage of 22.8 ft (NGVD29) in a peak SPF, which could be a threat even to a remediated Dike. In short, even when HHD repairs are complete, large inflow events will remain a concern for HHD safety. In the long term, the best way to reduce the threat of storms overwhelming the remediated HHD is to build large amounts of storage capacity outside of Lake Okeechobee, and the conveyance capacity needed to utilize it quickly. Building such infrastructure is what the Comprehensive Everglades Restoration Plan was designed to do. CERP itself is beyond the scope of the DSMS, but will be an indispensable component to the future safety of the HHD. Audubon pledges to support efforts at the national and state levels to help the Corps and its partners make south Florida as safe and functional as possible.	Thank you for your review, comments, and support for dam safety and CERP.
PRIVATE		
FLORIDA FRUIT AND VEGETATABLE ASSOCIATION (FFVA)		

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FFVA-1	The Florida Fruit & Vegetable Association (FFVA), a non-profit, agricultural trade organization whose mission is to enhance the competitive and business environment for producing and marketing fruits, vegetables and other crops, greatly appreciates the tremendous effort and diligence put forth by the United States Army Corp of Engineers (USACE) regarding the rehabilitation of the aging Herbert Hoover Dike (HHD). As an organization that represents a myriad number of producer members that operate both around and south of Lake Okeechobee and whose livelihoods are intrinsically linked to surface water provided by the lake, we greatly appreciate the opportunity to comment on the Draft Environmental Impact Statement (EIS) for the Herbert Hoover Dike Dam Safety Modification Study (DSMS).	Thank your for your review.
FFVA-2	What is glaringly absent, however, is any discussion pertaining to how future operations and management of Lake Okeechobee water levels could be affected by the identified and anticipated dike repairs. The current Lake Okeechobee Regulation Schedule (LORS) 2008 is innately tethered to the state and integrity of HHD. We are currently in the midst of an unprecedented wet "dry" season where every option regarding water storage is being thoroughly examined in hopes that additional lake water won't have to be discharged east and west to the St. Lucie and Caloosahatchee estuaries. Ironically, we will inevitably again face drought conditions in the near future where the lake's water will be concurrently and desperately sought after for public supply, agriculture and environmental benefit for the estuaries, the storm water treatment and water conservation areas, the Everglades and for the lake itself. It is imperative that we at least begin the discussion of how the recommendations proposed within the DSMS might translate to potential modifications of LORS 2008. To expedite this process without being hindered by another evaluation study, the DSMS needs to broach the subject and identify a range of lake levels that might be realistic with the completion of the proposed dike remediation projects.	A new lake operating schedule would be collaboratively assessed and evaluated under a separate NEPA study and document. This study could commence once the DSMR is approved.
FFVA-3	Again, FFVA supports the USACE's efforts in addressing the integrity of HHD to mitigate risk of a breach. While ensuring public health and safety is, rightly, the focus of this study, it is also paramount that we move forward prudently and simultaneously consider how the LORS 2008 could be beneficially modified as a result of the proposed remediation of HHD. With Lake Okeechobee, we find ourselves in the constant struggle between balancing public safety, water supply and environmental benefit. At the very least, the inclusion of a discussion in the DSMS offering guidance on how the dike repairs could possibly impact revised lake stages certainly seems salient. This will help expedite the process for the much needed review and reevaluation	A new lake operating schedule would need to be collaboratively assessed and evaluated under a separate NEPA study and document in order to discuss the possibilities of lake stages.

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	of the LORS without being burdened and mired by another prolonged study. If you have any comments or concerns, please don't hesitate to contact me.	
EVERGLADES AGRICULTURAL AREA ENVIRONMENTAL PROTECTION DISTRICT (EPD)		
EPD-1	The EPD encourages you to continue the expeditious completion of the HHD repairs and also initiate a study to formally modify the Lake Okeechobee regulation schedule, so the well documented water supply deficiencies of the current interim schedule can be corrected upon completion of the HHD repairs. We also encourage you to take advantage of the HHD repairs made to date to give yourself more flexibility in holding water in the Lake when we have wet periods like we are experiencing now. Using operational flexibility in the existing 2008 Lake Okeechobee regulation schedule, and recognizing the repairs already, or soon to be, complete, you and the Water Management District should evaluate operations to store more water in Lake Okeechobee as soon as possible. The commitment in the 2008 LORS' Final Supplemental Environmental Impact Statement (FSEIS at iv - v) and the Record of Decision recognizes the value of this opportunity.	A new lake operating schedule would be collaboratively assessed and evaluated under a separate NEPA study and document and is expected to begin no sooner than once the DSMR is approved.
EPD-2	The Lake's infrastructure, including the HHD, must be adequate to enable a lake regulation schedule capable of meeting all Project purposes established by Congress since 1948. To that end, we request that you provide confirmation in the HHD EIS that the HHD's structural integrity will be sufficient to allow water levels equal to or exceeding those experienced in the past. This clarification is necessary in view of statement in the EIS that the 2008 LORS is the base condition utilized in the alternatives selection process. It is not clear what that means with respect to future lake management options.	The proposed risk reduction increases the robustness of the dam under all loading conditions and repairs the most vulnerable sections of the embankment. The DSMS is based on the current operation schedule; however; sensitivity analysis was performed to verify that these measures would still be sufficient under previously used schedules. If the operating schedule changed following a separate NEPA study, the risk assessment would need to

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		be evaluated to verify that additional areas of the dam would not require risk reduction. The need for risk reduction in other areas would be dependent on the magnitude of variation in the operation schedule from LORS.
EPD-3	Thank you for considering these comments. We look forward to USACE's final HHD EIS, your continued work on the Dike, and future Lake operations which better serve the C&SF Project's Congressionally authorized purposes. We are very grateful for the work you have already done around the lake and appreciate the dedication of your staff who have accomplished so much already in protecting our community.	Thank you for your comments and support.
PRIVATE CITIZEN – ALLIE BURY		
BURY-1	The Herbert Hoover Dike was built in the 1930s to prevent flooding like those in 1926 and 1928 hurricane events that killed an estimated 2,400 and 3,400 people. This dike has successfully served its purpose, except that there is current water seepage from the '04 and '05 hurricanes. In addition, the record breaking amounts of rainfall this winter has increased the lake level to over 16 feet, close to capacity. It is critical that the dike undergoes immediate repair in order to protect citizens from dike failure.	Thank you for your comment, upon approval of the DSMR, design and construction of the Recommended Plan will commence.
BURY-2	In addition, the dike needs to be repaired and enhanced to secure high levels of water and reduce the amount of emergency releases. As a citizen of Fort Myers Beach, I have worries and concerns about an influx of water being released from Lake Okeechobee. Firstly, Lake O water is loaded with nitrogen and phosphorous pollutants. Once this water is released, it causes an upset of nutrient balances in the Caloosahatchee River and eventually in the Gulf of Mexico. This nutrient loading causes algal blooms and severe damage to all living organisms such as oyster beds, fisheries, and sea grass beds. Currently, FMB is suffering from red tides and severe outbreaks of red drift algae. This is causing damage to marine organisms such as fish, conch, and plants among many others. Lastly, the water releases cause economic and aesthetic impact to all areas affected. The muddy waters and red tides are creating a heavily polluted beach with large amounts of dead	The DSMS addresses public safety. We understand your concerns about water quality. A new regulation schedule would be a collaborative effort under NEPA and would have many competing interests and objectives.

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	organisms. This is causing large amounts of economic impacts due to the heavy reliance of tourism. Vacationers and locals on FMB are both highly perturbed and disgusted by the state of the water in both Estero Bay and the Gulf of Mexico.	
ANTONIO ARRUZA – FGCU COASTAL ZONE MANAGEMENT		
ARRUZA-1	This letter addresses the Army Corps of Engineers in regards to the current risk of water level affecting public safety from Lake Okeechobee. In Particular, my concern is with the Herbert Hoover Dike Dam (HDD) and whether or not it has been rated on a Saffir-Sympsons scale to withstand up to a category five hurricane. This is an urgent matter primarily relating to public safety but with water quality as well. As the water level increases, which is around 16ft as of Feb 7th, the more threatening a storm can be because it would take less wind to cause the water to over wash. As with Florida's history, we have had cases of bad storms and I quote from the draft EIS on the Corps rating the HDD in 2007 as, "critically near failure or extremely high risk". A failure in the outflow capacity will result in storm surge waves destroying nearby communities, canals, rivers, and wildlife. We must be prepared and if the HDD is not fit for a storm then the immediate discharge of water would be necessary for public safety. Thus I agree with Governor Rick Scott in proposing that L-29 canal water level be raised for water from Lake Okeechobee to be relocated. Thank you for your time.	USACE uses risk to evaluate the need for federal investment for infrastructure modification. The ability for the embankment to withstand storm surge from hurricanes is a function of both starting reservoir level and storm intensity. The risk analysis considered hurricane loading on the embankment, this included all categories of storms and all possible reservoir levels. The joint probability of wind and starting reservoir level showed that only 3 places on the dam exceeded USACE's tolerable risk guidelines.
COLLIN FEINBERG		
FEINBERG-1	Hello I am a citizen commenting on the draft environmental impact statement and concerned about the points the draft makes about safety. There is a statement about the dike needing to be "tolerable" there should be an expectation of less than 0.001 lives lost annually. I agree that there can't be anything man made of this magnitude and have a 100% safety rate. However I believe the word tolerable shouldn't be an appropriate word. Part of the definition of tolerable is mediocre which I can safely say that is far from the proper term used for a large scale dike. There is also significant issues with seepage that needs to be properly handled. Seepage can allow other	"tolerable risk guidelines" are defined in USACE engineering regulations. Changes to such terms is beyond the scope of SAJ's modification study.

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	chemicals to fester underneath the dike, which can cause them to be absorbed into the ground and potentially the groundwater. The dike should have more strict regulations in order to protect the people and the land around it. Erosion should be priority because this can affect the stabilization and integrity of the dike. Try and work on keeping erosion to a minimum or replace the soil that is leaving and causing piping with new soil.	Seepage occurs into the ground under the entire 750 square miles of lake and under all of the canals that enter and exit the lake. Chemical contamination sites are dealt with under other programs and are not part of the DSMS. The TSP cutoff wall is designed to prevent erosion of the soils in the embankment and foundation of HHD. Areas that have piped in the past have been backfilled to prevent continuation of these failure modes.
SUGAR CANE GROWERS COOPERATIVE OF FLORIDA		
SUGAR CANE-1	Our growers rely on Lake Okeechobee for flood protection and water supply. The integrity of the HHD is of paramount importance to us since we live and conduct our business around the rim of the Lake. We encourage the Corps of Engineers' to expeditiously complete the rehabilitation of the HHD and concurrently evaluate the flexibility available within the existing Lake Regulation Schedule (LORS-08) to safely store more water in the lake to prevent unwanted releases to coastal estuaries and assure adequate water supply for the built and natural environments.	The Corps intends to expeditiously complete rehabilitation of the HHD. A new lake operating schedule would be collaboratively assessed and evaluated under a separate NEPA study and document and is expected to begin no sooner than once the DSMR is approved.

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SUGAR CANE-2	When The LORS-08 regulation schedule was adopted, it was characterized as an interim schedule that was anticipated to be in place while the most vulnerable sections of the levee were rehabilitated. This has been substantially completed with the 21 miles of cutoff wall and culvert replacements. The public was led to believe that an updated Lake regulation schedule would be adopted as soon as HHD repairs allowed, to restore water supply to EAA users to a one in ten year level of service. LORS-08 diminished our level of service to a one and six year level of service. When Congress passed WRDA 2000 it included the Savings Clause that promised the level of service for water supply and flood protection as of Dec. 11, 2000 would not be diminished due to the implementation of components of the Comprehensive Everglades Restoration Plan including adjustments to the Lake regulation schedule.	The Corps concurs that LORS was characterized as an interim schedule. We said, "The Corps expects to operate under this interim schedule until the earlier of (1) implementation of a new Lake Okeechobee schedule as a component of the system-wide operating plan to accommodate the Comprehensive Everglades Restoration Plan (CERP Band 1 projects) and the State of Florida's fast track Acceler8 projects, or (2) completion of HHD seepage berm construction or equivalent dike repairs for reaches 1, 2 and 3."
SUGAR CANE-4	This has been substantially completed with the 21 miles of cutoff wall and culvert replacements. The public was led to believe that an updated Lake regulation schedule would be adopted as soon as HHD repairs allowed, to restore water supply to EAA users to a one in ten year level of service. LORS-08 diminished our level of service to a one and six year level of service. When Congress passed WRDA 2000 it included the Savings Clause that promised the level of service for water supply and flood protection as of Dec. 11, 2000 would not be diminished due to the implementation of components of the Comprehensive Everglades Restoration Plan including adjustments to the Lake regulation schedule.	The LORS EIS recognizes the water supply goal of proving at least a 1-in-10 level of service as indicated by simulations using the SFWMM in which three or less water years in the 26-year simulation period have water shortages in which significant water supply

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		cutbacks are necessary. A new lake operating schedule would be collaboratively assessed and evaluated under a separate NEPA study and document and is expected to begin no sooner than once the DSMR is approved.
SUGAR CANE-5	Given these facts, we presume that the structural design of the HHD rehabilitation Tentatively Selected Plan will provide the Dike with the integrity to raise lake stages to more historic levels, rather than having to undergo another time consuming Major Modification Report study effort and request a statement be included in the HHD EIS to this effect. We applaud the Corps of Engineers commitment to undertake parallel paths and initiate the process of revising the Lake Regulation Schedule in 2020 concurrent with constructing the cutoff wall in Zone B between Lake Harbor and Moore Haven so that the new Lake regulation schedule can be implemented as soon as possible.	As stated in the LORS EIS, dike rehabilitation could allow for greater operational flexibility, potentially including higher lake levels for increased water storage. Thank you for your comments.
GUNSTER FLORIDA LAW FIRM BUSINESS – UNITED STATES SUGAR CORPORATION (SUGAR)		
SUGAR-1	**Continue To Expeditiously Repair the HHD** Continued, expeditious repair of the HHD to address the public's health and safety is of utmost importance. USSC urges the USACE to proceed as promptly as possible while addressing the concerns noted in this comment letter. As the alternative design for the HHD rehabilitation is selected, it is appropriate to consider attaining the immediate goal of structural integrity, while assuring Lake Okeechobee operations meet Congressional and USACE commitments for the C&SF Project, as discussed below. We believe these commitments can and should be achieved concurrently with the repairs. Our comments request that the Corps integrate identification and implementation of HHD repairs with concurrent evaluations of how the HHD repairs will further all C&SF Project purposes.	The Corps intends to expeditiously complete rehabilitation of the HHD. A new lake operating schedule would be collaboratively assessed and evaluated under a separate NEPA study and document that could begin upon approval of the DSMR and will evaluate how to best achieve C&SF purposes in light of rehabilitation.

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SUGAR-2	**Repaired HHD Must Continue to Serve All C&SF Project Purposes for Lake Okeechobee** We recognize that the HHD Draft EIS and DSMS do not evaluate potential water supply or storage implications nor do they identify operational changes to store additional water in Lake Okeechobee based on the TSP. These matters will be the subject of a Lake regulation schedule modification study. However, it is appropriate now for the USACE to clearly state and confirm the repaired HHD's potential operational capabilities and commit to address the integrally related purposes of the HHD through a lake regulation schedule modification study that proceeds concurrent with the HHD repairs.	A new lake operating schedule would be collaboratively assessed and evaluated under a separate NEPA study and document that could begin upon approval of the DSMR.
SUGAR-3	The stability of the dike directly impacts the Corps' capability to meet the C&SF Project purposes, as established by Congress and the USACE's decisional documents approved since 1948. Lake Okeechobee serves multiple project purposes, including water supply and fish and wildlife. Water supply and fish and wildlife purposes include water for utilities, the Stormwater Treatment Areas (STAs), residential and agricultural lands within the Lower East Coast and the Lake Okeechobee Service Area, Lake W01ih Drainage District, Water Conservation Areas, Everglades National Park and Seminole Tribe of Florida. Moreover, the Comprehensive Everglades Restoration Plan (CERP) is a holistic framework and guide for modifications to the C&SF Project to achieve restoration, protection and preservation of the Everglades ecosystem, including Lake Okeechobee, while providing for other water related needs of the system. The foundational principles for implementation of CERP stress the need to address operational changes in the C&SF Project system holistically, as an integral part of CERP, and not piecemeal through non-CERP projects. *See* WRDA 2000; Sections 6.4.2, 6.4.13 Central and Southern Florida Project Comprehensive Review Study Final Integrated Feasibility Report and Programmatic Environmental Impact Statement April 1999. To this end, we request the USACE clearly state the potential storage capabilities of the repaired HHD and also provide written confirmation that the HHD Draft EIS and DSMS do not alter the Congressionally authorized C&SF Project purposes or other previous commitments, such as CERP and its enabling legislation.	CERP was developed with a view towards recommending structural and/or operational changes to better meet the goals of south Florida ecosystem restoration and the continued provision of safe, reliable water supply and flood protection for the people who live there. Future consideration of regulation schedule changes will more specifically address capabilities associated with dike rehabilitation. Dike rehabilitation does not change the authorized purposes of the C&SF Project.
SUGAR-4	As part of this commitment, please clarify that, consistent with LORS 2008 assurances, the use of LORS 2008 in the modeling for the "no action" and other dike repair alternatives, including the	The Corps only expected to operate under LORS until the

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	TSP, does not preempt the previous USACE commitments to restore water storage in the Lake through an updated Lake schedule.	earlier of (1) implementation of a new Lake Okeechobee schedule as a component of the system-wide operating plan to accommodate the Comprehensive Everglades Restoration Plan (CERP Band 1 projects) and the State of Florida's fast track Acceler8 projects, or (2) completion of HHD seepage berm construction or equivalent dike repairs for reaches 1, 2 and 3. The Corps currently plans to reevaluate the Lake Okeechobee Regulation schedule in 2020 and will consider a full range of alternatives.
SUGAR-5	**HHD Draft EIS Selected Alternative Must Ensure Successful CERP Implementation** USSC recognizes LORS 2008 was an interim Lake regulation schedule, necessitated by HHD stability concerns. This regulation schedule, however, substantially diminished water supply availability and does not meet the 1 in 10 level of water supply certainty. The CERP Savings Clause requires that existing legal sources of water supply (available in the year 2000 for agricultural and urban water supplies, fish and wildlife, Everglades National Park and Tribes) must not be eliminated or transfe1Ted until new sources of supply of comparable quantity and quality are provided. The CERP Savings Clause was adopted to protect against long-term changes in water availability that only achieve some Project purposes, such as, flood protection and environmental protection, at the expense of other Project purposes, such as water supply. This is the Savings Clause "benchmark" that must be satisfied as CERP proceeds forward.	WRDA 2000 does include Savings Clause provisions that apply to the implementation of projects and operational changes that are part of the Comprehensive Everglades Restoration Plan (CERP). LORS was not part of CERP.

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SUGAR-6	Returning to a 1 in 10 level of water supply performance is required by the CERP Savings Clause. This level of certainty should be the predicate for the proposed, modification to the Lake regulation schedule. It is critical that the USACE ensure its actions in determining the extent and timing of HHD repairs do not nullify this most fundamental precept - the CERP Savings Clause - as it forms the very foundation for CERP relied upon by the State of Florida in support of its decision to be local sponsor and partner in CERP implementation. We request written confirmation these expectations will be met by the repaired HHD infrastructure.	The Savings Clause only applies to changes from the date of enactment of WRDA 2000 that result from "implementation of the Plan." LORS is not part of the Plan and altered the Pre-CERP Baseline for purposes of the Savings Clause. Regardless of the Pre-CERP Baseline, the Corps will consider a full range or alternatives when it revisits the Lake Okeechobee regulation schedule, and evaluate water supply effects as one of the objectives.
SUGAR-7	**The USACE Should Conduct a Parallel Study to Modify the Lake Okeechobee Regulation Schedule** As the HHD rehabilitation alternative is selected and construction proceeds, it is essential that the USACE, in a contemporaneous and parallel effort, conduct a NEPA evaluation to establish a new Lake regulation schedule, predicated upon the repaired HHD infrastructure. This study should assess the capabilities of the C&SF Project, including the selected HHD alternative and reasonably anticipated Project-related infrastructure changes, to comprehensively serve all Project purposes. By undertaking a parallel Lake regulation schedule modification study, future Lake operational capabilities can be evaluated in light of performance measures and alternatives. These steps will enable prompt implementation of a new Lake Okeechobee regulation schedule. This Lake regulation schedule modification study must also assess the ability of C&SF Project and Lake operations to meet the legislatively required CERP water supply assurances.	A new lake operating schedule would be collaboratively assessed and evaluated under a separate NEPA study and document that could begin upon approval of the DSMR.
SUGAR-8	**DSMS and HHD Draft EIS Dam Safety Risk Analysis Should Serve As the Risk Analysis for Updates to the Lake Okeechobee Regulation Schedule**	The Risk Assessment completed for the DSMS

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	The USACE's public presentations on this HHD Draft EIS contain the following statement: "Proposed revisions to the current LORS 2008 will require an updated risk evaluation and a future lake regulation study for informed decision making." *See* January 26, 2016 USACE Presentation, slide 23, bullet 2. We question the need for an "updated risk evaluation" on the HHD, separate from this DSMS, as the selected Standard Performance Flood (SPF) evaluations apply a Lake stage of24.7 NA VD88, and both LORS 2008 and RUN 25 produce peak SPF stages below this elevation. In light of these statements in the HHD Draft EIS, a NEPA analysis for the Lake regulation schedule modification should be the only process necessary prior to implementing a modified Lake Okeechobee regulation schedule. We request the USACE to confirm in the HHD EIS that the proposed, structural changes to the HHD are sufficient to accommodate all previously existing Lake regulation schedules, such as the Run 25 or similar schedule. Additionally, we request USACE include further explanation that, in light of these facts, no additional HHD risk analysis is needed before modifying the Lake regulation schedule.	assumed that LORS08 was the operating schedule. A new regulation schedule would need to undergo NEPA analysis.
SUGAR-9	**The USACE Should Provide More Detailed Explanation of Revised Dike Evaluation Standards** Over time, USACE's dam safety evaluation standards have evolved. How are the revised standards for assessing dike safety and balancing economic considerations different from previous standards, particularly as to those identified in the LORS 2008 Final Supplemental Impact Statement for Reaches 1, 2 and 3? *See* LORS 2008 Final Supplemental Environmental Impact Statement November 2007 (FSEIS) at iv - v. While the HHD Draft EIS describes the new evaluation criteria, it is not possible to evaluate or analyze the practical implications of shifting from the standards used in the 2007 Environmental Assessment for HHD rehabilitation to current evaluation standards. This information is particularly relevant as the LORS 2008 FSEIS identifies HHD repairs as a "trigger" for Lake operational changes. How does the TSP compare to the repairs listed in the LORS 2008 FSEIS, noted above as "triggering" both interim operational improvements, and shifting to a new Lake regulation schedule? A chart comparing the LORS 2008 FSEIS terms associated with HHD repair with those used in the HHD Draft EIS is requested.	The analysis you are requesting was not completed and is not available. A new lake operating schedule would be collaboratively assessed and evaluated under a separate NEPA study and document that could begin upon approval of the DSMR.
SUGAR-10	**The USACE Should Implement Operational Flexibility Per LORS 2008** As an interim schedule, LORS 2008 manages Lake Okeechobee at lower levels than prior regulation schedules, in order to reduce structural risk to the HHD, while repairs are underway.	A new lake operating schedule would be collaboratively assessed and

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	This low regulation schedule, however, presents dramatically reduced performance as to other Project purposes, specifically, an increased risk of low Lake levels and associated adverse effects to water supply. Numerous stakeholders; including among others, the South Florida Water Management District, the Seminole Tribe of Florida, agricultural and various urban interests; expressed concern for the LORS 2008 risk to water supply. To address the Lake's diminished water supply performance, per the temporary regulation schedule, the USACE's decisional documents made key assurances. LORS 2008 Record of Decision (ROD) and November 2007 FSEIS assured stakeholders that LORS 2008 was a shorterm, interim schedule, necessary to respond to high Lake levels while HHD repairs were made. Further, the LORS 2008 ROD and FSEIS commit the USACE to incrementally improve water supply performance, as made possible by HHD infrastructure repairs. (ROD 5) The FSEIS provides a detailed explanation of specific dike repairs that would prompt the USACE to evaluate operational flexibility, within LORS 2008 and consistent with protection of health and safety, to provide additional water storage. The USACE commits: Pending completion of rehabilitation in Reaches 1, 2 or 3, as HHD rehabilitation progresses, the Corps will evaluate the capacity to operate the Lake in a manner to provide more water storage in conjunction with achieving other project purposes. The anticipated points at which the Corps will utilize the flexibility within the schedule [LORS 2008] consistent with protection of health safety and welfare to provide additional storage include, at a minimum, completion of filling of the toe ditch, construction of the seepage berm within the existing right of way in Reach 1, and equivalent dike improvements in Reaches 2 or 3, which are currently under design. Upon changed circumstances, the Corps will provide additional storage, consistent with technical analysis, that might result from higher lake elevations. The Corps can respond to changed circumstances by adjusting operations within LORS' operational flexibility or through schedule deviations. (FSEIS pp. iv - v) Based on the recent USACE presentation and statements made at the January 2016 HHD public meetings, it appears the USACE intends to perform this assessment and take advantage of near-term opportunities to store additional water in the Lake. USSC urges completion of the necessary evaluation at the soonest possible time so that relief to supply and estuarine interests is swiftly provided. Additional storage in the Lake will benefit the Lake's ecology and water supply interests during drier years. We have included a table of comments on the HHD Draft EIS, which is attached as Exhibit A and an index of documents to supplement the record for the HHD Draft EIS, which is attached as Exhibit B. The documents listed on the index are being provided via email.	evaluated under a separate NEPA study and document that could begin upon approval of the DSMR.

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SUGAR-EXHIBIT A-1	**1.8 Related Projects SFWMD Restoration Strategies Project -** Correct inaccurate statements consistent with SFWMD Inaccurate statements regarding SFWMD Restoration Strategies Project should be corrected based on the February 11, 2016 letter from South Florida Water Management District to Florida State Clearinghouse, Department of Environmental Protection, "U.S. Army Corps of Engineers – Herbert Hoover Dike Dam Safety Modification Study Draft Environmental Impact Statement SAI# FL201601047515C" The following sentence should also be added to correct the existing statement on inflows to Lake Okeechobee due to Kissimmee River Restoration and Headwaters Revitalization: Inflows to Lake Okeechobee will not be reduced by implementation of the Kissimmee River Restoration projects.	Details regarding the KRR and Headwaters Revitalization were added to this section, which included a statement that inflows would not change significantly.
SUGAR-EXHIBIT A-2	**1.9 Approvals -** Correct inaccurate and outdated information; update based on Northern Everglades and Estuaries Protection Act (NEEPA)as amended in 2016 This section and others identified herein contain inaccurate and outdated references to outdated Florida water quality laws. Revisions to the Northern Everglades and Estuaries Protection Act (NEEPA) were enacted by the Florida Legislature in January 2016. Some suggested language is provided below and should be addressed in relevant water quality related sections throughout the EIS: Nutrient loads within the Lake Okeechobee Basin are regulated under the Northern Everglades and Estuaries Protection Act (NEEPA). The NEEPA specifies the implementation of Basin Management Action Plans (BMAPs). The Lake Okeechobee BMAP was adopted in December 2014 and allocated the TMDL to the entire LOK Watershed which includes all nine-sub watersheds to the north, south, east and west. The plans contain a schedule for subsequent phases of phosphorus load reduction consistent with the TMDLs and milestones must be set. The FDEP has a five-year cycle for setting and updating TMDLs and BMAPs. Revisions to the NEEPA were enacted in January 2016 and scheduled to become effective July 1, 2016.	Added the language, but did not delete previous language as the NEEPA has not yet become effective.
SUGAR-EXHIBIT A-3	**3.3 LAND USE (Also correct identification agriculture surrounding lake in Section 3.6 Vegetation) -** Clarify description of agricultural activities surrounding the Lake This section should be updated and clarified in coordination with the Florida Department of Agriculture and Consumer Services. The language should include the following: The primary land use in the Lake Okeechobee region is agriculture. Major agricultural activities in the southern area include sugarcane and row crops, along with ornamental and tree nurseries. Along the East of the Lake, there are citrus groves,	This language was added to Section 3.3.

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	sugar cane and increasing row crops. To the West and north, agricultural activities include rangeland and cow calf operations.	
SUGAR-EXHIBIT A-4	**3.4 Hydrology & Hydraulics Surface Water -** Clarify surface water supply purposes of Lake Okeechobee and inflow watersheds; Clarify Lake Okeechobee watersheds Inflow to Lake Okeechobee for drainage purposes and outflow made through a series of Federal, state, and local drainage district culverts that penetrate the HHD are made for water supply to the Lake Okeechobee Service Area (LOSA), municipal water supply, water supply to the Seminole Tribe, water supply to the Water Conservation Areas, water supply to fish and wildlife, water supply to the Stormwater Treatment Areas and other mandated water quality treatment facilities, water supply for groundwater recharge in the Lower East Coast and EAA, and water supply to Everglades National Park. Inflow enters from the north, east, and west of Lake Okeechobee through the following watersheds: Kissimmee River Upper Kissimmee and Lower Kissimmee, Taylor Creek-Nubbin Slough, Fisheating Creek (Nicodemus Slough), Indian Prairie, Lake Istokpoga East Lake Okeechobee and West Lake Okeechobee. The drainage areas associated with these 13 culverts are local water control districts mostly contained within the Everglades Agricultural Area (EAA), but also include U.S. Sugar, Trucane, Lake Point and Five Smooth Stones and many other landowners too numerous to mention. The EAA is divided into seven drainage basins and is comprised of a network of canals, structures, and levees that divide the area to provide for the removal of excess water to Lake Okeechobee and the WCAs to the south. The local water control districts, also referred to as special districts or '298 Districts,' have governmental pump stations that discharge to Lake Okeechobee or the EAA canals. Figure 3-3 provides a map of the 298 Districts.	Recommended language was taken into consideration and appropriate revisions were made within this section.
SUGAR-EXHIBIT A-5	**3.4 Hydrology & Hydraulics Surface Water Use -** Include and update description of the Everglades Agricultural Area consistent with the South Florida Environmental Report (SFER) This section should be revised in coordination with the South Florida Water Management District for accuracy and completeness. Recommended language includes the following: Surface water diversions from Lake Okeechobee meet several different C&SF project purposes, including water supply to the Lake Okeechobee Service Area (LOSA), municipal water supply, water supply to the Seminole Tribe, water supply to the Water Conservation Areas, water supply to fish and wildlife, water supply to the Stormwater Treatment Areas and other mandated water	Recommended language was taken into consideration and appropriate revisions were made to this section.

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	quality treatment facilities, water supply for groundwater recharge in the Lower East Coast and EAA, and water supply to Everglades National Park. The SFWMD manages the water use permitting process within its boundaries under authority of Chapter 373, Florida Statutes, and several Florida Administration Code (F.A.C.) rule chapters. A water use permit provides the user with a right to divert and use the allocated quantity from a designated source (both groundwater and surface water sources). Permit use classes include agricultural, recreation, public water supply, industrial and "diversion and impoundment" (including 298 Water Control Districts). There are 298 Water Control Districts (originated under the authority of Chapter 298, Florida Statutes), which maintain and operate secondary canal systems in the EAA (Pickett et al., 2013; Figure 3-3). For users within these water control districts, the water supply in the EAA is assured by maintaining water levels in these canals. Water levels in the 298 Water Control Districts with the EAA are maintained approximately 1 to 2 feet below the ground surface, However, during most of the year and especially for harvest, planting, and cultivation the control elevations at the pump stations can be as much as a three to four foot differential do to the distance of the far-point/tail-end of canal. Some distances can be as much as 5-10 miles and of course all is predicated on the weather. For users outside of the water control districts and within the EAA, water tables are maintained by inflow from the SFWMD primary canals. For water users outside of the EAA, including the rest of the Lake Okeechobee Service Area and the Seminole Tribe of Florida, water users depend upon the level of Lake Okeechobee to provide irrigation to maintain seepage systems or for overhead irrigation.	
SUGAR-EXHIBIT A-6	**Section 3.4 Hydraulics and Hydrology Groundwater -** Clarify EAA/WCD's groundwater management Water levels in the 298 Water Control Districts with the EAA are maintained approximately 1 to 2 feet below the ground surface. However, during most of the year and especially for harvest, planting, and cultivation the control elevations at the pump stations can be as much as a three to four foot differential do to the distance of the farpoint/ tail-end of canal. Some distances can be as much as 5-10 miles and of course all is predicated on the weather.	Recommended language was taken into consideration and appropriate revisions were made to this section.
SUGAR-EXHIBIT A-7	**3.4 Hydrology & Hydraulics Water control Structures (Culverts) -** Include and update description of the Everglades Agricultural Area consistent with the South Florida Environmental Report (SFER) (NEEPA) as amended in 2016 Water from the EAA is managed by both the SFWMD through the primary canals and the water control districts through the secondary canals. Additionally, the	The existing conditions section is discussing the culverts within the HHD

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	surface water elevations for water control districts at the control structures are 3-4 feet below ground, on average. Four major canals pass through the EAA: West Palm Beach, Hillsboro Canal, North New River Canal, and Miami Canal. Flows from Lake Okeechobee and runoff from the EAA are discharged via these four canals to relieve flooding for the local drainage area and into the Stormwater Treatment Areas (STAs) for water quality improvement. Discharges to the east coast occur through the West Palm Beach Canal. At times, when conditions do not allow for the STAs to treat all runoff water, diversion to the WCAs could occur. The inflows from Lake Okeechobee to these canals are from structures S-351, S-352, and S-354. These structures are gated spillways with a maximum tailwater elevation not to exceed 12 ft NGVD for Lake Okeechobee operation. The optimum water control elevations for S-351 and S-354 range between 11.5 and 12.0 ft NGVD. During WY2014, daily average elevations ranged from 9.50 to 12.13 ft NGVD. The outflows from the four canals to the STAs are discharged through pump structures S-5A, S-319, S-6, G-370, G-372, and G-434. Outflows from STAs are inflows into WCAs. During the dry season and drier-than normal wet seasons, water supply for agricultural irrigation is provided by these four primary canals, mainly through gravity release from Lake Okeechobee. During droughts, when Lake Okeechobee levels are low, forward pumping is required to withdraw water from the lake. At times, water is also supplied to the EAA from the WCAs. Farmers utilize a set of secondary and tertiary farm canals to distribute water from several gated culverts and pumps to their respective fields. (SFER 2-39 2015)	system, rather than within the EAA.
SUGAR-EXHIBIT A-8	**3.5 Water Quality -** Correct inaccurate and outdated information; update based on Northern Everglades and Estuaries Protection Act (NEEPA)as amended in 2016 See comments for Section 1.9	DEP-8 said the NEEPP is not the authority the proposed construction would be authorized under. Please see response to DEP-8.
SUGAR-EXHIBIT A-9	**3.8 Threatened and Endangered Species -** Correct inaccuracies on species listing status and section on snail kites. Table 3-6 on listed species in the EIS contains various inaccuracies on the current status of listed species that should be corrected before the EIS is finalized. Additionally, snail kite information should be updated to reflect best available information on current population, habitat, foraging, and nesting conditions	The snail kite is listed as endangered in Table 3-6. No change was made. The USFWS has concurred with the Corps determinations of effects.

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SUGAR-EXHIBIT A-10	**3.12.1 Economic Activities In and Around Lake Okeechobee -** Insert accurate descriptive information regarding socio-economic activities and local governments. The primary economic activity throughout the study area is agriculture. The EAA, located directly south of Lake Okeechobee, consists of approximately 500,000 acres of highly productive agricultural land, the vast majority of which is under active sugarcane cultivation. In addition to sugarcane, crops grown in the EAA include an array of winter vegetables including sweet corn, green beans, all varieties of lettuce, radishes, celery, rice and sod. This region of Palm Beach County is the nation's top producer of sugar, sweet corn, radishes and number two in winter vegetables. The economic value of these crops exceed $3 billion annually (FDACS 2016) and provide employment for more than 12,000 people in the sugar sector alone(LMC Internation-2011). The agricultural operations are vertically integrated and there are four raw sugar mills, two sugar refineries, a rice mill, eight vegetable packing houses and distribution centers, and a renewable energy power plant. Other agricultural activities in the Lake Okeechobee watershed include citrus, pasture, livestock and dairy operations. Other than agriculture, recreation, tourism, commercial fishing, and navigation, secondary economic activities include: services (banking, insurance, etc.) healthcare, education, and government activities. Examples of the above include: the Lakeside Medical Center, and the University of Florida- Everglades Research and Education Center, Palm Beach State College, Belle Glade Campus and the Dolly Hand Cultural Arts Center; Glades Day School serving students Pre-K-12; seven public elementary schools, two middle schools and two high schools as well as the West Technical Training and Education Center. The City of Clewiston is a major center of the agricultural community around the Lake. Known as the "Gateway to Lake Okeechobee" it has many of the above activities. Also, the Town of Moore Haven is the seat of government for Glades County, so there are several public buildings in the town. (This section does not cover any economic activity associated with the City of Okeechobee that sits on the north shore of the lake.)	This language was added to Section 3.12.1.
SUGAR-EXHIBIT A-11	**3.12.2 Demographics** Recognize socioeconomic value of farming in EAA The primary economic activity throughout the study area is agriculture. The Everglades Agricultural Area (EAA), located directly south of Lake Okeechobee consists of approximately 500,000 acres of highly productive agricultural land, the vast majority of which is under active sugarcane cultivation. Palm Beach County is the nation's leader in production of sugarcane, sweet corn, winter leaf crops and	This language was added to Section 3.12.2.

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	radishes and number two in winter vegetable production. In addition, citrus and pasture lands for livestock and dairy operations are in the watershed.	
SUGAR-EXHIBIT A-12	**3.16 Recreational Resources Fishing and Boating** The City of Belle Glade also has a marina and camp ground to access the lake off of Torey Island.	This language was added to section 3.16.
SUGAR-EXHIBIT A-13	**4.3 Land Use** Recognize Belle Glade facilities. For the past 100 years, the primary economic activity in this area has been agriculture. As discussed previously, ecosystem restoration projects are projected to be completed in areas south of the HHD project area designed to restore the hydrology and water quality in the Everglades Protection Area. According to the South Florida Water Management District's Lower East Coast Water Supply Plan, agricultural production south of Lake Okeechobee is projected to remain steady. As urban development continues to move west, there is an opportunity for the Glades community to grow in the light manufacturing, industrial development and distribution center areas. The tri cities participate in the Lake Okeechobee Region Economic (LORE) alliance that has partnered with the Business Development Board of Palm Beach County in attracting new businesses to the Glades region. The former Glades Correctional Institute site is being actively marketed and several agricultural businesses have expanded in this region. Also, through the LORE/BDB partnership two additional employment centers are being built and several other leads are underway. Improvement to the local infrastructure has received both state and local funding to improve the area. Land use (Figure 4-1) for the northern part of the watershed (i.e., Kissimmee Upper Basin) will become increasingly developed as the Orlando-Kissimmee urban epicenter continues to sprawl. Existing population centers in the southern part of the watershed and along the perimeter of Lake Okeechobee are predicted to expand outward such that development along the entire rim of the lake would be nearly continuous.	This language was replaced in section 4.3.
SUGAR-EXHIBIT A-14	**4.4 Hydrology & Hydraulics CERP Central Everglades Planning Project (CEPP) – In Place** The water supply benefits of CERP are not carried forward in CEPP. The purpose of the CEPP is to improve the quantity, quality, timing and distribution of water flows to the Northern Estuaries, central Everglades (Water Conservation Area 3 (WCA 3) and Everglades National Park (ENP), and Florida Bay.	The goal of CEPP is captured correctly in the EIS.

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SUGAR-EXHIBIT A-15	**4.4 Hydrology & Hydraulics SFWMD Northern Everglades and Estuaries Protection Program -** Correct inaccurate and outdated information. See comments for Section 1.9 Approvals.	Please see comment/response for DEP-8.
SUGAR-EXHIBIT A-16	**4.5 Water Quality Surface Water -** Correct inaccurate and outdated information. See comments for Section 1.9 Approvals. The following is additional recommended language for this section: The most significant flows into Lake Okeechobee related to nutrient loading are from the northern Lake Okeechobee Basin, and not agricultural operations in general.	Revised language to say: the most significant source of surface water pollution will continue to be from the northern Lake Okeechobee basin and agricultural operations in the area.
SUGAR-EXHIBIT A-17	**4.12 Socioeconomics 4.12.1 -** Correct statement regarding agriculture as economic driver The basic economic drivers associated with high value integrated agricultural operations are expected to remain in place over time. Value added by agricultural businesses and industries will likely occur over the long term.	Revised language has been added to Section 4.12.1.
SUGAR-EXHIBIT A-18	**5.5. Water Quality Surface Water Quality -** Recognize existing Corps commitments on monitoring wells for saltwater movement This section should be updated to reflect previous commitments identified in: May 12, 2015 Memorandum to Florida State Clearinghouse from Chad Kennedy, et al, Florida Department of Environmental Protection, "Department of the Army, Jacksonville District Corps of Engineers – Draft Environmental Assessment for the Herbert Hoover Dike Supplemental Major Rehabilitation Report – Palm Beach County, Florida SAI #FL201503177229C"; February 8, 2016 letter from Palm Beach County, Mary Lou Berger, Mayor to Stacie Auvenshine, USACE, regarding "Herbert Hoover Dam Draft Environmental Impact Statement" (contained in Index to USSC comment letter); and February 12, 2016 Letter from Rebecca Elliott, Florida Department of Agriculture and Consumer Services to Department of Environmental Protection, Florida State Clearinghouse, "Department of the Army, Jacksonville District Corps of Engineers –Draft Environmental Impact Statement (EIS) for Herbert Hoover Dike (HHD) Dam Safety Modification Study Report- SAI# FL2016010475C"	In Section 5.5 the following was added: "To address the uncertainty regarding impact to groundwater quality, the Corps has continued groundwater monitoring and installed six new monitoring wells in Reaches 1, 2 and 3 in 2015 and 2016. The Corps currently plans to continue to monitor these wells through 2018 and follow up with additional groundwater modeling efforts to predict long-term impacts. Monitoring efforts will be

COMMENT	AGENCY/PUBLIC COMMENT	CORPS RESPONSE & LOCATION OF CHANGE IN REPORT IF NECESSARY
		reviewed in 2018 to evaluate the need for and scope of subsequent long-term groundwater quality monitoring.
SUGAR–EXHIBIT B-1	Provided an index of documents associated with the Supplemental MRR EA and public meeting for draft EIS for the DSMS.	Thank you for your comment.
PRIVATE CITIZEN – JOSHUA WILSON		
WILSON-1	Water quality is a serious concern in the southern parts of Florida. Reduction of risk in flooding that negatively impacts the environment and life from the breach of HHD is crucial. It will not only effect animals and the environment but humans as well. With the research I am involved in, water quality in the area has made changes to the results we obtain meaning we need to fix our problems in south Florida quickly.	Thank you for your comment.
PRIVATE CITIZEN – KRISTEN MARSH		
MARSH -1	Are the current methods in place holding the waters of Lake Okeechobee at a hurricane rating of category five? If not, could repairs/adjustments also be made to the structures to withstand a powerful hurricane so that an incident like Hurricane Katrina in New Orleans can be avoided? Regarding the release of water from Lake Okeechobee to SW Florida through the Caloosahatchee River, do you have methods of purifying the water of pollutants? Water quality has greatly diminished and the overwhelming amount of freshwater being released into the SW estuaries is disrupting all sorts of aquatic organisms. Eventual restoration of water flow to its historic pattern of slowly making its way through the river of grass, should be an ultimate goal. I do believe that repairs need to be made to the Herbert Hoover dike, since this structure holds large amounts of water, and if a breach occurs we have a real environmental crisis to deal with.	USACE uses risk to evaluate the need for federal investment for infrastructure modification. The ability for the embankment to withstand storm surge from hurricanes is a function of both starting reservoir level and storm intensity. The risk analysis considered hurricane loading on the embankment, this included all categories of storms and all possible reservoir levels. The joint probability of wind

COMMENT	AGENCY/PUBLIC COMMENT	CORPS RESPONSE & LOCATION OF CHANGE IN REPORT IF NECESSARY
		and starting reservoir level showed that only 3 places on the dam exceeded USACE's tolerable risk guidelines. This project does not include any project features that will remove water pollutants for waters directed towards the Caloosahatchee River.
PRIVATE CITIZEN – MICHAEL H.		
H-1	In reviewing the Draft EIS for the Herbert Hoover Dike Safety Modification, it was made apparent to the casual observer that little to no information was given in regards to the water quality in areas closer to the oceanic or gulf shores that receive discharges from Lake Okeechobee. Section 3.5 - Water Quality only seems to focus on the water quality of the lake itself and its immediately surrounding water systems. In particular, one may say that the Caloosahatchee River (C-43) is vital to several counties in Fort Myers for its role in the natural environment as well as with the communities that surround the river. A change in the rate that the water flows through this area or how much pollutants/nutrients it carries may prove to be a significant risk for a quite large population. Might you be able to share or direct us to more information regarding this topic of how distant downstream areas will be impacted? Please consider discussing this further.	This study focused on safety surrounding HHD. The impact of the project on water quality in and around the lake is discussed; however, the project will not change the rate that water flows into or out of the lake or the pollutant loading of water. For these reasons, discussion of estuary water quality was not extensively discussed though the link between Lake Okeechobee and downstream water bodies is mentioned.
PRIVATE CITIZEN - NICHOLAS ALLEN		

COMMENT	AGENCY/PUBLIC COMMENT	CORPS RESPONSE & LOCATION OF CHANGE IN REPORT IF NECESSARY
ALLEN-1	I am writing in regards to the Lake Okeechobee water quality control problem. Growing up on the St. Lucie River and currently going to Florida Gulf Coast University in Fort Myers, I have seen what the waters on both sides of the state look like when Lake Okeechobee water is being discharged. I understand it is a complicated problem because it affects so many people and ecosystems. My question is why has it taken so many years to find a more permanent and sustainable solution? I have read the Draft Environmental Impact Statement (December 2015), and know about the NEPA process; so I can see why it takes longer than most people unaware of all the processes it takes to implement a program would assume. But I don't understand why this process hasn't been expedited, since it such a huge environmental problem. And how much do the big sugar corporations south of Lake Okeechobee affect decisions in regard to water management of Lake Okeechobee waters? Thank you for taking the time to read these questions and hope you are able to clarify these matters for me.	The DSMS addresses public safety. We understand your concerns about water quality. A new regulation schedule would be a collaborative effort under NEPA and would have many competing interests and objectives.
PRIVATE CITIZEN – NICHOLAS CULLIGAN		
CULLIGAN-1	My comment concerns Chapter 370, Living Saltwater Resources. This section states that the State must preserve, manage, and protect any and all of the living saltwater resources and surrounding human activities while completing the project. The consistency statement says that the project is located inland so there would be no effect on the downstream saltwater resources. However, this project is directly affecting Lake Okeechobee which is the major contributor of fresh water to South Florida's nearshore environments and estuaries. The statement mentions that this is only a rehabilitation of the HHD embankment and will not change the Lake Okeechobee Regulation Schedule. Because of that, the EIS says that the project is not applicable to this chapter. However, I think it is very applicable. Even though there is not a change to that water schedule, any kind of development has an effect on the environment around it, especially development concerning a large water supply. The construction that takes place on these dikes will have an effect on Lake Okeechobee and in turn will somehow effect the estuaries and nearshore environments that receive water from it. Even if the effect is minimal, I think that there is a big enough chance that something could happen that it deserves more research into that topic. Instead of this section not being applicable to the project, there should be at least some form of caution when looking at these possible effects. It is much better to do a little extra work now to absolutely make sure that there will be no effect rather than to assume there will be no effect and there to be one. We have seen recently how much the lake effects the nearshore environments with all of the water	This EIS focused on effects due to the TSP, which is putting in a cutoff wall around the lake. This cutoff wall would not affect the saltwater resources. A subsequent study on lake regulation schedule would discuss effects of Lake Okeechobee releases on the estuaries and saltwater resources.

COMMENT	AGENCY/PUBLIC COMMENT	CORPS RESPONSE & LOCATION OF CHANGE IN REPORT IF NECESSARY
	releases recently (red tide, too much freshwater in the nearshore areas), so it would be beneficial to prevent anything like that from happening by an accident in this project.	
PRIVATE CITIZEN – RACHEL MARGALUS		
MARGALUS-1	Has there been any studies of the water quality throughout the Caloosahatchee River or the St. Lucie River, into where they lead out into the Gulf of Mexico and the Atlantic Ocean? Is there any way that before releasing any of the water into the two rivers that we can treat the water and have similar conditions the two rivers have? Has the water quality even in Lake Okeechobee been analyzed and compared to the two rivers? Instead of just releasing the water that could be toxic and can effect other areas and organisms, having the same water quality through each water way can protect the civilians, as well as the organisms living there.	Sources of water pollution to the Caloosahatchee and St. Lucie include Lake Okeechobee as well as the basins that are located between the lake and the ocean. State and Federal agencies are working on projects and programs to address the water quality issues in the Caloosahachee and St. Lucie Basins. In general, nutrient loads and concentrations in Lake Okeechobee water are typically lower than nutrient concentrations and loads contributed by the basins that lie between the lake and the coastal estuaries.
PRIVATE CITIZEN - REBECCA MAY		
MAY-1	I was able to able to obtain a copy of Governor Rick Scott's letter in regards to the flooding of the Everglades Water Conservation Areas and the releases of water from Lake Okeechobee and also the draft Environmental Impact Statement for the Herbert Hoover Dike Dam Safety Modification Study. Under the Environmental Consequences of the Tentatively Selected Plan section of the E.I.S. there is a statement that says "there is potential for disturbance to the species during construction activities." Is there anything in place or in the works that aims to reduce these disturbances during construction?	Yes, there are avoidance and minimization measures in the draft FWCAR that the Corps will follow during construction to the maximum extent practicable.

COMMENT	AGENCY/PUBLIC COMMENT	CORPS RESPONSE & LOCATION OF CHANGE IN REPORT IF NECESSARY
PRIVATE CITIZEN – RUDY KRONAUGE		
KRONAUGE-1	I am writing to give public comment regarding the Herbert Hoover Dike Dam Safety Modification Study. As a Ft. Myers residence and FGCU Marine Science major, the issue of the current Lake Okeechobee water levels and the subsequent releases down the Caloosahatchee and St. Lucie rivers are of great concern to me. While I understand much of this issue has been misreported and skewed by the media, there are many legitimate concerns being buried in the process. On issue 10 in the study, the consistency statement specifically states that because the proposed project is located inland, it will have "no effect on saltwater resources either directly or indirectly through discharge downstream". This statement is in direct conflict with the common knowledge regarding rates of seagrass loss and oyster die-offs in the Ft. Myers/Sanibel area due to low salinity levels and decreased sunlight penetration due to turbidity resulting from river discharge. Equally false is the consistency statement in issue 13, which states "this work does not involve the transportation or discharge of pollutants", when in fact it has been shown that the discharge waters do contain excess nitrogen and phosphorous from agricultural activities. Whether or not these elements are in high enough concentrations to account for any known environmental issues we have observed, they are still pollutants and therefore must be addressed. I appreciate your time regarding this increasingly-important environmental issue in Southwest Florida. I hope that there is a solution that can be reached that benefits all parties involved. Thank you.	This EIS focused on effects due to the TSP, which is putting in a cutoff wall around the lake. This cutoff wall would not affect the saltwater resources. A subsequent study on lake regulation schedule would discuss effects of Lake Okeechobee releases on the estuaries and saltwater resources.
PRIVATE CITIZEN – STEPHANIE PALMER		
PALMER-1	Using the rights given under NEPA, this email is to express some concerns that I have with the draft EIS regarding the Herbert Hoover Dike dam safety modification. Under the table of contents, when looking at the environmental effects, some effects do not state a TSP. Since a TSP is not mentioned for all of them, does that mean that there is no favored alternative? With regards to the dam safety, is it rated to sustain a major hurricane on the Saffir-Simpson scale? In Appendix D, Chapter 258, State Parks and Aquatic Preserves, how can you be so sure that there will not be any impacts? And, how can you state that the chapter is not applicable, when there is definitely a possibility that there will be indirect impacts? Also, for Chapter 370 Living Saltwater Resources, it states that, “The proposed project is located inland and would have no effect on saltwater resources directly or indirectly through discharge downstream,” but how can that be true when water is shipped down C-43? For Chapter 388 Arthropod Control, what would be done if the zika virus was exposed?	The TSP is valid for each environmental effect, however, some resources had the same effect due to any of the alternatives. This EIS focused on effects due to the TSP, which is putting in a cutoff wall around the lake. This cutoff wall would not affect the saltwater resources. A subsequent study on lake regulation

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		schedule would discuss effects of Lake Okeechobee releases on the estuaries and saltwater resources. USACE uses risk to evaluate the need for federal investment for infrastructure modification. The ability for the embankment to withstand storm surge from hurricanes is a function of both starting reservoir level and storm intensity. The risk analysis considered hurricane loading on the embankment, this included all categories of storms and all possible reservoir levels. The joint probability of wind and starting reservoir level showed that only 3 places on the dam exceeded USACE's tolerable risk guidelines.
PRIVATE CITIZEN – WILLIAM GLASSEY		
GLASSEY-1	I feel that the issue at hand isn't just a public safety issue, but also a water quality issue.	Thank you for your comment. This EIS focuses on dam safety.
GLASSEY-2	I believe that another option would be to dredge a canal leading to the everglades past the agricultural farmland. If the water has a way to filter out all of the sediments and nutrients	Thank you for your comments.

COMMENT	AGENCY/PUBLIC COMMENT	CORPS RESPONSE & LOCATION OF CHANGE IN REPORT IF NECESSARY
	through the everglades naturally then not only will there be a way to move water out of the Lake faster and keep the water levels at a more sustainable level during rainy months like Jan.2016, but one would also be able to avoid the slew of problems caused by the discharging of water through the Saint Lucy and Caloosahatchee rivers. 1. Increase Dikes and Dams to withstand Category 5 hurricanes. a. During the process add a system to send water south efficiently. i. Water moving through the everglades gives more options for water control ii. Won't cause algae blooms as much iii. Will improve relations with Naples and Port Saint Lucy areas.	
GLASSEY-3	As a final comment what was the Herbert Hoover Dike and Dam system originally designed to withstand in terms of a hurricane. The levee system in Katrina was rated for Category 3 storms. I feel that Florida's should be rated for the worst storms that can be thrown at it.	USACE uses risk to evaluate the need for federal investment for infrastructure modification. The ability for the embankment to withstand storm surge from hurricanes is a function of both starting reservoir level and storm intensity. The risk analysis considered hurricane loading on the embankment, this included all categories of storms and all possible reservoir levels. The joint probability of wind and starting reservoir level showed that only 3 places on the dam exceeded USACE's tolerable risk guidelines.
PRIVATE CITIZEN – ZOE SPANBROEK		
SPANBROEK-1	"While this draft EIS document is very thorough in explaining all immediate effects of the proposed HHD repairs, I would like to know more about their longevity. More specifically, what is the expected lifespan of each proposed alternative? Are these reparation plans meant to last a	The proposed cutoff wall would be constructed using soil and cement, which is

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	while or will they require constant future upkeep? Given that these repairs are being made in the interest of public safety, wouldn't it benefit the citizens being protected by the HHD if its repairs lasted a long time? (Also, doesn't the tediousness of the EIS process give further cause to create strong, long-lasting repairs that don't require constant upkeep and thus constant involvement in the EIS process?) Put succinctly, I think it might be a good idea to indicate how long you anticipate the proposed repairs are likely to last before the HHD needs to be repaired again."	expected to have a design life in excess of 100 years and will not increase the operation and maintenance burden of the facility. The drainage systems could last indefinitely; however, clogging with vegetation or pump maintenance would be required throughout the service life.
PRIVATE CITIZEN – ROBERT NORTON		
NORTON-1	I have been active with SFWMD since 1989 to improve water quality and to stop agriculture run-off water. I still do not see water quality improvement 27 years later. The state did not make compliance of 40ppb in June 2015 in Lake Okeechobee. BMP's and BMAPS do not seem to want to enforce action to clean up water. BMPs must not be voluntary systems, but need to be enforced, cowboy's do not volunteer for anything even I know this. Cattle are in contact with flowing water to Lake Okeechobee.	Thank you for your comments. The EIS focuses on dam safety, with the Recommended Plan being cutoff wall to deter seepage and piping issues to prevent a failure in the system.
NORTON-2	We need to put more interest into completing more than 50 individual projects. Lake levels should be set at 12.5 to 15.5 for Lake Okeechobee Regulation Schedule.	Thank you for your comment.
NORTON-3	We need to stop sea planes land and take off from Lake Okeechobee. Remember Lake Okeechobee is a class 1 drinking water supply people, one accident and we have fuel in our drinking water. They can practice at sea or other lakes that are not a drinking water supply sir.	Thank you for your comment.
NORTON-4	A very good idea on the internal drainage system. I like that the seepage water is collected, filtered and sand filter system.	Thank you for your comment.
NORTON-5	Surface water use needs to be permit has too many loopholes. Need more action to control. Also the groundwater needs more controls set for use. Agriculture over use.	Thank you for your comment.
NORTON-6	Back pumping into the lake needs to stop and only floodwater pumped out of the lake, not into.	Thank you for your comment.

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NORTON-7	I agree with the cutoff wall system, very good.	Thank you for your comment.
NORTON-8	Water quality will be improved if we filter agriculture runoff water to Lake Okeechobee. The state will never meet the water quality standard set TMDL 140mt-40ppb to Lake Okeechobee because of fish eating creek being a uncontrolled discharge. My point of view of your book I received it's very good, a lot of fine information. As I travel around the lake I see the cutoff wall work. I am sure it will work and be a good structural measure. I also like floodwall and armoring to replace culvert removals. Not in use anymore. Anytime I can help you with my public comments, please write me.	Thank you for your comment.

C.5 Public and Agency Comment Letters and Emails

P.O. Box 1989
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Palm Beach County Board of County Commissioners

Mary Lou Berger, Mayor
Hal R. Valeche, Vice Mayor
Paulette Burdick
Shelley Vana
Steven L. Abrams
Melissa McKinlay
Priscilla A. Taylor

County Administrator

Verdenia C. Baker

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February 8, 2016

Stacie Auvenshine
U. S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Fla. 32232-0019

Subject: Herbert Hoover Dam Draft Environmental Impact Statement (EIS)

Dear Ms. Auvenshine:

On behalf of Palm Beach County, Florida, I am submitting comments on the Army Corps of Engineers (ACOE) Draft Environmental Impact Statement as part of the Herbert Hoover Dam (HHD) Safety Modification Study.

Our concerns regarding the technical aspects of the Draft EIS Study:

(1) The purpose of the Herbert Hoover Dike (HHD) Dam Safety Modification Study is to identify and recommend a cost effective alternative risk management plan that supports the expeditious reduction of risk at HHD. While the primary purpose of the remediation of HHD is to ensure public safety, objectives of the project also include lowering the probability of experiencing a breach with incurring impacts on ecological, cultural, and aesthetic resources (including the Everglades) that may result from a breach. **The EIS spends considerably more time discussing the impact of the HHD construction on the habitat surrounding the lake, than it does defining the risk reduction associated with the construction projection public safety.**

(2) Palm Beach County strongly supports achieving the goal of a safer dam for Lake Okeechobee. However, we are very concerned about the approach ACOE is taking in attempting to ensure that the dam is safe. The main concern the County has is the schedule for certifying the dam to meet dam safety standards. As we have pointed out many times in our discussions with the ACOE, the Federal Emergency Management Agency (FEMA) has revised the Digital Flood Rate Insurance Maps (DFIRMs) for Palm Beach County. These maps are used to establish insurance premiums for flooding after a storm that is of the 1 in 100 year magnitude. FEMA has told the County on numerous occasions that until the ACOE certifies the dam, they will analyze the HHD as if it will fail. The analysis done to date contemplates the Base Flood Elevations for the Tri-Cities (Pahokee, Belle Glade, and South Bay) within the Glades area at extremely high elevations due to the analyses results being based on a compilation of 18 different levee

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breaches along the portion of the HHD within Palm Beach County. This has resulted in homes and businesses in the Tri-Cities area that were previously above the "100 year flood stages" to being within an AO Flood Zone where flooding will occur up to three feet deep across the existing natural grade causing many homes and businesses to be flooded "on paper". This will require the affected residents and businesses to have to purchase flood insurance at catastrophic rates. This area is one of the most economically challenged areas within the County. Having the portion of the dam that has been completed within Palm Beach County certified by the ACOE will eliminate the assumption by FEMA to analyze the/dam **as if it will fail. Therefore, it is the request of the County that the ACOE certify the dam as quickly** as possible.

(3) Palm Beach County shares the concerns of the Department of Agriculture and Consumer Services (DACS) in regard to the potential impacts of the introduction of high chlorides into the surficial aquifer that the farming community of the Glades area uses for their crop irrigation. Palm Beach County is the winter vegetable capital of the United States and a negative impact to that industry would have a detrimental effect on the economy of Palm Beach County. **Therefore, we join DACS in requesting that the ACOE continue to monitor the induction wells that have been added along the perimeter of the HHD and add an additional array of monitoring wells to assess chlorides as construction proceeds around the south and west areas of the HHD.**

(4) Palm Beach County also supports the concerns DACS has regarding the Lake Okeechobee regulation schedule. It does not appear that LORS08 Schedule is being addressed in this draft EIS. **The ACOE, as part of that Schedule, was to address the lake levels within Lake Okeechobee in order to bring the water supply component from a level of service of 1 in 6 years to a state mandated level of service of 1 in 10 years.** This review needs to be addressed so that Lake operations incrementally improve storage as repairs are made.

If you have any questions, please contact Ken Todd at (561) 355-4600.

Sincerely,

Mary Lou Berger

Mary Lou Berger, Mayor
Palm Beach County Board of County Commissioners

c: Board of County Commissioners
Verdenia C. Baker, County Administrator
Jon Van Arnam, Deputy County Administrator
Bill Johnson, Director, Emergency Management
George Webb, County Engineer
Rob Robbins, Director ERM
Ron Rice, Director, Cooperative Extension Services
Eric Call, Director, Parks & Recreation
Rebecca Caldwell, Director, Planning, Zoning & Building
Doug Wise, Director, Building Division
Ken Todd, Water Resources Manager

Florida Department of Environmental Protection

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

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

March 2, 2016

Mr. Eric Summa, Chief
Division of Policy and Planning - Jacksonville District
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

RE: Department of the Army, Jacksonville District Corps of Engineers - Draft Environmental Impact Statement for the Herbert Hoover Dike Dam Safety Modification Study - Florida.
SAI # FL201601047515C

Dear Mr. Summa:

The Florida State Clearinghouse has coordinated the state's review of the referenced Draft Environmental Impact Statement (DEIS) for the proposed Herbert Hoover Dike Dam Modification Study under the following authorities: Presidential Executive Order 12372; § 403.061(42), *Florida Statutes*; the Coastal Zone Management Act (16 U.S.C. §§ 1451 *et seq.*, as amended); and the National Environmental Policy Act (42 U.S.C. §§ 4321-4347, as amended). The protection of the state's natural, historical and human resources is critical to Florida. Therefore, the state supports all of the efforts to ensure the safe operation of the Herbert Hoover Dike System. Any modifications should include options that will avoid or significantly minimize any impacts to natural and cultural resources.

In addition to the protection of natural and cultural resources, the successful rehabilitation of Herbert Hoover Dike is critical to the overall effectiveness of the Central and South Florida System improvements for restoration of America's Everglades. In order to expeditiously complete the remaining rehabilitation tasks, it is vital to procure appropriate and consistent funding. The state, therefore, urges Congress and the US Army Corps of Engineers to seek appropriations of the funds needed for the coming years so that Herbert Hoover Dike can provide the necessary water supply, flood protection and safety for those that live in the shadow of the dike. This would include the funds required to initiate modification of the current Lake Okeechobee Regulation Schedule (LORS 2008) so that this process would be completed on a parallel track to the dike repairs.

Without federal funding ensuring the proper maintenance of the Herbert Hoover Dike and a modified Lake Okeechobee Regulation Schedule, frequent harmful lake releases will continue to both the St. Lucie and Caloosahatchee estuaries. These releases cause unreasonable interference with the health, safety, and welfare of the state's natural resources and its residents. Further, the releases from Lake Okeechobee have resulted in extensive environmental harm to wildlife and the aquatic ecosystems, triggering multiple violations of state water quality standards in downstream rivers and estuaries. Inaction at the federal level will have severe negative consequences for the State of Florida and its residents.

The following state agencies have submitted agency-specific comments and recommendations on the DEIS, all of which (letters, memoranda or Clearinghouse database entries) are attached hereto, incorporated herein by this reference and made an integral part of this letter:

- Florida Department of Environmental Protection
- Florida Department of Transportation
- Florida Fish and Wildlife Conservation Commission
- Florida Department of Agriculture and Consumer Services
- South Florida Water Management District

Based on the information contained in the submittal and enclosed agency comments, the state continues to find that the U.S. Army Corps of Engineer's DEIS for the Herbert Hoover Dike is consistent with the Florida Coastal Management Program (FCMP). The state's continued concurrence will be based on the activities' compliance with FCMP authorities, including federal and state monitoring of the activities to ensure their continued conformance, and the adequate resolution of issues identified during this and subsequent regulatory reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the state's environmental permitting process, in accordance with Section 373.428, *Florida Statutes*.

Thank you for the opportunity to review these documents. Should you have any questions regarding this letter, please don't hesitate to contact Chris Stahl at Chris.Stahl@dep.state.fl.us or (850) 245-2169.

Yours sincerely,

Jonathan Steverson, Secretary
Florida Department of Environmental Protection

Enclosures
cc: Matthew Morrison, South Florida Water Management District
Mark Markovich, Florida Department of Transportation
Sara Catala, Florida Department of Transportation District 1

Ed Smith, Florida Department of Environmental Protection
Jane Chabre, Florida Fish and Wildlife Conservation Commission
Rebecca Elliott, Florida Department of Agriculture and Consumer Services

Memorandum

TO: Chris Stahl, Florida State Clearinghouse

THROUGH: Ed Smith, Director
Office of Ecosystem Projects

FROM: Stan Ganthier and Jerilyn Ashworth
Office of Ecosystem Projects

Cheri Albin
Division of Recreation and Parks

DATE: February 10, 2016

SAI#: FL201601047515C

SUBJECT: Department of the Army, Jacksonville District Corps of Engineers – Draft Environmental Impact Statement for the Herbert Hoover Dike (HHD) Dam Safety Modification Study – Glades, Hendry, Martin, Okeechobee, and Palm Beach Counties, Florida

Background:

The purpose of the Herbert Hoover Dike (HHD) Dam Safety Modification Study (DSMS) is to identify and recommend a cost effective alternative risk management plan (RMP) that supports the expeditious reduction of risk at the HHD. While the primary purpose of the remediation of HHD is to ensure public safety, an objective of the project also includes lowering the probability of experiencing a breach and resulting impacts on ecological, cultural, and aesthetic resources and the Everglades. Species and habitats directly on the dike and within the path of the water due to a breach would be negatively impacted, and snail kite critical habitat could be negatively impacted due to lower lake levels. Further, if a breach were to occur along the southern perimeter of HHD, flooding would occur within the Everglades Agricultural Area (EAA) and further south, through the Water Conservation Areas (WCAs) and eventually to Everglades National Park. There are many state and federally listed species within south Florida that would be negatively impacted due to a loss of habitat from flooding resulting from a breach of HHD.

This Draft Environmental Impact Statement (EIS) assesses the environmental effects of four alternatives of the eleven alternatives, as well as the No Action Alternative, to rehabilitate the HHD that surrounds Lake Okeechobee. The Draft EIS is part of the Corps' Dam Safety Modification Study (DSMS) to identify and recommend a cost effective risk management plan that expeditiously reduces the risk of a breach of HHD. The DSMS divided the HHD levee into thirty-two segments for analysis of risk and potential risk reduction measures. These thirty-two segments were grouped into seven Common Inundation Zones (CIZ) that are downstream areas where similar inundation or flooding would occur from a breach anywhere within that zone.

The Corps evaluated the four alternatives to determine which one would most effectively reduce societal and individual life safety risks and the annual probability of failure to satisfy tolerable risk guidelines for the segments and CIZs that require remediation. The segments identified with intolerable life safety risk were Segments 5-2, 8, 12 and 13. The segments identified with intolerable annual probability of failure risk due to internal erosion were Segments 4, 5-2, 5, 6, 7, 8, 9 and 12. The segments identified with intolerable annual probability of failure risk due to overwash and overtopping were Segments 13, 14A, 14B, 15, 16 and 17.

Alternative 3 was determined to be the most economically, environmentally, and socially efficient alternative to reduce the overall risks of a breach in the HHD; thus, it was identified as the tentatively selected plan (TSP). Proposed components of the TSP include:

- 33.3 miles of cutoff wall along the approximate centerline of the embankment from just west of Lake Harbor to just east of Moore Haven (Segments 4 through a portion of 9) and near Lakeport (portion of Segments 12 and 13) with bottom tip elevations ranging from -10 ft. to -30 ft. NAVD.
- A filter and drainage blanket around the downstream end of the US Sugar Raw Water Intake pipes within Segment 5-2.
- Armoring the embankment at the intersection of the S.R. 78 bridge and Harney Pond Canal (Segments 13 and 15).
- A 1- to 6-feet high flood wall adjacent to Structure S-71 located on the Harney Pond Canal (Segments 14A and 14B).
- A 1- to 6-feet high flood wall adjacent to Structure S-72 located on the Indian Prairie Canal (Segments 16 and 17).

Comments:

Environmental Effects of the TSP

Adverse effects associated with implementing the TSP are expected to be minimal to moderate. Many effects, such as noise levels, air quality and recreation, would be temporary during construction. Only aesthetics are expected to incur potential moderate effects due to the proposed floodwall, up to 6 feet above the crest of HHD, adjacent to Structures S-71 and S-72.

Land Use

The proposed cutoff wall in the TSP within Segments 4 – 9 (CIZ B) and Segments 12 and 13 (CIZ C) may permanently alter seepage flows for agricultural use with the potential to moderately impact current land use. However, the Corps has determined that land use would have just minor impacts since other water sources are available to agricultural operators. The proposed floodwalls and embankment armoring would have no effect on land use.

Water Quality

Since 2011, the Corps and the U.S. Geological Survey (USGS) have conducted groundwater monitoring to assess potential impacts of the cutoff wall installed in Reach 1 (within CIZ A) and to collect baseline groundwater quality data in Reaches 2 and 3. This groundwater monitoring has

shown impacts to shallow groundwater quality at locations where the tip of the cutoff wall is less than approximately 15 feet above the underlying saline groundwater. The observed impacts include a reduction in the depth of the saltwater interface at which the groundwater quality transitions from fresh to saline.

The proposed cutoff wall in Segments 4, 5, 7 and 9 is not likely to adversely affect shallow groundwater, because the maximum tip elevation is -30 feet NAVD which is approximately 15 to 20 feet above the saltwater interface. The proposed cutoff wall in Segments 5-2, 6 and 7 is not likely to degrade shallow groundwater quality because of the presence of clay layers that separate the base of the cutoff wall from the saltwater interface. The proposed cutoff wall within Segments 12 and 13 will have little to no effect on groundwater quality north of the Lake, because the predominant groundwater flow direction is from the north towards the Lake.

The proposed cutoff wall in Segment 6 will have a maximum tip elevation of -30 feet NAVD within a thick (15 ft.) clay layer which extends from ~-15 ft. to -30 ft. NAVD. High chloride (500 mg/L) groundwater is believed to be confined below this clay layer. Thus, upper layers of fresh groundwater will not pass under the cutoff wall. No groundwater users are expected to be affected because there are no permitted wells within 2,500 feet of the HHD levee along this segment. Agricultural users are not likely to be affected because they primarily rely on surface water supplies.

The proposed cutoff wall in Segment 8 will have a maximum tip elevation of -30 feet NAVD, while potable groundwater is believed to extend to at least -40 feet NAVD. The Corps believes that this cutoff wall will have minor effects to shallow groundwater quality, because the tip of the cutoff wall will be at least 10 feet above the saltwater interface.

Vegetation/ Wetlands

Wetlands in the Lake Okeechobee area, though greatly reduced in area and quality through human impact, still exist as valuable ecosystems both landward and lakeward of the HHD. Lake Okeechobee hydraulically feeds wetlands beyond the dike, providing freshwater for the Florida Everglades to the south and for the Water Conservation Areas in Palm Beach and Broward Counties. Low quality wetlands also occur in the toe ditches around the HHD. The majority of the wetlands appear to be outside of the TSP project footprint and occurring in the uplands. Proposed structural features would be constructed on or within the HHD embankment and construction/staging areas would be located in upland or previously disturbed areas. Please note, temporary impacts related to construction will be assessed in the regulatory permit application. The Corps will be required to demonstrate that wetland impacts have been avoided and minimized to the maximum extent possible and practicable.

Threatened and Endangered Species

Many State and Federally listed plant and wildlife species are found within the vicinity of the HHD including areas of designated critical habitat for the Everglades Snail Kite (*Rostrahamus sociabilis plumbeus)*, West Indian Manatee (*Trichechus manatus)*, Green Sea Turtle (*Chelonia mydas*), and Johnson's seagrass (*Halophila johnsonii*). For the TSP, species would not be directly affected by the long term effects of a cut off wall, however there is moderate, short term potential for

disturbance to species during construction activities. The action may produce noise above ambient levels, however, mufflers and sound dampening equipment would be required during construction, along with preconstruction surveys. The Corps determined that the TSP may affect but is not likely to adversely affect the following Federally listed species: the Audubon's crested caracara, Eastern indigo snake, Everglades snail kite, Okeechobee gourd, West Indian manatee, wood stork, Florida panther, and the Florida bonneted bat. Additionally, there are state listed species expected to occur within the TSP project area such as the gopher tortoise and burrowing owl. Preconstruction surveys for gopher tortoise and burrowing owls would occur, with appropriate relocation permits obtained by the contractor if necessary. Overall, negligible adverse impacts are anticipated to State listed species as a result of this project.

Recreation
The Office of Greenways and Trails (OGT) prefers that the Lake Okeechobee Scenic Trail (LOST) is temporarily closed for construction, and not permanently closed. A paved trail is preferred to gravel. It is important to note that neither the Florida Department of Environmental Protection, Division of Recreation and Parks, Florida Parks Service nor the OGT manages this trail as a state trail/park. The OGT provides statewide leadership and coordination to establish, expand and promote the Florida Greenways and Trails System. The LOST is a Priority Land Trail in the state trail system, approved by the Florida Greenways and Trails Council in 2012.

Regulatory Approval

The HHD rehabilitation is subject to Section 401 of the Clean Water Act, therefore the Corps is required and continues to obtain Water Quality Certification from the Department for planned repairs. Upon receipt of an Environmental Resource Permit application, the Department will review all submitted material and will require information related to groundwater quality. For example, summaries and analyses of groundwater monitoring data and groundwater modeling results will be important to support the review/approval of the proposed cutoff wall. Also, the Corps should submit a robust groundwater monitoring plan to assess the potential impacts, if any, of the proposed cutoff wall on both groundwater and surface water quality.

Hazardous, Toxic and Radioactive Wastes

The Corps has conducted surveys along the HHD to identify Hazardous, Toxic and Radioactive Waste (HTRW) contamination. The Department recommends that the Corps continue to coordinate with the South Florida Water Management District and the Department's Waste Cleanup Section to ensure that potentially contaminated sites are properly assessed and remediated, if necessary, prior to construction of HHD repairs.

Specific Comments:

- The title of Figure 2-2 states that the Lake stage is 25 ft NGVD, while the first footnote states that the Lake stage is 25 ft NAVD at the time of a breach in the HHD. Please make the referenced vertical datum consistent.

- Figure 2-15 shows that Alternative 1 includes a cutoff wall near Clewiston, while Section 2.4.1 on page 2-24 states that this alternative proposes a filter and drainage blanket for the U.S. Sugar Raw Water Intake pipes located within Segment 5-2 near Clewiston. Please address this discrepancy.

- In Section 2.4.4 on page 2-29, please revise the sentence that states that Figure 2-18 depicts the location of the cutoff wall for Alternative 4, since this figure actually depicts a pumped internal filter system.

- Table 2-4 shows the deepest bottom tip elevation of the cutoff wall as -30 ft NAVD for Alternative 3, while Section 2.6.1 on page 2-32 states the deepest tip elevation is -35 ft NAVD. Please reconcile this discrepancy.

- In Section 1.9, please clarify that the proposed construction activity will require an Environmental Resource Permit (ERP) to be obtained from the Department, under the authority of Part IV of Chapter 373, Florida Statutes (F.S.). This construction activity will not be authorized under the Lake Okeechobee Protection Act (LOPA) or Northern Everglades and Estuaries Protection Program (NEEPP) (Section 373.4595, F.S.).

The Department supports Alternative 3, the tentatively selected plan, and sincerely appreciates the opportunity to comment. Should you have any questions regarding our comments, please contact Natalie Barfield at 850-245-3197.

ec: Ed Smith, Frank Powell, Chad Kennedy, Deinna Nicholson, Jordan Pugh, Kelli Edson, Stan Ganthier, Jerilyn Ashworth, and Cheri Albin

Florida Department of Transportation

RICK SCOTT
GOVERNOR

10041 Daniels Parkway
Fort Myers, FL 33913

JIM BOXOLD
SECRETARY

February 12, 2016

Mr. Chris Stahl
Florida Department of Environmental Protection
State Clearinghouse
3900 Commonwealth Boulevard, MS 47
Tallahassee, Florida 32399-3000

RE: United States Army Corps of Engineers (USACOE) Draft Environmental Impact Statement (DEIS) Herbert Hoover Dike Dam Safety Modification Study – Intergovernmental Coordination and Review (ICAR), Project FL201602047515C

Dear Mr. Stahl:

The Florida Department of Transportation (FDOT), District One, has reviewed the ICAR packet for the USACOE Herbert Hoover Dike (HHD) Safety Modification Study. The Department provided condensed comments to fit in the Clearinghouse Database and offers the following recommendations/comments as a comprehensive supplement to the Database:

1. Technical review of the potential for catastrophic failure of the HHD concluded that the current condition of the dam poses imminent risk to the people and environment of South Florida. The proposed project purpose and need is to identify and recommend a cost effective alternative risk management plan to reduce risk of breach in the HHD. Of four alternatives analyzed, Alternative 3 was identified as the preferred alternative, or tentatively selected plan (TSP). The TSP proposes the construction of a reinforcement cutoff wall along segments where the probability of a dike breach is intolerable. The majority of these segments are located in FDOT District One. As noted in the DEIS, U.S. Highway 27/State Road 80 is a potential emergency and hurricane evacuation route, a portion of which is located in close proximity to the area of greatest instability of the HHD, and U.S. Highway 78 is also proximate to the project area. Transportation safety is a priority for FDOT. The goal of improving safety of the HHD is consistent with the mission of the FDOT to improve public safety on Florida's transportation system.

U.S. Highway 27/ State Road 80 is part of the Strategic Intermodal System (SIS) which is the State's largest and most strategic system for moving people and freight throughout Florida, and outside of its borders. U.S. Highway 27 is a critical north-south freight corridor comprised of both highway and rail modes. The safety and security of all modes on the SIS remain a priority for the Department.

2. The TSP would also involve the replacement of SR78 Bridge over Harney Pond Canal, Indian Prairie Canal, and the Kissimmee River. The DEIS proposes that recommendation be made to the FDOT for the reconstruction of the bridge to HHD design grades at the end of the bridge's service life at these locations, with armoring of the bridge's abutments in the interim. For any planned changes in future flow conditions due to the Army Corps project, the bridge hydrology for each referenced bridge will need to be re-evaluated and possible scour countermeasures installed or bridge replacement considered by the USACOE. The USACOE should perform the analysis and submit it to District One (James J. Jacobsen, P.E., District Structures Maintenance Engineer) for review.

The Department performed a review of the bridges noted in the package and provide the following summary:

Bridge Number: #050054: SR78 over Kissimmee River Overflow
Year Built: 1978
Bridge Type: Low level concrete bridge. Five spans.
Deck elevation: Approx. 22.0 ft
Scour Critical: No: Low risk, monitor during inspection.
Condition summary: Overall in Good condition. The Department has no plans for bridge replacement based on condition in the foreseeable future.
Channel: There is minor deterioration of the slope protection which is maintainable by the FDOT. If there are planned changes in future flow conditions due to the Army Corps project, the bridge hydrology will need to be re-evaluated and possible scour countermeasures installed or bridge replacement considered by the USACOE. The USACOE should perform the analysis and submit it to the Department for review.

Bridge Number: #910009: SR78 over Kissimmee River
Year Built: 1964
Bridge Type: Low level concrete bridge with steel lift out span over channel. Nine spans total.
Deck elevation: Approx. 39.5 ft
Scour Critical: No: Low risk, monitor during inspection.
Condition summary: Overall in Good condition. The Department has a planned project to replace the center span grating in FY2017
The Department has no plans for bridge replacement based on condition in the foreseeable future.
Channel: There is minor deterioration of the slope protection which is maintainable by the FDOT. If there are planned changes in future flow conditions due to the Army Corps project, the bridge hydrology will need to be re-evaluated and possible scour countermeasures installed or bridge replacement considered by the USACOE. The USACOE should perform the analysis and submit it to the Department for review.

Bridge Number: #050011: SR78 over Harney Pond Canal
Year Built: 1960
Bridge Type: Low level concrete bridge. Seven spans.
Deck elevation: Approx. 35.6 ft
Scour Critical: No: Low risk, previous unknown foundation, monitor during inspection.
Condition summary: Overall in Good condition. The Department has no plans for bridge replacement based on condition in the foreseeable future.
Channel: There is minor ongoing minor maintenance of the slope protection which is maintainable by the FDOT. If there are planned changes in future flow conditions due to the Army Corps project, the bridge hydrology will need to be re-evaluated and possible scour countermeasures installed or bridge replacement considered by the USACOE. The USACOE should perform the analysis and submit it to the Department for review.

Bridge Number: #050018: SR78 over Indian Prairie Canal
Year Built: 1960
Bridge Type: Low level concrete bridge. Five spans.
Deck elevation: Approx. 31 ft
Scour Critical: No: Low risk, previous unknown foundation, monitor during inspection.
Condition summary: Overall in Good condition. The Department has no plans for bridge replacement based on condition in the foreseeable future.
Channel: There is occasional minor maintenance of the slope protection which is maintainable by the FDOT. If there are planned changes in future flow conditions due to the Army Corps project, the bridge hydrology will need to be re-evaluated and possible scour countermeasures installed or bridge replacement considered by the USACOE. The USACOE should perform the analysis and submit it to the Department for review.

3. The State of Florida has recognized the importance of developing and maintaining non-motorized trails as stated in 339.81, F.S. This authorized the creation of The Florida Shared-Use Nonmotorized (SUN) Trail Network and directs FDOT to use its expertise in efficiently providing transportation projects to develop a statewide system of paved non-motorized trails as a component of the Florida Greenways and Trails System (FGTS), which is planned by FDEP. The LOST is a major link in connecting South Florida with the rest of the state in the FGTS.

The LOST provides important eco-tourism opportunities and is a vital component of economic development in the economically distressed Lake Okeechobee Region.

The Department would appreciate that every effort be made to avoid damage to the LOST during construction of the cutoff wall and any future landside rehabilitation. If damage to the paved areas does occur, the Department requests that the USACOE provide for the reconstruction or funding of the asphalt paving.

Thank you for providing FDOT with the opportunity to review and comment on the ICAR. If you have any questions please free to contact me at (239) 225-1981 or sarah.catala@dot.state.fl.us.

Sincerely,

Sarah Catala, ICAR Coordinator
FDOT District One

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February 5, 2016

Chris Stahl
Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, M.S. 47
Tallahassee, FL 32399-3000
Chris.Stahl@dep.state.fl.us

RE: SAI #FL201601047515C, Herbert Hoover Dike Dam Safety Modification Study, Draft Environmental Impact Statement, Glades, Hendry, Martin, Okeechobee and Palm Beach Counties, Florida

Dear Mr. Stahl:

Florida Fish and Wildlife Conservation Commission (FWC) staff has coordinated our agency's review of the above-referenced project, and provides the following comments for your consideration in accordance with the National Environmental Policy Act.

The purpose of the Herbert Hoover Dike (HHD) Dam Safety Modification Study (DSMS) is to identify and recommend a cost-effective alternative risk management plan (RMP) that supports the expeditious reduction of risk at HHD. While the primary purpose of the remediation of HHD is to ensure public safety, objectives of the project also include lowering the probability of a breach and evaluating potential impacts on ecological, cultural, and aesthetic resources and the Everglades resulting from a breach. FWC staff provided comments and recommendations on the related Herbert Hoover Dike Supplemental Major Rehabilitation Report (MRR) via the Florida State Clearinghouse in April, 2015. The comments below are in addition to those included in our previous response, which is enclosed.

FWC staff understands the need for the physical repair of the dike and we appreciate the plans for avoidance and minimization of impacts, education materials for workers, and inclusion of conservation measures for listed species including the *Standard Manatee Conditions for In-water Work* in the Fish and Wildlife Coordination Act Report (appendix E). The draft Environmental Impact Statement (DEIS) also identifies a number of ecological and recreational impacts that have been deemed temporary. Temporary impacts may include disruptions of recreational access during late November through January, which could coincide with periods of highest recreational use (i.e. for hiking) or with entire hunting seasons (i.e. for waterfowl) for the calendar year. We recommend considering the economic and societal value of recreational opportunities when planning for construction activities and contacting FWC staff to discuss alternatives that would avoid impacts to recreational users.

Additionally, the DEIS indicates the potential for the rehabilitated HHD to allow for higher lake stages under a new regulation schedule. Changes to the Lake Okeechobee Regulation Schedule (LORS) can have negative impacts to ecological conditions of Lake Okeechobee and the fish and wildlife resources dependent on the lake. For instance,

recent evidence suggests that Lake Okeechobee plays a vital role in linking snail kites from the Everglades with those of the Everglades headwater lakes. The lake ecology has only recently recovered from the effects of high water management which has allowed snail kites to return to nesting on Okeechobee. FWC staff recommends the future planning and alternatives for LORS consider potential negative impacts on this and other fish and wildlife resources in the ecosystem. We further recommend coordinating with FWC staff prior to proposing changes to the LORS so we can provide technical assistance in avoiding or offsetting potential impacts to fish and wildlife resources.

We appreciate the opportunity to provide comments on this project and find it consistent with our authorities under Chapter 397, F.S. If you need any further assistance, please do not hesitate to contact Jane Chabre either by phone at (850) 410-5367 or by email at FWCConservationPlanningServices@MyFWC.com. If you have specific technical questions regarding the content of this letter, please contact Marissa Krueger by phone at (561) 882-5711 or by email at Marissa.Krueger@MyFWC.com.

Sincerely,

Jennifer D. Goff

Jennifer D. Goff
Land Use Planning Program Administrator
Office of Conservation Planning Services

jdg/mk
ENV 1-3-2
Herbert Hoover Dike Dam Safety Modification Study_22399_020516
Enclosure

cc: Stacie Auvenshine, USACE, Stacie.J.Auvenshine@usace.army.mil
Bob Progulske, USFWS, bob_progulske@fws.gov

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April 24, 2015

Lauren Milligan
Florida State Clearinghouse
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3900 Commonwealth Boulevard, M.S. 47
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Lauren.Milligan@dep.state.fl.us

Re: SAI #FL201503177229C, Department of the Army, Jacksonville District Corps of Engineers – Draft Environmental Assessment for the Herbert Hoover Dike Supplemental Major Rehabilitation Report (MRR), Palm Beach County

Dear Ms. Milligan:

Florida Fish and Wildlife Conservation Commission (FWC) staff has coordinated our agency's review of the above-referenced project, and provides the following comments for your consideration in accordance with the National Environmental Policy Act.

The Herbert Hoover Dike (HHD) is a component of the Central and South Florida Project. The Supplement MRR Environmental Assessment (EA) (to the 2000 MRR) is evaluating alternatives for remediation of the dike for the 6.8 miles between Belle Glade and Lake Harbor within Common Consequence Zone A (CCZ A) which is the most at risk section of the dike. The HHD has experienced a high quantity of seepage through its embankment and foundation. Embankment and foundation erosion from these seepage forces has required emergency remediation along southeastern portions of the dike. The objective of the EA is to assess the environmental effects of rehabilitating the HHD embankment in Reach 3.

The alternatives developed for the EA include alternatives developed as part of the HHD Dam Safety Modification Study. The concepts and lessons learned in the development of rehabilitation designs for Reach 1 (the first HHD reaches to receive comprehensive evaluation) have been used to develop alternative designs for the remainder of HHD rehabilitation efforts. Alternative 1 is the No Action Alternative which assumes that aside from routine operation and maintenance, no additional actions would be taken to rehabilitate the dike. Alternative 2 (cutoff wall) includes construction of a cutoff wall at two locations within the embankment: at the centerline of the dike and on the upstream face of the dike. Cutoff walls of varying depths were evaluated within CCZ A and are included as Alternative 2A and Alternative 2B with consideration to local geologic conditions, estimated seepage exit gradients, and adjacent features such as ground surface elevations and ditch or canal invert elevations. Alternative 2A is a shallow cutoff wall which would extend from near the crest of the embankment to an elevation of approximately -7 feet to -25 feet NAVD88. Alternative 2B is a deep cutoff wall which would extend from near the crest of the embankment to an elevation of approximately -40 feet NAVD88. Alternative 3 is an internal drainage system which intercepts seepage waters moving through the embankment and foundation and safely discharges this water into the adjacent tow ditch through a designed drain. Alternative 4 is property acquisition and relocation to remove the threat of flooding to homes within CCZ A.

The U.S. Army Corps of Engineers (USACE) has developed and analyzed the alternatives and the Preferred Alternative is the shallow cutoff wall of Alternative 2A. The EA states that constructing a shallow cutoff wall would increase stability of the embankment as well as adequately accommodate for economic and environmental damages if a breach were to occur.

The USACE has determined that the Preferred Alternative is not likely to adversely affect any of the federally listed species or its critical habitat known to occur within the project area. The EA states that while small foraging or nesting areas utilized by the gopher tortoise and burrowing owl may be temporarily affected by the project, each alternative is not likely to adversely affect protected State species. Additionally, preconstruction surveys for gopher tortoise and burrowing owls would occur, with appropriate relocation permits obtained by the contractor if necessary.

The FWC believes that the Preferred Alternative (2A) is not likely to directly affect fish and wildlife resources as the work will be concentrated in the existing embankment. Consideration of the following recommendations would aid in reducing potential impacts on wildlife resources during construction activities.

FWC staff acknowledges that preconstruction surveys for gopher tortoise and burrowing owls will be conducted. FWC staff recommends that wildlife surveys follow survey protocols established by the U.S. Fish and Wildlife Service (USFWS) and the FWC, and surveys should be conducted by qualified individuals with recent documented experience. Basic guidance for conducting wildlife surveys may be found in the Florida Wildlife Conservation Guide (FWCG) at http://fwcg.myfwc.com/index_files/800x600/index.html. Please refer to the FWC's Gopher Tortoise Permitting Guidelines Revised February 2015 (http://myfwc.com/media/2984206/GT-Permitting-Guidelines-FINAL-Feb2015.pdf) for survey methodology and permitting guidance prior to any land clearing or development activity. If burrowing owls are present, we recommend following the Burrowing Owl Nest Protection Guidelines and Procedures in Urban Areas (http://myfwc.com/media/290095/buowguidelines2009.pdf). Additionally, manatees have access to the rim canal around the lake and FWC has provided a copy of the Standard Manatee Conditions for In-Water Work (enclosed) to be followed if any in-water activity is proposed in order to protect manatees during project construction.

We find this project consistent with FWC's authorities under the Coastal Zone Management Act/Florida's Costal Management Program. If you need any further assistance, please do not hesitate to contact Jane Chabre either by phone at (850) 410-5367 or by email at FWCConservationPlanningServices@MyFWC.com. If you have specific technical questions regarding the content of this letter, please contact Marissa Krueger by phone at (561) 882-5711 or by email at Marissa.Krueger@MyFWC.com.

Sincerely,

Ernie Marks
Regional Director

em/mk
ENV 1-3-2
Herbert Hoover Dike Major Rehabilitation Report Draft EA_20841_042415
Enclosure

cc: Stacie Auvenshine, USACE, Stacie.J.Auvenshine@usace.army.mil
Eric Summa, USACE, Eric.P.Summa@usace.army.mil

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK
2011

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.

d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.

e. Any collision with or injury to a manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com

f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8 ½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.

OFFICE OF AGRICULTURAL WATER POLICY
(850) 617-1700

THE MAYO BUILDING
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TALLAHASSEE, FLORIDA 32399-0800

FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

COMMISSIONER ADAM H. PUTNAM

February 12, 2016

Mr. Chris Stahl
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3900 Commonwealth Blvd. MS 47
Tallahassee, FL 32399-3000

RE: Department of the Army, Jacksonville District Corps of Engineers – Draft Environmental Impact Statement (EIS) for the Herbert Hoover Dike (HHD) Dam Safety Modification Study Report (DSMS) - SAI # FL201601047515C

Dear Mr. Stahl:

The Florida Department of Agriculture and Consumer Services (FDACS) appreciates the opportunity to provide comments on the Draft Environmental Impact Statement (EIS) for the Herbert Hoover Dike (HHD) Dam Safety Modification Study Report (DSMS) dated December 2015. We are submitting the following comments for consideration as part of the Florida State Clearinghouse consistency evaluation.

FDACS supports the United States Army Corps of Engineers' (USACE) efforts to address the most vulnerable areas of the HHD as quickly as possible. The rehabilitation of the HHD with a minimum of delay is important to public health and safety, could enhance the use of the Lake Okeechobee Regulation Schedule 2008 (LORS 08) operational flexibility, and provides an opportunity to adopt a revised regulation schedule to better meet Lake Okeechobee's multi-purpose objectives.

FDACS concerns are detailed below. We are committed to working with all our partners to address these concerns without creating delays for the project schedule proposed by the USACE in the Draft EIS for the HHD DSMS.

Our review focused on the main report and aspects of the Draft EIS for the HHD DSMS which may impact private agricultural lands and agricultural operations. The comments below are specific to the topics addressed and do not constitute a review of the entire Draft EIS for the HHD DSMS and its supporting appendices.

Need to complete the rehabilitation of the HHD to meet all purposes

While acknowledging the need to complete the HHD remediation for all reaches and associated culvert improvements as determined necessary to lower the Dam Safety Action Classification (DSAC) rating from Level 1 without delay; the DSMS needs to be a rehabilitation plan that will optimize the dike's ability to meet all of the authorized purposes. After completing the currently proposed risk reduction features, the HHD will still be a dike at risk potentially with a rating of DSAC 2. This is not adequate to meet the future needs of the multi-purpose functions of the HHD.

Provide technical guidance in the HHD DSMS on what range of lake management could be available in the future.

There is a pressing need to begin the review of the LORS in hopes of finding a new approach that can reduce the impact on the estuaries and retain more water in the Lake for both economic and environmental needs. We know this report cannot promote any particular regulation schedule but it should provide some guidance on what range of lake level management could be available in the future. This is essential information if we are going to undertake a formal concurrent review of the schedule. It should not require another separate, time consuming risk evaluation study before the important next step of a LORS review can begin. With an expedited review of the LORS in mind, the HHD DSMS should indicate the level of protection expected with this plan and what interim flexibility will be available to make schedule adjustments once the structural changes are complete along the southern shore of the lake.

Lake Regulation Schedule Information

We recognize the Draft EIS for the HHD DSMS and the study for a new Lake Okeechobee regulation schedule are distinct and separate efforts subject to their own development processes and National Environmental Policy Act (NEPA) requirements. However, the LORS08 information provided and use of the LORS08 regulation schedule for the 100 year future without condition has resulted in some uncertainty regarding the intentions of the USACE to be consistent with the commitment of the LORS Final EIS (USACE 2007) to "timely shift from the

interim LORS to a new schedule with the intent to complete any necessary schedule modifications or deviations concurrent with completion of (1) or (2)." One of the reasons for the concern is that (2) has been redefined from the LORS EIS "(2) completion of HHD seepage berm construction or equivalent dike repairs for reaches 1, 2 and 3" to the Draft EIS for the HHD DSMS "(2) completion of sufficient HHD remediation for all reaches and associated culvert improvements as determined necessary to lower the DSAC rating from Level 1." It would be helpful if the Draft EIS for the HHD DSMS addressed the differences between the language used for the (2) criteria and describe if and why they are equivalent.

There are also some inconsistencies in the document where some sections predict a future "LORS08-like" regulation schedule with little change and others predict significant changes. It would be helpful to remove any unnecessary predictions since the LORS08 regulation schedule is being used for the HHD DSMS Risk Assessment and that should suffice for the evaluation exercise.

We recommend the USACE consider using some of the text provided in the public workshop power point presentation regarding the LORS throughout the document and also including it in the Executive Summary to address the indirect relationship of the DSMS to LORS08 in the "Areas of Controversy" section. The points presented at the public workshop that can clarify the relationship between the HDD DSMS and LORS08 are:

- The DSMS Risk Assessment utilized the current LORS.
- A study for a new regulation schedule could be undertaken concurrently while risk reduction features identified in the DSMS are constructed.

Changes in the Saltwater Interface

FDACS has concerns regarding the potential for changes in the salt water interface due to the installation of the shallow cut-off wall proposed in the Draft EIS for the HHD DSMS for Common Inundation Zone (CIZ) B. A comprehensive monitoring plan to determine whether or not the shallow cut-off wall is causing a saltwater interface shift needs to be included in the permit conditions. We acknowledge the proposed shallow cut-off wall probably has less potential to induce upwelling of the saline connate water than the Reach 1 deep cut-off wall. However, the data set currently available and used by the USACE is not adequate to assess the risk of future impacts to the groundwater.

Due to insufficient monitoring data, there are uncertainties regarding the influence of the previously installed Reach 1 deep cut-off wall. The USGS report "Changes in Saltwater Interface Corresponding to the Installation of a Seepage Barrier Near Lake Okeechobee, Florida, Open File Report 2014-1256" identified changes in the salt water interface up to 19 feet below the slurry wall along the eastern rim of the lake. FDACS does not believe that the installation of the cut-off wall in Reach 1B can be ruled out as the primary cause for changes in the chloride concentrations in the surface water drainage/supply canals largely because the existing monitoring program is not adequate to make that determination. The proposed Draft EIS for the HHD DSMS cut-off wall should preclude such uncertainties by a monitoring program that can accurately assess the shift of the saline interface should it occur. Please see the FDACS Clearinghouse comments submitted for the Draft Environmental Assessment (EA) for the HHD Supplemental Major Rehabilitation Report (MRR) dated April 28, 2015 for additional technical comments and references on this subject.

A monthly review and report to Florida Department of Environmental Protection (FDEP) of the data collected is recommended as a permit condition to provide an early warning mechanism in the event problematic conditions are detected. While contingency plans for such a development are not included in the Draft EIS for the HHD DSMS, there should be some adaptive management considerations to lower the risk associated with the potential for changes in the saltwater interface.

We also recommend a permit condition requiring that the USACE hold an annual interagency meeting to review the data collected in support of this project similar to the agency review currently required by permit for the C-111 West Spreader Canal Project. The meeting's purpose would be to provide interagency review of the data collected for the project and recommendations for the future.

Characterization of the Everglades Agricultural Area (EAA) Operations Impact on the Surficial Aquifer Groundwater– page 4-8

The Draft EIS for the HHD DSMS proposes a hydrologic relationship between EAA canal operations that increases salinities in the shallow surficial aquifer groundwater along the perimeter of the lake from Port Mayaca southwest to Moorhaven. It is our understanding that no such relationship has been documented and there is no data to support this claim. Unless the authors can provide conclusive data demonstrating this relationship, we recommend any discussion of this hypothetical relationship be deleted.

Lack of Acknowledgement of Reach 1 Deep Cut-Off Wall Connection to Acceleration of Upward Flow of Connate Groundwater – page 4-8

We recommend the text in this section include a reference to the USGS report "Changes in Saltwater Interface Corresponding to the Installation of a Seepage Barrier Near Lake Okeechobee, Florida, Open File Report 2014-1256".

Need to Update and Revise Background Information

FDACS recommends the authors of the Draft EIS for the HHD DSMS reach out to state partners such as the South Florida Water Management District (SFWMD) and the FDEP in order to have text regarding state programs updated by subject matter experts. This includes rules, regulations, and programs such as environmental resource permits, consumptive water use, and water quality related to Lake Okeechobee.

Thank you for the opportunity to provide Clearinghouse comments. We look forward to continued progress for the HHD Rehabilitation Project and working with our state and federal partners to improve system-wide capabilities. If you have any questions regarding FDACS' comments, please contact Ray Scott at (850) 617-1716 or Rebecca Elliott at (561) 682-6040.

Sincerely,

Rebecca Elliott
Water Policy Liaison
Office of Agricultural Water Policy

570.85 Agritourism.—
(1) It is the intent of the Legislature to eliminate duplication of regulatory authority over agritourism as expressed in this section. Except as otherwise provided for in this section, and notwithstanding any other provision of law, a local government may not adopt an ordinance, regulation, rule, or policy that prohibits, restricts, regulates, or otherwise limits an agritourism activity on land classified as agricultural land under s. 193.461. This subsection does not limit the powers and duties of a local government to address an emergency as provided in chapter 252.
(2) The Department of Agriculture and Consumer Services may provide marketing advice, technical expertise, promotional support, and product development related to agritourism to assist the following in their agritourism initiatives: Enterprise Florida, Inc.; convention and visitor bureaus; tourist development councils; economic development organizations; and local governments. In carrying out this responsibility, the department shall focus its agritourism efforts on rural and urban communities.
History.—s. 1, ch. 2007-244; s. 426, ch. 2011-142; s. 1, ch. 2013-179; s. 111, ch. 2014-150.
Note.—Former s. 570.96.
570.86 Definitions.—As used in ss. 570.85-570.89, the term:
(1) "Agritourism activity" means any agricultural related activity consistent with a bona fide farm or ranch or in a working forest which allows members of the general public, for recreational, entertainment, or educational purposes, to view or enjoy activities, including farming, ranching, historical, cultural, or harvest-your-own activities and attractions. An agritourism activity does not include the construction of new or additional structures or facilities intended primarily to house, shelter, transport, or otherwise accommodate members of the general public. An activity is an agritourism activity regardless of whether the participant paid to participate in the activity.
(2) "Agritourism operator" means a person who is engaged in the business of providing one or more agritourism activities, whether for compensation or not for compensation.
(3) "Farm" means the land, buildings, support facilities, machinery, and other appurtenances used in the production of farm or aquaculture products, including land used to display plants, animals, farm products, or farm equipment to the public.
(4) "Farm operation" has the same meaning as in s. 823.14.
(5) "Inherent risks of agritourism activity" means those dangers or conditions that are an integral part of an agritourism activity including certain hazards, such as surface and subsurface conditions; natural conditions of land, vegetation, and waters; the behavior of wild or domestic animals; and the ordinary dangers of structures or equipment ordinarily used in farming and ranching operations. The term also includes the potential of a participant to act in a negligent manner that may contribute to the injury of the participant or others, including failing to follow the instructions given by the agritourism operator or failing to exercise reasonable caution while engaging in the agritourism activity.
History.—s. 1, ch. 2007-244; s. 17, ch. 2012-83; s. 2, ch. 2013-179; s. 112, ch. 2014-150.
Note.—Former s. 570.961.
570.87 Agritourism participation impact on land classification.—
(1) In order to promote and perpetuate agriculture throughout the state, farm operations are encouraged to engage in agritourism. The conduct of agritourism activity on a bona fide farm or on agricultural lands classified as such pursuant to s. 193.461 shall not limit, restrict, or divest the land of that classification.
(2) Local governments and agricultural representatives shall meet for the purpose of discussing the benefits of agritourism to local economies and opportunities for cooperation, conflict resolution, regulatory streamlining, and incentives.
History.—s. 1, ch. 2007-244; s. 113, ch. 2014-150.
Note.—Former s. 570.962.
570.88 Liability.—

(1) Except as provided in subsection (2), an agritourism operator, his or her employer or employee, or the owner of the underlying land on which the agritourism occurs is not liable for injury or death of, or damage or loss to, a participant resulting from the inherent risks of agritourism activities if the notice of risk required under s. 570.89 is posted as required. Except as provided in subsection (2), a participant, or a participant's representative, may not maintain an action against or recover from an agritourism operator, his or her employer or employee, or the owner of the underlying land on which the agritourism occurs for the injury or death of, or damage or loss to, an agritourism participant resulting exclusively from any of the inherent risks of agritourism activities.

(2) In the event of the injury or death of, or damage or loss to, an agritourism participant, subsection (1) does not prevent or limit the liability of an agritourism operator or his or her employer or employee or the owner of the underlying land on which the agritourism occurs if he or she:

(a) Commits an act or omission that constitutes gross negligence or willful or wanton disregard for the safety of the participant, and that act or omission proximately causes injury, damage, or death to the participant; or

(b) Intentionally injures the participant.

(3) The limitation on legal liability afforded by this section to an agritourism operator or his or her employer or employee or the owner of the underlying land on which the agritourism occurs is in addition to any limitations of legal liability otherwise provided by law.

History.—s. 3, ch. 2013-179; s. 114, ch. 2014-150.

Note.—Former s. 570.963.

570.89 Posting and notification.—

(1)(a) Each agritourism operator shall post and maintain signs that contain the notice of inherent risk specified in subsection (2). A sign shall be placed in a clearly visible location at the entrance to the agritourism location and at the site of the agritourism activity. The notice of inherent risk must consist of a sign in black letters, with each letter a minimum of 1 inch in height, with sufficient color contrast to be clearly visible.

(b) Each written contract entered into by an agritourism operator for the provision of professional services, instruction, or the rental of equipment to a participant, regardless of whether the contract involves agritourism activities on or off the location or at the site of the agritourism activity, must contain in clearly readable print the notice of inherent risk specified in subsection (2).

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

February 11, 2016

Mr. Chris Stahl
Coordinator, Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, MS 47
Tallahassee, FL 32399-3000

Subject: U.S. Army Corps of Engineers — Herbert Hoover Dike Dam Safety Modification Study Draft Environmental Impact Statement SAI#: FL201601047515C

Dear Mr. Stahl:

The South Florida Water Management District (SFWMD) has completed its review of the U.S. Army Corps of Engineers (USACE) Draft Environmental Impact Statement for the Herbert Hoover Dike, Dam Safety Modification Study and the Tentatively Selected Plan for continued rehabilitation of the Herbert Hoover Dike (HHD) that surrounds Florida's Lake Okeechobee. The agency's technical comments are attached with this correspondence.

USACE investigations have affirmed the critical need for continued investment to reduce risk to human health and safety. SFWMD gratefully acknowledges the $600 million invested by Congress for the first phase of this work: replacement of HHD culverts and installation of a seepage wall in a portion of the dike.

The remaining tasks, including those identified in the Tentatively Selected Plan, require additional critical work such as completing the remaining culvert replacements, closing Zone 1 seepage wall gaps and construct a 6.6-mile seepage wall extension.

SFWMD calls on Congress and the USACE to maintain funding momentum and construction progress on this at-risk structure, which is classified as a national priority for continued rehabilitation. The projected $800 million cost to complete the job must be committed in the coming years to assure that the HHD can perform as designed to store additional water, provide flood protection and assure water supply and safety for tens of thousands of families in communities surrounding the lake.

Further, SFWMD strongly recommends a prompt initiation of the next modification of the current Lake Okeechobee Regulation Schedule (LORS 2008) so that completion of the two-year updating effort is concurrent with completion of culvert repairs and the new seepage wall.

To achieve this, SFWMD will work collaboratively with USACE, other agencies and interested citizens, with the goal of improving operating flexibility of Lake Okeechobee while continuing to protect human health and safety, the regional economy and South Florida's environment.

Sincerely,

Dan O'Keefe

Dan O'Keefe
Chairman, SFWMD Governing Board

3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045
Mailing Address: P.O. Box 24680, West Palm Beach, FL 33416-4680 • www.sfwmd.gov

Amended Supporting Comments to the State Clearinghouse Review
Herbert Hoover Dike Dam Safety Modification Study
Draft Environmental Impact Statement SAI#: FL201601047515C

In summary, the SFWMD requests that the United States Army Corps of Engineers (USACE) declare whether the Environmental Impact Statement (EIS) and recommended Tentatively Selected Plan (TSP) are adequate to meet the original Congressionally authorized design level of service, as well as previous operational schedules. The District also asks the USACE to confirm that the next Lake Okeechobee regulation schedule will allow adjustment in the Lake's upper elevation stages providing for an increase in storage, if the new operational plan recommends it.

1. The draft EIS discusses the effects of the proposed changes to the hydraulics and hydrology of the system and concludes that negligible to no impact is expected for surface and groundwater hydrology as a result of implementing Alternative 3. The draft EIS also documents observed changes to the freshwater-connate water interface in monitoring wells at several locations adjacent to the Reach 1 seepage wall. The District supports the Corps effort to continue the current ground water monitoring and the expansion of the ground water monitoring network in Consequence Zones A and B. The data and ongoing analysis will aid in determining the spatial and temporal impacts upon the freshwater-saline interface and potential changes to freshwater seepage from the Lake to the shallow surficial aquifer.

2. Section 3.8.1.8 The Florida bonneted bat is now listed as an Endangered species by the FWS under the ESA.

3. Page 1-15, Recommend replacing with the following language:

   "Acquisition of more than 100,000 acres of land needed for Kissimmee River Restoration and Headwaters Revitalization is substantially complete. This project is scheduled to be complete in 2029. Once restoration construction is complete, 40 square miles of Kissimmee River and floodplain ecosystem would be restored including almost 63,000 acres of wetlands (38,000 acres of riverine floodplain and 25,000 acres of lake littoral zone) and 40 miles of historic river channel. The restoration of the Kissimmee River is dependent on implementation of a headwater regulation schedule that provides dynamic storage in Lakes Kissimmee, Cypress, and Hatchineha and subsequent inflows to the Kissimmee River to meet restoration goals. Inflow volumes delivered to Lake Okeechobee from the restored Kissimmee River will remain mostly unchanged, with slight reduction due to increased evapotranspiration associated with reintroduced sheet flow across the floodplain. The timing of delivery will be attenuated by 1 to 2 months."

4. Page 2-29: Is there a cutoff wall in Alternative 4? Test reads "Figure 2-18 depicts the location of the cutoff wall for Alternative 4".

5. Page 3-7, paragraph 5, changes "Culverts S-2 and S-3" to "Pump Stations S-2 and S-3".

6. Page 3-11, second paragraph, should note that 298 Districts are only a portion of the agricultural lands served by Lake Okeechobee. The SFWMD also operates the gated spillways, S-351, S-352 and S-354 to provide supplemental irrigation deliveries to other agricultural lands.

7. Table 3-1: If the draft EIS assumes that the culvert replacements are completed, then this table should reflect that the culverts are no longer CMP but concrete box culverts.

8. Table 3-2 through 3-5, recommend providing a statement that the risk analysis determined that the non-Federal structures were inspected and determined to not need replacement or risk reduction remediation.

9. Page 4-6, Kissimmee River Restoration (KRR) Project Complete

    a. Omit the following last sentence in paragraph 1 ..." Ongoing studies as part of the Kissimmee Basin Modified Water Control Plan to continue to develop flood operations for the anticipated future state of the KRR Project."

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Mr. Eric Summa
Chief, Planning & Policy Division, Jacksonville USACE
701 San Marco Boulevard
Jacksonville, Florida 32207-8175

March 1, 2016

RE: DHR Project File No.: 2015-6215 Received by DHR: December 24, 2015
Project: Department of the Army, Jacksonville District Corps of Engineers
Draft Environmental Impact Statement, for the Herbert Hoover Dike Dam Safety Modification Study
Glades, Hendry, Martin, Okeechobee and Palm Beach Counties, Florida

Mr. Summa:

The Florida State Historic Preservation Officer reviewed the referenced project for possible effects on historic properties listed, or eligible for listing, on the *National Register of Historic Places.* The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, and its implementing regulations in *36 CFR Part 800: Protection of Historic Properties.*

Thank you for providing the Florida State Historic Preservation Officer (SHPO) the opportunity to comment on the Draft Environmental Impact Statement (EIS) for the Herbert Hoover Dike (HHD) Dam Safety Modification Study. According to the Draft EIS, Alternative 3 is the preferred alternative. It is our understanding that many of the project activities will take place within the Federal Right-of–Way for the Herbert Hoover Dike, a National Register eligible cultural resource, while other project activities may occur outside of this area. We further note that there are many cultural resources that are eligible for the National Register of Historic Places or that have not yet been evaluated for eligibility that may fall within some areas of this project.

We note that consultation with this office was initiated in July of 2013 and will continue through the completion of this project. We look forward to continuing to work with you.

For questions, please contact Robin Jackson, Historic Sites Specialist at *Robin.Jackson@dos.myflorida.com*, or by telephone at 850.245.6333 or 800.847.7278.

Sincerely

Timothy A. Parsons, Ph.D.,
Interim Director, Division of Historical Resources, and
State Historic Preservation Officer

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Mr. Jason Spinning
Chief, Planning & Policy Division, Jacksonville USACE
701 San Marco Boulevard
Jacksonville, Florida 32207-8175

April 25, 2016

RE: DHR Project File No.: 2016-61B/ Received by DHR: March 14, 2016
Project: Department of the Army, Jacksonville District Corps of Engineers
Draft Environmental Impact Statement, for the Herbert Hoover Dike (HHD)
Dam Safety Modification Study (DSMS), Tentatively Selected Plan

Mr. Spinning:

The Florida State Historic Preservation Officer reviewed the referenced project for possible effects on historic properties listed, or eligible for listing, on the *National Register of Historic Places.* The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, and its implementing regulations in *36 CFR Part 800: Protection of Historic Properties.*

It is the understanding of this office that as a result of the DSMS, a Tentatively Selected Plan (TSP) is being recommended that is expected to occur in previously disturbed HHD federal right-of –way and is not expected to adversely affect historic resources. We further note that each proposed undertaking will be presented as a separate consultation with this office, once the designs have been finalized and prior to construction. We look forward to continuing to work with you.

For questions, please contact Robin Jackson, Historic Preservationist, Compliance and Review at *Robin.Jackson@dos.myflorida.com*, or by telephone at 850.245.6333 or 800.847.7278.

Sincerely

Timothy A. Parsons, Ph.D.,
Director, Division of Historical Resources, and
State Historic Preservation Officer

EVERGLADES AGRICULTURAL AREA ENVIRONMENTAL PROTECTION DISTRICT

MALCOLM S. WADE, JR., CHAIRMAN
WILLIAM F. TARR, SECRETARY
JOE M. HILLIARD, JR., SUPERVISOR
FRITZ "SONNY" STEIN, III, SUPERVISOR
PAUL GROSE, SUPERVISOR
JEFF SUMNER, EX OFFICIO SUPERVISOR

ROBERT M. BROWN, TECHNICAL ADVISOR

AN INDEPENDENT SPECIAL DISTRICT
& POLITICAL SUBDIVISION OF
THE STATE OF FLORIDA

ONE CLEARLAKE CENTRE
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CHARLES F. SCHOECH
ADMINISTRATOR, ASST. SECRETARY
& GENERAL COUNSEL

CHARLES HAAS
FINANCIAL MANAGER

TELEPHONE: (561) 655-0620
TELECOPIER: (561) 655-3775

February 23, 2016

VIA E-MAIL AND U.S. MAIL
(HHDEnvironment@usace.army.mil AND stacie.j.auvenshine@usace.army.mil)

Department of the Army
Attention: Stacie Auvenshine
Jacksonville District Corps of Engineers
U.S. Army Corps of Engineers
701 San Marco Boulevard
Jacksonville, FL 32207-8175

RE: Everglades Agricultural Area Environmental Protection District's Comments on "Draft Environmental Impact Statement on the Herbert Hoover Dike Dam Safety Modification Study" (December 15, 2015) drafted by the Department of the Army; U.S. Army Corps of Engineers, Jacksonville District

Dear Ms. Auvenshine:

This letter provides the Everglades Agricultural Area Environmental Protection District's (EPD) comments on the U.S. Army Corps of Engineers' (USACE) December, 2015 draft Environmental Impact Statement – Herbert Hoover Dike Dam Safety Modification Study (DSMS) (HHD Draft EIS).

The EPD was established by the Florida Legislature as a special district representing agricultural landowners within the Everglades Agricultural Area (EAA) for the purpose of ensuring environmental protection by conducting scientific research regarding water and land management practices within the EAA. Farmers within the EAA rely on water supply and flood protection afforded by the Central and Southern Florida Flood Control Project (C&SF Project), including the HHD and Lake Okeechobee for their agricultural operations. Therefore, rehabilitation of the HHD to standards appropriate to fulfill C&SF Project's multiple purposes, at least to historically experienced performance, is critical.

The EPD encourages you to continue the expeditious completion of the HHD repairs and also initiate a study to formally modify the Lake Okeechobee regulation schedule, so the well documented water supply deficiencies of the current interim schedule can be corrected upon completion of the HHD repairs. We also encourage you to take advantage of the HHD repairs made to date to give yourself more flexibility in holding water in the Lake when we have wet

periods like we are experiencing now. Using operational flexibility in the existing 2008 Lake Okeechobee regulation schedule, and recognizing the repairs already, or soon to be, complete, you and the Water Management District should evaluate operations to store more water in Lake Okeechobee as soon as possible. The commitment in the 2008 LORS' Final Supplemental Environmental Impact Statement (FSEIS at iv – v) and the Record of Decision recognizes the value of this opportunity.

The Lake's infrastructure, including the HHD, must be adequate to enable a lake regulation schedule capable of meeting all Project purposes established by Congress since 1948. To that end, we request that you provide confirmation in the HHD EIS that the HHD's structural integrity will be sufficient to allow water levels equal to or exceeding those experienced in the past. This clarification is necessary in view of statement in the EIS that the 2008 LORS is the base condition utilized in the alternatives selection process. It is not clear what that means with respect to future lake management options.

Thank you for considering these comments. We look forward to USACE's final HHD EIS, your continued work on the Dike, and future Lake operations which better serve the C&SF Project's Congressionally authorized purposes. We are very grateful for the work you have already done around the lake and appreciate the dedication of your staff who have accomplished so much already in protecting our community.

Sincerely,

Malcolm S. Wade, Jr.
Chairman, Environmental Protection District

MARTIN COUNTY
BOARD OF COUNTY COMMISSIONERS
2401 S.E. MONTEREY ROAD • STUART, FL 34996

DOUG SMITH
Commissioner, District 1

ED FIELDING
Commissioner, District 2

ANNE SCOTT
Commissioner, District 3

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February 23, 2016

Stacie Auvenshine
U.S. Army Corps of Engineers Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019

Re: Herbert Hoover Dike Dam Safety Modification Study Draft Environmental Impact Statement

Dear Ms. Auvenshine:

The safety of the Herbert Hoover Dike (HHD) is critical to Martin County. The current regulation schedule for the lake is limited, due to dike integrity. This situation contributes to extreme fluctuations between damaging freshwater releases to our estuaries and then to tide. Unfortunately we are experiencing massive lake discharges now into our St. Lucie River and Estuary and on to the Indian River Lagoon.

The health, safety and welfare of south Florida residents are central to the need for federal funding assistance. Not only is the dike integrity crucial to the citizens of south Florida, but the inability to handle excess stormwater runoff has become an all too frequent catastrophe to the St. Lucie and Caloosahatchee Estuaries. The massive amounts of stormwater released from Lake Okeechobee carries pollutants, and such releases can upset the delicate salinity balance of our coastal ecosystems. Therefore, we experience the destruction of environmentally significant plants and animals. The toxic blooms of blue green algae attack plants and marine life and force the posting of warnings by the State Health Department to avoid contact with our waterways. These discharges are disastrous to our economy and our environment.

We support the work of the US Army Corps of Engineers to rehabilitate the dike system, and we continue to advocate for robust funding for the HHD project. The HHD is critical to protecting surrounding communities from floodwaters, and it is the "liquid heart" of a multi-billion dollar effort to restore America's Everglades. The HHD greatly contributes to the economy, environment, navigation, agriculture, water supply, and flood protection / public safety in all of South Florida. Most importantly to Martin County, a restored HHD can hopefully mitigate some of the devastating impact of freshwater releases on our fragile ecosystem.

Therefore, the Martin County Board of County Commissioners strongly feels that the HHD must maintain a high priority status for funding until the rehabilitation project is completed.

Further, it is essential that the Corps expedite the project as much as is possible.

Thank you for the opportunity to provide comments on the critical importance of this project to the health and wellbeing of Martin County and all of South Florida.

Sincerely,

Anne Scott, Chair
Martin County Board of County Commissioners

AS/kp

C: Honorable Members of the Martin County Board of County Commissioners
Taryn Kryzda, County Administrator

Auvenshine, Stacie SAJ

From: Allie Bury <alliebury@gmail.com>
Sent: Monday, February 22, 2016 4:25 PM
To: HHDEnvironment, SAJ
Subject: [EXTERNAL] Comments on the HHD Draft Environmental Impact Statement

To whom it may concern,

After reviewing the draft EIS on the Herbert Hoover Dike, I have several comments and concerns:

The Herbert Hoover Dike was built in the 1930s to prevent flooding like those in 1926 and 1928 hurricane events that killed an estimated 2,400 and 3,400 people. This dike has successfully served its purpose, except that there is current water seepage from the '04 and '05 hurricanes. In addition, the record breaking amounts of rainfall this winter has increased the lake level to over 16 feet, close to capacity. It is critical that the dike undergoes immediate repair in order to protect citizens from dike failure.

In addition, the dike needs to be repaired and enhanced to secure high levels of water and reduce the amount of emergency releases. As a citizen of Fort Myers Beach, I have worries and concerns about an influx of water being released from Lake Okeechobee. Firstly, Lake O water is loaded with nitrogen and phosphorous pollutants. Once this water is released, it causes an upset of nutrient balances in the Caloosahatchee River and eventually in the Gulf of Mexico. This nutrient loading causes algal blooms and severe damage to all living organisms such as oyster beds, fisheries, and sea grass beds. Currently, FMB is suffering from red tides and severe outbreaks of red drift algae. This is causing damage to marine organisms such as fish, conch, and plants among many others.

Lastly, the water releases cause economic and aesthetic impact to all areas affected. The muddy waters and red tides are creating a heavily polluted beach with large amounts of dead organisms. This is causing large amounts of economic impacts due to the heavy reliance of tourism. Vacationers and locals on FMB are both highly perturbed and disgusted by the state of the water in both Estero Bay and the Gulf of Mexico.

The reconstruction of the dike is absolutely necessary in order to protect public safety, as well as decrease potential impacts on ecological, cultural, and aesthetic resources.

Antonio Arruza

2/20/16

FGCU Coastal Zone Management

Prof. Frank Gable

To whomever it may concern,

This letter addresses the Army Corps of Engineers in regards to the current risk of water level affecting public safety from Lake Okeechobee. In Particular, my concern is with the Herbert Hoover Dike Dam (HDD) and whether or not it has been rated on a Saffir-Sympsons scale to withstand up to a category five hurricane. This is an urgent matter primarily relating to public safety but with water quality as well. As the water level increases, which is around 16ft as of Feb 7th, the more threatening a storm can be because it would take less wind to cause the water to over wash. As with Florida's history, we have had cases of bad storms and I quote from the draft EIS on the Corps rating the HDD in 2007 as, "critically near failure or extremely high risk". A failure in the outflow capacity will result in storm surge waves destroying nearby communities, canals, rivers, and wildlife. We must be prepared and if the HDD is not fit for a storm then the immediate discharge of water would be necessary for public safety. Thus I agree with Governor Rick Scott in proposing that L-29 canal water level be raised for water from Lake Okeechobee to be relocated. Thank you for your time.

Kind Regards,

Antonio A. Arruza

Auvenshine, Stacie SAJ

From: Collin Feinberg <collinfein@hotmail.com>
Sent: Tuesday, February 23, 2016 8:37 PM
To: HHDEnvironment, SAJ
Subject: [EXTERNAL] Herbert Dike

Dike Comment

Hello I am a citizen commenting on the draft environmental impact statement and concerned about the points the daft makes about safety. There is a statement about the dike needing to be “tolerable” there should be an expectation of less than 0.001 lives lost annually. I agree that there can’t be anything man made of this magnitude and have a 100% safety rate. However I believe the word tolerable shouldn’t be an appropriate word. Part of the definition of tolerable is mediocre which I can safely say that is far from the proper term used for a large scale dike. There is also significant issues with seepage that needs to be properly handled. Seepage can allow other chemicals to fester underneath the dike, which can cause them to be absorbed into the ground and potentially the groundwater. The dike should have more strict regulations in order to protect the people and the land around it. Erosion should be priority because this can affect the stabilization and integrity of the dike. Try and work on keeping erosion to a minimum or replace the soil that is leaving and causing piping with new soil.

Dike Comment

Hello I am a citizen commenting on the draft environmental impact statement and concerned about the points the daft makes about safety. There is a statement about the dike needing to be “tolerable” there should be an expectation of less than 0.001 lives lost annually. I agree that there can’t be anything man made of this magnitude and have a 100% safety rate. However I believe the word tolerable shouldn’t be an appropriate word. Part of the definition of tolerable is mediocre which I can safely say that is far from the proper term used for a large scale dike. There is also significant issues with seepage that needs to be properly handled. Seepage can allow other chemicals to fester underneath the dike, which can cause them to be absorbed into the ground and potentially the groundwater. The dike should have more strict regulations in order to protect the people and the land around it. Erosion should be priority because this can affect the stabilization and integrity of the dike. Try and work on keeping erosion to a minimum or replace the soil that is leaving and causing piping with new soil.

Sent from Windows Mail

County Coalition for Responsible Management of Lake Okeechobee • St. Lucie and Caloosahatchee Estuaries • Lake Worth Lagoon

GLADES COUNTY

HENDRY COUNTY

HIGHLANDS COUNTY

LEE COUNTY

MARTIN COUNTY

OKEECHOBEE COUNTY

OSCEOLA COUNTY

PALM BEACH COUNTY

ST. LUCIE COUNTY

February 23, 2016

Stacie Auvenshine
U.S. Army Corps of Engineers Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019

Re: Herbert Hoover Dike Dam Safety Modification Study Draft Environmental Impact Statement

Dear Ms. Auvenshine:

As Chairman of the County Coalition that convenes this association of the sixteen counties that comprise the jurisdictional area of the South Florida Water Management District, I am writing to express our support for funding for the Herbert Hoover Dike and the importance of the dike's rehabilitation to the County Coalition.

The safety of the Herbert Hoover Dike (HHD) is critical to the County Coalition. The current regulation schedule for the lake is limited, due to dike integrity. This situation contributes to extreme fluctuations between damaging freshwater releases to our estuaries and then to tide. Unfortunately we are experiencing massive lake discharges now into the Caloosahatchee estuaries and St. Lucie River and Estuary and on to the Indian River Lagoon.

The health, safety and welfare of south Florida residents are central to the need for federal funding assistance. Not only is the dike integrity crucial to the citizens of south Florida, but the inability to handle excess stormwater runoff has become an all too frequent catastrophe to the St. Lucie and Caloosahatchee Estuaries.

We support the work of the US Army Corps of Engineers to rehabilitate the dike system, and we continue to advocate for robust funding for the HHD project. Each year, the County Coalition gathers representatives from these sixteen counties to develop a unified list of federal legislative priorities. The Coalition has long advocated that solutions rely on what we can agree on, and how we can move forward, together. Since the County Coalition began convening the 16 counties, the top priority has remained the Herbert Hoover Dike -increasing annual appropriation or rehabilitation of the HHD to accelerate project completion. The HHD is critical to protecting surrounding communities from floodwaters, and it is the "liquid heart"

of a multi-billion dollar effort to restore America's Everglades. The HHD greatly contributes to the economy, environment, navigation, agriculture, water supply, and flood protection / public safety in all of South Florida. Therefore, the County Coalition strongly feels that the HHD must maintain a high priority status for funding until the rehabilitation project is completed.

Further, it is essential that the Corps expedite the project as much as is possible.

Thank you for the opportunity to provide comments on the critical importance of this project to the health and wellbeing of all of South Florida.

Sincerely,

Karson Turner, Chairman, County Coalition
Commissioner, Hendry County
c: County Coalition

Enclosure

FLORIDA FARM BUREAU FEDERATION

THE VOICE OF AGRICULTURE

February 22, 2016

Mr. Chris Stahl
Florida Department of Environmental Protection
Florida State Clearinghouse
3900 Commonwealth Blvd. MS 47
Tallahassee, FL 32399-3000

Dear Mr. Stahl:

RE: Department of the Army, Jacksonville District Corps of Engineers - Draft Environmental Impact Statement for the Herbert Hoover Dike Dam Safety Modification Study Report

Although the Florida Farm Bureau Federation was not formally on the list of recipients to review the subject document we appreciate the opportunity to comment on the Draft Environment Impact Statement (EIS) for the Herbert Hoover Dike (HHD) Dam Safety Modification Report dated December 2015. We endorse the comments submitted by the Florida Department of Agriculture and Consumer Services (FDACS) on February 12, 2016 concerning this draft EIS report. Our focus, in align with FDACS, is to review and comment on recommendations and decisions regarding such important projects that may impact farming operations as well as rural agricultural communities around Lake Okeechobee and throughout the State of Florida.

The Lake Okeechobee Regulation Schedule LORS2008 is important on many fronts, environmental, economic, and flood protection. We support a balanced approach for managing lake levels during and after the HHD rehabilitation. We are in favor of alternatives that maximize the water use communities existing permitted water allocations, minimizing the potential for short-term water supply shortages and assuring the predictability of a continued and reliable water supply. We also support recognition within all alternatives that water emergencies include both flooding and drought relief.

In Section 3.3 of the report, the statement identifying the major agricultural uses in the area is grossly inaccurate. We suggest working with FDACS to more accurately reflect agricultural land uses throughout the project area. Comments in Chapter 4, concerning water quality, identify agriculture as a significant source of pollution to Lake Okeechobee. We would urge the USACE to also include a paragraph on best management practices (BMPs) noting that agriculture has been implementing BMPs north and south of the Lake for the last three decades resulting in improvements in water quality runoff into Lake Okeechobee and south into the Water Conservation Areas. Improvements in water quality due to implementation of agricultural BMPs have been documented from data collected by the South Florida Water Management and the Florida Department of Environmental Protection.

P.O. Box 147030, Gainesville, Florida, 32614 - 7030 • 352.378.1321 • www.FloridaFarmBureau.org

We also agree with FDACS concerning changes in the saltwater interface in the Common Inundation Zone (CIZ) B and a need for a more comprehensive monitoring plan to determine whether or not this is an impact due to the shallow cutoff wall. Likewise we feel there is no substantial scientific information that supports a hydrologic relationship between EAA canal operations and salinities in the surficial aquifer along the perimeter of the Lake from Port Mayaca south to Moore Haven.

Lastly agricultural communities have experienced economic benefits from visitors and residents using the paved portions of the Lake Okeechobee Scenic Trail. We encourage the USACE to pursue funding to replace the paved portions on the Levee using Section 111 Chief of Engineer's discretionary funds.

Thank you for the opportunity to provide comments on this important document. We look forward to continue working with all State and Federal Agencies toward the completion of the HHD Rehabilitation Project as well as other restoration projects that serve to improve a balanced and sustainable approach to managing south Florida's water and natural resources. Should you have any questions concerning comments from the Florida Farm Bureau Federation please do not hesitate to contact Gary Ritter at 352-727-0547.

Sincerely,

Gary Ritter
Assistant Director of Government and Community Affairs
Florida Farm Bureau Federation

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Richard B. Russell Federal Building
75 Ted Turner Drive S.W., Suite 1144
Atlanta, Georgia 30303

ER 15/0711
9043.1

April 12, 2016

Stacie Auvenshine
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Re: Comments on the Notice of Availability of Draft Environmental Impact Statement (DEIS) for the Herbert Hoover Dike Dam Safety Modification Study – Lake Okeechobee, Florida

Dear Ms. Auvenshine:

The United States Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement (DEIS) for the Herbert Hoover Dike Dam Safety Modification Study. We have no comments at this time.

Thank you for the opportunity to provide comments on this project. If you have questions, I can be reached via email at joyce_stanley@ios.doi.gov or at (404) 331-4524.

Sincerely,

Joyce Stanley, MPA
Regional Environmental Protection Specialist

cc: Christine Willis – FWS
Gary Lecain - USGS
Anita Barnett – NPS
Chester McGhee – BIA
OEPC – WASH

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Richard B. Russell Federal Building
75 Ted Turner Drive, S.W., Suite 1144
Atlanta, Georgia 30303

ER 15/0711
9043.1

February 22, 2016

Stacie Auvenshine
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Re: Comments for the Notice of Availability of Draft Environmental Impact Statement (DEIS) for the Herbert Hoover Dike Dam Safety Modification Study – Lake Okeechobee, Florida

Dear Mr. Auvenshine:

The U.S. Department of the Interior (Department) has reviewed the Notice of Availability of Draft Environmental Impact Statement for the Herbert Hoover Dike Dam (HHD) Safety Modification Study. We offer the following comments.

The Department has a long history of coordination with the Army Corps of Engineers, Jacksonville District (Corps) concerning the rehabilitation of and all associated work at HHD. The Department previously provided a Final Fish and Wildlife Coordination Act Report (FWCAR) for Reach 1 dated December 20, 2001, for the 2000 HHD Major Rehabilitation Evaluation Report, and supplemental FWCAR's for HHD rehabilitation in Reach 1 dated March 4, 2003, and March 8, 2004 (Reach 1A) for previous HHD rehabilitation work. We have provided several supplemental FWCAR's for work on the HHD and several related culvert replacements. In January 2014, the Department met with the Corps to discuss the DSMS and an accompanying FWCAR. Most recently, the Department provided a Draft Interim FWCAR for the HHD DSMS dated July 14, 2014. These are just some of the highlights of our continued cooperation with the Corps in assuring protection of fish and wildlife in accordance with the Fish and Wildlife Coordination Act, Migratory Bird Treaty Act, and section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*).

We will assess the need for a more detailed and comprehensive report after review of the Corps Draft EIS describing the planning process, comparison of alternatives, selection of the Tentatively Selected Plan (TSP), and construction associated with the TSP. Upon completion

and receipt of the Final EIS, the Department will further assess potential impacts associated with the selected plan and, if needed, prepare a Final FWCAR.

As stated in the Draft EIS, the Corps has initiated consultation with the Department in accordance with the provisions of Section 7 of the Endangered Species Act, as amended. In the initiation package of information/data submitted to the Department (dated December 24, 2015), the Corps (and its contractors) commits to avoiding, minimizing, or mitigating for adverse effects of the Tentatively Selected Plan to the greatest extent possible in both the planning and construction phases of the project. Monitoring of listed species identified to occur within the HHD DSMS will be addressed with continuing communication with the Department. Construction will span over multiple years, and design plans have not currently been established for each segment, therefore, consultation with the Department will continue as construction proceeds in each segment of the HHD. Department conservation measures and guidelines for all threatened and endangered species will be included in the construction/contract specifications.

Specific Comments

Page x, List of Figures:

> Figure 3-8. Caracara nests and observations (from 1992-2014) around Lake Okeechobee. Source: USFWS 2015 – date should be 2014.
> Figure 3-9. Snail Kite Critical Habitat - no source given for this information; source should be USFWS 2014.
> Figure 3-10. Snail kite nest locations from 2010-2015 (*active nests only). Source: USFWS 2015 – date should be 2014.
> Figure 3-11. Wood stork colonies (2005-2015) near HHD and Lake Okeechobee. Source: USFWS 2015 – date should be 2014.
> Figure 3-12. Florida panther zones in South Florida – no source given for this figure; source should be USFWS 2014.

Page 3-24, Under 3.8 THREATENED AND ENDANGERED SPECIES, last sentence of paragraph, sentence states – "Additional detail can also be found in the USFWS draft Fish and Wildlife Coordination Act Report (CAR) included in Appendix E." The sentence should state "…can also be found in the Draft Interim Fish and Wildlife Coordination Act Report...." and should include a date of 2014.

Page 3-27: Cites "USFWS produced map with a date of 2015." Should have a date of 2014 if the source of this map is the U.S. Fish and Wildlife Service's 2014 Draft Interim FWCAR.

Page 3-28: States "Figure 3-8. Caracara nests and observations (from 1992-2014) around Lake Okeechobee. Source: USFWS 2015." The date for the source should be 2014.

Herbert Hoover Dike Dam Safety Modification Study - ER 15-0711

Page 3-31: States "Figure 3-10. Snail kite nest locations from 2010-2015 (*active nests only). Source: USFWS 2015." The date should be 2014 if the source is the 2014 Draft Interim FWCAR. If not the source, please provide the source of the map in references cited.

Page 3-34: States "Figure 3-11. Wood stork colonies (2005-2015) near HHD and Lake Okeechobee. Source: USFWS 2015." The date should be 2014 if the source is the 2014 Draft Interim FWCAR. If not the source, please provide the source of the map in references cited.

Page 3-35: States "Figure 3-12. Florida panther zones in South Florida." The source of the figure should be included with the figure description.

Page 3-36: States "However, the principal habitat in the area for these wading birds is within the littoral zone of Lake Okeechobee (USFWS 2001)." The USFWS 2001 reference is not included in the list of references for the Draft EIS. This reference should be provided in Section 9. References of the Draft EIS.

Page 6-1: Under 6.0 ENVIRONMENTAL COMPLIANCE**;** ENDANGERED SPECIES ACT OF 1973, AS AMENDED, it states the following: "The Corps sent a letter to the USFWS on December 24, 2015 that provided an opinion that the project remains "not likely to adversely affect" threatened and endangered species." This sentence should state the following: The Corps sent a letter to the USFWS on December 24, 2015 that provided a determination that the project "may affect, but not adversely affect" threatened and endangered species provided conservation measures outlined in the 2014 Draft Interim Coordination Act Report are implemented and adhered to during preconstruction, construction, and after construction phases of the project.

Page 9-3: The following reference is included twice in the list of references cited (Section 9.0 References): USFWS. (2013, November 25). Retrieved from Species Profile: http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=C044#candidate

Under Section 9.0 References, the 2014 U.S. Fish and Wildlife Service Draft Interim Coordination Act Report (South Florida Ecological Services Office, Vero Beach, Florida) cited several times in the document and included in the Appendices for the Draft EIS, should be included as a cited reference.

Thank you for the opportunity to provide comments. If you have questions, I can be reached on (404) 331-4524 or via email at joyce_stanley@ios.doi.gov.

Sincerely,

Joyce Stanley, MPA
Regional Environmental Protection Specialist

Herbert Hoover Dike Dam Safety Modification Study - ER 15-0711

cc: Christine Willis – FWS
Gary LeGain - USGS
Anita Barnett – NPS
Chester McGhee – BIA
OEPC – WASH

SEMINOLE TRIBE OF FLORIDA

CHERISE MAPLES
Environmental Resource Management Department Director

6365 Taft Street, Suite 3008
HOLLYWOOD, FLORIDA 33024
PHONE (954) 965-4380
FAX (954) 962-8727
E-MAIL: cmaples@semtribe.com

WEBSITE:
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Tribal Officers:

JAMES E. BILLIE
Chairman

MITCHELL CYPRESS
Vice Chairman

LAVONNE M. ROSE
Secretary

PETER A. HAHN
Treasurer

VIA U.S. MAIL
AND ELECTRONIC MAIL

February 19, 2016

Ms. Kimberley Taplin
Tribal Liaison
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: Herbert Hoover Dike Dam Safety Modification Study Draft Environmental Impact Statement – December 2015

Dear Ms. Taplin:

The Seminole Tribe of Florida ("Seminole Tribe") is in receipt of the Draft Environmental Impact Statement ("DEIS") for the Herbert Hoover Dike (HHD) Dam Safety Modification Study ("DSMS") dated December 2015. We appreciate the opportunity to consult with the U.S. Army Corps of Engineers ("USACE") on the DEIS. The National Environmental Policy Act ("NEPA") requires the USACE to consult with the Seminole Tribe in order to ensure that the federal action agency takes a "hard look" at all the potential impacts to the human environment; including those that are of interest to the Seminole Tribe. Unlike the consultation requirements under NEPA, formal consultation under the USACE's trust responsibility requires the USACE to act "with good faith and utter loyalty to the [Seminole Tribe's] best interests." Consequently, the USACE's trust obligation does require a substantive outcome; namely, one that is in the best interests of the Seminole Tribe.

Environmental and Water Related Concerns

A. Lake Okeechobee Regulation Schedule (LORS)

The Seminole Tribe relies on the delivery of water from Lake Okeechobee for its water rights entitlements for the Brighton Seminole Indian Reservation and the Big Cypress Seminole

Indian Reservation. While the DEIS does not address and study potential operational changes for Lake Okeechobee, the DEIS does discuss the possibility of a regulation schedule change in the future if the proposed modifications address the dam safety concerns. The Seminole Tribe was pleased to hear in the consultation meeting with the USACE and again in the public hearings that the USACE had on the DEIS that the USACE will make incremental changes in operations to store more water in the Lake as you make the dike repairs. As the USACE knows the Seminole Tribe was very concerned with the prior changes to the LORS to store less water in the Lake. The LORS was to have been for a temporary time period which has extended long beyond the anticipated timeframe. The reduction of Lake levels puts the Seminole Tribe's water rights at significant risk especially during water shortage events. The Seminole Tribe supports the initiation of NEPA for a lake regulation schedule modification as soon as possible and to proceed while the HHD construction occurs so that the storage capacity of the Lake can be made available contemporaneously with dike repairs.

The Seminole Tribe requests that the USACE initiate formal government-to-government consultation when appropriate with the Tribe to discuss such a regulation schedule change so that there can be a full understanding of the Seminole Tribe's interests. Some of the issues to be addressed in subsequent consultation include: the nature of the incremental operational changes that could be made by the USACE and timeframe for same; and the nature and timing of a full regulation schedule modification.

B. Access

The Seminole Tribe's members have historically utilized the study area for the HHD DEIS for hunting, fishing, and recreational activities. While the DEIS recognizes these existing uses and states that access will continue it is not clear how that will be coordinated and provided for during construction. The Seminole Tribe is also concerned with the statement in the DEIS that "...the floodwall would reduce aesthetics and would potentially change where access to fishing would occur around the structures." The Seminole Tribe would like to engage in further consultation with the USACE in order to understand this access issue better so that we can collaboratively develop measures to ensure access for Seminole Tribal members.

C. Consultation

The Seminole Tribe appreciates the USACE's consultation with the Seminole Tribe on the HHD DEIS. We respectfully request that formal consultation on the construction related impacts to tribal access continue in a timely fashion. The Seminole Tribe also looks forward to consultation on the incremental operational changes and the potential for a LORS schedule modification. The Seminole Tribe is committed to its consultation relationship with the USACE and looks forward to this project being funded so that the USACE can move forward with the project and re-establish the storage that has been lost in Lake Okeechobee.

The Seminole Tribe understands that these consultations are an on-going process. The Seminole Tribe appreciates your consideration of the foregoing comments, and we look forward

to working through these issues with the USACE. The Seminole Tribe's comments from the Tribal Historic Preservation Office will be submitted separately.

Should there be any questions, please do not hesitate to call me at (954) 965-4380.

Sincerely,

Cherise Maples, Director

Environmental Resource Management Department

Cc: James E. Billie, Chairman
Jim Shore, General Counsel

To whom it may concern,

The draft EIS on the Herbet Hoover Dike is an assessment of a much *needed* action. Public safety is, as stated, the number one concern of many, including the Army Corps of Engineers. However, there are a couple of discrepancies that *must* be addressed before the plan is put into action.

In the federal consistency statement section (Appendix D) for Chapter 370, Living Saltwater Resources, it is stated that, "The proposed project is located inland and would have no effect on saltwater resources either directly or indirectly through discharge downstreams." It is highly unlikely, if not one hundred percent unlikely, to be able to claim the knowledge of such a project is so great that the Army Corps of Engineers can foresee every indirect effect from every aspect of the restoration of the Herbert Hoover Dike. It is *not* possible to have an indirect effect on anything in this world. Further research into indirect effects of inland construction into marine zones is obviously needed, since any and all fluid links to the ocean.

Secondly, along the same lines, in Appendix D, Chapter 258, State Parks and Aquatic Preserves it is stated, "… This chapter is not applicable." In Chapter 258, it states that the federal action (Herbert Hoover Dike) must be consistent with any direct or indirect adverse effects of park property, natural resources, park programs, or management operations. It is baseless to claim that a construction restoration of the Dike will, again, not have *any* indirect effects on any of the mentioned park and aquatic preserve aspects. Everything is connected indirectly and more research into how construction sites may impact communities/ecosystems far and near is needed.

Respectfully,

Drew Mertzlufft

Everglades Restoration Program
PO Box 707
Lorida, FL 33857
Tel: 863-655-1831
PGray@Audubon.org
http://fl.audubon.org/

Stacie Auvenshine
US Army Corps of Engineers
PO Box 4970
Jacksonville, FL 32232-0019

Submitted by email

February 23, 2016

Dear Ms. Auvenshine:

This letter constitutes Audubon Florida's comments on the December 2015 DRAFT Environmental Impact Statement for the Herbert Hoover Dike Dam Safety Modification Study (DSMS). Audubon has had full time staff working on Lake Okeechobee since 1936 and have been stewards of 28,250 acres of Wildlife Sanctuaries inside the Herbert Hoover Dike (HHD); designated by the Governor and Cabinet in 1938. We support the Corps' selected alternative for remediating the HHD.

Due to its size and location, Lake Okeechobee is probably the single most important water feature in south Florida. All flow from the 2.6 million acre Northern Everglades watershed passes through the Lake on its way south. The Lake furnishes flood protection and water supply for humans and downstream ecosystems. It supports fisheries and wildlife habitat, navigation across the state and a tourism-based economy. The Lake also strongly influences rain and temperature patterns in central Florida. Recent concerns about the safety of the HHD however, have resulted in water management decisions being made primarily for precautionary reasons, which have interfered with many of these functions. With the repair of the HHD, more options will be available and many of Lake Okeechobee's values can be restored and maximized.

Once remediation is complete, occasional higher water levels may be permissible in the Lake. We support the Corps' intention not to modify the LORS schedule until the entire remediation effort is finished because allowing higher levels before the HHD were safe would be imprudent. However, once a new operating schedule is feasible, we caution that higher water levels create new issues.

The "Stage envelope" performance measure for the Lake quantifies how often water levels are in an ideal range, which is considered within 6 inches of a dry season low of 12.5 feet and a wet season high of 15.5 feet. From 1978 until the early 2000s, water levels were maintained higher than the stage envelope most of the time and proved disastrous to the Lake's biota, and to estuaries who suffered massive releases from an often too-deep lake. The chronically deep levels also hastened the erosion of the HHD and any future schedule will have to weigh impacts of deep levels on the Lake, Estuaries, and the HHD itself.

Although chronically deep levels are a concern, occasional deep water during wet period emergencies, could be a future part of management. To a point, the lake marshes and biota can withstand temporary

deep water events with manageable harm. Were the HHD safer today, the Corps could contemplate reducing or halting the current disastrous releases to the estuaries for a period of time to benefit them, and resume releases later. With the HHD in its present condition, such an option is not feasible and is an example of how a safer Dike can allow improved management.

Acute high water events bring up the most important point about post-remediation HHD safety. Lake Okeechobee does not have nearly enough outlet capacity to keep up with inflows, meaning Lake levels can rise almost uncontrollably. The DSMS noted that LORS would allow a lake stage of 22.8 ft (NGVD29) in a peak SPF, which could be a threat even to a remediated Dike. In short, even when HHD repairs are complete, large inflow events will remain a concern for HHD safety.

In the long term, the best way to reduce the threat of storms overwhelming the remediated HHD is to build large amounts of storage capacity outside of Lake Okeechobee, and the conveyance capacity needed to utilize it quickly. Building such infrastructure is what the Comprehensive Everglades Restoration Plan was designed to do. CERP itself is beyond the scope of the DSMS, but will be an indispensable component to the future safety of the HHD. Audubon pledges to support efforts at the national and state levels to help the Corps and its partners make south Florida as safe and functional as possible.

Thank you for this opportunity to comment.

Sincerely,

Science Coordinator
Everglades Restoration Program

GLADES SUGAR HOUSE

Sugar Cane Growers Cooperative of Florida

POST OFFICE BOX 666 BELLE GLADE, FLORIDA

33430-0666

February 23, 2016

VIA E-MAIL AND U.S. MAIL

Ms. Stacie Auvenshire
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: Sugar Cane Growers Cooperative of Florida's Submittal of Comments on "Draft Environmental Impact Statement on the Herbert Hoover Dike Dam Safety Modification Study" (December 15, 2015) drafted by the Department of the Army; U. S. Army Corps of Engineers, Jacksonville District

Dear Ms. Auvenshire:

Sugar Cane Growers Cooperative of Florida is an interested and affected stakeholder in the issues relating to Lake Okeechobee and the rehabilitation of the Herbert Hoover Dike (HHD). The Cooperative was founded in 1960 and is comprised of 45 grower-owners who grow sugarcane on approximately 75,000 acres of land in the Everglades Agricultural Area (EAA) south and east of Lake Okeechobee. The primary functions of the Cooperative are the harvesting, transporting and processing of sugarcane and the marketing of raw sugar to one of our co-owned sugar refineries. Our processing facility is located in Belle Glade and employs over 550 people during the harvest season with an annual payroll of $30 million and an economic impact of $285 million. The Cooperative is Belle Glade's largest single employer, thus has a special interest in Lake Okeechobee and its associated operations.

Additionally, many of our grower-owners rotate their crops with winter vegetable, leaf and rice crops. We are proud to be part of the $3 billion agricultural industry in the EAA. These are high value, vertically-integrated agricultural operations that include four raw sugar mills, two sugar refineries, a renewable power plant and eight fresh market vegetable packing houses. This region

Telephone (561) 996-5556 Fax No. (561) 996-4747

is the nation's top producer of sugarcane, sweet corn, winter leaf crops, radishes and number two in winter vegetables.

Our growers rely on Lake Okeechobee for flood protection and water supply. The integrity of the HHD is of paramount importance to us since we live and conduct our business around the rim of the Lake. We encourage the Corps of Engineers' to expeditiously complete the rehabilitation of the HHD and concurrently evaluate the flexibility available within the existing Lake Regulation Schedule (LORS-08) to safely store more water in the lake to prevent unwanted releases to coastal estuaries and assure adequate water supply for the built and natural environments.

When The LORS-08 regulation schedule was adopted, it was characterized as an interim schedule that was anticipated to be in place while the most vulnerable sections of the levee were rehabilitated. This has been substantially completed with the 21 miles of cutoff wall and culvert replacements. The public was led to believe that an updated Lake regulation schedule would be adopted as soon as HHD repairs allowed, to restore water supply to EAA users to a one in ten year level of service. LORS-08 diminished our level of service to a one and six year level of service. When Congress passed WRDA 2000 it included the Savings Clause that promised the level of service for water supply and flood protection as of Dec. 11, 2000 would not be diminished due to the implementation of components of the Comprehensive Everglades Restoration Plan including adjustments to the Lake regulation schedule.

Given these facts, we presume that the structural design of the HHD rehabilitation Tentatively Selected Plan will provide the Dike with the integrity to raise lake stages to more historic levels, rather than having to undergo another time consuming Major Modification Report study effort and request a statement be included in the HHD EIS to this effect.

We applaud the Corps of Engineers commitment to undertake parallel paths and initiate the process of revising the Lake Regulation Schedule in 2020 concurrent with constructing the cutoff wall in Zone B between Lake Harbor and Moore Haven so that the new Lake regulation schedule can be implemented as soon as possible.

Lake Okeechobee is the central feature in the entire Central and South Florida Flood Control project. Its integrity is essential for all upstream and downstream regions of the Greater Everglades ecosystem to function properly.

Please include this letter into the administrative record for the HHD EIS. We incorporate by reference the comment letters submitted by the Florida Department of Agriculture and Consumer Services, Palm Beach County, EAA Environemntal Protection District, and by the Gunster Law Firm on behalf of U. S. Sugar Corporation.

Thank you for accepting our comments in support of completing the rehabilitation of the HHD expeditiously while concurrently looking at flexibility to store more water under LORS-08 and conducting a study to modify the lake regulation schedule. We welcome the opportunity to participate in future discussions on these important issues.

Sincerely,

Barbara J. Miedema
Vice President, Public Affairs & Communicatons

BJM:swd

cc: South Florida Water Management District – Mr. Peter Antonacci, Executive Director
South Florida Water Management District – Mr. Lennart Lindahl, Assistant Executive Director
South Florida Water Management District – Mr. Daniel O'Keefe, Governing Board Chairman
South Florida Water Management District – Mr. Brian Accardo, Esq., General Counsel
South Florida Water Management District – Mr. Kirk Burns, Office of Counsel
Florida Department of Environmental Protection – Mr. Drew Bartlett
Florida Department of Agriculture and Consumer Services – Mr. Steve Dwindell
U.S. Army Corps of Engineers – Mr. Timothy Murphy
U.S. Army Corps of Engineers – LTC Jennifer Reynolds

SEMINOLE TRIBE OF FLORIDA

CHERISE MAPLES
Environmental Resource Management Department Director

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Tribal Officers:

JAMES E. BILLIE
Chairman

MITCHELL CYPRESS
Vice Chairman

LAVONNE M. ROSE
Secretary

PETER A. HAHN
Treasurer

VIA U.S. MAIL
AND ELECTRONIC MAIL

February 19, 2016

Ms. Kimberley Taplin
Tribal Liaison
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: Herbert Hoover Dike Dam Safety Modification Study Draft Environmental Impact Statement – December 2015

Dear Ms. Taplin:

The Seminole Tribe of Florida ("Seminole Tribe") is in receipt of the Draft Environmental Impact Statement ("DEIS") for the Herbert Hoover Dike (HHD) Dam Safety Modification Study ("DSMS") dated December 2015. We appreciate the opportunity to consult with the U.S. Army Corps of Engineers ("USACE") on the DEIS. The National Environmental Policy Act ("NEPA") requires the USACE to consult with the Seminole Tribe in order to ensure that the federal action agency takes a "hard look" at all the potential impacts to the human environment; including those that are of interest to the Seminole Tribe. Unlike the consultation requirements under NEPA, formal consultation under the USACE's trust responsibility requires the USACE to act "with good faith and utter loyalty to the [Seminole Tribe's] best interests." Consequently, the USACE's trust obligation does require a substantive outcome; namely, one that is in the best interests of the Seminole Tribe.

Environmental and Water Related Concerns

A. Lake Okeechobee Regulation Schedule (LORS)

The Seminole Tribe relies on the delivery of water from Lake Okeechobee for its water rights entitlements for the Brighton Seminole Indian Reservation and the Big Cypress Seminole

Indian Reservation. While the DEIS does not address and study potential operational changes for Lake Okeechobee, the DEIS does discuss the possibility of a regulation schedule change in the future if the proposed modifications address the dam safety concerns. The Seminole Tribe was pleased to hear in the consultation meeting with the USACE and again in the public hearings that the USACE had on the DEIS that the USACE will make incremental changes in operations to store more water in the Lake as you make the dike repairs. As the USACE knows the Seminole Tribe was very concerned with the prior changes to the LORS to store less water in the Lake. The LORS was to have been for a temporary time period which has extended long beyond the anticipated timeframe. The reduction of Lake levels puts the Seminole Tribe's water rights at significant risk especially during water shortage events. The Seminole Tribe supports the initiation of NEPA for a lake regulation schedule modification as soon as possible and to proceed while the HHD construction occurs so that the storage capacity of the Lake can be made available contemporaneously with dike repairs.

The Seminole Tribe requests that the USACE initiate formal government-to-government consultation when appropriate with the Tribe to discuss such a regulation schedule change so that there can be a full understanding of the Seminole Tribe's interests. Some of the issues to be addressed in subsequent consultation include: the nature of the incremental operational changes that could be made by the USACE and timeframe for same; and the nature and timing of a full regulation schedule modification.

B. Access

The Seminole Tribe's members have historically utilized the study area for the HHD DEIS for hunting, fishing, and recreational activities. While the DEIS recognizes these existing uses and states that access will continue it is not clear how that will be coordinated and provided for during construction. The Seminole Tribe is also concerned with the statement in the DEIS that "...the floodwall would reduce aesthetics and would potentially change where access to fishing would occur around the structures." The Seminole Tribe would like to engage in further consultation with the USACE in order to understand this access issue better so that we can collaboratively develop measures to ensure access for Seminole Tribal members.

C. Consultation

The Seminole Tribe appreciates the USACE's consultation with the Seminole Tribe on the HHD DEIS. We respectfully request that formal consultation on the construction related impacts to tribal access continue in a timely fashion. The Seminole Tribe also looks forward to consultation on the incremental operational changes and the potential for a LORS schedule modification. The Seminole Tribe is committed to its consultation relationship with the USACE and looks forward to this project being funded so that the USACE can move forward with the project and re-establish the storage that has been lost in Lake Okeechobee.

The Seminole Tribe understands that these consultations are an on-going process. The Seminole Tribe appreciates your consideration of the foregoing comments, and we look forward

to working through these issues with the USACE. The Seminole Tribe's comments from the Tribal Historic Preservation Office will be submitted separately.

Should there be any questions, please do not hesitate to call me at (954) 965-4380.

Sincerely,

Cherise Maples, Director

Environmental Resource Management Department

Cc: James E. Billie, Chairman
Jim Shore, General Counsel

Auvenshine, Stacie SAJ

From: Joshua Wilson <jgwilson4228@eagle.fgcu.edu>
Sent: Tuesday, February 23, 2016 4:12 PM
To: HHDEnvironment, SAJ
Cc: Gable, Frank
Subject: [EXTERNAL] Public Comment

To whom it may concern,

Water quality is a serious concern in the southern parts of Florida. Reduction of risk in flooding that negatively impacts the environment and life from the breach of HHD is crucial. It will not only effect animals and the environment but humans as well. With the research I am involved in, water quality in the area has made changes to the results we obtain meaning we need to fix our problems in south Florida quickly.

Sincerely,

Concerned citizen

Auvenshine, Stacie SAJ

From: kristenmarsh@att.net
Sent: Monday, February 22, 2016 9:32 PM
To: HHDEnvironment, SAJ; Gable, Frank
Subject: [EXTERNAL] Public Comment on Herbert Hoover Dike Dam Safety Modification EIS

Are the current methods in place holding the waters of Lake Okeechobee at a hurricane rating of category five? If not, could repairs/adjustments also be made to the structures to withstand a powerful hurricane so that an incident like Hurricane Katrina in New Orleans can be avoided?

Regarding the release of water from Lake Okeechobee to SW Florida through the Caloosahatchee River, do you have methods of purifying the water of pollutants? Water quality has greatly diminished and the overwhelming amount of freshwater being released into the SW estuaries is disrupting all sorts of aquatic organisms. Eventual restoration of water flow to its historic pattern of slowly making its way through the river of grass, should be an ultimate goal.

I do believe that repairs need to be made to the Herbert Hoover dike, since this structure holds large amounts of water, and if a breach occurs we have a real environmental crisis to deal with. Thank you. Sincerely,

Kristen Marsh

Sent from Windows Mail

LAKE WORTH DRAINAGE DISTRICT
13081 MILITARY TRAIL
DELRAY BEACH, FLORIDA 33484-1105

Board of Supervisors
James M. Alderman
Stephen Bedner
Jeffrey P. Phipps, Sr.
Harry Raucher
John I. Whitworth III
Executive Director
Robert M. Brown
Attorney
Mark A. Perry, P.A.

February 22, 2016

VIA E-MAIL AND U.S. MAIL

Stacie Auvenshine
U.S. Army Corps of Engineers
PO Box 4970
Jacksonville, Florida 32232-0019

Subject: Comments on the U.S. Army Corps of Engineers, Jacksonville District, "Draft Environmental Impact Statement on the Herbert Hoover Dike Dam Safety Modification Study," dated December 15, 2015

Dear Ms. Auvenshine:

This letter is written on behalf of the Lake Worth Drainage District (LWDD) for the purpose of providing comments on the U.S. Army Corps of Engineers' (Corps) Draft Environmental Impact Statement on the Herbert Hoover Dike Dam Safety Modification Study (draft HHD EIS).

The Lake Worth Drainage District plays a vital role in managing south Florida's water supplies. Created in 1915, LWDD is an independent taxing district of the State of Florida that operates over 500 miles of canals and 20 major water control structures located in central and south Palm Beach County. This extensive canal network provides flood control and water supply for more than 750,000 residents and 10,000 acres of agricultural land. LWDD is located south and east of Lake Okeechobee, so risk of HHD failure bears directly upon LWDD and its infrastructure. In addition to concerns regarding HHD failure, LWDD relies on Lake Okeechobee for water supply. Hence, both of LWDD's key missions, flood control and water supply, are at the heart of LWDD's interest in timely and appropriate rehabilitation of the HHD.

In the event of HHD failure, it is likely that the reconstruction effort necessary to return the dike to a safe condition could take several years. During this period, it is unlikely that water levels in the Lake could be managed near the elevations required to provide adequate supplemental water supply to the Lake Okeechobee Service Area and other areas dependent on the Lake for a portion of their supplemental water needs. This would leave the Arthur R. Marshall National Wildlife Refuge as the only available source of regional water supply to LWDD, thereby increasing the risk that insufficient regional water inflow to LWDD would severely reduce well field protection and supplemental irrigation supply for both agricultural and urban uses. Likewise, increased water demand on the Refuge, along with severely reduced base flow from Lake Okeechobee, could cause significant impacts to the Refuge.

While HHD repairs are underway, LWDD requests the Corps initiate and complete a Lake Okeechobee regulation schedule modification study. This action will enable the Corps to be poised to implement a new Lake regulation schedule at the earliest possible moment and in light of the rehabilitated HHD. LWDD has repeatedly expressed concern about the inadequacy of water supplies provided pursuant to the current Lake regulation schedule, 2008 LORS. LWDD provides surface water, largely from WCA 1 as replenished by Lake Okeechobee during dry times, to its irrigation water users. Also, LWDD's canal network recharges the Surficial Aquifer in coastal Palm Beach County to maintain ground water levels, help prevent inland migration of the saltwater interface, and recharge public water supply utility wellfields. In 2007, LWDD commented on the Corps' draft Lake regulation schedule environmental impact study and its potential to exacerbate water shortages. Additional details concerning water shortages and use of permanent forward pumps to relieve supply problems at low Lake levels resulting from the then proposed regulation schedule were requested at that time. This regulation schedule, now known as 2008 LORS, was approved as an interim schedule nearly eight years ago. The 2008 LORS does not assure LWDD of adequate water supply to meet its above stated missions, thus it should be replaced with a new regulation schedule as soon as possible.

Additionally, the LWDD requests the Corps to operate Lake Okeechobee in light of the HHD repairs that have already occurred. The 2008 LORS recognized the burden this schedule placed on water supply interests and assured stakeholders of the potential to operate the Lake so as to improve storage as HHD repairs progressed. To date, the Corps has not undertaken operational changes. LWDD requests the Corps immediately implement these changes. Storing more water in Lake Okeechobee will benefit water supply users and will also provide much needed relief to the estuaries and even benefit the Lake's ecology.

In closing, LWDD appreciates the Corps' on-going effort to rehabilitate the HHD and recognizes the magnitude of this project. However, swift completion of HHD repairs is urgently needed, as is implementing a new Lake regulation schedule and taking advantage of improved storage made possible by the repairs accomplished to date. Your consideration of LWDD's concerns is appreciated.

Sincerely,

Robert M. Brown
Executive Director
Lake Worth Drainage District

RMB

C: James M. Alderman, President, LWDD Board of Supervisors
Harry Raucher, LWDD Board Supervisor and WRAC Representative
Mark A. Perry, LWDD Counsel

Auvenshine, Stacie SAJ

From: Vieira, Mark <Mark.Vieira@fema.dhs.gov>
Sent: Tuesday, January 19, 2016 8:08 AM
To: HHDEnvironment, SAJ
Subject: [EXTERNAL] Comments

HERBERT HOOVER DIKE DAM SAFETY MODIFICATION STUDY

Page 7-1 Federal Emergency Management Administration should be Agency and not Administration.

Mark A. Vieira, P.E.

FEMA Region IV

Mitigation Div, Risk Analysis Br.

3003 Chamblee-Tucker Rd

Atlanta GA 30341

770-220-5450

mark.vieira@fema.dhs.gov

Auvenshine, Stacie SAJ

From: Physics Dude <physic.dude@gmail.com>
Sent: Thursday, February 18, 2016 6:12 PM
To: HHDEnvironment, SAJ
Subject: [EXTERNAL] HHD Draft EIS comments - West coast water quality impacts

Hello,

In reviewing the Draft EIS for the Herbert Hoover Dike Safety Modification, it was made apparent to the casual observer that little to no information was given in regards to the water quality in areas closer to the oceanic or gulf shores that receive discharges from Lake Okeechobee. Section 3.5 - Water Quality only seems to focus on the water quality of the lake itself and its immediately surrounding water systems.

In particular, one may say that the Caloosahatchee River (C-43) is vital to several counties in Fort Myers for its role in the natural environment as well as with the communities that surround the river. A change in the rate that the water flows through this area or how much pollutants/nutrients it carries may prove to be a significant risk for a quite large population.

Might you be able to share or direct us to more information regarding this topic of how distant downstream areas will be impacted? Please consider discussing this further.

Many thanks,

Michael H.

Auvenshine, Stacie SAJ

From: McLeod, Michelle <MMcLeod@gunster.com>
Sent: Tuesday, February 23, 2016 4:37 PM
To: HHDEnvironment, SAJ; Auvenshine, Stacie SAJ
Cc: Phillips, Luna
Subject: [EXTERNAL] US Sugar's Comment Letter to Draft Environ. Impact Statement on Herbert Hoover Dike Dam Safety Mod. Study
Attachments: 2016-02-23 USSC HHD Comment Letter to Corps (S. Auvenshine).PDF; New folder.zip

Good afternoon Ms. Auvenshine,

On behalf of the United States Sugar Corporation (USSC), please accept the attached comment letter dated February 23, 2016, including the zip file/folder containing Exhibit A, Exhibit B and the referenced documents to supplement the Record, as USSC's electronic submittal related to Draft Environmental Impact Statement on the Herbert Hoover Dike Dam Safety Modification Study, December 15,2015. Please review and process these comments accordingly.

If you have any questions do not hesitate to contact Luna Phillips at lphillips@gunster.com <mailto:lphillips@gunster.com> or 954-712-1478.

Thank you,

Michelle

Best regards,

M. McLeod

Michelle A. McLeod
Legal Secretary to Rick J. Burgess, Esq., Luna E. Phillips, Esq. & Deborah K. Madden, Esq.

Las Olas Centre, 450 East Las Olas Boulevard, Suite 1400
Fort Lauderdale, FL 33301-4206
P 954-462-2000, Ext. 226 / F 954-523-1722

GUNSTER
FLORIDA'S LAW FIRM FOR BUSINESS

Our File Number: 13776.00057
Writer's Direct Dial Number: (954) 712-1478
Writer's E-Mail Address: lphillips@gunster.com

February 23, 2016

VIA E-MAIL ONLY
(HHDEnvironment@usace.army.mil AND stacie.j.auvenshine@usace.army.mil)

Department of the Army
Attention: Stacie Auvenshine
Jacksonville District Corps of Engineers
U.S. Army Corps of Engineers
701 San Marco Boulevard
Jacksonville, FL 32207-8175

RE: United States Sugar Corporation's Submittal of Comments on "Draft Environmental Impact Statement on the Herbert Hoover Dike Dam Safety Modification Study"

Dear Ms. Auvenshine:

This firm represents the United States Sugar Corporation (USSC), an interested stakeholder in issues related to the management of Lake Okeechobee (Lake), including the Herbert Hoover Dike (HHD) repairs. On December 24, 2015, the Environmental Protection Agency (EPA) published notice in the Federal Register of the U.S. Army Corps of Engineers (USACE) December 2015, "Draft Environmental Impact Statement - Herbert Hoover Dike Dam Safety Modification Study (DSMS)" (HHD Draft EIS). The Federal Register notice opened a 60-day public comment period on the HHD Draft EIS, ending on February 23, 2016. Please accept this letter and its attachments as USSC's comments on the HHD Draft EIS.

USSC Is an Affected Stakeholder

USSC's substantial interests are affected by the DSMS and the HHD Draft EIS. USSC owns and operates over 215,000 acres of agricultural lands in Florida; many of these acres are located adjacent to Lake Okeechobee. USSC produces sugar cane and refined cane sugar and is one of Florida's major producers of oranges and orange juice products. Dependent upon weather, growing conditions and federal market allocations, USSC produces over 7 million tons of sugar cane each year, which equates to approximately 800,000 tons of sugar each year, providing nearly 8 percent of the sugar produced in America.

USSC's farming operations in the EAA depend on the water supply and flood control functions of the Central and Southern Florida Flood Control Project (C&SF Project). Lake Okeechobee is an essential water supply source for agricultural operations. The strength of the

HHD and its ability to withstand conditions, not breach, and to store water for water supply purposes, similar to historic operational levels, is of utmost importance to farmers in the Lake Okeechobee Service Area. USSC has a substantial interest in the timely and robust repair of the HHD.

Continue To Expeditiously Repair the HHD

Continued, expeditious repair of the HHD to address the public's health and safety is of utmost importance. USSC urges the USACE to proceed as promptly as possible while addressing the concerns noted in this comment letter.

As the alternative design for the HHD rehabilitation is selected, it is appropriate to consider attaining the immediate goal of structural integrity, while assuring Lake Okeechobee operations meet Congressional and USACE commitments for the C&SF Project, as discussed below. We believe these commitments can and should be achieved concurrently with the repairs. Our comments request that the Corps integrate identification and implementation of HHD repairs with concurrent evaluations of how the HHD repairs will further all C&SF Project purposes.

Repaired HHD Must Continue to Serve All C&SF Project Purposes for Lake Okeechobee

We recognize that the HHD Draft EIS and DSMS do not evaluate potential water supply or storage implications nor do they identify operational changes to store additional water in Lake Okeechobee based on the TSP. These matters will be the subject of a Lake regulation schedule modification study. However, it is appropriate now for the USACE to clearly state and confirm the repaired HHD's potential operational capabilities and commit to address the integrally related purposes of the HHD through a lake regulation schedule modification study that proceeds concurrent with the HHD repairs.

The stability of the dike directly impacts the Corps' capability to meet the C&SF Project purposes, as established by Congress and the USACE's decisional documents approved since 1948. Lake Okeechobee serves multiple project purposes, including water supply and fish and wildlife. Water supply and fish and wildlife purposes include water for utilities, the Stormwater Treatment Areas (STAs), residential and agricultural lands within the Lower East Coast and the Lake Okeechobee Service Area, Lake Worth Drainage District, Water Conservation Areas, Everglades National Park and Seminole Tribe of Florida.

Moreover, the Comprehensive Everglades Restoration Plan (CERP) is a holistic framework and guide for modifications to the C&SF Project to achieve restoration, protection and preservation of the Everglades ecosystem, including Lake Okeechobee, while providing for other water related needs of the system. The foundational principles for implementation of CERP stress the need to address operational changes in the C&SF Project system holistically, as an integral part of CERP, and not piecemeal through non-CERP projects. *See* WRDA 2000;

Sections 6.4.2, 6.4.13 Central and Southern Florida Project Comprehensive Review Study Final Integrated Feasibility Report and Programmatic Environmental Impact Statement April 1999.

To this end, we request the USACE clearly state the potential storage capabilities of the repaired HHD and also provide written confirmation that the HHD Draft EIS and DSMS do not alter the Congressionally authorized C&SF Project purposes or other previous commitments, such as CERP and its enabling legislation. As part of this commitment, please clarify that, consistent with LORS 2008 assurances, the use of LORS 2008 in the modeling for the "no action" and other dike repair alternatives, including the TSP, does not preempt the previous USACE commitments to restore water storage in the Lake through an updated Lake schedule.

HHD Draft EIS Selected Alternative Must Ensure Successful CERP Implementation

USSC recognizes LORS 2008 was an interim Lake regulation schedule, necessitated by HHD stability concerns. This regulation schedule, however, substantially diminished water supply availability and does not meet the 1 in 10 level of water supply certainty. The CERP Savings Clause requires that existing legal sources of water supply (available in the year 2000 for agricultural and urban water supplies, fish and wildlife, Everglades National Park and Tribes) must not be eliminated or transferred until new sources of supply of comparable quantity and quality are provided.

The CERP Savings Clause was adopted to protect against long-term changes in water availability that only achieve some Project purposes, such as, flood protection and environmental protection, at the expense of other Project purposes, such as water supply. This is the Savings Clause "benchmark" that must be satisfied as CERP proceeds forward.

Returning to a 1 in 10 level of water supply performance is required by the CERP Savings Clause. This level of certainty should be the predicate for the proposed, modification to the Lake regulation schedule. It is critical that the USACE ensure its actions in determining the extent and timing of HHD repairs do not nullify this most fundamental precept - the CERP Savings Clause - as it forms the very foundation for CERP relied upon by the State of Florida in support of its decision to be local sponsor and partner in CERP implementation. We request written confirmation these expectations will be met by the repaired HHD infrastructure.

The USACE Should Conduct a Parallel Study to Modify the Lake Okeechobee Regulation Schedule

As the HHD rehabilitation alternative is selected and construction proceeds, it is essential that the USACE, in a contemporaneous and parallel effort, conduct a NEPA evaluation to establish a new Lake regulation schedule, predicated upon the repaired HHD infrastructure. This study should assess the capabilities of the C&SF Project, including the selected HHD alternative and reasonably anticipated Project-related infrastructure changes, to comprehensively serve all Project purposes. By undertaking a parallel Lake regulation schedule modification study, future

Lake operational capabilities can be evaluated in light of performance measures and alternatives. These steps will enable prompt implementation of a new Lake Okeechobee regulation schedule. This Lake regulation schedule modification study must also assess the ability of C&SF Project and Lake operations to meet the legislatively required CERP water supply assurances.

DSMS and HHD Draft EIS Dam Safety Risk Analysis Should Serve As the Risk Analysis for Updates to the Lake Okeechobee Regulation Schedule

The USACE's public presentations on this HHD Draft EIS contain the following statement: "Proposed revisions to the current LORS 2008 will require an updated risk evaluation and a future lake regulation study for informed decision making." *See* January 26, 2016 USACE Presentation, slide 23, bullet 2.

We question the need for an "updated risk evaluation" on the HHD, separate from this DSMS, as the selected Standard Performance Flood (SPF) evaluations apply a Lake stage of 24.7 NAVD88, and both LORS 2008 and RUN 25 produce peak SPF stages below this elevation. In light of these statements in the HHD Draft EIS, a NEPA analysis for the Lake regulation schedule modification should be the only process necessary prior to implementing a modified Lake Okeechobee regulation schedule.

We request the USACE to confirm in the HHD EIS that the proposed, structural changes to the HHD are sufficient to accommodate all previously existing Lake regulation schedules, such as the Run 25 or similar schedule.

Additionally, we request USACE include further explanation that, in light of these facts, no additional HHD risk analysis is needed before modifying the Lake regulation schedule.

The USACE Should Provide More Detailed Explanation of Revised Dike Evaluation Standards

Over time, USACE's dam safety evaluation standards have evolved. How are the revised standards for assessing dike safety and balancing economic considerations different from previous standards, particularly as to those identified in the LORS 2008 Final Supplemental Impact Statement for Reaches 1, 2 and 3? *See* LORS 2008 Final Supplemental Environmental Impact Statement November 2007 (FSEIS) at iv - v. While the HHD Draft EIS describes the new evaluation criteria, it is not possible to evaluate or analyze the practical implications of shifting from the standards used in the 2007 Environmental Assessment for HHD rehabilitation to current evaluation standards. This information is particularly relevant as the LORS 2008 FSEIS identifies HHD repairs as a "trigger" for Lake operational changes. How does the TSP compare to the repairs listed in the LORS 2008 FSEIS, noted above as "triggering" both interim operational improvements, and shifting to a new Lake regulation schedule? A chart comparing the LORS 2008 FSEIS terms associated with HHD repair with those used in the HHD Draft EIS is requested.

The USACE Should Implement Operational Flexibility Per LORS 2008

As an interim schedule, LORS 2008 manages Lake Okeechobee at lower levels than prior regulation schedules, in order to reduce structural risk to the HHD, while repairs are underway. This low regulation schedule, however, presents dramatically reduced performance as to other Project purposes, specifically, an increased risk of low Lake levels and associated adverse effects to water supply. Numerous stakeholders; including among others, the South Florida Water Management District, the Seminole Tribe of Florida, agricultural and various urban interests; expressed concern for the LORS 2008 risk to water supply.

To address the Lake's diminished water supply performance, per the temporary regulation schedule, the USACE's decisional documents made key assurances. LORS 2008 Record of Decision (ROD) and November 2007 FSEIS assured stakeholders that LORS 2008 was a short-term, interim schedule, necessary to respond to high Lake levels while HHD repairs were made. Further, the LORS 2008 ROD and FSEIS commit the USACE to incrementally improve water supply performance, as made possible by HHD infrastructure repairs. (ROD 5) The FSEIS provides a detailed explanation of specific dike repairs that would prompt the USACE to evaluate operational flexibility, within LORS 2008 and consistent with protection of health and safety, to provide additional water storage. The USACE commits:

> Pending completion of rehabilitation in Reaches 1, 2 or 3, as HHD rehabilitation progresses, the Corps will evaluate the capacity to operate the Lake in a manner to provide more water storage in conjunction with achieving other project purposes. The anticipated points at which the Corps will utilize the flexibility within the schedule [LORS 2008] consistent with protection of health safety and welfare to provide additional storage include, at a minimum, completion of filling of the toe ditch, construction of the seepage berm within the existing right of way in Reach 1, and equivalent dike improvements in Reaches 2 or 3, which are currently under design. Upon changed circumstances, the Corps will provide additional storage, consistent with technical analysis, that might result from higher lake elevations. The Corps can respond to changed circumstances by adjusting operations within LORS' operational flexibility or through schedule deviations. (FSEIS pp. iv – v)

Based on the recent USACE presentation and statements made at the January 2016 HHD public meetings, it appears the USACE intends to perform this assessment and take advantage of near-term opportunities to store additional water in the Lake. USSC urges completion of the necessary evaluation at the soonest possible time so that relief to supply and estuarine interests is swiftly provided. Additional storage in the Lake will benefit the Lake's ecology and water supply interests during drier years.

We have included a table of comments on the HHD Draft EIS, which is attached as Exhibit A and an index of documents to supplement the record for the HHD Draft EIS, which is attached as Exhibit B. The documents listed on the index are being provided via email.

Please include this letter and the attachments with the administrative record of USACE's file on the above referenced matter, and incorporate the entire LORS 2008 administrative record into the file on the above referenced matter.

USSC thanks the USACE for considering our comments and welcomes the opportunity to participate in further stakeholder input.

Sincerely,

Luna E. Phillips
On behalf of the Gunster Law Firm,
Attorneys for United States Sugar Corporation

LEP/mam

Attachments: **Exhibit A** - Table of Comments on "Draft Environmental Impact Statement on the Herbert Hoover Dike Dam Safety Modification Study" (December 15, 2015) drafted by the Department of the Army; U.S. Army Corps of Engineers, Jacksonville District

Exhibit B - Index to the Documents to Supplement the Record on the "Draft Environmental Impact Statement on the Herbert Hoover Dike Dam Safety Modification Study" (December 15, 2015) Drafted by the Department of the Army; U.S. Army Corps of Engineers, Jacksonville District

cc: Client
South Florida Water Management District – Mr. Peter Antonacci, Mr. Lennart Lindahl, and Brian Accardo, Esq.
Florida Department of Environmental Protection – Mr. Drew Bartlett
Florida Department of Agriculture and Consumer Services – Mr. Steve Dwinell
U.S. Army Corps of Engineers – Mr. Timothy Murphy and Lt. Col. Jennifer Reynolds

EXHIBIT A

Table of Comments on "Draft Environmental Impact Statement on the Herbert Hoover Dike Dam Safety Modification Study" (December 15, 2015) drafted by the Department of the Army; U.S. Army Corps of Engineers, Jacksonville District

INTRODUCTION

The comments identified herein pertain to subjects not addressed in the USSC "draft HHD EIS" comment letter. As with the comment letter issues, we request the comments herein be integrated into relevant portions of the draft HHD EIS, the DSMS, and other appendices. Specific language provided in this attachment is suggested language for inclusion in the Final HHD EIS to replace existing language in the specified sections.

Draft HHD EIS Section	Purpose	Specific Comments and Clarifications
1.8 Related Projects SFWMD Restoration Strategies Project	Correct inaccurate statements consistent with SFWMD	Inaccurate statements regarding SFWMD Restoration Startegies Project should be corrected based on the February 11, 2016 letter from South Florida Water Management District to Florida State Clearinghouse, Department of Environmental Protection, "U.S. Army Corps of Engineers – Herbert Hoover Dike Dam Safety Modification Study Draft Environmental Impact Statement SAI# FL201601047515C" The following sentence should also be added to correct the existing statement on inflows to Lake Okeechobee due to Kissimmee River Restoration and Headwaters Revitalization: Inflows to Lake Okeechobee will not be reduced by implementation of the Kissimmee River Restoration projects.
1.9 Approvals	Correct inaccurate and outdated information; update based on Northern Everglades and Estuaries Protection Act (NEEPA)as amended in 2016	This section and others identified herein contain inaccurate and outdated references to outdated Florida water quality laws. Revisions to the Northern Everglades and Estuaries Protection Act (NEEPA) were enacted by the Florida Legislature in January 2016. Some suggested language is provided below and should be addressed in relevant water quality related sections throughout the EIS: : Nutrient loads within the Lake Okeechobee Basin are regulated under the Northern Everglades and Estuaries Protection Act (NEEPA). The NEEPA specifies the implementation of Basin Management Action Plans (BMAPs). The Lake Okeechobee BMAP was adopted in December 2014 and allocated the TMDL to the entire LOK Watershed which includes all nine-sub watersheds to the north, south, east and west. The plans contain a schedule for subsequent phases of phosphorus load reduction consistent with the TMDLs and milestones must be set. The FDEP has a five-year cycle for setting and updating TMDLs and BMAPs. Revisions to the NEEPA were enacted in January 2016 and scheduled to become effective July 1, 2016.

Draft HHD EIS Section	Purpose	Specific Comments and Clarifications
3.3 LAND USE (Also correct identification agriculture surrounding lake in Section 3.6 Vegetation)	Clarify description of agricultural activities surrounding the Lake.	This section should be updated and clarified in coordination with the Florida Department of Agriculture and Consumer Services. The language should include the following: The primary land use in the Lake Okeechobee region is agriculture. Major agricultural activities in the southern area include sugarcane and row crops, along with ornamental and tree nurseries. Along the East of the Lake, there are citrus groves, sugar cane and increasing row crops. To the West and north, agricultural activities include rangeland and cow calf operations.
3.4 Hydrology & Hydraulics Surface Water;	Clarify surface water supply purposes of Lake Okeechobee and inflow watersheds; Clarify Lake Okeechobee watersheds	Inflow to Lake Okeechobee for drainage purposes and outflow made through a series of Federal, state, and local drainage district culverts that penetrate the HHD are made for water supply to the Lake Okeechobee Service Area (LOSA), municipal water supply, water supply to the Seminole Tribe, water supply to the Water Conservation Areas, water supply to fish and wildlife, water supply to the Stormwater Treatment Areas and other mandated water quality treatment facilities, water supply for groundwater recharge in the Lower East Coast and EAA, and water supply to Everglades National Park. Inflow enters from the north, east, and west of Lake Okeechobee through the following watersheds: Kissimmee River Upper Kissimmee and Lower Kissimmee, Taylor Creek-Nubbin Slough, Fisheating Creek (Nicodemus Slough), Indian Prairie, Lake Istokpoga East Lake Okeechobee and West Lake Okeechobee. The drainage areas associated with these 13 culverts are local water control districts mostly contained within the Everglades Agricultural Area (EAA), but also include U.S. Sugar, Trucane, Lake Point and Five Smooth Stones and many other landowners too numerous to mention. The EAA is divided into seven drainage basins and is comprised of a network of canals, structures, and levees that divide the area to provide for the removal of excess water to Lake Okeechobee and the WCAs to the south. The local water control districts, also referred to as special districts or ‘298 Districts,’ have governmental pump stations that discharge to Lake Okeechobee or the EAA canals. Figure 3-3 provides a map of the 298 Districts.

Draft HHD EIS Section	Purpose	Specific Comments and Clarifications
3.4 Hydrology & Hydraulics **Surface Water Use**	Correct description of surface water use of Lake water, including description of 298 Water Control Districts and other users.	This section should be revised in coordination with the South Florida Water Management District for accuracy and completeness. Recommended language includes the following: Surface water diversions from Lake Okeechobee meet several different C&SF project purposes, including water supply to the Lake Okeechobee Service Area (LOSA), municipal water supply, water supply to the Seminole Tribe, water supply to the Water Conservation Areas, water supply to fish and wildlife, water supply to the Stormwater Treatment Areas and other mandated water quality treatment facilities, water supply for groundwater recharge in the Lower East Coast and EAA, and water supply to Everglades National Park. The SFWMD manages the water use permitting process within its boundaries under authority of Chapter 373, Florida Statutes, and several Florida Administration Code (F.A.C.) rule chapters. A water use permit provides the user with a right to divert and use the allocated quantity from a designated source (both groundwater and surface water sources). Permit use classes include agricultural, recreation, public water supply, industrial and "diversion and impoundment" (including 298 Water Control Districts). There are 298 Water Control Districts (originated under the authority of Chapter 298, Florida Statutes), which maintain and operate secondary canal systems in the EAA (Pickett et al., 2013; Figure 3-3). For users within these water control districts, the water supply in the EAA is assured by maintaining water levels in these canals. Water levels in the 298 Water Control Districts with the EAA are maintained approximately 1 to 2 feet below the ground surface, However, during most of the year and especially for harvest, planting, and cultivation the control elevations at the pump stations can be as much as a three to four foot differential do to the distance of the far-point/tail-end of canal. Some distances can be as much as 5-10 miles and of course all is predicated on the weather. For users outside of the water control districts and within the EAA, water tables are maintained by inflow from the SFWMD primary canals. For water users outside of the

Draft HHD EIS Section	Purpose	Specific Comments and Clarifications
		EAA, including the rest of the Lake Okeechobee Service Area and the Seminole Tribe of Florida, water users depend upon the level of Lake Okeechobee to provide irrigation to maintain seepage systems or for overhead irrigation.
Section 3.4 Hydraulics and Hydrology Groundwater	Clarify EAA/WCD's groundwater management	Water levels in the 298 Water Control Districts with the EAA are maintained approximately 1 to 2 feet below the ground surface. However, during most of the year and especially for harvest, planting, and cultivation the control elevations at the pump stations can be as much as a three to four foot differential do to the distance of the far-point/tail-end of canal. Some distances can be as much as 5-10 miles and of course all is predicated on the weather.
3.4 Hydrology & Hydraulics **Water control Structures (Culverts)**	Include and update description of the Everglades Agricultural Area consistent with the South Florida Environmental Report (SFER)	Water from the EAA is managed by both the SFWMD through the primary canals and the water control districts through the secondary canals. Additionally, the surface water elevations for water control districts at the control structures are 3-4 feet below ground, on average. Four major canals pass through the EAA: West Palm Beach, Hillsboro Canal, North New River Canal, and Miami Canal. Flows from Lake Okeechobee and runoff from the EAA are discharged via these four canals to relieve flooding for the local drainage area and into the Stormwater Treatment Areas (STAs) for water quality improvement. Discharges to the east coast occur through the West Palm Beach Canal. At times, when conditions do not allow for the STAs to treat all runoff water, diversion to the WCAs could occur. The inflows from Lake Okeechobee to these canals are from structures S-351, S-352, and S-354. These structures are gated spillways with a maximum tailwater elevation not to exceed 12 ft NGVD for Lake Okeechobee operation. The optimum water control elevations for S-351 and S-354 range between 11.5 and 12.0 ft NGVD. During WY2014, daily average elevations ranged from 9.50 to 12.13 ft NGVD. The outflows from the four canals to the STAs are discharged through pump structures S-5A, S-319, S-6, G-370, G-372, and G-434. Outflows from STAs are inflows into WCAs. During the dry season and drier-than-normal wet seasons, water supply for agricultural irrigation is provided by these four primary canals, mainly through gravity release from Lake Okeechobee. During droughts, when Lake Okeechobee levels are low, forward pumping is required to

Draft HHD EIS Section	Purpose	Specific Comments and Clarifications
		withdraw water from the lake. At times, water is also supplied to the EAA from the WCAs. Farmers utilize a set of secondary and tertiary farm canals to distribute water from several gated culverts and pumps to their respective fields. (SFER 2-39 2015)
3.5 Water Quality	Correct inaccurate and outdated information; update based on Northern Everglades and Estuaries Protection Act (NEEPA)as amended in 2016	See comments for Section 1.9
3.8 Threatened and Endangered Species	Correct inaccuracies on species listing status and section on snail kites	Table 3-6 on listed species in the EIS contains various inaccuracies on the current status of listed species that should be corrected before the EIS is finalized. Additionally, snail kite information should be updated to reflect best available information on current population, habitat, foraging, and nesting conditions
3.12.1 Economic Activities In and Around Lake Okeechobee	Insert accurate descriptive information regarding socio-economic activities and local governments.	The primary economic activity throughout the study area is agriculture. The EAA, located directly south of Lake Okeechobee, consists of approximately 500,000 acres of highly productive agricultural land, the vast majority of which is under active sugarcane cultivation. In addition to sugarcane, crops grown in the EAA include an array of winter vegetables including sweet corn, green beans, all varieties of lettuce, radishes, celery, rice and sod. This region of Palm Beach County is the nation's top producer of sugar, sweet corn, radishes and number two in winter vegetables. The economic value of these crops exceed $3 billion annually (FDACS 2016) and provide employment for more than 12,000 people in the sugar sector alone(LMC Internation-2011). The agricultural operations are vertically integrated and there are four raw sugar mills, two sugar refineries, a rice mill, eight vegetable packing houses and distribution centers, and a renewable energy power plant. Other agricultural activities in the Lake Okeechobee watershed include citrus, pasture, livestock and dairy operations.

Draft HHD EIS Section	Purpose	Specific Comments and Clarifications
		Other than agriculture, recreation, tourism, commercial fishing, and navigation, secondary economic activities include: services (banking, insurance, etc.) healthcare, education, and government activities. Examples of the above include: the Lakeside Medical Center, and the University of Florida- Everglades Research and Education Center, Palm Beach State College, Belle Glade Campus and the Dolly Hand Cultural Arts Center; Glades Day School serving students Pre-K-12; seven public elementary schools, two middle schools and two high schools as well as the West Technical Training and Education Center. The City of Clewiston is a major center of the agricultural community around the Lake. Known as the "Gateway to Lake Okeechobee" it has many of the above activities. Also, the Town of Moore Haven is the seat of government for Glades County, so there are several public buildings in the town. (This section does not cover any economic activity associated with the City of Okeechobee that sits on the north shore of the lake.)
3.12.2 Demographics	Recognize socioeconomic value of farming in EAA	The primary economic activity throughout the study area is agriculture. The Everglades Agricultural Area (EAA), located directly south of Lake Okeechobee consists of approximately 500,000 acres of highly productive agricultural land, the vast majority of which is under active sugarcane cultivation. Palm Beach County is the nation's leader in production of sugarcane, sweet corn, winter leaf crops and radishes and number two in winter vegetable production. In addition, citrus and pasture lands for livestock and dairy operations are in the watershed.
3.16 Recreational Resources **Fishing and Boating**	Recognize Belle Glade facilities.	The City of Belle Glade also has a marina and camp ground to access the lake off of Torey Island.

Draft HHD EIS Section	Purpose	Specific Comments and Clarifications
4.3 Land Use	Correct inaccurate and incomplete language regarding land use	For the past 100 years, the primary economic activity in this area has been agriculture. As discussed previously, ecosystem restoration projects are projected to be completed in areas south of the HHD project area designed to restore the hydrology and water quality in the Everglades Protection Area. According to the South Florida Water Management District's Lower East Coast Water Supply Plan, agricultural production south of Lake Okeechobee is projected to remain steady. As urban development continues to move west, there is an opportunity for the Glades community to grow in the light manufacturing, industrial development and distribution center areas. The tri-cities participate in the Lake Okeechobee Region Economic (LORE) alliance that has partnered with the Business Development Board of Palm Beach County in attracting new businesses to the Glades region. The former Glades Correctional Institute site is being actively marketed and several agricultural businesses have expanded in this region. Also, through the LORE/BDB partnership two additional employment centers are being built and several other leads are underway. Improvement to the local infrastructure has received both state and local funding to improve the area. Land use (Figure 4-1) for the northern part of the watershed (i.e., Kissimmee Upper Basin) will become increasingly developed as the Orlando-Kissimmee urban epicenter continues to sprawl. Existing population centers in the southern part of the watershed and along the perimeter of Lake Okeechobee are predicted to expand outward such that development along the entire rim of the lake would be nearly continuous.
4.4 Hydrology & Hydraulics CERP Central Everglades Planning Project (CEPP) – In Place	The water supply benefits of CERP are not carried forward in CEPP.	The purpose of the CEPP is to improve the quantity, quality, timing and distribution of water flows to the Northern Estuaries, central Everglades (Water Conservation Area 3 (WCA 3) and Everglades National Park (ENP), and Florida Bay.

Draft HHD EIS Section	Purpose	Specific Comments and Clarifications
4.4 Hydrology & Hydraulics SFWMD Northern Everglades and Estuaries Protection Program	Correct inaccurate and outdated information.	See comments for Section 1.9 Approvals.
4.5 Water Quality Surface Water	Correct inaccurate and outdated information.	See comments for Section 1.9 Approvals. The following is additional recommended language for this section: The most significant flows into Lake Okeechobee related to nutrient loading are from the northern Lake Okeechobee Basin, and not agricultural operations in general.
4.12 Socioeconomics 4.12.1	Correct statement regarding agriculture as economic driver	The basic economic drivers associated with high value integrated agricultural operations are expected to remain in place over time. Value added by agricultural businesses and industries will likely occur over the long term.
5.5. Water Quality **Surface Water Quality**	Recognize existing Corps commitments on monitoring wells for saltwater movement	This section should be updated to reflect previous commitments identified in: May 12, 2015 Memorandum to Florida State Clearinghouse from Chad Kennedy, et al, Florida Department of Environmental Protection, "Department of the Army, Jacksonville District Corps of Engineers – Draft Environmental Assessment for the Herbert Hoover Dike Supplemental Major Rehabilitation Report – Palm Beach County, Florida SAI # FL201503177229C"; February 8, 2016 letter from Palm Beach County, Mary Lou Berger, Mayor to Stacie Auvenshine, USACE, regarding "Herbert Hoover Dam Draft Environmental Impact Statement" (contained in Index to USSC comment letter); and February 12, 2016 Letter from Rebecca Elliott, Florida Department of Agriculture and Consumer Services to Department of Environmental Protection, Florida State Clearinghouse, "Department of the Army, Jacksonville District Corps of Engineers – Draft Environmental Impact Statement (EIS) for Herbert Hoover Dike (HHD) Dam Safety Modification Study Report- SAI# FL2016010475C"

LAKE OKEECHOBEE
and
THE HERBERT HOOVER DIKE

A Summary of the Engineering Evaluation of Seepage and Stability Problems at the Herbert Hoover Dike.

The Good Life

Lake Okeechobee and the Herbert Hoover Dike Are Important to South Florida.

Here's Why:

It's the second largest freshwater lake that lies entirely within the United States.

To the north, cowboys on horseback raise cattle. To the east, vacationers in RVs make camp.

There are deer. Turkey. Wild boar. And scores of bird watchers seeking a peek at the rare Everglades Kite.

Miles and miles of citrus groves play neighbor to a sugarcane industry that generates thousands of jobs and more than $1.5 billion annually for the economy of the region.

You'll find tourists from around the world sightseeing and fishing for bass.

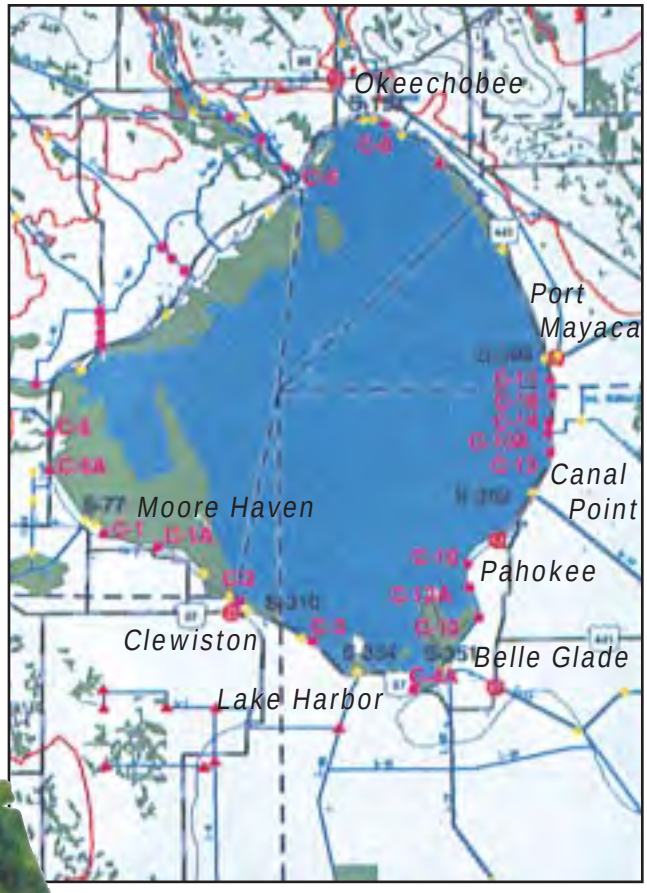
Seminoles named it "Big Water." And more than 40,000 men, women, and children living in communities like Lakeport, Moore Haven, Clewiston, Lake Harbor, South Bay, Belle Glade, Pahokee, Canal Point, Port Mayaca, Indiantown, and Okeechobee call it home.

Fact: *Sixteen species known to occur in the vicinity of the lake are currently listed as threatened or endangered by the U.S. Fish and Wildlife Service.*

The People.
The Land.
The Water.

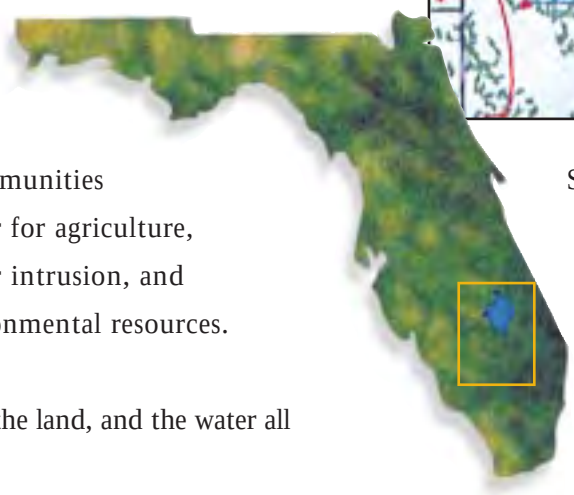
The good life is protected by the Herbert Hoover Dike.

The Herbert Hoover Dike is an earthen dike system that encircles Lake Okeechobee for 140 miles.



The dike system has numerous water control structures to provide flood protection, navigation, recreation, freshwater for the communities of south Florida, water for agriculture, prevention of saltwater intrusion, and enhancement of environmental resources.

In short — the people, the land, and the water all depend on each other.



Since 1984, the U.S. Army Corps of Engineers, Jacksonville District, has written several engineering reports documenting that areas of the dike are prone to water seepage and stability problems.

And these problems may put the good life at risk.

"Records covering the performance of the dike system during major flood events indicate that the embankment and foundation of the structure are susceptible to significant seepage and piping erosion when the reservoir reaches critical levels during these flood events."

— Excerpt from *Expert Review Panel Report of Findings and Recommendations*, October 1, 1998

The Problem

Breach of Florida Power and Light Cooling Reservoir, 1979. Failed due to piping of material from the foundation of the dike.

Here's What We Have Found:

For the layman, the problem with the Herbert Hoover Dike when the lake reaches high water levels can be summed up in two words:

"It leaks."

An overly simplified description of the problem? Perhaps. Yet, it's true. When the lake is high, water finds its way through the dike from lakeside to landside – sometimes eroding soil from within or beneath the dike.

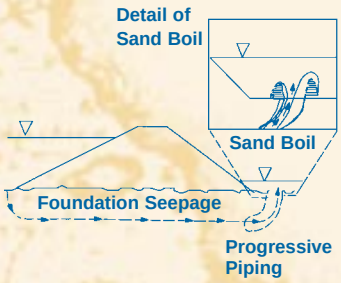
This erosion of soil is technically known as *piping*. The piping of the soil creates a continuous open path through which water can erode even more soil. If this soil erosion is allowed to continue, it will eventually create large cavities in the dike.

And those large cavities — with water from the lake running through them unimpeded — create a serious risk that the dike will breach, with large releases of water from Lake Okeechobee flooding the surrounding lands.

Building the Dike

Throughout its history, the dike was designed, built, and maintained within the accepted

FOUNDATION PIPING



Piping — *the erosion of soil caused by water. As the soil erodes, it creates an open path (a "pipe") through which water can pass. As more and more soil erodes, the pipe gets larger.*

Sandbagging and piping at Lake Harbor showing mound of piped material that is flowing from the dike.

standards existing at the time — beginning in the 1930s.

The dike was originally constructed using hydraulic dredge and dragline techniques which concentrated deposits of pervious shell, rock, and gravel within the dike.

The hydraulic dredging methods used to construct the first levees were state-of-the-art and fully acceptable in the 1930s; however, due to an improved understanding of material properties and seepage mechanisms, those same methods would not be acceptable today.

In addition, the foundation beneath the dike has pervious layers of limestone, sand, gravel, and shell.

As a result of the pervious zones described above, some areas of the dike are prone to excessive seepage.

Sinkhole on levee crest at Lake Harbor site.

"The causes of the seepage and piping are related to the geometry, materials, and methods used in the construction of the dike and in the complex and variable geology comprising the foundation of the dike system."

— Excerpt from *Expert Review Panel Report of Findings and Recommendations*, October 1, 1998

"Our seepage analysis indicates that dike seepage gradients increase non-linearly as the lake elevation rises above +20 feet. In its present geometry, condition, and without extensive maintenance activity, it is our opinion that seepage and piping related dike breach is likely as the lake elevation rises above +20 feet."

— Excerpt from the conclusions of URS Greiner Woodward-Clyde, an engineering consultant firm hired to perform an independent analysis of dike conditions

What is a Dike Failure?

When we say dike failure, we mean a breach or open gap in the dike. Waters from Lake Okeechobee would pass through the breach — uncontrollably — and flood adjacent land.

Some dike problems may be harmless – such as the formation of springs and wet areas along the landward toe of the dike. These conditions are undesirable but do not pose immediate safety hazards.

We have found, during recent high water events, that numerous areas of the dike have seepage and piping problems when the lake elevation reaches 18.5 feet.

THE DANGER: Flooding would be severe and warning time would be limited. And with 40,000 people living in the communities protected by the Herbert Hoover Dike, the potential for human suffering and loss of life is significant.

It's a risk we can't afford to take.

How Bad is It?

There is limited potential for dike failure with lake elevations lower than 18.5 feet. But as the lake level rises, so does the risk of dike failure.

Our analytical studies show a dike failure would be likely at one or more locations if the water elevation in Lake Okeechobee reached elevation 21 feet.

The lake would reach elevation 21 feet during a 100-year flood event.

Statistically, a 100-year flood event would be expected to happen on average once every 100 years. But in reality, a 100-year flood event can happen during any given year.

City of Pahokee, on the east side of Lake Okeechobee.

In fact, Lake Okeechobee reached an elevation of 18.6 and 18.5 — both 30-year events — in 1995 and 1998. That's two 30-year events in only four years.

Note: The lake elevations referred to in this report are static lake levels that last for weeks, not a hurricane wind driven storm surge that lasts for only a few hours.

When Will the Dike Fail?

There is limited potential for a dike failure with lake levels as low as 18.5 feet. The likelihood of a failure increases at higher lake levels. At a lake level of 21 feet, a dike failure would be likely at one or more locations.

What the World Experts Say:

The U.S. Army Corps of Engineers, Jacksonville District, convened an expert panel of five of the world's foremost authorities in Geotechnical Engineering. Here is a portion of their conclusions:

"We believe the deterministic and probabilistic models developed by URSGWC and the (Jacksonville) District are based on the best information available. Further, we believe the conclusion they have drawn from their analyses — that there is a very serious risk of catastrophic failure and loss of the reservoir due to piping — is reasonable.

"Considering the past performance of the dike system and our assessment of the probable performance of the dike under the more critical 100-year flood event, as well as the high potential for downstream catastrophic loss of life and damage due to dike failure, the Panel considers the dike to be unsafe from a piping and erosion point of view, and recommends that actions be taken without further delay to initiate remedial design and construction of repairs to bring the dike up to satisfactory condition."

Members of the Expert Review Panel for the Herbert Hoover Dike:

John A. Bischoff, P.E.
Senior Managing Principal and Vice President for Woodward-Clyde Consultants

J. Michael Duncan, Ph.D., P.E.
University Distinguished Professor, Department of Civil Engineering, Virginia Polytechnic Institute and State University

Ronald C. Hirschfeld, Ph.D., P.E.
Associate Professor of Civil Engineering
Massachusetts Institute of Technology (Retired)

Dr. J.B. (Hans) Sellmeijer
Scientific Specialist, Delft Geotechnics,
The Netherlands

Thomas F. Wolff, Ph.D., P.E.
Associate Professor and Associate Dean,
Department of Civil and Environmental Engineering, Michigan State University

The Precedence

Disaster Led to the Building of the Dike

View from Pahokee water tower before the dike was built, circa 1935.

The ravages of nature struck Lake Okeechobee in September of 1926.

There was no Herbert Hoover Dike. Just a small muck dike that had been made to keep the lake from drowning crops.

Hurricane winds thrashed the town of Moore Haven with a wall of water that killed nearly 400 people.

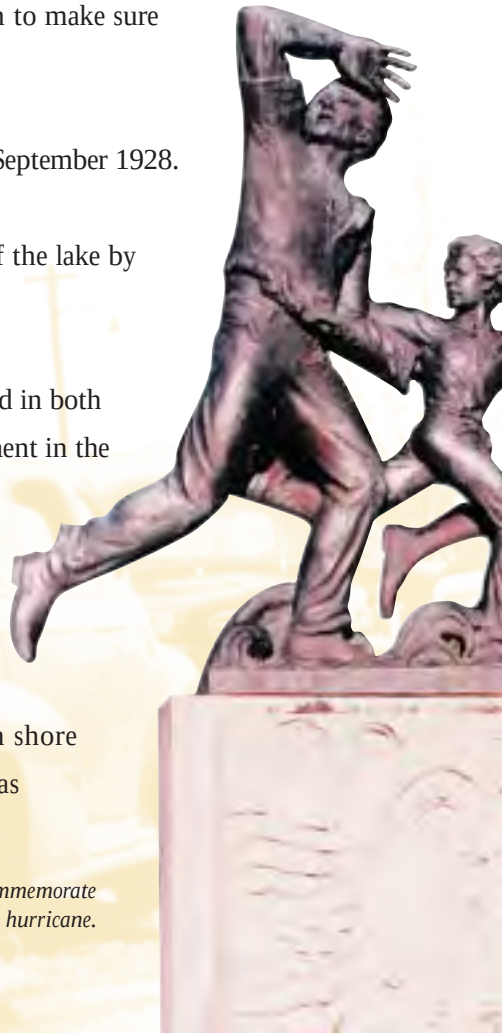
Engineers, lawyers, and politicians looked for a solution to make sure that kind of tragedy never happened again.

But before one was reached, another hurricane struck in September 1928.

Nearly 2,000 people were killed by waters driven out of the lake by hurricane winds.

These tragedies — commemorated by monuments erected in both Clewiston and Belle Glade — prompted federal involvement in the provision of flood protection to lakeside communities.

The result was the Corps of Engineers construction of the Herbert Hoover Dike, which began in 1932. The 68-mile south shore was completed in 1936, and an additional 16-mile north shore was completed in 1938. Subsequent construction has increased the dike length to 140 miles.



Monument in Belle Glade to commemorate the 2,000 victims of the 1928 hurricane.

100-Year Event — *an event that happens an average of once every 100 years. (For example: Every year Lake Okeechobee has a 1 in 100 chance of reaching a level of 21 feet.)*

The Corps has maintained a diligent schedule of maintenance and repair ever since. Yet, even so, time has taken its toll.

May 1974 – North Shore Dike Breach

A section of the north shore dike extends for about 6.5 miles from Lake Okeechobee along the north bank of the Kissimmee River.

In 1974, a portion of this dike at the intersection of a drainage canal breached due to piping.

Fortunately, due to low lake levels at the time, the breach of the dike resulted in a flood release from the canal that flowed into Lake Okeechobee rather than out of the lake.

As a result, only the dike and a water control structure were damaged, and there were no other flood-related damages.

1979 Florida Power & Light Dike Failure

The nearby Florida Power and Light Cooling Reservoir Dike failed in 1979 causing considerable flooding damages. It failed as a result of piping through its foundation.

Similar foundation conditions and piping potential would exist for the portions of Herbert Hoover Dike north of Port Mayaca.

Flooded Main Street in Clewiston due to hurricane rains, circa 1948.

"There are numerous case histories of piping failure where seepage-control measures were not present, as is the case at Herbert Hoover Dike. Two piping failures have occurred in the immediate vicinity (northwest corner of Herbert Hoover Dike and Florida P&L) with differential heads of approximately 14 feet. Seepage and piping failures may occur without warning. They may result, in part, from accumulated damage from previous high water events and/or high water duration, in addition to differential head."

— Excerpt from *Expert Review Panel Report of Findings and Recommendations*, October 1, 1998

The Threat

High Lake Levels Create an Unacceptable Risk

The subtropical climate of the Lake Okeechobee area produces steamy summers and dry winters.

And it rains a lot — between 55 and 60 inches every year.

Any excessive rainfall would result in higher lake levels if it falls directly on the lake or within its drainage basin.

There is no reason to be afraid of a spring shower. But if it rains . . . and rains . . . and keeps raining — like it often does in South Florida — stress is placed on the dike as the rain causes lake levels to rise.

And Then There's Hurricane Season

It happens — without fail — every year.

From June 1 to November 30, the people who live in the communities around Lake Okeechobee stay prepared. They stock up with extra food, drinking water, batteries — all the essentials, just in case a storm hits. And they trust in the Herbert Hoover Dike to help protect them.

The effects of a hurricane — with its strong winds, heavy rains, and storm surges on the lake — could contribute to loss of life and property.

But the dike has been stressed during recent high water events — even without a hurricane.

High Water Event — 1995

In the late summer and early fall of 1995, the lake rose to elevation 18.6 feet. The dike showed substantial distress, but it did not breach.

However, several significant problem areas were identified.

Cane field in Clewiston, 1998.

Seepage — *the movement of water through soil or rock.*

Inspection teams discovered excessive seepage, piping, and sinkhole formation on the dike crest. Cloudy water exiting the landward toe of the dike and the accummulation of fine sands indicated that internal erosion of the dike was occurring.

Emergency repairs (construction of "seepage berms") were completed in time for the 1996 hurricane season, but these repairs were not intended or designed to be a permanent solution to the seepage and stability problems.

High Water Event — 1998

In March of 1998 the lake rose to elevation 18.5 feet. Again, it did not fail.

But overall conditions continued to worsen. Areas not repaired from the 1995 high water event exhibited additional boil formation and seepage — presumably due to cumulative damage that occurs with each successive high water event.

The Risk is Unacceptable

It could be a hurricane, a tropical storm, or just lots of heavy rain. The risk increases significantly anytime the lake reaches an elevation above 18.5 feet.

Major Rehabilitation Evaluation Approach

The Army Corps of Engineers' goal is to ensure that a reliable dike system is provided along the perimeter of Lake Okeechobee. That's why we have conducted a Major Rehabilitation Evaluation of the Herbert Hoover Dike.

For the Major Rehabilitation Evaluation, we performed engineering, economic, and environmental analyses for the entire Herbert Hoover Dike system. This approach has allowed the Army Corps of Engineers to:

- Determine that rehabilitation measures related to seepage and stability problems are warranted
- Provide economic justification for the rehabilitation measures
- Address environmental issues related to the proposed rehabilitation
- Provide a technical supporting document for a comprehensive Project Cooperation Agreement
- Allow direct progression into preparation of Plans and Specifications for rehabilitation of Reach 1

The evaluation has indeed indicated that rehabilitation efforts are warranted; therefore, upon approval of the Major Rehabilitation Evaluation Report, a series of additional efforts will be initiated if appropriate funding is available.

The Plain Truth

What Are Our Options? And What Happens if We Do Not Fix the Dike?

If the problems with the dike are not corrected, we would continue to inspect the dike during high water events. And we would do whatever was humanly possible to prevent a dike breach.

We would continue to perform maintenance and operate the dike as we have done historically.

But that means the people and property protected by the Herbert Hoover Dike would continue to be subjected to an unacceptable risk of dike failure. Also, the best efforts of the Corps of Engineers, the South Florida Water Management District, and the local emergency management agencies may not be enough to avert a dike failure if the lake rises above 19 feet.

So what are our options?

We Could Keep the Lake Below Elevation 18.5 Feet

This may seem like an easy answer; however, our ability to remove water from the lake is limited by the capacity of available outlet facilities.

In short, we can only lower the lake at a rate of about 0.4 of an inch per day under ideal conditions. But during extreme rainfall events, this would not be enough. The amount of water entering Lake Okeechobee would be much greater than the amount of water we could discharge.

The lake elevation would actually rise even if we were discharging water from the lake at the maximum possible rate.

We could increase our outlet capacity by building a new outlet channel, but the costs would be much greater than our proposed rehabilitation of the dike.

We Could Permanently Lower the Lake

Unfortunately, even if we were to substantially lower the lake, during a 100-year flood event, the water comes into the lake much faster than we could remove it. The lake level could still rise to an elevation that could result in a dike failure.

Besides, maintaining unusually low lake levels — or draining the lake entirely — would have significant socioeconomic and environmental consequences.

During high lake stages, large regulatory discharges are sometimes made from the lake to the estuaries to avoid loss of life and property associated with high stages and hurricane-generated waves and tides. Any prolonged releases of large freshwater discharges, including urban and agriculture basin runoff, can cause adverse effects to the estuarine system.

Therefore, lake levels must be maintained within reasonable levels.

We Could Build Relief Wells

Relief wells are specialized water wells that would be constructed to drain seepage water from within the dike or from the foundation of the dike before the seepage water can exit on the surface.

When seepage water is prevented from exiting on the surface, no piping of dike materials is possible.

The problem with this solution is that it will only work for certain portions of the dike.

We Could Build Ring-Dikes and Increase the Tailwater

We could build a second smaller dike parallel to and landward of the Herbert Hoover Dike. We would then raise the water level between the two dikes (tailwater). This would decrease the differential seepage pressure across the big dike. Decreasing the seepage pressure would prevent the piping of materials from the Herbert Hoover Dike.

This alternative was investigated in significant detail; however, the estimated level of protection it would provide is not adequate.

Or We Could Build a Cutoff Wall to Hold Back the Lake Waters

A cutoff wall would require digging a trench through the dike and into the dike foundation. This trench would then be filled with clay. The clay would not allow the passage of seepage water from the lake through the dike.

With this seepage water cut off, piping of materials from the dike would not be possible.

Although this alternative may be very effective, it is expensive. The estimated cost is $16 million per mile.

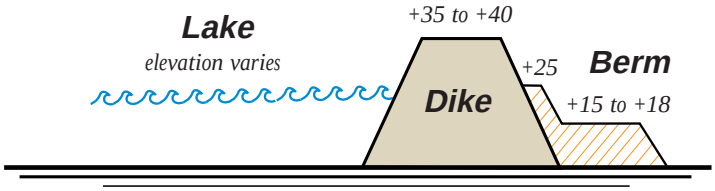
Also, this alternative could have detrimental impacts on groundwater flows immediately adjacent to the dike.

"The [Jacksonville] District's vigilance in taking emergency action in 1995 may have prevented a breach. After the 1995 event, they made very diligent efforts to staff and train a surveillance team and to react to observed distress.
They also constructed effective seepage control berms, filters, and drains after the event. These measures performed well in the 1998 high water event. The importance of this effort cannot be overemphasized."

— Excerpt from *Expert Review Panel Report of Findings and Recommendations*, October 1, 1998

The Recommended Solution

Cross Section of Dike



Typical dike section for southeast portion of the lake, not to scale, elevations shown are in feet.

This is It:

We are currently proposing for approval a solution which involves the construction of a seepage berm, with relief trench and drainage system, along the landside toe of the dike.

In other words, we would build a filter that lets the water through without allowing the dike material to pass through with it.

It's cost-effective, provides good flood protection, and doesn't harm the environment.

We are pursuing this solution for the first phase of construction along 22 miles of the southeast shore. This first phase — one of eight segments we have prioritized due to the great length of the dike — is where the most severe seepage and stability problems occur.

Here's the Technical Stuff:

The five-foot thick berm will consist of filter sand

Construction site at culvert No. 3 east of Clewiston - An example of part of the 10 million dollars of construction work already completed.

Fishing pier on Lake Okeechobee.

and gravel and will contain a perforated culvert for the collection and transfer of seepage waters.

The berm will prevent piping of soil from the embankment and foundation. A relief trench below the berm will control uplift pressures and prevent heaving at the landward toe of the embankment. It will also intercept and transport seepage which would otherwise emerge uncontrolled landward of the embankment.

Sound complicated?

Think of it this way: It's like making coffee. The water passes through, but the grounds are retained by the filter.

And the people living around Lake Okeechobee stay protected.

"We recommend that the Corps of Engineers stockpile repair materials at strategic locations to control piping that may develop along those stretches of the dike that showed signs of distress during the high-water period in 1998. Such repair materials would include, but not be limited to, filled sandbags and soils that satisfy filter criteria and that could be used to build weighted filters over areas where springs discharge soil."

— Excerpt from *Expert Review Panel Report of Findings and Recommendations*, October 1, 1998

The Need

Time. Money. Dedication.

Here's the bottom line:

For the first phase of construction — 22 miles along the southeast shore of the lake from Belle Glade to Port Mayaca —the estimated cost is $67 million.

The rehabilitation of other portions of the dike will be addressed in subsequent engineering reports.

It Will Take Time

The first phase of construction will take about four years.

If rehabilitation is required along all of the south and east shores, we estimate the total construction time will be 12 years.

We could construct the needed improvements more quickly if funds were available to support simultaneous construction efforts.

The Happy Ending

For the People, the Water, and the Land

The Herbert Hoover Dike was built to protect the people who live around Lake Okeechobee.

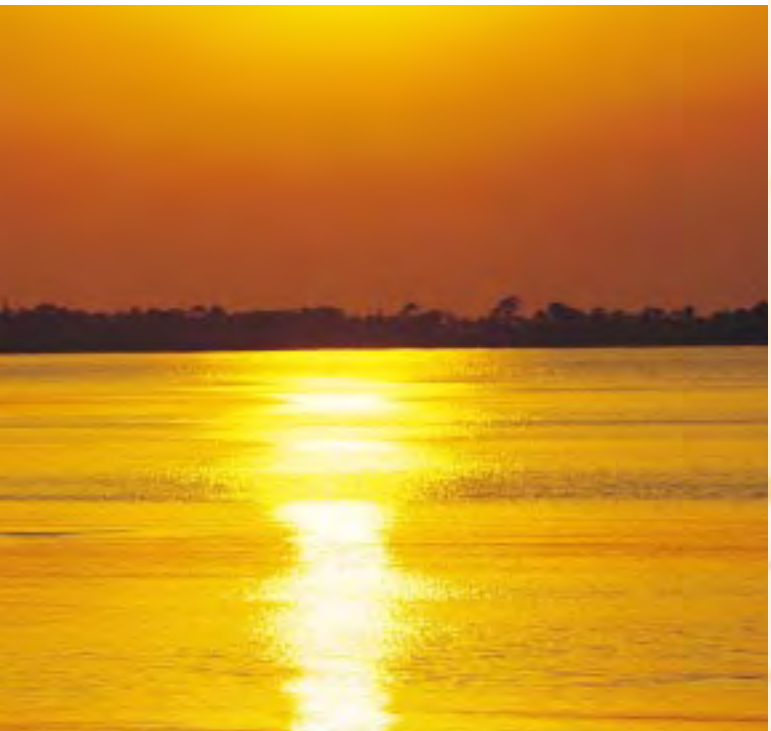
The dike has provided significant benefits to the people and economy of South Florida for 60 years.

But our engineering studies and the recent two high water events have demonstrated that the dike does not provide the required level of flood protection when lake levels exceed 18.5 feet.

But it can. We have the solution.

We can protect the good life — the heart-stopping beauty of Lake Okeechobee — for the people who live here . . . work here . . . play here.

For their children. And for future generations.



"We recommend that the Jacksonville District, U.S. Army Corps of Engineers review their Emergency Action Plans to ensure that timely warnings can be issued and emergency actions taken in case of a breach or imminent breach anywhere along the dike. The District should review their plans for stockpiling materials and for mobilizing earthmoving equipment and operators to plug any breaches that may develop."

— Excerpt from *Expert Review Panel Report of Findings and Recommendations*, October 1, 1998

Questions & Answers

1. Is the dike going to fail?

There is limited potential for dike failure with lake levels as low as 18.5 feet. The likelihood of a failure increases at higher lake levels. At a lake level of 21 feet, a dike failure would be likely at one or more locations.

2. Wasn't the dike fixed in 1995?

In the past five years, we have completed $10 million worth of construction that was directed toward problem areas. Those critical repairs were only a partial solution to the seepage and stability problems — more work is needed.

3. What is being done about the problem now?

Our plan is to diligently inspect the dike during high water events. In a joint effort with the South Florida Water Management District and local authorities, we will inspect the dike system daily when lake levels meet or exceed elevation 18.5 feet. We will direct all available resources toward the early identification and rapid repair of any problem areas.

If conditions began deteriorating in spite of our efforts to control the seepage, we would recommend evacuation of the threatened areas.

4. How long have you known about this condition?

There have been some questions about the reliability of the dike since 1984. Our engineering studies, along with our observations of the dike during the 1995 and 1998 high water events, have demonstrated that those concerns were warranted.

5. Why was an unsafe dike built in the first place?

The Corps would not intentionally build an unsafe dike. The dike was built in compliance with the construction standards that existed in the 1930s. Recent engineering analysis, along with the observed high water damage to the dike, demonstrate that the levee will not withstand sustained high lake levels.

6. If the dike fails, where would it fail?
Our engineering studies indicate the southern and eastern portions of the dike system are more likely to fail than the northern and western portions of the dike.

7. Is my community at risk of flooding?
The Corps of Engineers have developed flood maps that show the areas that would be flooded if the dike were to break. If a dike break occurred near a population center, that area would be flooded.

8. How much warning would there be?
In general, we would expect a warning time of 24 to 48 hours prior to a dike failure that releases water from the lake; however, under some conditions the warning time might be longer, and under others, a dike failure could occur with no warning.

Should an emergency occur, instructions for public saftey will be issued through the local Emergency Management Agency.

The primary objective of our high water inspection procedures is to identify any problems as quickly as possible. If problems are detected soon enough, remedial measures can be taken in an effort to prevent a dike failure. However, there are over 140 miles of levee within the dike system, and inspection resources and manpower are finite. Also, there exist some possible failure scenarios which would be difficult, or impossible, to detect prior to failure. If a dike failure occurred, the warning time would depend on factors such as the nature and mechanism of the failure, where it occurs, and at what stage the problem was detected.

9. How could such a massive structure fail?
The massiveness of the structure would argue for the inherent safety of the dike, but there are specific features within the dike that could contribute to a failure.

For example, substantial portions of the levee were constructed out of shelly material that is highly pervious to water. Water seeping through these shelly materials during the 1995 and 1998 high water events caused erosion of the dike material. This type of erosion creates cavities within the dike which increase the potential of a dike failure.

10. How will the public be informed about potential failures of the dike?
The Corps will keep all interested parties informed about seepage problems along Herbert Hoover Dike and efforts to remedy those problems. If high water conditions arise in the future, prior to construction of the remedial measures, the Corps will coordinate with local emergency management agencies and issue press releases to inform the public of our concerns and proposed actions. Individuals seeking information about any Corps activities can contact the Jacksonville Corps of Engineers' Public Affairs Office. The phone number is (904) 232-1650.

This publication is furnished by:

U. S. Army Corps of Engineers
Jacksonville District
P.O. Box 4970
Jacksonville, Florida 32232-0019
904-232-1650

Index to the Documents to Supplement the Record on the "Draft Environmental Impact Statement on the Herbert Hoover Dike Dam Safety Modification Study" (December 15, 2015) Drafted by the Department of the Army; U.S. Army Corps of Engineers, Jacksonville District

Submitted on behalf of the United States Sugar Corporation

February 23, 2016

EXHIBIT B

Index to the Documents to Supplement the Record on the "Draft Environmental Impact Statement on the Herbert Hoover Dike Dam Safety Modification Study" (December 15, 2015) Drafted by the Department of the Army; U.S. Army Corps of Engineers, Jacksonville District

February 23, 2016

No.	Document Description
001	0000-00-00 Summary of the Engineering Evaluation of Seepage and Stability of HHD
002	2015-04-28 HHD Draft EA Clearinghouse Comments (FDACS)
003	2015-04-28 HHD Draft EA Clearinghouse Comments (FDOT)
004	2015-05-12 Memorandum to State Clearinghouse from DEP 15-7229C DEP Comments
005	2015-11-00 HHD - Integrated Delivery Schedule
006	2016-01-26 HHD DSMS Public Meeting

Auvenshine, Stacie SAJ

From: Nicholas Allen <nballen7249@eagle.fgcu.edu>
Sent: Tuesday, February 23, 2016 9:23 PM
To: HHDEnvironment, SAJ
Subject: [EXTERNAL] Lake Okeechobee Comment

Dear Stacie Auvenshine,

I am writing in regards to the Lake Okeechobee water quality control problem. Growing up on the St. Lucie River and currently going to Florida Gulf Coast University in Fort Myers, I have seen what the waters on both sides of the state look like when Lake Okeechobee water is being discharged. I understand it is a complicated problem because it affects so many people and ecosystems. My question is why has it taken so many years to find a more permanent and sustainable solution?

I have read the Draft Environmental Impact Statement(December 2015), and know about the NEPA process; so I can see why it takes longer than most people unaware of all the processes it takes to implement a program would assume. But I don't understand why this process hasn't been expedited, since it such a huge environmental problem. And how much do the big sugar corporations south of Lake Okeechobee affect decisions in regard to water management of Lake Okeechobee waters? Thank you for taking the time to read these questions and hope you are able to clarify these matters for me.

Sincerely,

Nicholas Allen

Auvenshine, Stacie SAJ

From: Nicholas Culligan <nickculligan@gmail.com>
Sent: Monday, February 22, 2016 8:20 PM
To: HHDEnvironment, SAJ
Subject: [EXTERNAL] Public Comment for Herbert Hoover Dike Dam Draft EIS

To Whom It May Concern:

My comment concerns Chapter 370, Living Saltwater Resources. This section states that the State must preserve, manage, and protect any and all of the living saltwater resources and surrounding human activities while completing the project. The consistency statement says that the project is located inland so there would be no effect on the downstream saltwater resources. However, this project is directly affecting Lake Okeechobee which is the major contributor of fresh water to South Florida's nearshore environments and estuaries. The statement mentions that this is only a rehabilitation of the HHD embankment and will not change the Lake Okeechobee Regulation Schedule. Because of that, the EIS says that the project is not applicable to this chapter. However, I think it is very applicable. Even though there is not a change to that water schedule, any kind of development has an effect on the environment around it, especially development concerning a large water supply. The construction that takes place on these dikes will have an effect on Lake Okeechobee and in turn will somehow effect the estuaries and nearshore environments that receive water from it. Even if the effect is minimal, I think that there is a big enough chance that something could happen that it deserves more research into that topic. Instead of this section not being applicable to the project, there should be at least some form of caution when looking at these possible effects. It is much better to do a little extra work now to absolutely make sure that there will be no effect rather than to assume there will be no effect and there to be one. We have seen recently how much the lake effects the nearshore environments with all of the water releases recently (red tide, too much freshwater in the nearshore areas), so it would be beneficial to prevent anything like that from happening by an accident in this project.

-Nicholas Culligan

EIS Public Comment

Has there been any studies of the water quality throughout the Caloosahatchee River or the St. Lucie River, into where they lead out into the Gulf of Mexico and the Atlantic Ocean? Is there any way that before releasing any of the water into the two rivers that we can treat the water and have similar conditions the two rivers have? Has the water quality even in Lake Okeechobee been analyzed and compared to the two rivers? Instead of just releasing the water that could be toxic and can effect other areas and organisms, having the same water quality through each water way can protect the civilians, as well as the organisms living there.

Auvenshine, Stacie SAJ

From: Rebecca May <rkmay3145@eagle.fgcu.edu>
Sent: Sunday, February 21, 2016 6:29 PM
To: HHDEnvironment, SAJ
Cc: Gable, Frank
Subject: [EXTERNAL] Comment on the Herbert Hoover Dike Dam Safety Modification Study EIS

Good evening Ms. Auvenshine,

I was able to able to obtain a copy of Governor Rick Scott's letter in regards to the flooding of the Everglades Water Conservation Areas and the releases of water from Lake Okeechobee and also the draft Environmental Impact Statement for the Herbert Hoover Dike Dam Safety Modification Study. Under the Environmental Consequences of the Tentatively Selected Plan section of the E.I.S. there is a statement that says "there is potential for disturbance to the species during construction activities." Is there anything in place or in the works that aims to reduce these disturbances during construction?

Thank you,

Rebecca May

COMMENTS BY ROBERT M NORTON

NOTES #1

Robert Norton
4200 US Highway 441 S.E.
Okeechobee, FL 34974

NOTES CULVERTS (NO LONGER USED)
ABENDMENTS
REACH # 5 AREA
C-7
~~TEAR~~ TCC TAYLOR CREEK CULVERT
C-9 NOTE ALSO OTHER AREAS
ACTION TAKEN TO
(A) REDUCING RISKS TO TOLERABLE LEVELS
(B) REMOVE STRUCTURE
(C) REPLACE STRUCTURES
(D) REMOVE OR FILL IN CULVERTS APPROVED
SYSTEM-WIDE STRUCTURAL ALTERNATIVES

#1
REMEDIATION OF SOIL CONTAMINATION WITH AGRICULTURE INDUSTRY CHEMICALS WILL BE REQUIRED
#2 PRIMARY LAND USE IN THE LAKE OKEECHOBEE REGION IS AGRICULTURE RUN-OFF WATER

NOTES #2

#3 FISHEATING CREEK FROM THE HEADWATERS NEAR LAKE JOSEPHINE THE CREEK DISCHARGES UNCONTROLLED AND FLOWS SOUTH FOR 32 MILES, THEN EAST FOR 23 MILES TO DISCHARGE INTO LAKE OKEECHOBEE NO WONDER THEY CAN NOT MEET SET TMDL OF 140NT - 40PPB. THIS DISCHARGE UNCONTROLLED IS VERY VERY POLLUTED PEOPLE

#4 WETLANDS LAKE OKEECHOBEE AREA THOUGH GREATLY REDUCED IN AREA AND QUALITY THROUGH HUMAN IMPACT BY IMPROVED PASTURES THERE AGRICULTURE..

#5 DID YOU KNOW THAT WATER FLOWS FROM NORTH OF LAKE OKEE TO SOUTH INTO LAKE OKEECHOBEE DUE TO THE FACT WE HAVE A ELEVATION DROP OF 36 FOOT TO LAKE OKEECHOBEE S-65 TO S-65E

NOTES #3

#6 WATER QUALITY IN OKEECHOBEE IS VERY POOR DUE TO AGRICULTURE RANCH RUN-OFF. ALSO IT IS AFFECTED BY OTHER AGRICULTURE OPERATIONS. SUCH AS. CITRUS, DAIRIES, ROW CROPS SOD FARMS., TREE PLANTIONS THAT HAS RUN-OFF WATER TO OUR LAKE OKEECHOBEE.

#7 WE HAVE HORSE FARMS, PIG FARMS, CHICKEN FARMS THAT ALSO IMPACT WATER QUALITY. WE NEED TO PUT IN PLACE SOMETHING BESIDES BMP'S AS THE BMP PROGRAM IS VOLUNTARY SYSTEM, NOT ENFORCED BY LAW.

#8 THE STATES 40E-61 AND 40E-63 IS NOT ENFORCED. AS I CAN SHOW YOU WHERE CATTLE ARE, IN CONTACT WITH FLOWING WATER TO LAKE OKEECHOBEE.

NOTES #4

#9 WE NEED TO PUT MORE INTREST INTO COMPLETEING MORE THAN 50 INDIVIDUAL PROJECTS LAKE LEVELS SHOULD BE SET AT 12.5 TO 15.5 FOR LAKE OKEECHOBEE REGULATION SCHEDULE.

#10 WE NEED TO STOP SEA PLANE'S LAND AND TAKE OFF FROM LAKE OKEECHOBEE. REMEMBER LAKE OKEECHOBEE IS A CLASS #1 DRINKING WATER SUPPLY PEOPLE ONE ACCIDENT AND WE HAVE FUEL IN OUR DRINKING WATER THEY CAN PRACTICE AT SEA OR OTHER LAKES THAT ARE "NOT" A DRINKING WATER SUPPLY SIR

#11 A VERY GOOD IDEA ON THE INTERNAL DRAINAGE SYSTEM. I LIKE THAT THE SEEPAGE WATER IS COLLECTED, FILTERED AND SAND FILTER SYSTEM PAGE 4 2-29 FIG 2-17

NOTES #5

#12 SURFACE WATER USE NEEDS TO BE PERMIT HAS TO MAY 100P HOLES, NEED TO MORE ACTION TO CONTROL. ALSO THE GROUND WATER NEED'S MORE CONTROLS SET FOR USE AGRICULTURE OVER USE.

#13 BACK PUMPING NEEDS TO STOP AND ONLY FLOOD WATER PUMPED OUT OF LAKE NOT INTO LAKE.

#14 I AGREE WITH THE CUT-OFF WALL SYSTEM VERY GOOD.

#15 WATER QUALITY WILL BE IMPROVED IF WE FILTER AGRICULTURE RUN-OFF WATER TO LAKE OKEECHOBEE. THE STATE WILL NEVER MEET THE SET TMDL 140MT-40PPB TO LAKE OKEECHOBEE BECAUSE OF FISH EATING CREEK BEING A UNCONTROLLED DISCHARGE.

MY POINT OF VIEW YOUR

NOTES #6

BOOK I RECEIVED IS VERY GOOD A LOT OF FINE INFORMATION. AS I TRAVEL AROUND THE LAKE I SEE THE CUT-OFF WALL WORK. I AM SURE IT WILL WORK AND BE A GOOD STRUCTURAL MEASURE I ALSO LIKE FLOOD WALL AND ARMORING TO REPLACE OLD CULVERT REMOVALS. NOT IN USE ANY MORE. ANY TIME I CAN HELP YOU WITH MY PUBLIC COMMENTS PLEASE WRITE ME AS I DO NOT OWN OR OPERATE A COMPUTER AT ALL. SNAIL MAIL ONLY PLEASE.

Robert M. Norton
Veteran
4200 U.S. Hwy. 441 SE
Okeechobee, Florida 34974

Robert M Norton
ECOSYSTEM WATCH
LAKE OKEECHOBEE

Auvenshine, Stacie SAJ

From: Rudy Kronauge <rudy.kronauge@gmail.com>
Sent: Tuesday, February 23, 2016 8:57 PM
To: HHDEnvironment, SAJ
Subject: [EXTERNAL] HHDDSMS Public Comment

To Whom it May Concern,

I am writing to give public comment regarding the Herbert Hoover Dike Dam Safety Modification Study. As a Ft. Myers residence and FGCU Marine Science major, the issue of the current Lake Okeechobee water levels and the subsequent releases down the Caloosahatchee and St. Lucie rivers are of great concern to me. While I understand much of this issue has been misreported and skewed by the media, there are many legitimate concerns being buried in the process. On issue 10 in the study, the consistency statement specifically states that because the proposed project is located inland, it will have "no effect on saltwater resources either directly or indirectly through discharge downstream". This statement is in direct conflict with the common knowledge regarding rates of seagrass loss and oyster die-offs in the Ft. Myers/Sanibel area due to low salinity levels and decreased sunlight penetration due to turbidity resulting from river discharge..

Equally false is the consistency statement in issue 13, which states "this work does not involve the transportation or discharge of pollutants", when in fact it has been shown that the discharge waters do contain excess nitrogen and phosphorous from agricultural activities. Whether or not these elements are in high enough concentrations to account for any known environmental issues we have observed, they are still pollutants and therefore must be addressed.

I appreciate your time regarding this increasingly-important environmental issue in Southwest Florida. I hope that there is a solution that can be reached that benefits all parties involved. Thank you.

Sincerely,
Rudy Kronauge

Auvenshine, Stacie SAJ

From: Stephanie Palmer <sapalmer2349@eagle.fgcu.edu>
Sent: Tuesday, February 23, 2016 11:50 AM
To: HHDEnvironment, SAJ
Subject: [EXTERNAL] HHD Dam Safety Modification Study Concerns

Dear Stacie Auvenshire:

Using the rights given under NEPA, this email is to express some concerns that I have with the draft EIS regarding the Herbert Hoover Dike dam safety modification. Under the table of contents, when looking at the environmental effects, some effects do not state a TSP. Since a TSP is not mentioned for all of them, does that mean that there is no favored alternative? With regards to the dam safety, is it rated to sustain a major hurricane on the Saffir-Simpson scale?

In Appendix D, Chapter 258, State Parks and Aquatic Preserves, how can you be so sure that there will not be any impacts? And, how can you state that the chapter is not applicable, when there is definitely a possibility that there will be indirect impacts? Also, for Chapter 370 Living Saltwater Resources, it states that, “The proposed project is located inland and would have no effect on saltwater resources directly or indirectly through discharge downstream,” but how can that be true when water is shipped down C-43? For Chapter 388 Arthropod Control, what would be done if the zika virus was exposed?

Thank you for your time,

Stephanie Palmer

SEMINOLE TRIBE OF FLORIDA
TRIBAL HISTORIC PRESERVATION OFFICE
AH-TAH-THI-KI MUSEUM

TRIBAL HISTORIC
PRESERVATION OFFICE

SEMINOLE TRIBE OF FLORIDA
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TREASURER
PETER HAHN

February 24, 2016

Colonel Jason A. Kirk, P.E., District Commander
Department of the Army, Jacksonville District Corps of Engineers
701 San Marco Boulevard
Jacksonville, Florida 32207-8175

Subject: Herbert Hoover Dike Dam Safety Modification Study, Draft Environmental Impact Statement
THPO#: 0011642

Dear Colonel Kirk,

Thank you for consulting with the Seminole Tribe of Florida's Tribal Historic Preservation Office (STOF-THPO) regarding the draft Environmental Impact Statement (DEIS) referenced above. Because the project lies within an area that is culturally and historically significant to the Tribe we feel that it is important to offer the following comments about the DEIS.

- In the section of the document entitled Environmental Consequences of the Tentatively Selected Plan (found within the documents Executive Summary) no mention is made of possible adverse effects to cultural resources (including burial resources) or Tribal resources. While we recognize that this is just a brief summary of the documents conclusions we feel that it is important to mention early on that cultural and Tribal resources were taking into consideration.

- It seems to be a standard practice in NEPA documents when describing existing conditions for cultural resources (see Section 3.18 Cultural Resources) to focus on what is currently known, that is, to focus on previously recorded sites and resources. This is reasonable since it does describe current or existing conditions but it also tends to predispose people to assume that if there aren't any known resources in an area it is unlikely that any resources exist there. Clearly this is not the case, and we caution against relying too heavily on utilizing the number of previously recorded sites within an area as predicting whether or not any unrecorded/undiscovered resources are present. We believe that additional cultural resource investigations, possibly involving field surveys, may be warranted as the overall project proceeds.

- The Seminole Tribe believes that its history in Florida predates the time frame stated in the DEIS (see page 3-14). While the federal government's recognition of the Seminole Tribe of Florida is of a relatively recent origin, the Tribe views those indigenous populations who resided in Florida 12,000 (or more) years ago as ancestors.

TRIBAL HISTORIC
PRESERVATION OFFICE

SEMINOLE TRIBE OF FLORIDA
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TREASURER
PETER HAHN

- While the U.S. Army Corps of Engineers (USACE) has consulted with the STOF about the DEIS, consultation under Section 106 of the National Historic Preservation Act has not been initiated. Also, no consultation pursuant to the USACE-STOF Burial Resources Agreement (BRA) has occurred. In order to ensure that the Tribes cultural and historical resources are adequately considered and that possible impacts are fairly assessed, the STOF THPO stands ready to meaningfully engage in Section 106 and Burial Resource consultations with the USACE.

- Related to the preceding comment: At this time the STOF THPO believes that a considerable amount of Section 106 and BRA consultation is required in order to fully assess the possible impacts of whichever Alternative is finally chosen. We note that the preferred alternative involves multiple undertakings (cutoff walls, filter and drainage blankets, armored embankments, floodwalls, etc.). Each of these construction undertakings will require consultation with the THPO and careful assessment of the nature of impacts to cultural and historical resources and how these impacts might be avoided or resolved.

- Based on the Advisory Council on Historic Preservation's position that NEPA documents cannot be finalized (i.e., no Record of Decision rendered for an EIS) before Section 106 compliance has been completed, a Memorandum of Agreement would need to be prepared and executed.

- Lastly, we respectfully request that as part of our anticipated BRA consultation, the USACE and the STOF develop "plan of action" to be implemented in the event of an accidental/unanticipated discovery of human remains.

Thank you again for contacting us. Please continue to consult with us on this project and if you have any questions feel free to contact us at any time.

With Consideration,

Paul N. Backhouse, Ph.D., RPA
Ah-Tah-Thi-Ki Museum Director and Tribal Historic Preservation Officer

cc: Kim Taplin, Tribal Liaison, USACE
Jim Shore, General Counsel, STOF
Danny Tommie, Chairman's Administrator, STOF
Anne Mullins, THPO Assistant Director, STOF

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

February 23, 2016

Stacie Auvenshine
U.S. Army Corps of Engineers
Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019

SUBJ: EPA Review and Comments on the Draft Environmental Impact Statement (DEIS) Herbert Hoover Dike (HHD) Dam Safety Modification Study (DSMS); Glades, Hendry, Martin, Okeechobee, and Palm Beach Counties, FL; CEQ No.: 20150358

Dear Ms. Auvenshine:

Pursuant to Section 309 of the Clean Air Act (CAA) and Section 102(2)(C) of the National Environmental Policy Act (NEPA), the U.S. Environmental Protection Agency (EPA), Region 4 reviewed the Draft Environmental Impact Statement (DEIS) for the Herbert Hoover Dike (HHD) Dam Safety Modification Study (DSMS). The HDD, surrounding Lake Okeechobee, is currently recognized as requiring urgent repairs to minimize risks to public safety and the surrounding environment. The purpose of this letter is to provide our review and technical comments regarding the proposed project.

Alternative 3 is identified in the DEIS as the Preferred Alternative and tentatively selected plan (TSP), as well as the environmentally-preferred alternative. The TSP includes construction of risk reduction measures around the southern half of the HHD, and to limited areas in the northwest sides of the dam, in order to reduce the potential for breach-related damages to the surrounding areas and to ensure the continued safety of the surrounding communities. The construction of a cutoff wall would significantly decrease the likelihood of failure of the embankment and, therefore, reduce the likelihood of risk to surrounding areas, including economic and environmental damages from a potential breach. The objective stated in the DEIS is to identify and recommend a cost-effective alternative risk management plan (RMP) that supports the efficient reduction of risk from a breach of the HHD.

Based on the EPA's review of the project, the Preferred Alternative will result in reducing the risk of adverse impacts on surrounding communities and the environment by lowering the risk of a potential breach in the embankment. We also note that no air quality permits are required, regardless of the selected alternative, and that no wetlands would be impacted by the Preferred Alternative. The project would not impact the water quality of Lake Okeechobee. Therefore, we rated the DEIS's Preferred Alternative as Lack of Objections (LO). The enclosed Summary of Rating Definitions provides a detailed explanation of the EPA's ratings.

We recommend that updated information be included in the Final EIS (FEIS) regarding threatened and endangered species, environmental justice, and coordination activities regarding historic preservation. In addition, the EPA encourages continued government-to-government consultation with the Seminole Tribe of Florida and Miccosukee Tribe of Indians of Florida at all levels of decision-making. The FEIS should include updated information regarding consultation and coordination with the aforementioned tribes. Please see the enclosed detailed comments regarding subjects that EPA requests to be clarified in the FEIS.

We appreciate your coordination with us, and look forward to reviewing the FEIS. If you have any questions, please contact Ramona Klein McConney of my staff at 404-562-9615 or at McConney.Ramona@epa.gov.

Sincerely,

Christopher Militscher, Chief
NEPA Program Office
Resource Conservation and Restoration Division

Enclosures: EPA Review and Comments
Summary of Rating Definitions and Follow-up Action

Enclosure
EPA Review and Comments
Draft Environmental Impact Statement (DEIS)
Herbert Hoover Dike (HHD) Dam Safety Modification Study (DSMS)
Glades, Hendry, Martin, Okeechobee, and Palm Beach Counties, FL
CEQ No.: 20150358

General

The EPA concurs with the need to repair the HDD, and with the objectives of ensuring continued public safety, lowering the probability of experiencing a breach, and avoiding impacts to ecological, cultural, and aesthetic resources and the Everglades ecosystem from a potential breach. We also appreciate your efforts to minimize project impacts during construction.

Climate Change and Greenhouse Gases (GHGs)
Executive Order 13653, Climate Change Considerations (EO 13653), requires Federal agencies to review the effect of climate change on their programs. Tables 5-2–5-4 in the DEIS estimates emissions resulting from the construction of the project alternatives, including the Preferred Alternative. The DEIS also states that climate change is likely to affect water management operations of Lake Okeechobee, which is contained within the Herbert Hoover Dike. In the future, the ability of water managers to keep the lake level within the target parameters is likely to be affected because climate change could increase or decrease the frequency and magnitude of large storm events, alter the frequency and characteristics of rainfall patterns, and influence evapotranspiration from the lake and upstream basins.

The DEIS states that the effectiveness of the dike renovation efforts may be adversely impacted by potential climate change impacts associated with increased frequency and magnitude of large storm events, which could result in more extreme high lake stage events, thereby, potentially placing more stress on the dike. The lake levels are engineered and controlled and, therefore, each alternative for the rehabilitation of the embankment would not be directly affected by sea level rise. However, if storms become stronger, rehabilitation of the embankment would provide more stability for community safety and resource protection. We also note that, depending on the effects of climate change (temperature and rainfall especially), plant community structure within the littoral zone of Lake Okeechobee may change.

Recommendations: We recommend that the FEIS include discussions and analysis of reasonable alternatives and/or practicable mitigation measures to reduce project-related GHG emissions. The FEIS should make clear whether commitments have been made to ensure implementation of design or other measures to reduce Greenhouse Gas (GHG) emissions or to adapt to climate change impacts. The EPA further recommends that the Record of Decision (ROD) commits to implementation of reasonable mitigation measures that would further reduce or eliminate project-related GHG emissions.

Threatened and Endangered Species

The U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) have designated certain species of reptiles, birds, mammals, gastropods, and plants and lichens in

Glades, Hendry, and Palm Beach counties as threatened or endangered, and the DEIS notes that several of these listed species have been observed within the vicinity of the HHD.

The DEIS states that the Preferred Alternative is not likely to adversely affect the threatened and endangered species and their critical habitat in the project area, and that these species would not be directly affected by the construction of a cutoff wall or internal drainage system. However, the DEIS also states that there is a potential for disturbance to the species during construction activities, and page 5-23 describes impacts to protected species as minor and temporary.

Recommendations: The EPA defers to the Federal and the state wildlife agencies on these issues, and recommends that the FEIS provide updated information regarding coordination and consultation with these agencies regarding the protection of threatened and endangered species in the context of the proposed project. Impacts should be avoided to the maximum extent feasible, and unavoidable impacts should be mitigated.

Water Quality

The DEIS states that the Preferred Alternative would not result in impacts to wetlands. However, incidental temporary impacts may occur in association with staging or site access, and the DEIS states that these impacts would total less than half an acre. Therefore, a Section 404(b)(1) evaluation was not prepared as part of the DEIS.

Recommendations: Temporary impacts resulting from construction-related activities, such as staging or site access, should be avoided or minimized to the extent feasible.

National Pollutant Discharge Elimination System (NPDES)

Section 402(b) (2) requires that a NPDES construction activities permit be acquired for construction activities that disturb more than one acre of land. The Florida Department of Environmental Protection (FDEP) issues these permits, which would be acquired prior to initiation of construction of this project. The DEIS states that full compliance with the Clean Water Act (CWA) will be achieved with issuance of a Water Quality Certification under Section 401 from the State of Florida (page 6-1).

Recommendations: Impacts resulting from construction-related activities should be avoided or minimized to the extent feasible. The FEIS should include a listing of permits that are required for this project, and the planned schedule for these permits.

Environmental Justice (EJ)

Pursuant to Executive Order 12898, an assessment of the potential for disproportionately high and adverse health and environmental impacts was included in the DEIS. This assessment concluded that while a significant low-income population resides within the study area, this project is not expected to have disproportionately high and adverse human health or environmental impacts on minority or low income populations.

Communities may experience both benefits and burdens associated with construction. The DEIS identifies potential benefits to minority and low-income populations such as improved safety for community residents in the event of a project failure, but fails to identify potential impacts (page 6-4). In regards to project-related impacts, the EPA notes that a distinction is made between temporary construction impacts and longer-term impacts. However, the DEIS does not specify the construction period. If the construction is likely to be underway for a long period, these impacts may be considered significant for local communities.

According to the DEIS, two public scoping meetings were held in February, 2013 prior to the required public meetings in January 2016 for the proposed rehabilitation of the HHD. It is unclear what specific efforts were made to meaningfully engage minority and low-income populations within the project area throughout the decision-making process.

***Recommendations*:** The EJ analysis should include demographic data, and a summary of impacts on affected minority and low-income populations, including Native American tribes and populations that are dependent on subsistence resources. Issues regarding traffic congestion, socioeconomic impacts, noise, construction impacts and other issues that directly concern the local communities, as well as operational impacts related to these matters, should also be fully clarified in the FEIS. The EPA's EJ and mapping tool, EJSCREEN (www.epa.gov/ejscreen), utilizes standard and nationally consistent data to highlight areas that may have environmental burdens and vulnerable populations, and may assist in determining any project-specific impacts to minority and low-income populations.

The EPA encourages a comprehensive public outreach strategy. This should include, but is not limited to, targeted outreach campaigns to neighbors, informational literature, and updated websites. The FEIS might also include information about the outreach towards, and participation of, minority and low-income populations that may have limited English proficiency. In addition, a summary of any EJ comments or concerns and their resolution should be included in the FEIS. Traffic impacts and emergency preparedness measures are particular topics that should continue to be addressed and coordinated with local communities. The EPA encourages continued coordination with the communities that will be impacted by the construction of the proposed project in an effort to meaningfully involve them throughout the decision-making and construction process.

Tribal Coordination and Consultation

The DEIS states that the Seminole Tribe would probably continue to use the HHD for hunting and fishing (Section 3, Existing Conditions). The DEIS also documents previous communication with tribes regarding the proposed project. The EPA encourages continued government-to-government consultation with the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida at all levels of decision-making. The EPA works closely with both tribes on Everglades-related matters, and is committed to working with other Federal partners to prioritize the tribes' water quality and water management concerns.

Recommendations: The FEIS should include updated information regarding consultation and coordination with the tribes regarding the proposed project. Finalized decision documents should be included, if available.

National Historic Preservation Act (NHPA), Section 106

The Corps of Engineers has determined that there will be no effects to historic properties' area of potential effect (APE) if activities take place within the Federal right-of-way. In 2005, the Corps determined that the cutoff wall for Reach 1, constructed within the Federal right-of-way, would not affect the National Register of Historic Places (NRHP) eligibility of the dike, and the Florida State Historic Preservation Officer (SHPO) concurred. The DEIS provides that the remaining reaches would be expected to attain this determination and subsequent SHPO concurrence. Any actions outside of the Federal right-of-way may have the potential to affect historic properties within the APE, and further consultation with the Florida SHPO and federally-recognized tribes would be conducted in this event. The DEIS notes that consultation is ongoing with the SHPO and federally-recognized tribes (page 6-3).

Recommendations: Compliance with Section 106 of the National Historic Preservation Act (NHPA) should be documented as the project progresses. The FEIS should include an update of coordination activities with the SHPOs and tribes, along with the finalized decision documents pursuant to Section 106 of the NHPA, if available. The EPA defers to the SHPOs and tribes on these issues, and encourages continued government-to-government consultation with the Seminole Tribe of Florida and Miccosukee Tribe of Indians of Florida at all levels of decision-making.

SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION*

Environmental Impact of the Action

LO-Lack of Objections
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS sate, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate
The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information
The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment

Auvenshine, Stacie SAJ

From: William Glassey <waglassey5892@eagle.fgcu.edu>
Sent: Tuesday, February 23, 2016 12:11 AM
To: HHDEnvironment, SAJ
Cc: Gable, Frank
Subject: [EXTERNAL] EIS Draft Comment

William Glassey

Feb. 23, 2012

Draft EIS Comment

I feel that the issue at hand isn't just a public safety issue, but also a water quality issue.

I believe that another option would be to dredge a canal leading to the everglades past the agricultural farmland. If the water has a way to filter out all of the sediments and nutrients through the everglades naturally then not only will there be a way to move water out of the Lake faster and keep the water levels at a more sustainable level during rainy months like Jan.2016, but one would also be able to avoid the slew of problems caused by the discharging of water through the Saint Lucy and Caloosahatchee rivers.

1. Increase Dykes and Dams to withstand Category 5 hurricanes.
    a. During the process add a system to send water south efficiently.
        i. Water moving through the everglades gives more options for water control
        ii. Won't cause algae blooms as much
        iii. Will improve relations with Naples and Port Saint Lucy areas.

As a final comment what was the Herbert Hoover Dyke and Dam system originally designed to withstand in terms of a hurricane. The levee system in Katrina was rated for Category 3 storms. I feel that Florida's should be rated for the worst storms that can be thrown at it.

Thanks for the chance to comment.

William Glassey

Auvenshine, Stacie SAJ

From: Zoe Spanbroek <zrspanbroek7129@eagle.fgcu.edu>
Sent: Sunday, February 21, 2016 8:10 PM
To: HHDEnvironment, SAJ
Cc: Gable, Frank
Subject: [EXTERNAL] public comment

US Army Corps of Engineers,

Hello, my name is Zoë Spanbroek, a student at Florida Gulf Coast University. I have recently been made aware of your draft Environmental Impact Statement for the Herbert Hoover Dike Dam Safety Modification Study. After overlooking the document, I have compiled an official public comment, which is as follows:

"While this draft EIS document is very thorough in explaining all immediate effects of the proposed HHD repairs, I would like to know more about their longevity. More specifically, what is the expected lifespan of each proposed alternative? Are these reparation plans meant to last a while or will they require constant future upkeep? Given that these repairs are being made in the interest of public safety, wouldn't it benefit the citizens being protected by the HHD if its repairs lasted a long time? (Also, doesn't the tediousness of the EIS process give further cause to create strong, long-lasting repairs that don't require constant upkeep and thus constant involvement in the EIS process?) Put succinctly, I think it might be a good idea to indicate how long you anticipate the proposed repairs are likely to last before the HHD needs to be repaired again."

Thank you for your time,

-Zoë

February 21, 2016

Stacie Auvenshine
U.S. Army Corps of Engineers Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: U.S. Army Corp of Engineers – Herbert Hoover Dike Draft Dam Safety Modification Study Report (DSMS) – SAI # FL201601047515C

Dear Ms. Auvenshine:

The Florida Fruit & Vegetable Association (FFVA), a non-profit, agricultural trade organization whose mission is to enhance the competitive and business environment for producing and marketing fruits, vegetables and other crops, greatly appreciates the tremendous effort and diligence put forth by the United States Army Corp of Engineers (USACE) regarding the rehabilitation of the aging Herbert Hoover Dike (HHD). As an organization that represents a myriad number of producer members that operate both around and south of Lake Okeechobee and whose livelihoods are intrinsically linked to surface water provided by the lake, we greatly appreciate the opportunity to comment on the Draft Environmental Impact Statement (EIS) for the Herbert Hoover Dike Dam Safety Modification Study (DSMS).

As stated in the report, the primary objective of the DSMS is to identify and recommend an economic solution to mitigate and reduce risk of the dam breaching. With Alternative 3 as the tentatively selected plan, I think the Corp is on the right path to accomplishing this task. What is glaringly absent, however, is any discussion pertaining to how future operations and management of Lake Okeechobee water levels could be affected by the identified and anticipated dike repairs. The current Lake Okeechobee Regulation Schedule (LORS) 2008 is innately tethered to the state and integrity of HHD. We are currently in the midst of an unprecedented wet "dry" season where every option regarding water storage is being thoroughly examined in hopes that additional lake water won't have to be discharged east and west to the St. Lucie and Caloosahatchee estuaries. Ironically, we will inevitably again face drought conditions in the near future where the lake's water will be concurrently and desperately sought after for public supply, agriculture and environmental benefit for the estuaries, the storm water treatment and water conservation areas, the Everglades and for the lake itself. It is imperative that we at least begin the discussion of how the recommendations proposed within the DSMS might translate to potential modifications of LORS 2008. To expedite this process without being hindered by another evaluation study, the DSMS needs to broach the subject and identify a range of lake levels that might be realistic with the completion of the proposed dike remediation projects.

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Again, FFVA supports the USACE's efforts in addressing the integrity of HHD to mitigate risk of a breach. While ensuring public health and safety is, rightly, the focus of this study, it is also paramount that we move forward prudently and simultaneously consider how the LORS 2008 could be beneficially modified as a result of the proposed remediation of HHD. With Lake Okeechobee, we find ourselves in the constant struggle between balancing public safety, water supply and environmental benefit. At the very least, the inclusion of a discussion in the DSMS offering guidance on how the dike repairs could possibly impact revised lake stages certainly seems salient. This will help expedite the process for the much needed review and reevaluation of the LORS without being burdened and mired by another prolonged study. If you have any comments or concerns, please don't hesitate to contact me.

Sincerely,

Florida Fruit & Vegetable Association

Kerry B. Kates, P.E.
Director of Water and Natural Resources

P.O. Box 948153, Maitland, FL 32794-8153 • 800 Trafalgar Court, Suite 200, Maitland, FL 32751
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To Whom It May Concern:

The purpose of this letter is to post public comment on the Herbert Hoover Dike rehabilitation project. As a concerned citizen, student and after going over the draft EIS, I've come to raise a few issues regarding the HHD rehabilitation project. I agree that the one of the primary purposes of the project should be to ensure public safety, as we don't want a reoccurrence of what has happened in the past. Although one issue I find to be pressing is to what standard the levee and HHD will be built to withstand on the Saffir-Simpson hurricane scale. Louisiana was decimated years ago because of a failed levee systems, and at that time theirs was only built to withstand a level 3 Hurricane, which proved devastating. In regards to public safety, to what degree on the Saffir-Simpson scale will the revitalized HHD and levees be built to withstand. With hurricane intensity on the rise and frequency staying roughly the same, it's important if infrastructure revitalization is taking place that we must take all available precautions to prepare for fiercer storms by building to higher standards.

Another issue with the HHD project is one of water quality. As a resident of Southwest Florida I find it to be of pivotal importance to alleviate the amount of water leaving Lake Okeechobee to the east and west, which are creating havoc on both the environment as well as economy because of polluted waters. Although the primary purpose of the remediation of the HHD is to ensure public safety, it is also their objective to reduce ecological impacts and aesthetic impacts, which both impact tourism and the economy. I believe that the HHD rehabilitation project should take into consideration an alternative route south through the EAA that may also play a role in the Everglades Restoration project. By facilitating more water south from Lake Okeechobee and into the Everglades, restoring sheet water flow as a means to filter out pollutants before reaching Everglades National Park is also a critical issue that needs to be addressed and an action that needs to be taken to ensure the health and wellbeing of our estuaries, and overall water quality of Southwest Florida.

Concerned Citizen and Student,

Logan M. Crawford

DEAR STACIE

ON THE FOLLING MATERIAL OF PAGES YOU WILL FIND. MY PUBLIC IN-PUT OR MY PUBLIC-COMMENT OR MY POINT OF VIEW'S. I SEND YOU THE PAGES, FROM THIS REPORT, THAT I WAS INTRESTED IN. I HAVE BEEN ACTIVE ON ALL OF OUR WATER PROBLES WE FACE.

SOME OF THE MANY PEOPLE I HAVE MADE CONTACT ARE. EPA - FDEP - FDACS - SFWMD - SWIM - USACE -. EVER SINCE YEAR 1989 I HAVE BEEN ACTIVE WITH SFWMD. TO IMPROVE WATER QUALITY AND TO STOP AGRICULTURE RUN-OFF WATER. BUT THIS POINT IN TIME SOME 27 YEARS LATER I STILL DO NOT SEE WATER QUALITY IMPROVEMENT.

THE STATE SET A TMDL OF 140-40PPB TO LAKE OKEECHOBEE, IT WAS TO BE IN COMPLIANCE BY YEAR 2015. THEY DID NOT MAKE COMPLIANCE. 2015. THEY DO NOT ENFORCE 40E-61 OR 40E-63. THE STATE DOES NOT SEEM TO CARE AT ALL, WHAT A WASTE OF TAX DOLLARS ON PEOPLE WHO DO NOT DO THEIR JOBS.

BMP'S AND BMAP PEOPLE DO NOT SEEM TO WANT TO ENFORCE ACTION TO CLEAN-UP WATER. BMP'S MUST NOT BE VOLUNTARY SYSTEMS BUT NEED TO BE ENFORCED, COWBOYS DO NOT VOLUNTEER FOR

ANY THING EVEN I KNOW THIS. EVEN AT TODAYS DATE, I SEE CATTLE IN CONTACT WITH FLOWING WATER TO LAKE OKEECHOBEE. ALL ALONG THE RIM CANALS, I SEE PASTURE RUN-OFF WATER GOING INTO RIM CANALS ALL ALONG 441 AND STATE ROADS 78, 4DE-61 AND 4DE-63 VIOLATIONS.

SO MUCH FOR ME AND YOUR PROBLEMS MAYBE AT SOME POINT WE WILL SEE SOMEONE WAKE-UP.

NOTE SOME OF THE REAL PEOPLE

Robert M Norton
ECOSYSTEM WATCH
LAKE OKEECHOBEE

Robert M. Norton
Veteran
4200 U.S. Hwy. 441 SE
Okeechobee, Florida 34974

GREEN BERET FOUNDATION

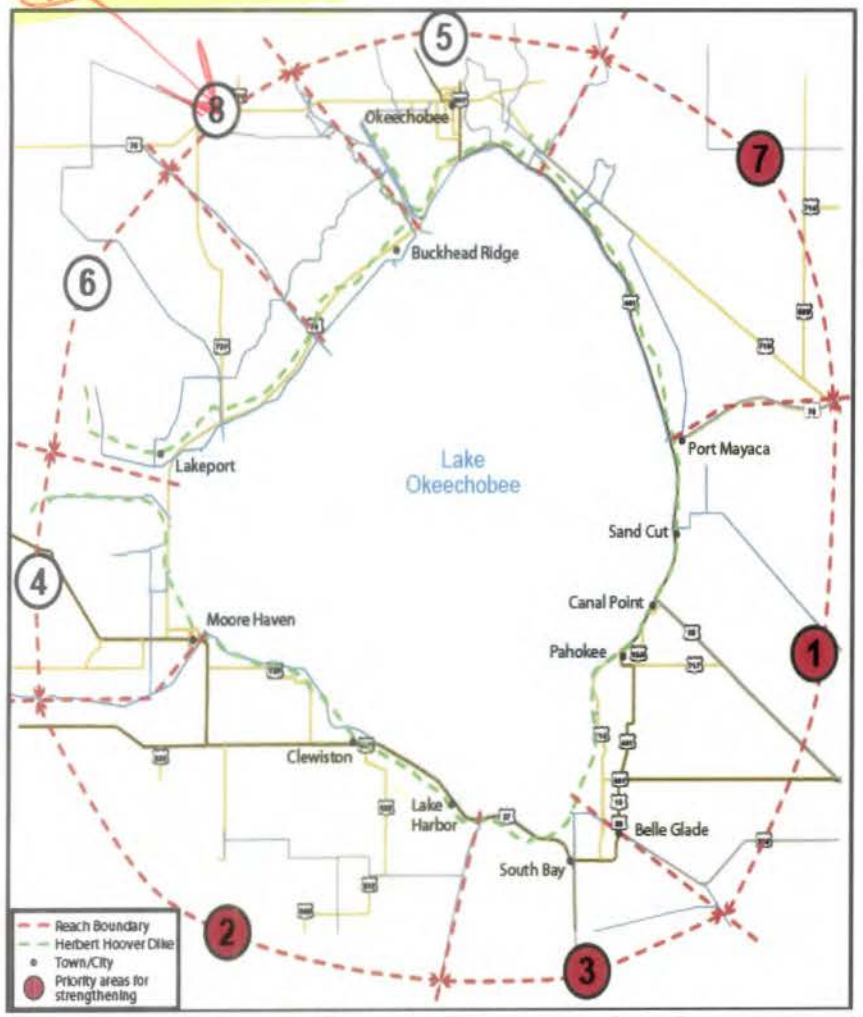

Figure 1-2. Herbert Hoover Dike Original Designation of Reaches

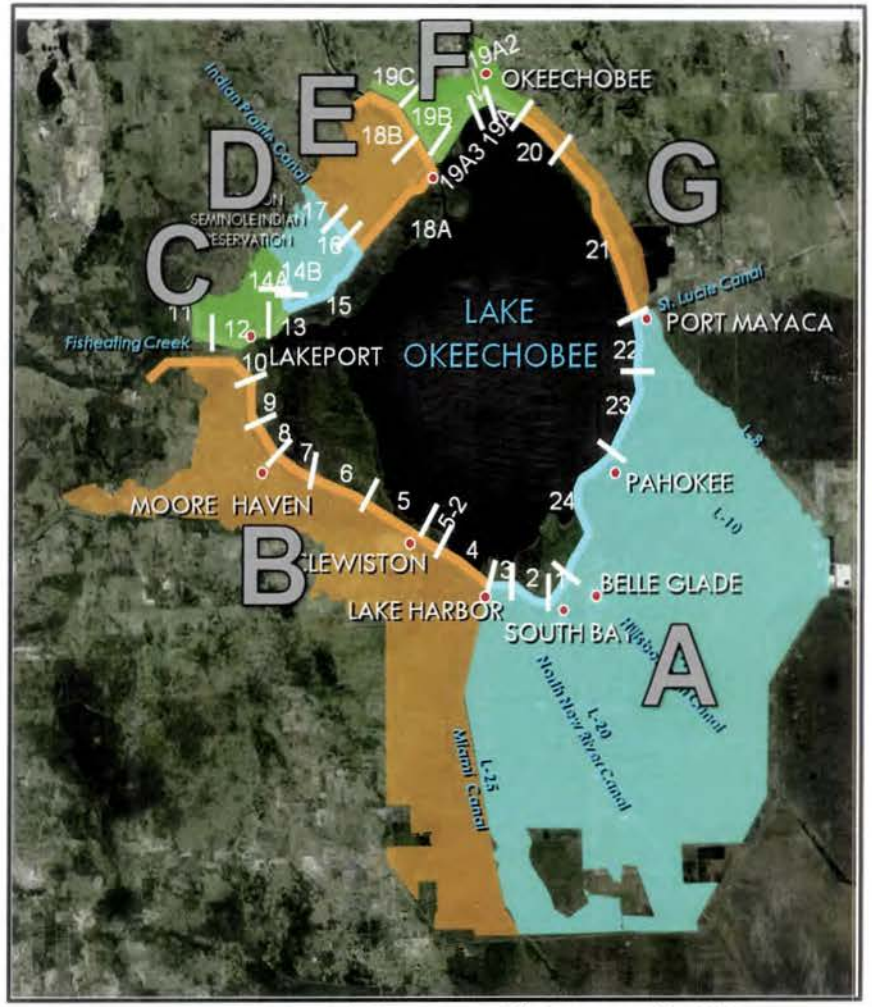

Figure 1-3. Common Inundation Zones with Segments for HHD

(X) PROBLEM AREA = TO FAR NORTH OF TO CAUSE ANY PROBLEMS.
NOTE – REMEMBER ALL WATER FLOWS TO THE SOUTH & 36 FT ELEVACATION DROP TO LAKE OKEECHOBEE THRU S-65 LOCKS.

1.2 PROJECT NEED AND OPPORTUNITY

NOT A REAL PROBLEM

Since the early 1980s, the Corps and independent technical reviewers have studied and documented the potential for catastrophic failure of the HHD during high water stages, particularly in CIZ A. The primary causes for concern are seepage and piping. Seepage occurs when water travels from the lake through the foundation and embankment of the dike. The seepage can carry material (mostly sands) with it, eventually eroding a water flow path through the HHD embankment and foundation. This causes a damaging mechanism of internal erosion or piping through the embankment or foundation. Underground seepage and internal erosion are made possible by the permeable nature of the materials of which the dike is constructed, including sand, gravel, shell, and limestone, and by the variable geology comprising the foundation of the dike system.

There are three phases of the piping erosion process: initiation, continuation and progression. Piping typically initiates at the toe or in the ditch at the toe of the HHD embankment (also referred to as the toe ditch) and is the point at which the seepage flows first become sufficient to erode the surface soils at the toe. In the continuation phase, the seepage flows are sufficientto continue erosion up-gradient toward the water source where erodible materials in the embankment or foundation are continuous and not interrupted by less erodible layers. In the erosion progression phase of piping, the seepage volumes and erosion increase, and layers within the embankment or foundation acts like a roof that allows the pipe to progress toward the lake. The final stage of the piping process results in an open conduit ("pipe") between the lake and landside toe that can rapidly cause a breach of the embankment (**Figure 1-4**).

REMOVE ANY CULVERT THAT MAY CAUSE PROBLEM

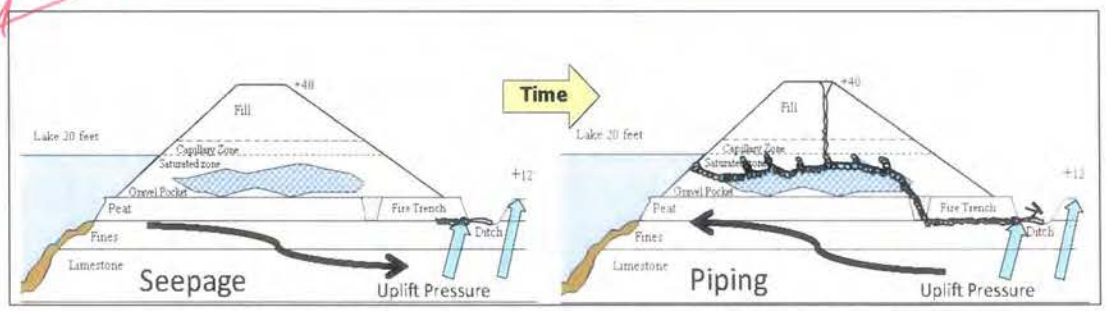

Figure 1-4. Dike Failure Cross-Section Depicting Seepage and Piping.

WATER GOES TO LOWEST POINT

Symptoms of serious seepage and piping include sand boils--concentrated vertical discharge of water mixed with sand on the landside of the dike, and/or horizontal discharge of seepage with deltas of sand being deposited around the discharge location. Piping can create tunnels and cavities, causing instability and sinkholes on the dike. Seepage and piping are the failure modes of greatest concern due to the high potential for their occurrence and evidence of this failure mode was observedduring past high water events (sinkholes, sand boils, and deltas of sand deposited in the landside toe ditch observed during high water events are evidence that the piping process has initiated or could initiate at slightly higher lake levels in some areas). "NOTE WHAT AREAS" REMEMBER ALL WATER FLOWS SOUTH TO LAKE

Water managers are unable to maintain safe water levels following sustained high rainfall events or water patterns because the outlet capacity to release lake water is limited. The outlet capacity (released via the St. Lucie and Caloosahatchee canals) is about one-sixth of the potential inflow capacity (USACE 2007b).

b. Effect of existing and proposed outlets on lake levels during the floods of record, 100-year flood, and standard project flood.

c. Height of levees required to protect developed areas from wind tides, waves, and wave run up which could be expected if a major hurricane should occur.

The plan of improvement included construction of levees on the northwest and northeast shores of Lake Okeechobee and raising of existing levees. It was recommended that the design of project works be based on the following hydraulic conditions: probable maximum hurricane on a 17.5-ft pool, standard project hurricane on a 21.6-ft pool (the 30-day average 100-year flood stage at that time), and moderate hurricane on a 23.5-ft pool (the 30-day average Standard Project Flood stage at that time). All elevations are in the National Geodetic Vertical Datum 29 (NGVD 29) throughout this report unless otherwise noted.

1.6 LAKE OKEECHOBEE REGULATION SCHEDULES

NOTE - A VERY GOOD LEVEL HERE

Regulation of Lake Okeechobee from the early 1900s up through the authorization of the Central and Southern Florida Project (C&SF) in 1948 attempted to maintain the lake at water levels between elevation 12.56 to 15.56 ft., NGVD29 (11.26 to 14.26 ft., NAVD88). The 1948 C&SF project authorization did not specify what lake regulation schedule should be adopted. As agricultural development south of the lake and population growth along Florida's southeast coast burgeoned in the 1950s and 1960s, an increased reliance and draw on the lake for water supply encouraged water managers and decision makers to attempt to store more water in the lake by raising the lake regulation schedule. Incorporating additional hurricane studies and the effects of wind setup/wave run-up, design, and construction of the full-height HHD in the 1960s also influenced the decision to increase the water levels in Lake Okeechobee with a revised lake regulation schedule. In 1974, the regulation schedule was increased with operating ranges between 14.5 to 16 ft., NGVD29 (13.2 to 14.7 ft., NAVD88) and then again in 1978, with operating ranges between 15.5 to 17.5 ft., NGVD29 (14.2 to 16.2 ft., NAVD88). The RUN25 and Water Supply and Environmental (WSE) lake regulation schedules were implemented in 1994 and 2000, respectively, with the WSE formally incorporating forecast information such as tributary inflows and climate outlooks into the lake management process. The top of the flood storage pool varied between 17 ft., NGVD29 (15.7 ft., NAVD88) up to 18.5 ft., NGVD29 (17.2 ft., NAVD88) for both the RUN25 and WSE lake regulation schedules.

The current regulation schedule implemented in April, 2008 is called the Lake Okeechobee Regulation Schedule (LORS). Lake regulation schedules influence the stage-duration on the lake which has the most effect on antecedent lake stages prior to episodic flood events. One purpose of LORS implementation was as an interim HHD risk-reduction measure by attempting to maintain lower lake levels. LORS attempts to limit maximum stages on Lake Okeechobee to elevation 17.25 ft., NGVD29 (15.95 ft., NAVD88) as opposed to previous schedules which limited maximum stages to 18.5 ft., NGVD29 (17.2 ft., NAVD88). ANY THING ABOVE 15.5 MUST BE LOOKED AT HAZARD 15.5 TO 18.5 PROBLEM

A variety of lake regulation schedules have been utilized on Lake Okeechobee since authorization of the C&SF project in 1948. These regulation schedules have been summarized within Appendix B.

1.7 HHD ENVIRONMENTAL AND RELATED DOCUMENTS

Since 1999, numerous engineering designs and interim risk reduction measures have been proposed for rehabilitating the dike in Reaches 1, 2, and 3. Each one has been accompanied by

an Environmental Assessment (EA) or an EIS. **Table 1-1** provides a summary of all NEPA documents that have been prepared for the HHD project. Each of the actions described in the NEPA documents have independent utility.

Table 1-1. Previous NEPA Documents for HHD Rehabilitation.

Type	Project	Title	Recommended Action	Decision
Draft EIS	Reach 1	Draft EIS for the Major Rehabilitation Report, HHD, Reach 1 (USACE, 2000)	Installation of a seepage berm with relief trench along the landward toe of the embankment.	Approved in 2000 contingent on economic revisions
Final EIS	Reach 1	Final EIS for the HHD Major Rehabilitation Report, Reach 1 (USACE, 2005)	Installation of a seepage cutoff wall on the landward side of the dike slope and a relief trench and relief berm at the toe of the dike, all within the current right of way.	Record of Decision signed on September 23, 2005
Draft EIS	Reaches 2 and 3	Draft EIS for the Major Rehabilitation Report, Phase 1, HHD Reaches 2 and 3 (USACE, 2006)	Installation of a partial cutoff wall at crest of dike and construction of a seepage berm within existing right of way	Cancelled by Notice in Federal Register (78 FR 8119) February 5, 2013
EA	Reaches 1, 2, and 3	EA of Modified Design in Reach 1 and Priority Toe Ditch Repairs in Reaches 1, 2, and 3 (USACE, 2007c)	(1) Installation of a cutoff wall at crest of dike, a partial seepage berm within existing right of way, and a drainage swale at toe of berm. (2) Backfill toe ditch for immediate repairs in the most critical areas. This document only assessed impacts within the existing right of way. A future NEPA document would assess impacts of the full seepage berm, which would extend outside of the existing right of way.	Finding of No Significant Impact, January 12, 2007
EA	Reach 1 and Sub-reach 1A	EA of Reach 1 Seepage Berm and Reach 1A Test Cutoff Wall (USACE, 2007e)	Installation of a demonstration cutoff wall at the crest of the dike in Reach 1A and a partial seepage berm within the existing right of way. A future NEPA document would assess impacts of the full seepage berm.	Finding of No Significant Impact, May 3, 2007
EA	Reach 1 and Sub-reaches 1B, C, and D	EA of Reach 1 Cutoff Wall with Addendum (Quarry) (USACE, 2008a)	Installation of a cutoff wall at crest of dike in Reach 1B, C, & D.	Finding of No Significant Impact, February 11, 2008

Type	Project	Title	Recommended Action	Decision
EA	Reaches 1 and 2	EA for Partial Reach 1 and 2 Ditch Backfill and Culvert 14 Removal (USACE, 2008b)	In Reach 1, assesses the impacts of removing Culvert 14 and filling the toe ditch in Focus Areas 1 and 6. In Reach 2, assesses impacts of filling in 9.5 acres of toe ditch.	Finding of No Significant Impact, August 28, 2008
Draft Supple-mental EIS	Reach 1A	Draft Supplemental EIS for the Major Rehabilitation Project, HHD Reach 1A (USACE, 2010)	Installation of a seepage berm, drainage swale, and relief wells outside of the existing right of way. Removal of Culvert 11 and replacement of Culvert 16.	Cancelled by Notice in Federal Register (78 FR 8118) February 5, 2013
EA	HHD Federal Culverts	EA for HHD Culvert Replacement and Removal	Replacement of 28 Federal culverts and removal of 4 Federal culverts.	Finding of No Significant Impact, May 13, 2011
EA	HHD Pilot Test	EA for HHD Alternative Rehabilitation Plan Pilot Test	To perform a pilot test to determine constructability and efficacy of alternative seepage collection systems and comparison to cutoff wall currently installed in Reach 1.	Finding of No Significant Impact, February 7, 2012
EA	Reach 3	EA for HHD Supplemental Major Rehabilitation Report	To perform maintenance on an existing Federal project and construction would occur within the Federal right of way.	Finding of No Significant Impact, June 15, 2015

NOTE – REMOVE ALL UNUSED CULVERTS

1.8 RELATED PROJECTS

Comprehensive Everglades Restoration Plan (CERP), April 1999

The $10.9 billion CERP takes a watershed approach that builds upon and works with other state and Federal efforts to revitalize the wetlands, lakes, bays, and estuaries of south Florida. Considered the largest environmental restoration program in history, CERP is largely based upon a series of projects that would address four major characteristics of freshwater flow: quantity, quality, timing, and distribution.

The complex, multi-year undertaking has two distinct levels of activity:

- Program-level coordination fosters productive working relationships and understanding among the various Federal, state, local, tribal, and stakeholder partners involved in CERP implementation. In addition, other key activities that span the life of CERP include ongoing efforts such as data collection, computer modeling, studying the response of the natural environment to CERP activities, addressing recreational opportunities, and science, outreach, and economic issues.

- Project-level activities are the land acquisition, planning, designing, and constructing of more than 50 individual projects.

GO FORWARD

VERY GOOD IDEA

Once fully implemented, CERP would allow water deliveries and overland flow to follow patterns that are more natural throughout the south Florida ecosystem. The CERP reservoirs would store excess water from Lake Okeechobee, receive flood control releases that would otherwise go to the estuaries, and collect stormwater runoff from developed areas. The stored water would then improve high and low water levels in Lake Okeechobee; help meet environmental targets in the estuaries, Everglades, and other natural areas; and supplement urban and agricultural water supply. The integrity of the HHD could affect future lake levels and Lake Okeechobee's ability to store water for Everglades restoration.

Final Supplemental EIS on Lake Okeechobee Regulation Schedule (LORS), Lake Okeechobee, Florida, 2008

The LORS was approved by the Corps on April 28, 2008. This regulation schedule represents the best balance of project goals, including improving the environmental health of certain major ecosystems while providing for public health and safety. High lake stages approved under the previous schedule, called the Water Supply and Environment schedule, threatened the integrity of the HHD in its current condition. To avoid stressing the HHD when lake stages are high, large volumes of lake water have been released to Lake Okeechobee's two major outlets, the St. Lucie and Caloosahatchee estuaries, contributing to adverse effects in these ecosystems. Extended periods of high water levels in Lake Okeechobee have also resulted in significant losses of valuable habitat in Lake Okeechobee's littoral zone and marsh communities, including habitat for the endangered Everglade snail kite (*Rostrhamus sociabilis*). The LORS allows for quick response and operational flexibility to changing lake conditions and tributary inflows. The schedule improves the rates of flow to the coastal estuaries by allowing low rates of flow to begin earlier as the lake rises, which in turn helps reduce the need for higher flows later in the year. The LORS also improves the environmental health of Lake Okeechobee by reducing the frequency and duration of high lake elevations that affect Lake Okeechobee's shore zones and HHD stability.

TOO MUCH TOO LITTLE

South Florida Water Management District (SFWMD) Restoration Strategies Project

The SFWMD is required to meet a numeric discharge limit, referred to as the WQBEL, which is contained in the National Pollutant Discharge Elimination System (NPDES) permit for discharges from the stormwater treatment areas (STAs) into the ENP. The WQBEL was developed to assure that such discharges do not cause or contribute to exceedances of the 10 parts per billion (ppb) total phosphorus (TP) criterion (expressed as a long-term geometric mean [LTGM]) established under 62-302.540, Florida Administrative Code (F.A.C.). The TP criterion is measured at a network of stations across the ENP marsh and is intended to prevent imbalances of aquatic flora and fauna. The WQBEL is measured at the discharge points from each STA and requires that the total phosphorus concentration in STA discharges shall not exceed: 1) 13 ppb as an annual flow weighted mean in more than three out of five water years on a rolling basis; and 2) 19 ppb as an annual flow-weighted mean in any water year. Excess phosphorus discharged into the ENP has caused ecological impacts within the Everglades.

THINK TO LAKE OKEE 140 PPB NOT ENFORCED

BMPs DO NOT WORK

To address water quality concerns associated with existing flows to the ENP, the SFWMD, FDEP, and USEPA engaged in technical discussions starting in 2010. The primary objectives were to establish a WQBEL that would achieve compliance with the State of Florida's numeric phosphorus criterion in the ENP and to identify a suite of additional water quality projects to work in conjunction with the existing Everglades STAs to meet the WQBEL. Based on this collaborative effort, a suite of projects has been identified that would achieve the WQBEL. The Restoration Strategies Regional Water Quality Final Plan (SFWMD 2012) describes those resulting projects and

STOP TECHNICAL GO TO ENFORCEMENT OR SET TMDL

Table 2-1. Common Inundation Zones (Zone) and Segments with HHD Reaches.

Zone	Segment	Reach
A	22, 23, 24, 1, 2, 3	1, 3
B	4, 5, 5-2, 6, 7,8, 9, 10	2, 4
C	11, 12, 13, 14A	6
D	14B, 15, 16	6
E	17, 18A, 18A-2, 18B	8
F	19A, 19A2, 19A3, 19B, 19C	5
G	20, 21	7

2.3 ALTERNATIVES

An initial array of alternatives was established by combining retained management measures with the intent of meeting three overarching concepts established for plan formulation:

I. System-wide structural solutions to reduce loading on the dike
II. System-wide solutions that are non-structural in nature
III. Structural and non-structural solutions at the segment level

The initial array of alternatives includes the five required alternatives specified in Engineering Regulation (ER) 1110-2-1156. Additional plans were developed to ensure that economically, socially, and environmentally justified alternatives were identified. The required alternatives include the following:

- No Action
- Reducing risks to tolerable levels and meeting applicable essential USACE guidelines (To meet USACE essential guidelines means to correct for all deficiencies from current state of the practice design guidance in the areas recommended for remediation.)
- Reducing risks to tolerable levels
- Remove Structures
- Replace Structures

NOTE - REMOVE ANY STRUCTURE OR CULVERT NOT USED ANY MORE

Figure 2-3 displays the initial suite of alternatives considered for remediating HHD. The alternatives shaded in green represent the five required plans and the alternatives shaded in white were additional alternatives identified.

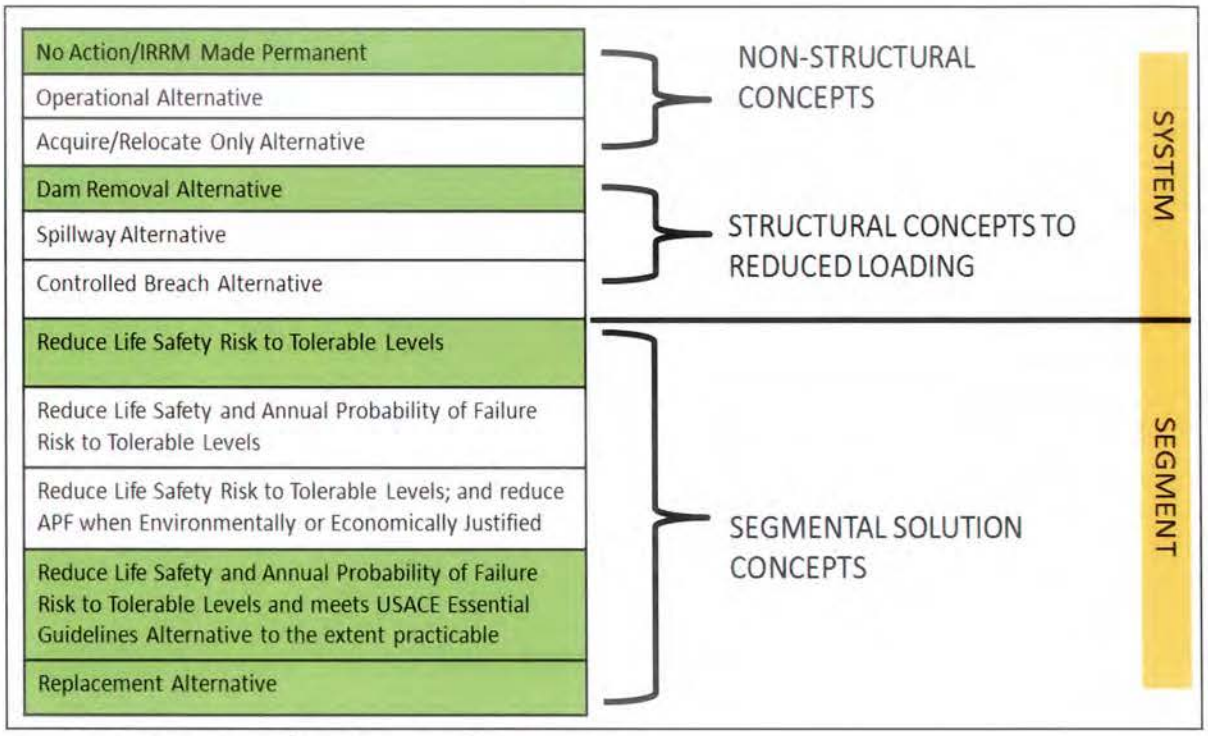

Figure 2-3. Overview of Initial Array of Alternatives

2.3.1 No Action Alternative

THE EXISTING SYSTEM WHO AGRICULTURE IS THE LAKE PROBLEM'S

Evaluation of the No Action Alternative, also known as the future without project condition, is a requirement of NEPA regulations. The No Action Alternative is defined as not taking actions to improve the existing system. This alternative assumes the lake is operated according to the current regulation schedule (Lake Okeechobee Regulation Schedule, LORS 2008). The schedule is intended to contain the lake stage within a band that best satisfies the C&SF Project flood damage reduction, water supply, navigation, and environmental objectives, while reducing the likelihood of a lake stage that could cause dam failure. The baseline risk assessment demonstrated that, even with the loading restrictions imposed by the current regulation schedule, the existing risk is still well above tolerable risk guidelines. This plan offers no opportunity to restore authorized project benefits or reduce risk to tolerable levels.

Without improvements to the HHD embankment, the safety of the surrounding human and natural environment may be severely impacted with subsequent effects upon the local and regional economies. The No Action Alternative does not provide a long-term solution to the potential for internal erosion throughout the system. Under this alternative, the continued occurrence of seepage and piping would increase the likelihood of a dike failure. The term "dike failure" implies a catastrophic breaching of some portion of the HHD system. This would result in widespread flooding as waters from Lake Okeechobee pass through the breach and onto adjacent lands. A failure could be initiated by the continuous uncontrolled seepage of water from one side of the dike to the other. If seepage increases to a rate that displaces material from the dike or its foundation, piping could eventually create large voids through the dike embankment or foundation. If the voids become large enough, the dike would weaken, and sections of the embankment could collapse. Such a collapse would reduce the embankment crest elevation in

the immediate area to a point where lake water would overtop the dike. At that point, lake water flowing through the breach would be uncontrollable, levee erosion would continue, and adjacent areas would flood. In the event of a total breach, significant impacts to human life, wildlife, agriculture, property, vegetation, and water resources would result. The No Action Alternative would not provide an acceptable level of flood risk management for nearby communities. Additional expectations in the future without project condition include: limited changes in land use and structure inventories, enhanced warning systems as a local responsibility, greater public awareness and education, and more effective evacuation planning. The No Action alternative is retained for further analysis in this DSMS and used as a baseline of comparison among the other alternatives.

THAT IS THE PROBLEM NO ACTION TO MEET TMDL TO LAKE OKEE

2.3.2 System-Wide Structural Alternatives

Three of the following system-wide structural alternatives focus on reducing the loading on the dike. The fourth system-wide alternative does not change the loading, but includes a complete replacement of the entire dam that would meet current USACE standards for embankment dams.

2.3.2.1 Dam Removal Alternative

This alternative includes removal of some portion(s) of the dike, or water control structures, such that the dike no longer retains a permanently impounded pool. Because the dike and its associated water control structures are integral components of the C&SF Project, this plan would require deauthorization of major portions of the C&SF Project. Without the dike, major portions of the C&SF Project cannot function as intended. According to the FY14 Corps Annual Civil Works Budget, the C&SF project produces over $225M in annual flood risk management benefits. The majority of that benefit is derived from lake stages above the 100-year storm event stage. As little as 20% of these benefits would still accrue, primarily from C&SF project components north of the lake, in the absence of the dike.

Based on analysis performed to route inflow volume that would result in a lake stage of 24.5 feet (the maximum inflow volume that would need to be passed to reduce both annual probability of failure and societal risk estimates to tolerable levels), the dam removal alternative includes the degradation of a 1.0 mile portion of the dam in Segment 2 to a crest elevation of 9.50 ft. NAVD88. The resulting peak lake stage during this inflow event was 12.29 ft. NAVD88, which would meet risk reduction objectives. The downstream area required to: 1) sufficiently capture discharges from this inflow volume, and 2) meet the desired downstream pool depth (depth of 6ft or less to allow emergent vegetation to dampen wind effects) resulted in use of lands between the North New River Canal and Miami Canal, as well as land east of the North New River Canal. This plan includes levee modifications to the Miami Canal, North New River Canal, L-5 Canal, L-6 Canal, L-15 Canal, and the L-16 Canal. Additionally, reconstruction of a portion of US Hwy 27, including a 1.0 mile bridge along HHD to allow water through the roadway corridor; relocation of a railroad that traverses the retention area; demolition of an existing industrial complex; and remediation of soil contaminated with agriculture industry chemicals will be required. Acquisition of real estate, relocation of public infrastructure, construction of additional levees, installation of pump stations, and water quality treatment would all be required for this alternative. The estimated real estate cost would be similar to the real estate costs for the controlled breach and the spillway/retention area alternatives, $1.6 to $1.9 billion. Construction costs would be additional.

AGRICULTURE IS OUR PROBLEM PEOPLE

The Dam Removal Alternative (**Figure 2-4**) is not pursued further because of the high cost, time to implement, and the significant adverse impacts to the benefits provided by Lake Okeechobee and the entire C&SF Project.

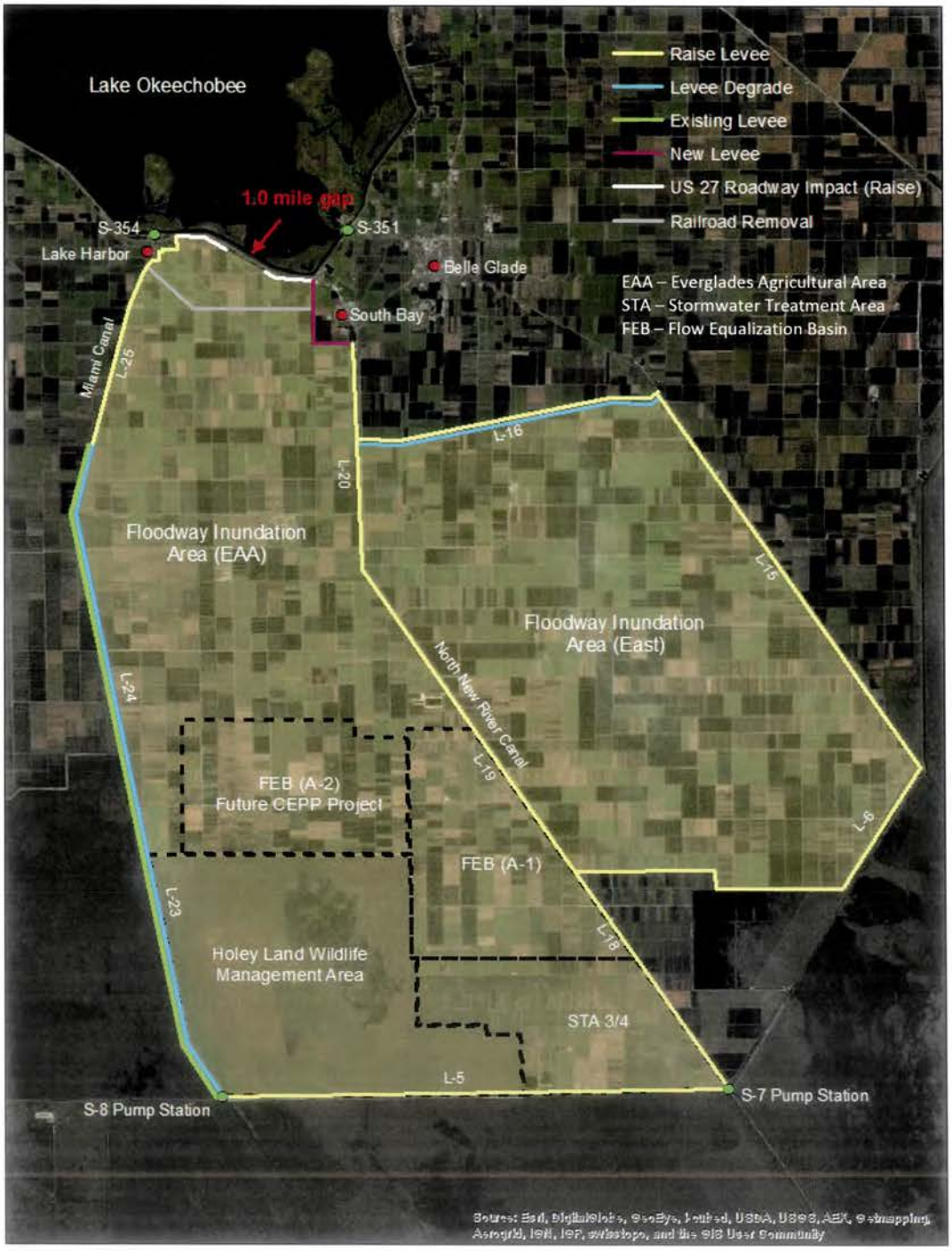

Figure 2-4. Conceptual Dam Removal Alternative

2.3.2.2 Gated Spillway and Retention Area Alternative

This plan includes the construction of a multi-bay bottom-hinge gated spillway (crest elevation 14.0 ft. with gate closed (in "up" position) and 10.5 ft. with gate open (in "down" position)) and an 89,000 acre downstream water retention area (**Figure 2-5**). The Lake Okeechobee pool stage requirement is the same for the spillway option as described in the Dam Removal - the maximum stage was established as 15.50 ft. NAVD88. Such a pool restriction is expected to reduce risk to tolerable levels, while preserving C&SF water supply and navigation benefits, and having only minimal adverse effects on the existing lake ecology. This plan would require reauthorization of major portions of the C&SF Project. The spillway configuration reduced the Lake Okeechobee stage to 15.94 ft. NAVD88 during the modeled inflow event.

The retention area would be formed by levee modifications adjacent to the Miami Canal, the North New River Canal, and Holey Land, and new levee construction near the town of South Bay, and partial levee degrading along the Miami Canal north of Holey Land. This plan also includes reconstruction of a portion of US Hwy 27, including a new 1,000 ft. bridge to allow water through the roadway corridor; relocation of a railroad that traverses the retention area; demolition of an existing industrial complex; and remediation of soil contaminated with agriculture industry chemicals. This plan is intended to preserve the function of the State's existing Stormwater Treatment Area 3/4 and future A-1 Flow Equalization Basin, although the infrastructure modifications required to do so have not been investigated. The estimated real estate cost would be similar to the real estate costs for the dam removal and controlled breach alternatives, $1.6 to $1.9 billion. Construction costs would be additional.

The gated spillway alternative is not pursued further in this DSMS because of the high cost and time to implement, and the significant adverse impacts to portions of the C&SF Project south of the retention area.

I AGREE HERE ON GATED SPILLWAYS, ALSO ANY CONNECTING CANALS AND CULVERTS SHOULD BE REMOVED. TO STOP AGRICULTURE RUN-OFF WATERS. WE MUST HAVE ENFORCEMENT OF BMP'S AND BMAP, WE CAN NO LONGER HAVE A VOLUNTARY SYSTEM FOR AGRICULTURE OPERATIONS

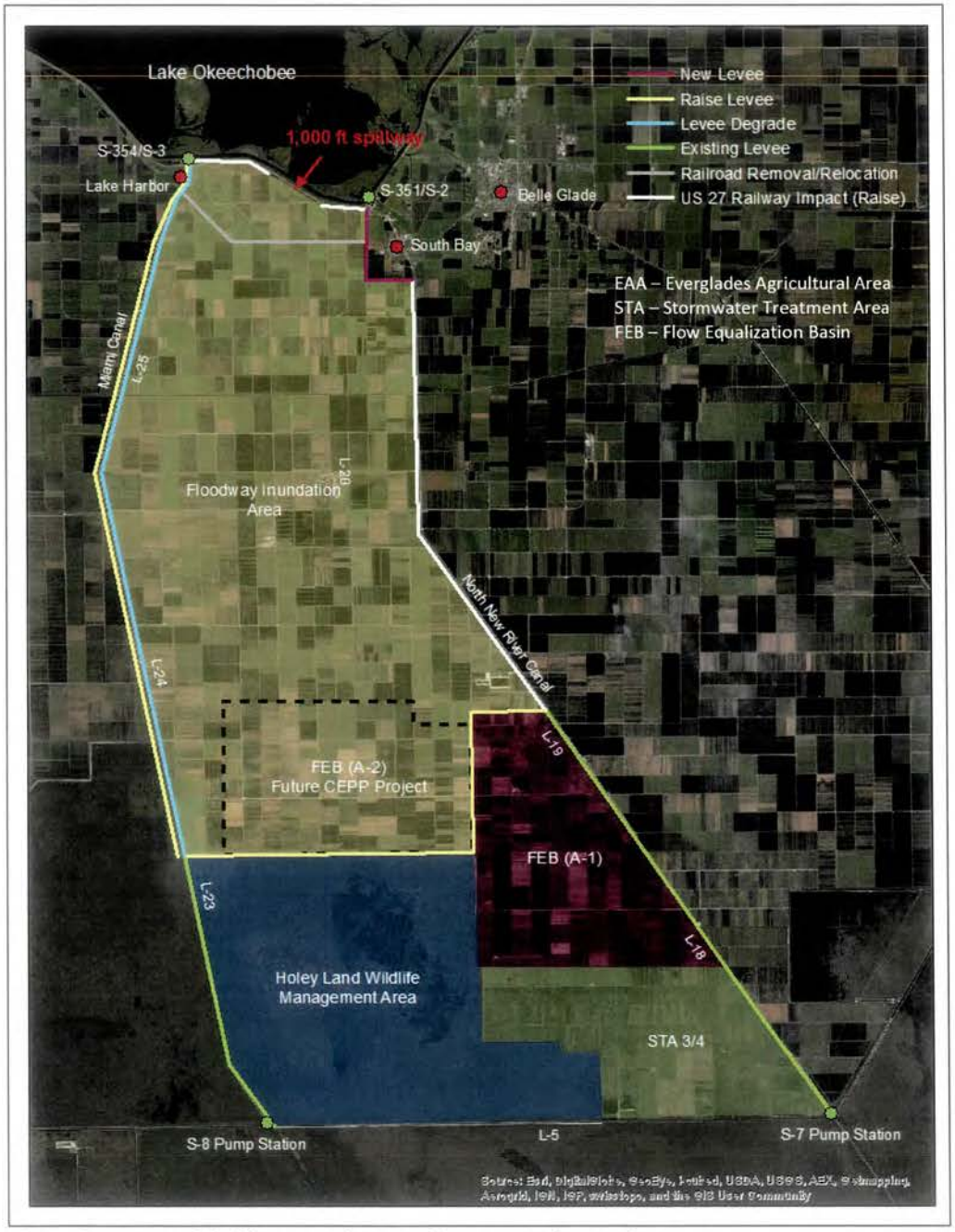

Figure 2-5. Conceptual Spillway and Retention Area Alternative

2.3.2.3 Controlled Breach and Retention Area Alternative

This plan includes deliberately breaching the dam at a predetermined location that would result in no/low potential for life loss and low economic damages to preclude a breach in a location that would result in a much higher consequences. This plan differs from the Dam Removal Alternative in that the this plan is based on a scenario in which an internal erosion failure has progressed, intervention has failed, and a breach would occur within 24 to 36 hours absent a rapid drop in lake stage. This plan requires that within a short notice period (2-3 hours), local law enforcement clear the Population At Risk (PAR) from the predetermined impacted/inundation area and re-

route all traffic accordingly. The proposed controlled breach location is the same as the new service spillway, to take advantage of a low-lying downstream agricultural area that would serve as a breach flood getaway and temporary retention area, assuming required flowage easements are secured. The breach width necessary to lower the reservoir from 25 ft to 18 ft NAVD 88 within 24 hours is estimated to be 3.75 miles.

Although this plan offers an opportunity to reduce risks, it does not reduce risk associated with a wind-driven wave overwash failure. For internal erosion failure modes, this plan may not reduce individual risk to within tolerable guidelines, meaning that, despite the efforts of local law enforcement, transient PAR would likely remain in the inundation area. This alternative also assumes that the control breach would undoubtedly prevent an additional uncontrolled breach at the progressing failure mode location. It is likely that by the time the breach was determined to be imminent at a progressing failure mode location, a controlled breach of the dam at a different location would not progress and reduce reservoir loading quickly enough to stop the progressing failure.

STOP UP STREAM PROBLEMS

Downstream property damages are not well defined and would likely include damages to US Hwy 27 (emergency and interior hurricane evacuation route for south Florida region), a railroad, an existing industrial complex, and others. In addition to infrastructure damage, indirect damages include economics of the region with loss of crops and flooded quarries for an extended period of time (e.g. months to a year), as well as catastrophic environmental damages to a sensitive and unique ecosystem currently holding hundreds of millions of dollars in sunken Federal and state capital investments. Potentially, flood damages may occur elsewhere within the C&SF system as the main floodwater storage components of the system (Lake, Water Conservation Areas, future reservoirs) would be strained with dewatering of the flooded EAA area for up to a year (e.g. lack of pumped water storage, excess seepage from the conservation areas over long duration, canal storage, etc.).

Based on a screening level evaluation, this plan was eliminated from further consideration. Although major consequences have been noted here, there are various other consequences that would further justify the final decision to eliminate breaching the dike in a deliberate manner.

2.3.2.4 Dam Replacement Alternative

This alternative includes replacing the existing dam with a new dam, built in increments, along the same alignment. Existing embankment material would be reused to the extent practical. This plan would require reauthorization of major portions of the C&SF Project. Dam replacement may require multiple decades to complete, with an estimated construction cost of $15B.

REPAIR AND MODE ION

The Dam Replacement Alternative is not pursued further because of the high cost and time to implement.

2.3.3 System-Wide Non-Structural Risk Management Plans

System-wide alternatives were formulated to determine if solutions other than rehabilitation of the dike existed to satisfy the risk reduction objectives.

2.3.3.1 New Lake Okeechobee Regulation Schedule Alternative

Several Lake Okeechobee regulation schedules were considered to determine if a change in the lake regulation schedule could significantly reduce the loading on the dam, and therefore the necessary rehabilitation. **Figure 2-6** depicts Lake Okeechobee Regulation Schedule 2008, developed to satisfy flood control, water supply, environmental requirements, and dam safety concerns.

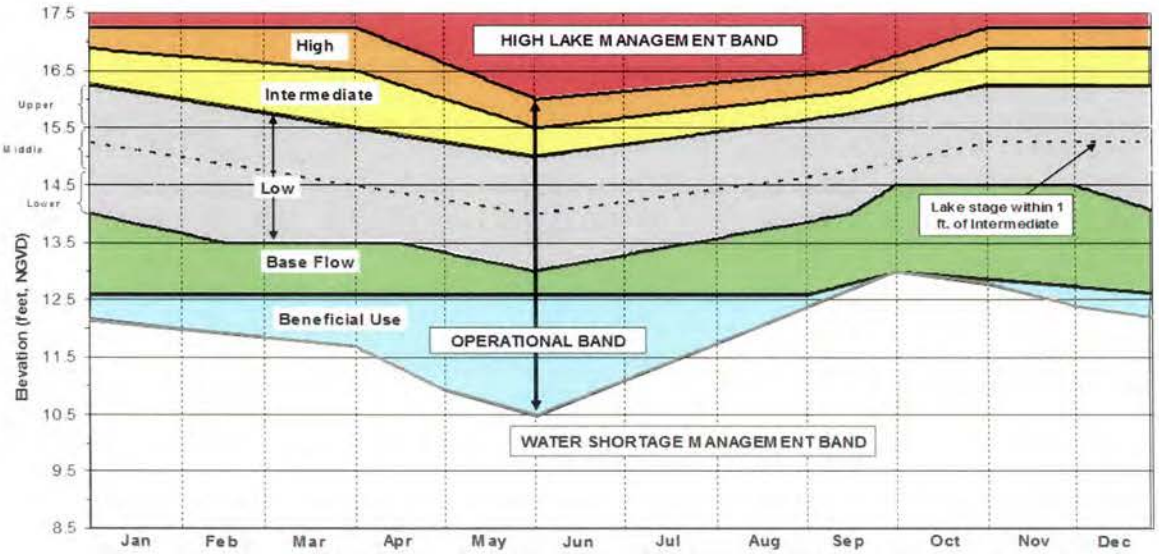

Figure 2-6. Lake Okeechobee Regulation Schedule 2008

As part of the HHD Major Rehabilitation Report 2000, a stage-frequency analysis was conducted that demonstrates that, even with an initial lake stage of 9.1 ft. (NAVD88), the Standard Project Flood (SPF) event results in a peak lake stage of 23.7 ft. (NAVD88). This situation is caused by a large volume of water that flows into the lake during an SPF event combined with a limited lake discharge capacity. Therefore, implementing a modified operational schedule would not significantly reduce lake stages during large storm events, and this alternative was screened from further consideration from the DSMS.

More recent hydrologic modeling using the MCRAM methodology also demonstrates that the LORS has limited ability to reduce the peak SPF on the lake versus prior regulation schedules. **Figure 2-7** and **Figure 2-8** show a peak SPF stage of el. 22.8 ft., NGVD29 (el. 21.5 ft., NAVD88) and el. 23.7 ft., NGVD29 (el. 22.4 ft., NAVD88) for the current LORS (2008-present) and RUN25 (1994-2000) lake regulation schedules, respectively.

Step 1: The risk assessment of each segment for both existing and future without federal action conditions (FWAC)/No Action was examined to identify where formulation of risk reduction measures is needed.

The first criterion in identifying minimally acceptable alternatives pertains to remediating areas of the dike where the risks of public safety and loss of life is intolerable. Since societal life loss is paramount to the Dam Safety program, a conservative approach was taken to account for uncertainty and formulate any segment without considering the potential for human intervention to detect and stop progression of a failure mode prior to breach. At a minimum, all alternatives in the final array would reduce risks to greater than an order of magnitude below societal life safety Tolerable Risk Guidelines (TRGs).

Segments 5-2, 8, 12, and 13 all present societal life safety risks that were determined to be intolerable.

The second criterion examined the probability of a dike breach occurring in any given Segment on an annual basis. Contrary to the formulation of segments for societal life loss and public safety, a less conservative approach was taken when formulating solutions based on the annual probability of a dike failure and consideration for possible intervention was included. Intervention would occur if a failure mode were detected and active flood fighting took place to prevent breach (as has occurred historically at HHD and at similar facilities).

Segments 4 through 9, 12, and 13 are all considered to have an annual probability of failure from internal erosion failure modes that causes concern and are included in the formulation of alternatives.

WHAT-IF WHAT-IF PROBLEMS

Structures S-71, S-72, and the SR 78 Harney Pond Canal Bridge crossing also cause concern for an overtopping driven failure due to low dike elevations at these points. The remediation of these structures (articulated concrete block armor and/or floodwall) is included in all of the alternatives as the cost of remediation is low when compared to the economic, social, and environmental damages that would occur from a breach at these locations.

Step 2: In addition to formulating solutions at the segment level, alternative formulation then focused on identifying combinations of segmental measures within CIZs in order to reduce the probability of a breach, and the resulting economic, social, and environmental risks to tolerable levels for the entire zone. As previously described, common economic, social, and environmental impacts would occur due to overlapping inundation patterns that occur for a breach in any segment within a CIZ. The annual probability of a breach and the breach-related economic and environmental risks for a given zone are not tolerable unless each segment in that zone is tolerable. Leaving a "weak link" or intolerable segment in any of the zones would render the entire zone intolerable.

WHAT IF PROBLEMS

Step 3: After solutions were formulated per segment, they were categorized into alternative concepts. The resulting measures identified at the segment were simply combined to form four alternatives at the CIZ. Respective alternatives per CIZ were then combined to provide four complete alternatives based on segmental solutions. The four alternatives are as follows:

NOTE WE NEED FACTS NOT (WHAT IF) AND PLEASE NO MORE (ASSUME) IS A WEAK LINK PEOPLE

Alternative 1: Alternative 1 reduces societal life safety risk to tolerable levels for every segment using the most cost-effective approach. As societal life safety is of paramount concern to the nation, the segments included in this minimal alternative are also included in Alternatives 2-4.

Alternative 2: Alternative 2 includes the risk management plans identified in Alternative 1 to reduce societal life safety risk and includes segments where the risk to individuals and the probability of a dike breach are intolerable. This alternative includes remediation of segments or CIZs having an intolerable probability of failure, regardless of the economic, environmental or social consequences.

Alternative 3: Alternative 3 reduces risks for all segments in which either societal or individual life safety risks were determined to be intolerable. However, this alternative only includes risk reduction for segments where the probability of a dike breach is intolerable and there are significant economic, social or environmental risks.

Alternative 4: Alternative 4, similar to Alternative 2, also reduces individual and societal risk for every segment, and brings the probability of failure to tolerable levels for every segment regardless of the economic, environmental or social consequences. However, this alternative is formulated to achieve a complete remediation of the individual failure modes being addressed to support the ultimate goal of having an adequately safe dam that meets essential USACE guidelines and the total residual risk for the dam is considered tolerable (DSAC V).

Each of the alternatives was analyzed to determine if there was a faster means of satisfying the primary objectives and considerations were applied to each alternative to identify if there was a refinement that could further reduce risk in a cost effective manner.

2.3.4.1 Segmental Risk Management Measures Considered

This section discusses the structural risk reduction measures that were carried forward for further evaluation. The measures for segmental designs are probabilistic, meaning no minimum service reservoir level and factors of safety were selected for design as would be done for a typical deterministic engineering solution. Rather, the robustness of the designs was tailored to annual probability of reservoir loadings and resulting downstream consequences. These plans will reduce risk and probability of failure.

2.3.4.1.1 Internal Erosion

GOOD IDEA

GOOD IDEA

Structural risk reduction measures for internal erosion can be generalized into two categories; cutoff walls and internal drainage systems. Three general variations of cutoff wall and three general variations of internal drainage systems were evaluated. For cutoff walls, these variations include different depth governing criteria based on the location specific geology and the cross sectional details of the embankment in each segment. Two different alignments of the cutoff wall were also considered (i.e. in the upstream face of embankment or along the centerline). Variations in the internal drainage system included depth or presence of a foundation trench to intercept through foundation seepage, presence of a chimney drain in the embankment to intercept through embankment seepage, and the materials and stages within the drain.

2.3.4.1.2 Cutoff Walls

Cutoff walls were evaluated as a risk reduction measure around the dam. Cutoff wall depth varied by segment based on local geologic conditions (permeability of the strata penetrated by the wall, erodeability of the foundation strata, reduction in estimated seepage exit gradients, etc.). The proposed wall depths were also influenced by the cross sectional characteristics of the embankment that could influence the depth of an internal erosion failure path; such as ground surface elevations at the toe and ditch or canal invert elevations. The proposed cutoff wall would be constructed of a Soil-Cement-Bentonite mixture, constructed by mixing a cement bentonite clay slurry with in-situ HHD soils. This would result in a low permeability barrier with strength characteristics similar to weak concrete.

Generally, the proposed cutoff walls can be separated into three categories; 1) traditional cutoff walls that tie into a confining layer, 2) partly penetrating (hanging) cutoff walls or walls that do not tie into any specific confining unit, and 3) cutoff walls that tie into a less erodible limestone layer. The magnitude of risk reduction is significantly different for the various wall types and therefore the depth requirements of the wall are variable around the dam.

GOOD IDEA HERE

Traditional fully penetrating cutoff walls that tie into a confining layer provide the largest magnitude of risk reduction. These walls cut off most seepage, reduce downstream pore water and exit gradients, cut off horizontal failure paths and force a failure path to advance through less erodible soils. This type of cutoff wall could be implemented in Segments 12/13 and in Segments 5 and 6 and throughout portions of other segments where clay or clayey soils are present in the foundation. **Figure 2-9** presents a generalized section of this variation of cutoff wall.

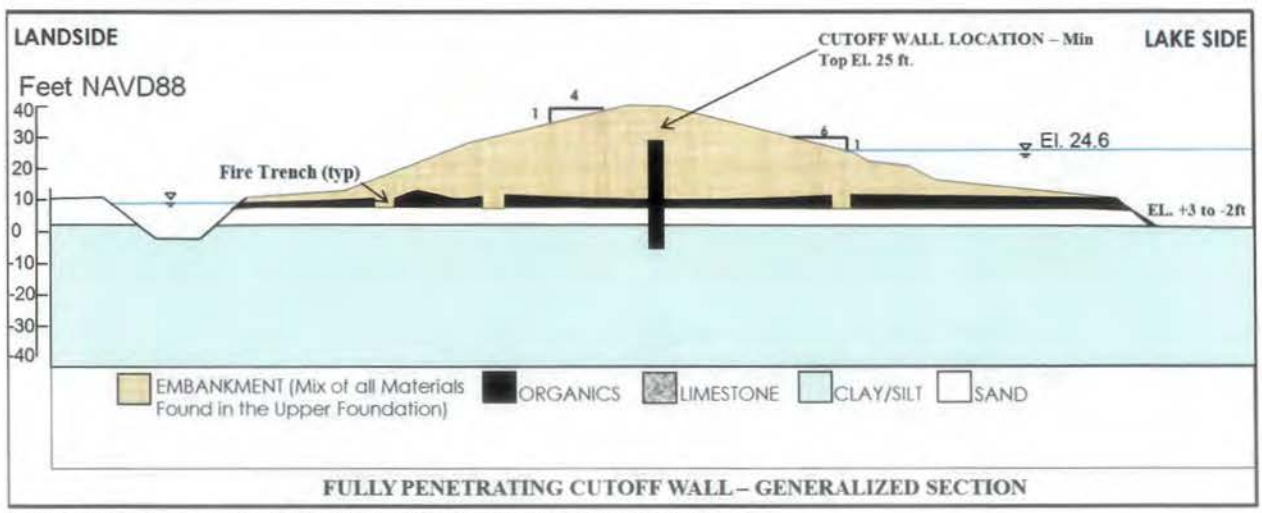

Figure 2-9. Generalized Section of Fully Penetrating Cutoff Wall

Partly penetrating cutoff walls achieve risk reduction by increasing the seepage path length, interrupting the horizontal failure path through the embankment and shallow foundation, add a vertical component to the failure mode progression, and significantly increase the reservoir levels that could initiate and progress an internal erosion failure mode to failure. For this variation of cutoff wall, the minimum wall depth that was established extends the cutoff wall to at least 20 feet below the adjacent canal/ditch invert elevation. This cutoff wall is proposed for a few isolated

areas in the south of HHD. **Figure 2-10** presents a generalized section of this variation of cutoff wall.

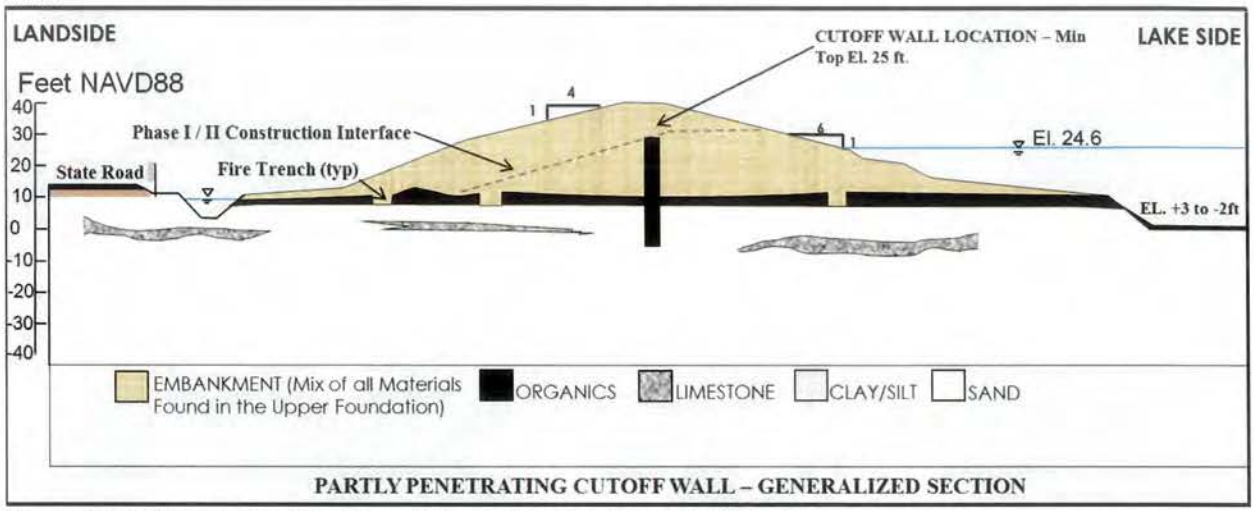

Figure 2-10. Generalized Section of Partly Penetrating Cutoff Wall

Partly penetrating cutoff walls that penetrate limestone are similar to that discussed above but with the additional benefit of forcing seepage flows and the failure path through un-erodible limestone or through a more tortuous path that must progress through defects in the limestone. This type of cutoff wall could be implemented throughout most of the southern segments of HHD.

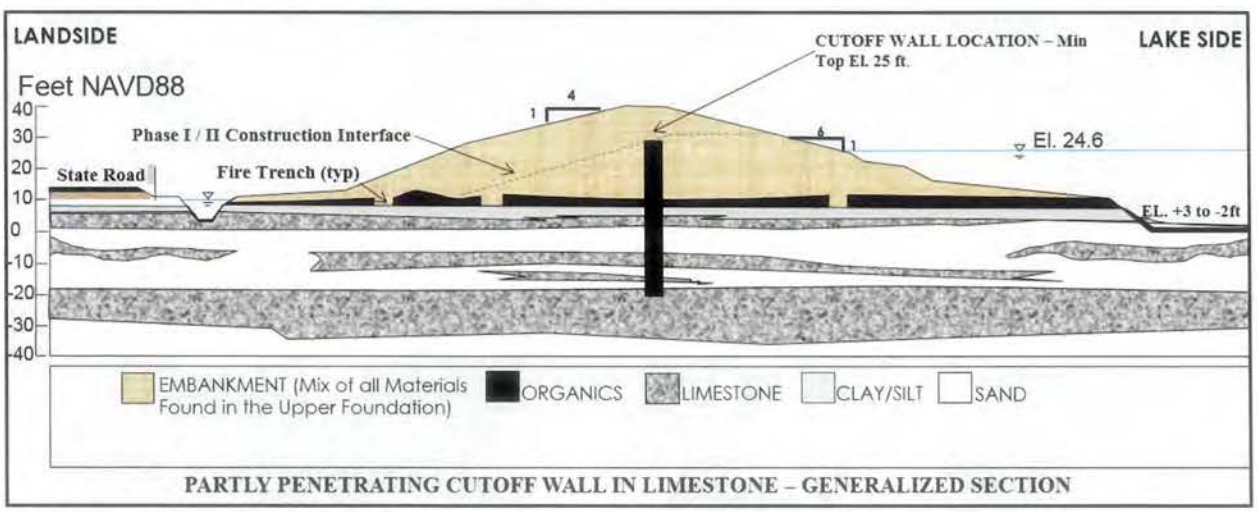

Figure 2-11. Generalized Section of Partly Penetrating Cutoff Wall Tipped In Limestone

The partly penetrating cutoff walls meet the risk reduction objectives; however, it should be understood that unfiltered seepage would likely still discharge in the toe ditch during high reservoirs.

2.3.4.1.3 Internal Drainage Systems

Internal drainage systems of varying designs and configurations were evaluated around the full length of the dam. The design and effectiveness of an internal drainage system varied around the dam considering local geologic conditions, actionable failure modes, and adjacent features such

Short duration, shallow overtopping could occur under certain elevated lake levels in combination with tropical cyclone storm surge on the lake.

2.3.4.2.1 Articulated Concrete Block (ACB)

GOOD IDEA

Articulated Concrete Block (ACB) is a crest and landside slope protection measure that was evaluated as a risk reduction measure for the overwash/overtopping failure mode. ACB consists of inter-connected concrete blocks that form a hard armor to protect against surface erosion. These blocks can be open cell and infilled with topsoil and vegetated, or can be closed cell concrete surface treatments (depending on the severity of the erosive forces being resisted). ACB is proposed to armor the crest and landside of the embankment for several hundred feet surrounding the Harney Pond Bridge. Construction of an ACB erosion protection system around the SR78 Harney Pond Bridge meets risk reduction objectives in this area. This structural measure would reinforce the embankment such that short duration overtopping during a storm would not fail the embankment; however, some flooding could still occur in the areas surrounding the bridge as a result of the overtopping. The combinations of loading events that would result in overtopping this area have a low probability of occurrence; therefore, this interim risk reduction measure is considered practical. The recommendation will be made to Florida Department of Transportation to raise the bridge to match surrounding embankment crest elevations upon normal service life replacement.

2.3.5 Formulation of Segmental Risk Management Plans

Plans were developed to remediate both the internal erosion and overwash and overtopping failure modes. The primary consideration is ensuring risks are reduced to tolerable levels with cost-effective considerations, and every alternative considered would, at a minimum, reduce risks to tolerable levels for life safety. Additionally, as a secondary metric, an assessment of the economic, environmental, and societal benefits and impacts determined if there was justification to take action in areas exhibiting intolerable probabilities of failure, but the risk to life safety was above guidelines. Plans were also examined based on implementation speed, robustness, resiliency, and redundancy.

Upon identification of the required depth of cutoff wall to reduce risks to tolerable levels, and the internal drainage system that most practicably meets Essential USACE guidelines, formulation of alternatives focused on which segments these solutions would be applied. Alternative 1, focused specifically on the most economical means to reduce life safety risks. Alternative 2 focused on the most economical means to reduce probability of failure for all segments that were identified as intolerable. Alternative 3 focused on the most economical means to reduce risks below TRGs, but also relied upon the significance of the economic, environmental, and social impacts that would result in the aftermath of a breach. Alternative 4 is similar to Alternative 2, but includes the most practicable means to meet essential USACE guidelines while reducing risks.

Table 2-2 presents the results for all four of the segmental alternatives arranged by common environmental and economic zone. Each of these alternatives were determined to be cost effective solutions to providing at a minimum life safety, and to varying degrees reduce risks in order to lower the likelihood of expected annual economic and environmental damages. **Table 2-3** presents the results of the overwash and overtopping alternatives arranged by common environmental and economic zone.

Table 2-2. Segmental Alternatives Description for Internal Erosion Failure Modes

Segment	Intolerable Probability of a Breach (Yes/No?)	Intolerable Societal Life Loss (Yes/No?)	Alternative 1	Alternative 2	Alternative 3	Alternative 4
ZONE A						
22, 23, 24	NO	NO	No action included in the DSMS: Cutoff-wall constructed as part of the 2000 MRR			
1	YES	YES	No action included in the DSMS: To be completed as part of the 2015 MRR Supplement			
2 and 3	YES	NO				
ZONE B						
4, 5, 6 and 7	YES	NO	No Action Recommended	Cutoff Wall	Cutoff Wall	Internal Drainage System
5-2 and 8	YES	YES	Filter at the Raw Water Intake	Cutoff Wall and Filter at Raw Water Intake	Cutoff Wall and Filter at Raw Water Intake	Internal Drainage System and Filter at Raw Water Intake
8	YES	YES	Cutoff Wall	Cutoff Wall	Cutoff Wall	Internal Drainage System
9	YES	NO	No Action Recommended	Cutoff Wall (Full Segment)	Cutoff Wall to C-5A	Internal Drainage System (Complete Segment)
Segment 10: No action is recommended. Risk is considerable tolerable.						
ZONE C						
Segments 11 and 14A: No action is recommended. Risk is considered tolerable.						
12	YES	YES	Cutoff wall from the interceptor levee east to segment end	Cutoff wall (Full Segment)	Cutoff wall from the interceptor levee east to segment end	Internal Drainage System (Complete Segment)
13	NO	YES (Adjacent to Segment 12)	Cutoff Wall- segment start to Sta. 4665	Cutoff Wall- segment start to Sta. 4665	Cutoff Wall - segment start to Sta. 4665	Internal Drainage System - segment start to Sta. 4665
Zone E						
Segments 17, 18A, 18A-2 and 18B: No action is recommended. Risk is considered tolerable.						
Zone F						
Segments 19A, 19A-2, 19A-3, 19B and 19C: No action is recommended. Risk is considered tolerable.						
Zone G						
Segments 20 and 21: No action is recommended. Risk is considered tolerable.						

boulders can be found within the embankment. These coarse pockets vary in length and thickness, and can have voids between the cobbles or be filled with a matrix of sand and gravel. These pockets are highly permeable.

Foundation

Organic Horizon: The organic horizon is 0 to 10 feet thick and has low permeability. The color of this horizon is typically black or brown, and it may vary from fibrous to intensely decomposed. The organic horizon is also composed of organic silt. The organic horizon is about eight feet thick at Belle Glade and gradually thins out both to the northeast and west. It is continuous in Reach 3 but thins and grades to organic stained sands in Reach 2. This horizon sometimes appears to be thicker, thinner, or out of sequence compared to the natural geologic sequence. This is usually the result of local excavations, fill placement, or spoil disposals. Any material overlying the organics is usually fill used to construct the dike.

Fines Horizon: The fines horizon has low permeability and alternating marine and freshwater limestone and/or marls. This horizon is typically tan, calcareous silts and clays formed from decomposed limestone. The fines horizon is not continuous, and pinches out in the eastern half of Reach 2 and ranges from one to five feet thick. Where the fines horizon is absent, the rock or sand horizons underlie the organic horizon.

Rock Horizon: The rock horizon is usually 0 to 30 feet thick. The rock horizon occurs throughout Reach 3 but thins in Reach 2 and is no longer continuous. This horizon is composed of interbedded limestone or sandstone and sand layers. The limestone within the rock horizon varies from dense crystalline limestone to sandy and shelly limestone. Some of the limestone is essentially impermeable, while the remainder varies to highly permeable, containing fractures, voids and solutioning features. In some areas, the rock horizon is essentially all limestone. In other areas, the limestone grades into sand deposits. The sands are usually clayey and silty, calcareous sands. Fine deposits such as silt and clay are interbedded within the rock horizon, formed from decomposing limestone.

Sand Horizon: The sand horizon is usually 30 to 110 feet thick. The sand horizon is typically fine to medium grained quartz sand and quartz silty sand. It sometimes has a significant shell component, and occasionally shell layers are present. Limestone beds are common.

Reach 4 (CIZ B)

Embankment

The HHD embankment was constructed using dredged material from Lake Okeechobee and is a heterogeneous mixture of loose to medium density, fine grained, silty, clayey, quartz sand with high percentages of silt and clay (average 30%), and varying amounts of shell. Other materials encountered in the fill at minor percentages are organic soils and peat, limestone and sandstone gravel, and cobbles, with occasional layers of sandy clay and silt. Along the Fisheating Creek tieback, the amount of fines decreases significantly. The fill is approximately 22 feet thick along the main stem of the crest and pinches out at the west end of the Fisheating Creek tieback.

Foundation

Organic Horizon: The organic horizon is 0 to 2 feet thick and has moderate permeability. The color of this horizon is typically black or brown and consists primarily of fine, organic stained, silty quartz sand and occasional layers of sandy organic silt and peat. These organic materials may become thicker in lower lying areas.

Sand Horizon: Below the organic horizon, over 100 foot thick sand is encountered. The sand horizon is composed of two distinct sand units. A bowl of high fines content sand and clays are found in the middle of the reach and are surrounded and underlain by cleaner sands with occasional rock layers. The sand within the bowl is found to be up to 70 feet thick and is composed of greenish gray, silty, clayey, and fine to very fine quartz sand with shell. The sands have a high fines content that averages over 30 percent, and is found to transition into layers of sandy silts and clays. The clay layers can run for several thousand feet, interbedded with silty/clayey sand and can be over 5 feet thick. The sand that surrounds and underlies the dirty sand is a homogeneous fine, partially cemented, light greenish gray, slightly silty to clean quartz sand with trace shell. These sands are dense, partial cemented, with occasional layers of sandstone and sandstone nodules.

Reach 5 (CIZ F) My AREA North of LAKE

Embankment

The HHD embankment was constructed using dredged material from Lake Okeechobee and is a semi-homogeneous mixture of loose to dense, fine to medium grained, clean to slightly silty quartz sand with shell. Other materials encountered in the fill at minor percentages are organic soils, and limestone and sandstone gravel, cobbles, with possible boulders. The thickness of the fill averages 25 feet.

Foundation

Organic Horizon: The organic horizon is 0 to 1 foot thick, semi-continuous, and has moderate permeability. The color of this horizon is typically black and consists of primarily of loose fine to medium grained clean to silty organic stained quartz sand with varying amounts of silt and occasional pockets of organic sandy silt, and peat. These organic materials may become thicker in lower lying areas.

Sand Horizon: This sand horizon is found to be over 100 feet thick and consists of semi-homogeneous light greenish gray, clean to slightly silty fine quartz sand with shell. Also found widely scattered throughout this unit are layers of silty to clayey fine quartz sand and layers of clay and silt. At various locations within this sand unit, the sand is composed of wholly fine to coarse sand sized broken shell with lesser amounts of quartz sand and fines; which account for less than 5% of the whole unit. This sand unit is generally of loose to medium consistency with dense areas generally caused by higher degrees of cementation, consolidation or thin layers of sandstone. Multiple thin layers of discontinuous soft to moderately hard sandstone can be found widely scattered throughout this sand unit.

Reach 6 (Includes Harney Pond Canal and Indian Prairie Canal; CIZ C, D)

Embankment

The HHD embankment was constructed using dredged material from Lake Okeechobee and is a heterogeneous mixture of loose to medium consistency, fine to medium grained, clean to silty quartz sand with shell. Minor percentages of organic materials and organic stained sands would also be present. At several locations within the main stem, the sand becomes considerably finer consisting of mostly, loose, very silty and clayey, fine quartz sand with significant interbedded layers of soft, sandy clay and silt up to 5 feet thick. In addition, from the middle of the reach towards the east, the shell content increases as does the appearance of limestone gravel, cobbles, and an occasional boulder. The fill is approximately 25 feet thick along the main stem of the crest and pinches out at the west end of the Fisheating Creek tieback.

Foundation

Organic Horizon: The organic horizon is 0 to 1 foot thick, semi-continuous, and has moderate permeability. The color of this horizon is typically black and consists primarily of loose fine to medium

The Soils of the Flatwoods group are level to gently sloping flat areas and poorly drained. These soils are acid to loamy sands and are low in fertility. Flatwood soils occur in areas where the water table rises to within five to 20 inches of the soil surface at least once during a growing season. The Soils of Sloughs and Freshwater Marshes are nearly level and poorly drained. These soils are found in areas with longer hydroperiods (typically nine to twelve months) and greater maximum depths of flooding. The soils of the Everglades group are nearly level and very poorly drained. This group of soils has a surface layer of muck underlain by limestone. These are primarily moderately permeable soils with a water table within three feet of the ground surface.

NEED ACTION SOON

3.3 LAND USE

AGRICULTURE IS OUR PROBLEM NO ENFORCEMENT DONE

The primary land use in the Lake Okeechobee region is agriculture. Major agricultural activities in the area include sugarcane plantations, ornamental plant nurseries, and citrus groves.

The Farmland Protection Policy Act of 1981 was enacted to minimize the extent that Federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. The U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) is responsible for designating prime or unique farmland protected by the Act. In early 2010, the NRCS designated certain high-value crops in Florida, such as sugarcane, ornamental plant nurseries, and citrus groves, as "unique," thereby protecting these farmlands under the Act. Unique farmland protected by the Act exists in close proximity to the HHD in Reaches 2 and 3.

3.4 HYDROLOGY & HYDRAULICS

Surface Water

Inflow to Lake Okeechobee for drainage purposes and outflow for agricultural water supply and other purposes, such as releases made under LORS 2008, are made through a series of Federal, state, and local drainage district culverts that penetrate the HHD. The majority of inflow enters Lake Okeechobee through several major canals and control structures. In general, excess runoff from the drainage basins are gravity fed to the canals and structures on the north, east, and west shores of Lake Okeechobee, as well as pumped to the canals and structures on the south shore of Lake Okeechobee. The Lake Okeechobee drainage area, including Lake Okeechobee, is approximately 5,600 square miles. The Standard Project Flood (SPF) was selected as the inflow design flood (IDF) for the HHD Project. The SPF is equivalent to a stage of 24.7 feet NAVD88.

Inflow enters from the north, east, and west of Lake Okeechobee through the following watersheds: Kissimmee River, Taylor Creek-Nubbin Slough, Fisheating Creek, Nicodemus Slough, and Lake Istokpoga. Inflow enters from the south of Lake Okeechobee through mostly state and local water control districts in the watershed designated as the 'South Shore'. These basin discharges are generally pumped back into Lake Okeechobee through the HHD culverts, with the exception of Culverts S-2 and S-3, which pump directly into Lake Okeechobee. In general, the HHD culverts along the south shore have surface water management permits for drainage to Lake Okeechobee and water supply from Lake Okeechobee for agricultural irritation purposes.

The largest outlets of Lake Okeechobee include the St. Lucie (C-44) and the Caloosahatchee Rivers (C-43). Four major agricultural canals (West Palm Beach, Hillsboro, North New River, and Miami) drain to the south into Stormwater Treatment Areas (STAs), and then sequentially through the three Water Conservation Areas (WCAs). **Figure 3-2** shows the major Lake Okeechobee hydrologic features including

the contributing watersheds to the north, east, and west, and the local water control districts along the south shore of Lake Okeechobee. Please see **Figure 3-4** for a map of structure locations.

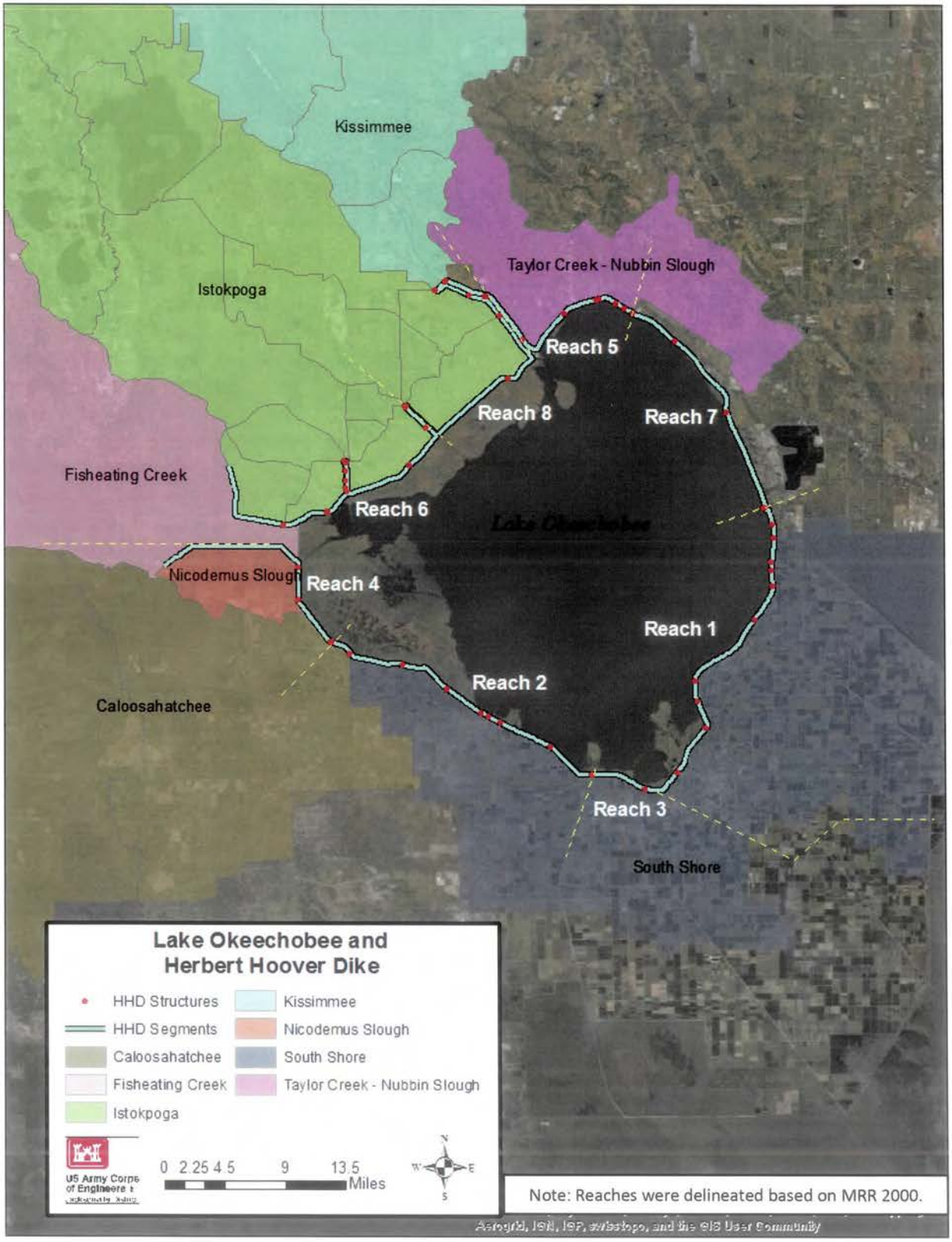

Figure 3-2. Basin Location Map

Kissimmee River

The Kissimmee River drainage basin encompasses about 2,260 square miles and extends from Orlando southward to Lake Okeechobee at the mouth of the Kissimmee River (C-38). The basin is the largest source of surface water flow to Lake Okeechobee with the inflow from C-38 controlled at SFWMD structure S-65E. There are two culverts that discharge into C-38 south of S-65E: KI-1 and KI-2.

Taylor Creek – Nubbin Slough REACH #5 AREA'S

The Taylor Creek – Nubbin Slough drainage area bordering the north and northeast shores of Lake Okeechobee encompasses about 309 square miles and extends from the Kissimmee River (C-38) to the St. Lucie River (C-44). All inflow from this watershed is controlled. There are five HHD culverts in the basin: C-6, C-7 (abandoned), C-8, C-9 (abandoned), and Taylor Creek Culvert (TCC; abandoned). The C-7, C-9 and TCC culverts are not in use and considered abandoned in place.

NOTE-NO ENFORCEMENT OF 40E-61 OR 40E-63 PEOPLE

Fisheating Creek

Fisheating Creek is located principally in the western portions of Highlands and Glades counties, with the western boundary extending into the easterly edges of Hardee, DeSoto, and Charlotte counties. The drainage area is adjacent to the Peace Creek Basin on the west and northwest, the Lake Istokpoga-Indian Prairie and Harney Pond Canal areas on the north and northeast, and Nicodemus Slough on the south. Fisheating Creek drains an L-shaped area of about 550 square miles. From the headwaters near Lake Josephine, the creek discharges uncontrolled and flows south for 32 miles, then east for 23 miles to discharge into Lake Okeechobee. UNCONTROLLED FLOWS ARE A PROBLEM DUE TO NO ENFORCEMENT OF 40E-61 AND 40E-63 AGRICULTURE RUN-OFF WATER

Nicodemus Slough

The Nicodemus Slough drainage basin borders the southwest shore of Lake Okeechobee extending from Fisheating Creek to Culvert 5A just north of the Caloosahatchee River watershed. The area encompasses about 39 square miles and normally drains to Lake Okeechobee. When lake levels are abnormally high, it is necessary to drain some of Nicodemus Slough south to the Caloosahatchee River through structures C-5 and C-5A. There are two HHD culverts in the basin: C-5 and C-5A. THIS IS NOT A VERY GOOD IDEA DUE TO DRINKING WATER BECOMES POLLUTED

Istokpoga

The Istokpoga drainage basin borders the northwest shore of Lake Okeechobee from Kissimmee River (C-38) to Fisheating Creek and encompasses about 1,070 square miles. Levees isolate the two main canals, Indian Prairie Canal (C-40) and Harney Pond Canal (C-41) from the watershed. There are three culverts that discharge into Indian Prairie Canal: IP-1, IP-2, and IP-3, as well as the S-72 gated spillway; and six culverts discharge into Harney Pond Canal: HP-1, HP-2, HP-3, HP-5, HP-6, and HP-7, as well as the S-71 gated spillway. The FC-1 culvert discharges into the L-50 borrow (Refer to **Figure 3-4** for a structure location map).

South Shore

The South Shore of Lake Okeechobee extends from Moore Haven at the Caloosahatchee River to Port Mayaca at the St. Lucie River. There are 13 HHD culverts in the basin: 1, 1A, 2, 3, 4A, 10, 10A, 11, 12, 12A, 13, 14 (to be removed), and 16. The drainage areas associated with these 13 culverts are local water control districts mostly contained within the Everglades Agricultural Area (EAA), but also include U.S. Sugar, Trucane, Lake Point and Five Smooth Stones. The EAA is divided into seven drainage basins and is comprised of a network of canals, structures, and levees that divide the area to provide for the removal of excess water to Lake Okeechobee and the WCAs to the south. The local drainage districts, also referred to as '298 Districts', have private pump stations that discharge to Lake Okeechobee or the EAA canals. **Figure 3-3** provides a map of the 298 Districts. WE MUST STOP BACK PUMPING

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NOTE – HERE WE SEE NO ENFORCEMENT ACTION TO IMPROVE AREA'S

Surface Water Use

The SFWMD manages the water use permitting process within its boundaries under authority of Chapter 373, State Statutes, 40E-20 Florida Administration Code (F.A.C.). A water use permit allows a user to withdraw a specified amount of water, from the ground, a canal, a lake, or a river. The water can be used for public water supply, for industrial processes, or for irrigation.

There are 298 Water Control Districts (originated through Florida State Statute 298), which maintain and operate a secondary canal systems in the EAA (**Pickett et al., 2013**; **Figure 3-3**). The water use in the EAA is assured by maintaining water levels in these canals. The Water Control Districts maintain water levels approximately 1 to 2 feet below ground surface for most of the year. During the planting and harvesting seasons, water levels are lowered further to facilitate operations. During dry periods, increased water use and high evapotranspiration can result in undesirably low water levels in Lake Okeechobee. To reduce adverse ecological effects from low lake levels, the SFWMD has developed a water supply management plan that requires various actions to be taken according to the severity of the dry conditions. The basis of this plan is an allocation scheme that parcels out lake water based on estimated water use for the remainder of the dry season.

Groundwater

The groundwater resources in the Lake Okeechobee area include the surficial unconfined aquifer system (SAS) and the Floridan Aquifer System (FAS) separated by the Intermediate Confining Units (**Radin et al. 2005**). Artesian freshwater conditions exist in the Upper Floridan Aquifer in the areas along HHD Reaches 4, 5, 6, and 8. Groundwater recharge in the area occurs primarily from precipitation. Pumping of the surficial aquifer for agricultural and potable water needs occurs around the entire perimeter of the lake though it is most predominant in the northern reaches of the lake. In the northern reaches (Reaches 4, 5, 6, 7, and 8) of the HHD, surficial aquifer groundwater tends to move from the landside to the lakeside since adjacent land elevations and groundwater levels are generally higher than the lake levels. Through the southern reaches (Reaches 1, 2 and 3) of the HHD, surficial aquifer groundwater tends to move from the lakeside to the landside (**England et al. 2013**) since adjacent land elevations and groundwater levels are generally lower than the lake levels. THIS IS A PROBLEM THAT CAN CAUSE SALT-WATER INTRUSSION TO ACCURE.

The typical depth to the surficial groundwater table in the Lake Okeechobee area is about three feet below ground surface. In Palm Beach, Glades, and Hendry counties, the SAS may extend to 200 feet below ground surface in HHD Reaches 2 and 3. The surficial groundwater aquifer in the vicinity of the eastern and southern portions of the HHD extends from the land surface (8.7 feet NAVD88) to a depth of -180 feet. The upper portion of this aquifer is potable to a depth of approximately -50 feet below land elevation. Residents and agricultural operations adjacent to the eastern and southern portions of Lake Okeechobee use shallow wells as a source of drinking and irrigation water. The groundwater below elevation -50 feet is not considered potable due to the high salinity of the underlying trapped connate water (i.e., ancient saline water). IRRIGRATION USE CAN CAUSE SINK HOLES TO ACCURE ??

Lithologies that include the SAS consist of undifferentiated fill, peat/silt, inter-bedded zones, highly permeable limestone layers, sand, and semi-confining units (**Pickett et al. 2013**). Pumping tests and other aquifer performance tests have been conducted along the HHD alignment to estimate values of key hydrologicparameters that characterize the transmissivity and storativity of groundwater within the SAS. These tests show that the transmissivity of groundwater in the SAS generally increases moving from north to south, with the overall hydraulic conductivity

estimated at 14 ft/day for the HHD Reaches 4, 5, 6, 7 and 8 and from 1 to 2 orders of magnitude higher along the HHD Reaches 1, 2, and 3.

Groundwater levels surrounding the HHD are rarely static and often fluctuate with changes in lake levels, recent rain events, agricultural pumping and operation of water control structures and canals. Typically, toe ditch water levels adjacent to the HHD are reflective of the local groundwater levels. In contrast, the water levels in the C&SF Project canals are managed by the SFWMD and water levels in those canals do not necessarily represent local groundwater levels. Within the EAA, due to land subsidence and the presence of levees bounding the C&SF Project canals, water levels in these canals can often be several feet higher than the groundwater levels being managed in the adjoining EAA farms.

Compared to the pre-historic condition, the groundwater hydrologic system in the area (particularly along the southern portions of Reaches 1 and 2 and all of Reach 3) has been changed due to the construction of the HHD, the construction/operation of public and private drainage systems and agricultural practices. The completion of the HHD and the primary drainage canal system of the C&SF Project allowed agricultural operations to flourish in the peat-deposited lands downstream of Reaches 1, 2, and 3, to the point that this region became known as the EAA. Water levels in the 298 Water Control Districts with the EAA are artificially maintained approximately 1 to 2 feet below the ground surface during the majority of the year and further lowered during the planting and harvesting seasons to facilitate operations. Other entities (lessees) of the EAA have similar practices. These systems operate under surface water and groundwater use permits issued by the SFWMD. Ultimately, the altered distribution of flows, peat loss, land subsidence, and decline of groundwater tables has caused an increase in the groundwater gradients across the HHD (**England et al. 2013**).

Groundwater Use

Lake Okeechobee provides potable water and recharges the surficial aquifer. The unconfined SAS is the principal source of groundwater for the basin's potable, agricultural, and industrial uses. The confined FAS aquifer has higher levels of dissolved solids such as sodium, thus it is not suitable for potable water except in some areas of Okeechobee and Glades Counties with the higher quality FAS water. Only eight water supply wells are known to tap into the Upper Floridan aquifer in the basin. AGRICULTURE WATER USE IS NOT CONTROLLED IN THESE AREAS AT ALL"

There are approximately 300 surficial aquifer system groundwater pumping wells permitted within the general vicinity of the south, southwest, and southeastern portions of Lake Okeechobee. These wells, in addition to unpermitted wells in the area, are used for household, agricultural, industrial consumption, and de-watering activities. Some of these wells are located within 2,500 ft. of the HHD. The majority of the wells have pump capacities below 1 million gallons per day. In the area south of the HHD, groundwater is used primarily for irrigation, livestock, and landscaping. In addition, there are several groundwater wells that are used for industrial and public water supply. For instance, the city of Moorehaven uses a surficial aquifer wellfield located within one mile of the HHD for its potable water supply.

PROBLEM AREA PEOPLE

Water control Structures

Culverts

The HHD has numerous culvert structures that provide flood protection to residents of Palm Beach, Okeechobee, Highlands, Broward, Hendry, Glades, and Martin counties. Lake Okeechobee and the HHD are integral components of both the C&SF Project and the CERP which aim to provide flood protection, navigation, agricultural and municipal water supply, prevention of saltwater intrusion, recreation, enhancement of environmental resources, and ecosystem restoration.

The current HHD system is composed of 28 operational culvert structures, designated as either 'primary' or 'secondary' culverts (**Figure 3-4**). Primary culverts were mainly constructed along the southern and eastern portions of Lake Okeechobee with a few located near the City of Okeechobee on the northern end of Lake Okeechobee. Secondary culverts, located along the northern side of Lake Okeechobee, were constructed as feeder canals and rivers flowing into Lake Okeechobee. **Table 3-1** summarizes details of each culvert structure.

- 15 primary culverts (adjacent to Lake Okeechobee): Culverts 1, 1A, 2, 3, 4A, 5, 5A, 8, 10, 10A, 11, 12, 12A, 13, and 16
- 13 secondary culverts: Culverts 6, FC-1, HP-1, HP-2, HP-3, HP-5, HP-6, HP-7, IP-1, IP-2, IP-3, KI-1, and KI-2

Four additional primary culverts (C-7, C-9, C-15 and TCC) have been buried and/or scheduled to be removed from service. Additionally, the SFWMD and other private entities operate separate additional culverts into and out of Lake Okeechobee. **Table 3-2** summarizes details of these additional culverts.

NOTE
ON following PAGES
WE TAKE UP CULVERTS AND THERE
LOCATIONS - (X) MARKES THE AREAS
I CALL PROBLEM AREAS

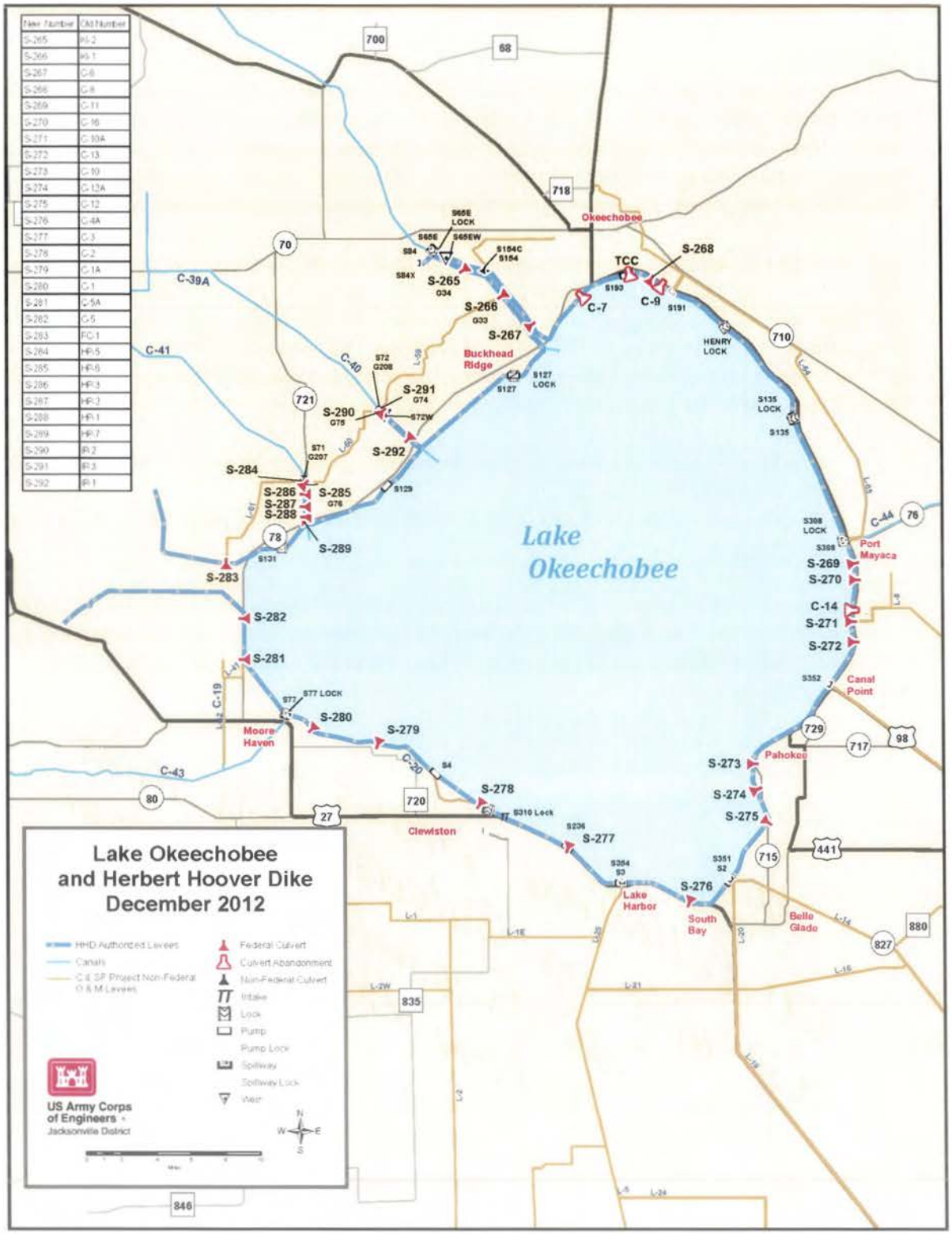

Figure 3-4. Structure Location Map

Table 3-1. HHD Culvert Summary

Culvert Name	New Structure Name	Barrels	Size (ft.)	Pipe Length (ft.)	Barrel Type	Reach	Basin
C-11	S-269	1	10	95	CMP	1	South Shore
C-16	S-270	1	10	96	CMP		
C-10A	S-271	5	10	76	CMP		
C-13	S-272	1	10	95	CMP		
C-10	S-273	2	10	111	CMP		
C-12A	S-275	1	7	86	Concrete		
C-12	S-274	3	10	91	CMP		
C-4A	S-276	1	10	177	CMP	3	
C-3	S-277	2	10	105	CMP	2	
C-2	S-278	6	10	105	CMP		
C-1A	S-279	3	7	172	CMP		
C-1	S-280	2	10	115	CMP		
C-5A	S-281	3	10	160	CMP	4	Nicodemus Slough
C-5	S-282	3	10	160	CMP		
FC-1	S-283	2	9	118	CMP	6	Istokpoga
HP-1	S-288	1	2.5	94	CMP		
HP-2	S-287	1	7	94	CMP		
HP-3	S-286	1	9	94	CMP		
HP-5	S-284	2	9	96	CMP		
HP-6	S-285	2	7	94	CMP		
HP-7	S-289	1	5	94	CMP		
IP-1	S-292	1	5	94	CMP		
IP-2	S-290	2	7	80	CMP		
IP-3	S-291	2	6	80	CMP	8	
KI-1	S-266	3	6	145	Concrete		Kissimmee
KI-2	S-265	1	6	145	Concrete		
C-6	S-267	1	10	151	CMP	5 (X)	Taylor Creek/ Nubbin Slough
C-8	S-268	3	10	151	CMP		

(X) REACH AREA PROBLEM AREAS DUE TO NO ENFORCEMENT ACTION TO IMPROVE RUN-OFF FROM AGRICULTURE – BMP'S ARE VOLUNTARY AND SELDOM ENFORCED AT ALL BY FDEP PEOPLE. COMES TO MY MIND IS THAT FDEP IS RUN BY AGRICULTURE PEOPLE.

Table 3-2. Additional HHD Culverts Summary

Culvert Name	Entity	Barrels	Size (ft.)	Pipe Length (ft.)	Barrel Type	Reach	Basin
S-169	SFWMD	3	7	60	CMP	2	South Shore
S-235	SFWMD	2	6	70	RCP	4	Caloosahatchee
S-47B	SFWMD	2	8	38	CMP	4	Nicodemus Slough
S-129	SFWMD	1	8	119	CMP	6	Istokpoga
S-131	SFWMD	1	8	217	CMP	6	
S-127	SFWMD	1	8	131	CMP	8	
S-154	SFWMD	2	8x10	117	CBC	5	Taylor Creek-Nubbin Slough
S-154C	SFWMD	1	6	136	RCP	5	
S-192	SFWMD	1	4	112	RCP	5	
S-135	SFWMD	2	8	161	CMP	7	S-135 Basin*
IPPC-1	Private	1	3	N/A	CMP	N/A	N/A
IPPC-2	Private	1	3	N/A	CMP	N/A	N/A

* Basin description not included because inflow provides negligible impact on Lake Okeechobee stages

AGRICULTURE DROP POINTS TO LAKE OKEECHOBEE

Lock Structures

The Corps, the SFWMD, and other private entities operate and maintain several other water control structures around Lake Okeechobee for navigation, such as locks. **Table 3-3** summarizes lock structures around Lake Okeechobee. See **Figure 3-4** for a structure location map.

Table 3-3. Lock Summary

Lock	Owner	Name	Reach	Basin
S-308B	Corps	Port Mayaca	1/7	South Shore
S-310	Corps	Clewiston	2	
S-77	Corps	Moore Haven	4	Caloosahatchee
S-131	SFWMD	Lakeport	6	Istokpoga
S-127	SFWMD	Buckhead Ridge	8	
S-65E	SFWMD	Kissimmee River		Kissimmee
S-193	SFWMD	Taylor Creek	5	Taylor Creek-Nubbin Slough
S-135	SFWMD	N/A	7	S-135 Basin*
G-36	Private	Henry Creek		S-135 Basin*

* Basin description not included because inflow provides negligible impact on Lake Okeechobee stages.

AGRICULTURE RUN-OFF TO LAKE OKEE

Pump Stations and Spillways

Several pump stations and spillways are operated along Lake Okeechobee to provide flood relief, irrigation water, and water supply to downstream property owners and municipalities. Many pump stations are adjacent to and operated in conjunction with spillways, locks, and culverts. All pump stations are operated by the SFWMD and have the ability to pump nearly 12,000 cfs at maximum operating capacity.

Additionally, there are several spillways on the tributary systems which assist in flood control, water supply, and irrigation needs. These spillways are owned and operated by the Corps and/or the SFWMD in accordance with the LORS 2008. All of the spillways operate with vertical lift gates that allow flow to spill over the crest. Locations of all pump stations and spillways can be found on **Figure 3-4**. **Table 3-4** summarizes pump station information; **Table 3-5** summarizes spillway information.

Table 3-4. Pump Station Summary

Pump Station Number	No. of units	Max cfs	Reach	Basin
S-2	4	3600	1/3	South Shore
S-3	3	2670	2/3	
S-4	3	2805	2	
S-236	3	255		
S-131	2	250	6	Istokpoga
S-129	3	375		
G-207	1	135		
S-208	1	135	8	
S-127	5	625		
S-133	5	625	5 (X)	Taylor Creek - Nubbin Slough
S-135	4	500	7	S-135 Basin*

* Basin description not included because inflow provides negligible impact on Lake Okeechobee stages.

NO AGRICULTURE RUN OFF TO LAKE OKEE

Table 3-5. Spillway Summary

Spillway No.	No. of gates	Max cfs	Reach	Basin
S-47D	1	1195	4	Caloosahatchee
S-77	4	9300	2/4	
S-71	3	6800	6	Istokpoga
S-72	2	3800	6/8	
S-84	2	9000	8	
S-65E	6	26000	8	Kissimmee
S-135	2	500	7	S-135 Basin*
S-191	3	7440	5/7	
S-153	2	4400	1/7	S-308C Basin*
S-308	4	17000	1/7	L-8 Basin*
S-351	3	2400	1	South Shore
S-352	2	1250	1	
S-354	2	2000	2/3	

* Basin description not included because inflow provides negligible impact on Lake Okeechobee stages.

NOTE - WE SEE NO ARTIO ON ENFORCEMENT TO TRY TO IMPROVE WATER QUALITY

Existing Canals

Major outflow canals from Lake Okeechobee include the Caloosahatchee River (C-43), St. Lucie River (C-44), Miami Canal, North New River Canal, Hillsboro Canal, and the West Palm Beach Canal. The Caloosahatchee River and the St. Lucie River are the primary outlets for release of floodwater when the lake is above regulation stages. Releases are controlled by a regulatory schedule and zones (USACE 2008).

The Caloosahatchee River (C-43), extending 52.8 miles from Lake Okeechobee, provides drainage for an area of about 1,230 square miles. The canal provides water control for the area adjacent to C-43 to prevent excessive depletion of groundwater during normal or dry periods. It also provides regulatory discharge capacity for Lake Okeechobee; serves as a navigation channel as part of the Okeechobee Water Way (OWW); and prevents saltwater intrusion and maintains freshwater supplies in the lower reaches of the Caloosahatchee River. Structure S-77, S-78, and S-79 in the Caloosahatchee River maintain normal pool elevations in the canal to prevent excessive velocities.

The St. Lucie River begins at Port Mayaca (S-308) and extends 23.9 miles east. The canal provides drainage for a 245-square mile area and for regulatory discharges for Lake Okeechobee. The canal also serves as a navigation channel as part of the OWW and prevents saltwater intrusion. Structure S-80 maintains normal regulated pool elevations in the canal.

Smaller outlet sources include the Miami, North New River, Hillsboro, and West Palm Beach Canals. The Miami Canal extends from Lake Okeechobee at pump station S-3 southeast to Miami-Dade County, by way of the S-8 pump station and through Water Conservation Area 3A. The Miami Canal is the primary drainage component of the S-3 and S-8 basins, the South 298 Drainage Districts and C-139 basin. The North New River Canal extends from Lake Okeechobee at pump station S-2 to pump station S-7, bordering Water Conservation Areas 2A and 3A, and on eastward to Ft. Lauderdale. The North New River Canal is the primary drainage feature of the S-2 and S-7 basins in the EAA. The Hillsboro Canal extends from Lake Okeechobee at the S-351 structure eastward to tide near Boca Raton. The West Palm Beach Canal extends from Lake Okeechobee at S-352 eastward to tide south of West Palm Beach.

Embankments

The existing HHD totals about 143 miles in length with crest elevations ranging from 30 to 45 feet NAVD88. Adjacent land elevations typically range from 8 to 19 feet NAVD88. Lakeside levee slopes vary from one foot vertical to three feet horizontal (1V:3H) to 1V:10H and landside slopes range from 1V:2H to 1V:5H. In addition to the main levees, there are several tie back levees on the Kissimmee River, Indian Prairie Canal, Harney Pond Canal, and Fisheating Creek. These tieback levees are considered part of the HHD system. The HHD is used for water storage and water control structures follow an operational schedule, whereas a dike does not have such characteristics (USACE 2008).

3.5 WATER QUALITY

Surface Water

Drinking water for all of South FLA

Lake Okeechobee is a multipurpose reservoir providing drinking water for urban areas, irrigation water for agricultural lands, recharge for aquifers, freshwater for the Everglades, habitat for fish

and waterfowl, flood control, navigation, and many recreational opportunities. Lake Okeechobee has been designated by the FDEP as a Class I water body (drinking water supply). The surface water in the HHD toe ditch and nearby canals meets most Class III water quality standards (recreation and maintenance of healthy fish and wildlife populations). However, the water in Lake Okeechobee and canals has elevated concentrations of nutrients (primarily phosphorus and nitrogen). The Clean Water Act requires states to classify their surface waters according to designated uses and to develop water quality standards. If water bodies are not meeting the standards, states are required to develop Total Maximum Daily loads (TMDLs). The TMDLs establish the maximum amount of a pollutant that a water body can assimilate without causing an exceedance of water quality standards. Nutrient loads within the Lake Okeechobee Basin are regulated under the LOPA. State agencies developed the Lake Okeechobee Protection Plan (LOPP) to outline strategies to reduce phosphorus loading to the lake and to meet the total phosphorus TMDL of 140 metric tons by 2015. The LOPP specifies the implementation of Best Management Practices, Basin Management Action Plans (BMAPs), which allocate discharge reductions to the various stakeholders within the watershed or river basin, and construction of large regional facilities to capture phosphorus. The plans contain a schedule for subsequent phases of phosphorus load reduction consistent with the TMDLs. The FDEP has a five-year cycle for setting and updating TMDLs and BMAPs. A reduction in Lake Okeechobee phosphorus is desired, in part, to reduce the occurrence of blue-green algal blooms in the lake, and to reduce the adverse effects of phosphorus on downstream systems, including the Caloosahatchee River Basin and the St. Lucie River Basin. During high lake stages conditions, large volumes of water are released from Lake Okeechobee and sent to the Caloosahatchee and St. Lucie Estuaries. These large flow events are undesirable because they contribute to harm in the downstream estuaries (USACE 2007d).

NOTE-STATE FAILED TO MEET 2015 DATE SO WHERE DO WE GO FROM HERE PEDANE

Groundwater LAKE OKEECHOBEE CLASS #1 DRINKING WATER SUPPLY

Groundwater quality varies throughout the five counties surrounding Lake Okeechobee, depending on geographic location and the subsurface aquifer characteristics. Two aquifer systems are present within Okeechobee County. These are the SAS and the FAS, which are separated from one another by a thick and impermeable Hawthorn Group sediments. Water quality within the SAS in most areas of Okeechobee County is considered suitable for drinking water supply.

Similarly, in Glades County, two aquifer systems are present beneath the entire county, the SAS and the FAS. The Intermediate Aquifer System is present in the western third of the county. The SAS yields low to moderate quantities of potable water in most areas of Glades County, except for the area near Lake Okeechobee, and in the western area of the county near the border with Charlotte County. The Intermediate Aquifer System is present in the western portion of Glades County but yields only small to moderate quantities of relatively good quality water. The FAS is utilized primarily for irrigation. Throughout most of the county it is highly mineralized and would require expensive treatment to meet public drinking water standards. However, in the northwestern corner of the county the FAS water quality generally meets drinking water standards. WHAT ARE YOU ABOUT THIS GENERALLY STUFF IT DOES OR DOES NOT MEET FAS QUALITY

In Hendry County, the SAS is the primary source of groundwater throughout the county and is composed of two aquifers, the Water Table Aquifer and the Lower Tamiami Aquifer. Water quality within the SAS is considered poor in the Everglades area in the northeastern corner of the county where incomplete flushing of connate seawater, or FAS irrigation water, has left high

chloride and total dissolved solids concentrations (**SFWMD 1989**). The FAS in this area is highly mineralized and for this reason it is not used as a source of potable water.

NOTE - WE MUST MEET SAS QUALITY BEFORE SOME ON GETS SICK

Two aquifer systems are present in Martin County that provide drinking water and irrigation water. These are the SAS and the FAS, which are separated from one another by the thick and impermeable Hawthorn Group sediments. The SAS is the primary source of drinking water throughout the county. The FAS is an alternate source of agriculture and potable water supplies.

The surficial groundwater aquifer surrounding Palm Beach County, the vicinity of the eastern and southern portions of the HHD extends from the land surface (8.7 feet NAVD88) to a depth of -180 feet. In the vicinity of HHD, the upper portion of this aquifer is potable to a depth of approximately -50 feet elevation. Rural houses and agricultural operations adjacent to the eastern and southern portions of Lake Okeechobee use shallow wells as a source of drinking and irrigation water. The groundwater below elevation -50 feet is not considered potable due to its high salt content.

The quality of the groundwater in the lower portion of the SAS is compromised by the presence of remnant seawater (Reese and Wacker, 2009), which has a high salt content and renders much of this water unsuitable for most potable and agricultural uses. The cities of Belle Glade, Pahokee, and South Bay historically drew their potable water supply from Lake Okeechobee because of the poor quality of the SAS and the underlying FAS in this part of Florida. Agricultural water demand in this area is generally met by water delivered through an extensive surface water canal network. Despite the poor water quality of the surficial aquifer, there are water supply wells that are primarily use the water for irrigation, though some of the shallower wells may be used as a source of potable water.

The USACE and the U.S. Geological Survey have been monitoring groundwater quality in the vicinity of the HHD Levee in Reaches 1, 2, and 3 since 2011 (Prinos and Valderrama, 2015). Groundwater quality is characterized using geophysical induction logging methods, in which the relative tendency of saturated sediments to conduct an induced electric charge is measured. Saline water has a greater tendency to conduct an electric charge, so saline water shows higher values of bulk conductivity. Most of the logging was conducted in Palm Beach County (CIZ A), where the saltwater interface is clearly defined in the SAS. Some of this monitoring occurred prior to the cutoff wall installation in Reach 1 which was completed in 2013. **Figure 3-5** shows a monitoring well at Segment 22 (PB-1815). The cutoff wall at this location is placed to a depth that is 30 or more feet above the elevation of the interface between fresh groundwater and saline groundwater. Induction logs at this monitoring well show that the cutoff wall has not had a significant effect on groundwater quality, as shown by a repeated pattern with depth over a four-year period. This is likely because the cutoff wall does not restrict all of the fresh groundwater that flows from the lake side of the levee landward. In contrast, **Figure 3-6** shows induction logs from a monitor well (PB-1819) in which the observed change in the saltwater interface became shallower subsequent to the installation of the cutoff wall in Segment 24. Based on the data available to date, it appears that the cutoff wall has caused the saltwater interface depth to decrease by about 10 feet. Given that each successive measurement shows a smaller change in the zone of interest in comparison to the prior measurement event, it is likely that the elevation of the saltwater interface is equilibrating. As long as the saltwater interface is substantially below the bottom of drainage and water supply ditches, the impact of the reduced depth of saline water is likely to be limited to those water supply wells located within the zone of influence of the cutoff wall and are screened at the depth of the cutoff wall tip. There are no monitoring wells placed in

the 500 to 1,000 foot downstream range from the levee so at present the USACE cannot determine the maximum distance from the levee that changes to groundwater saline interface depth occur; however, density dependent groundwater modeling simulation results indicate that this distance is likely less than 1,500 ft. In the vicinity ofSegment 23, there is some recent evidence of increased chloride concentrations in surface water drainage/supply canals that are located within 500 or so feet of the HHD levee. This area in the vicinity of Sand Cut has at least two active rock mines that may be possible sources of the elevated concentrations in the surface water. It is possible, though not proven, that installation of the cutoff wall in this location may contribute to the observed increase in surface water chloride concentrations. The Corps and USGS continue to conduct groundwater monitoring in Reaches 1, 2, and 3 to further understand the impact of the cutoff wall on groundwater and surface water quality. GOOD IDEA PEONE

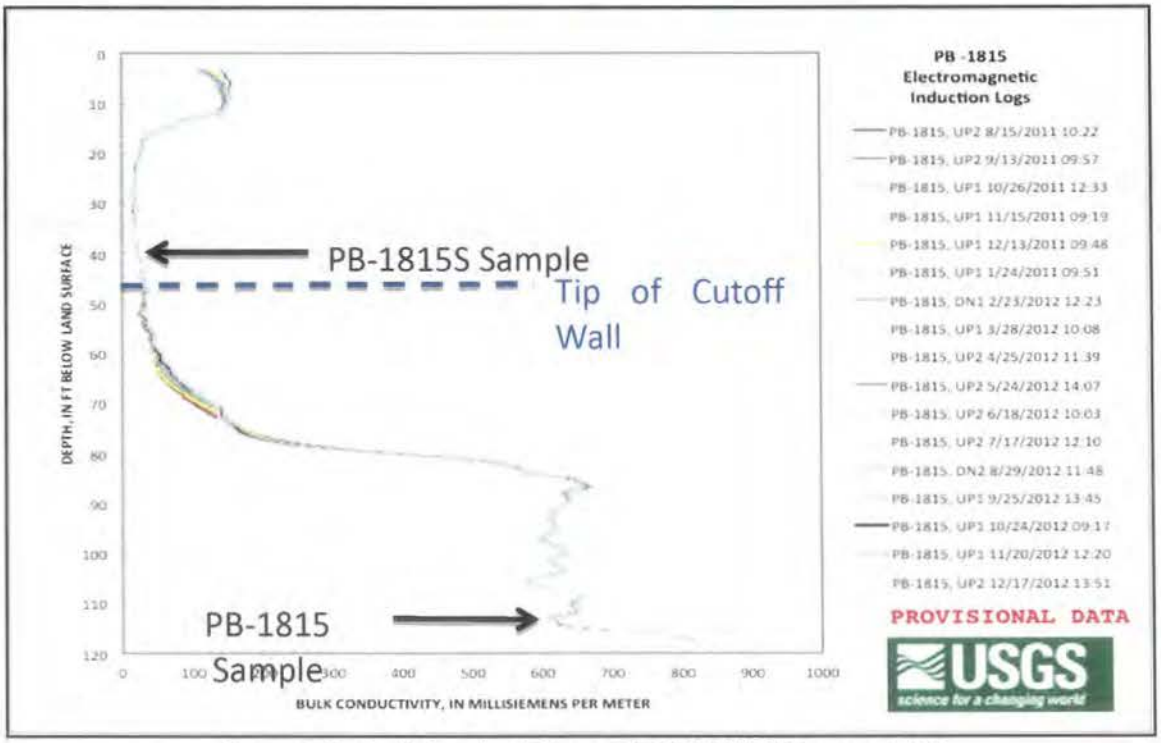

Figure 3-5. Bulk Conductivity at PB-1815 Well (Segment 22)

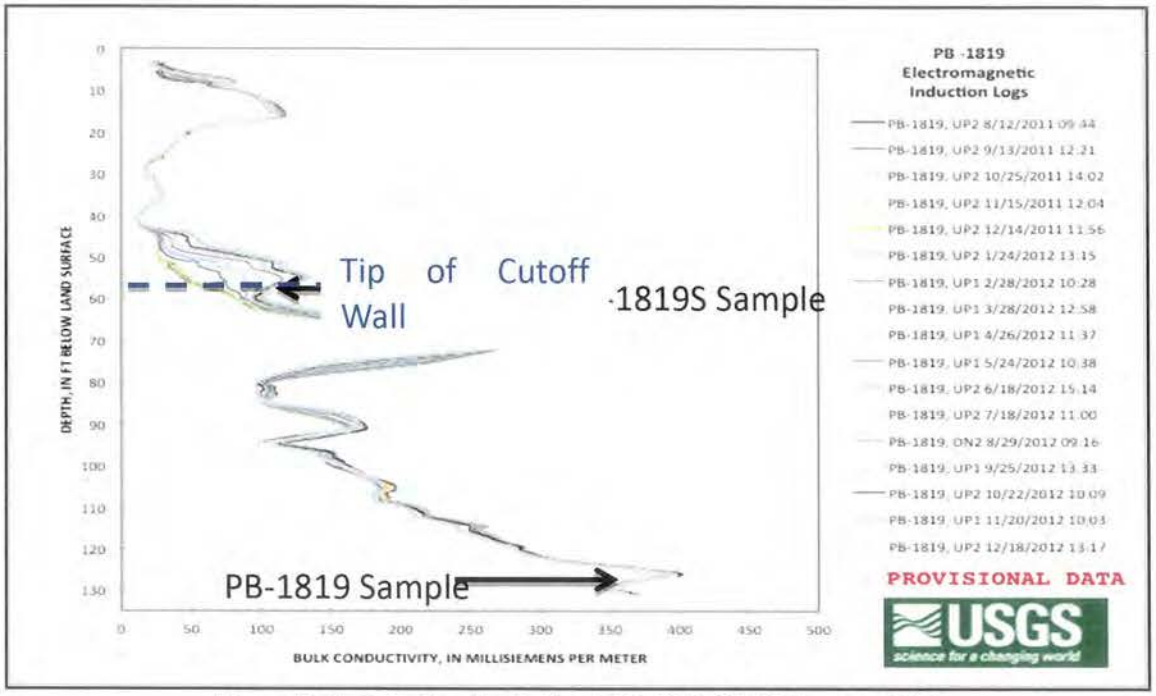

Figure 3-6. Bulk Conductivity at PB-1819 Well (Segment 24)

Saltwater Interface Characteristics in CIZ B (area of the TSP)

Additional monitor well clusters were constructed in the area during 2015 to supplement two existing monitor wells locations. Groundwater quality sampling and induction logs were obtained from all new well clusters. The depth and salinity of the saltwater interface in CIZ B wells differ from those in CIZ A. The saltwater interface occurs at greater depth, and the contrast in chloride concentration between overlying fresh groundwater and saltwater is not as great in CIZ B wells. **Figure 3-7** shows the induction log, chloride concentrations, and the proposed range of cutoff water termination depths for Segment 6 near Moore Haven.

Bulk conductivity values are significantly lower, indicating lower salinity in well G-333 at depth along CIZ B (100 to 200 mS/m at -60 to -80 ft NAVD88; **Figure 3-7**). For comparison, bulk conductivity values range between 100 and 600 mS/m at depths of -40 to -100 ft NAVD88) ft in Palm Beach County wells (CIZ A, **Figures 3-5** and **3-6**).

Chloride concentrations are considered elevated when they exceed the drinking water standard of 250 mg/L. Along CIZ B, chloride concentrations that exceed 250 mg/L (along with bulk conductivity values that exceed 100 mS/m) are found at elevations greater than approximately -50 ft NAVD88. The maximum cutoff wall elevation proposed for CIZ B is -30 ft NAVD88. The proposed cutoff wall will not intrude directly on the deeper, less saline saltwater interface in that area. Changing hydrologic flowpaths could cause some displacement of the saltwater interface at depth in CIZ B. However, groundwater quality changes are unlikely in this area due to the deeper occurrence and more dilute nature of the saltwater interface. "UNLIKELY", IS THAT THE SAME AS ASS/U/ME PEOPLE

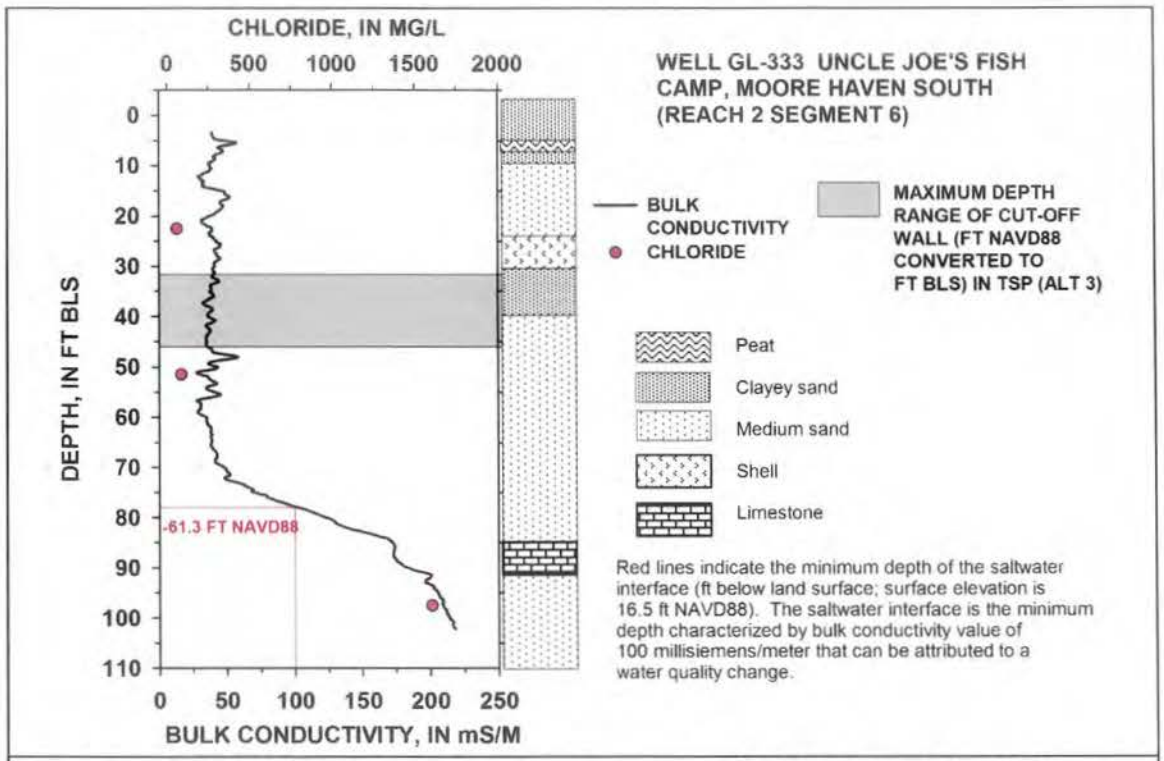

Figure 3-7. Bulk conductivity, chloride concentration, and lithology at well GL-333 (Segment 6)

3.6 VEGETATION

The vegetation within the Lake Okeechobee region has been greatly altered during the last century. Historically, the natural vegetation was a mix of freshwater marshes, hardwood swamps, cypress swamps, and pine flatwoods. Although some of these natural areas still exist, the introduction of controlled drainage for agriculture and land development has resulted in a significantly different set of cover types. WE MUST STOP RUN-OFF WATERS FROM AGRICULTURE OPERATIONS. WE NEED WETLANDS.

Landward of the HHD, sugarcane plantations, improved pasture, row crops, and urban lands now prevail. The HHD itself is covered with mixed grasses and some shrubs and trees that are mowed on a regular basis. The exotic invasive plants melaleuca (*Melaleuca quinquenervia*), Australian pine (*Casuarina* sp.), and Brazilian pepper (*Schinus terebinthifolius)* are found throughout the area. Wetland vegetation can be found in the toe ditch of the HHD though this vegetation is mowed during regular maintenance activities to allow inspection of the toe of the HHD embankment. GOOD IDEA In the toe ditch and the network of canals, exotic and nuisance vegetation exists, including species such as water hyacinth (*Eichhornia crassipes*), water lettuce (*Pistia stratiotes*), hydrilla (*Hydrilla verticillata*), cattails (*Typha* sp.), and bamboo (*Arundinaria* sp.).

The major cover types lakeward of the HHD include openwater and freshwater marshes. A 98,000-acre (154-square-mile) littoral zone is found along Lake Okeechobee's western edge and on the islands in its southern shore (Kraemer Island, Torry Island, and Ritta Island, which together encompass 4,000 acres). The littoral zone supports more than 50 species of emergent, submerged, and floating-leaf plants. Emergent vegetation within the littoral zone is dominated by cattail, spike rush (*Eleocharis* sp.), and the nuisance exotic torpedo grass (*Panicum repens*). AGRICULTUR RUN-OFF WATER FULL OF FETERLIZER,

Submerged vegetation, such as tape grass (*Vallisneria americana*), is abundant within the photic zone of Lake Okeechobee.

3.7 WETLANDS

REDUCED WETLANDS DUE TO IMPROVED PASTURES

Wetlands in the Lake Okeechobee area, though greatly reduced in area and quality through human impact, still exist as valuable ecosystems both landward and lakeward of the HHD. Lake Okeechobee hydraulically feeds wetlands beyond the dike, providing freshwater for the Florida Everglades to the south and for the Water Conservation Areas in Palm Beach and Broward Counties. Low quality wetlands also occur in the toe ditches around the HHD. Typical vegetation in the toe ditch wetlands includes baby bluestem (*Andropogon* spp.), rush fuirena (*Fuirena scirpoidea*), bald cypress (*Taxodium distichum*), begger's tick (*Torilis arvensis*), matchhead (*Phyla* sp.), alligator weed (*Alternanthera philoxeroides*), Brazilian pepper, common reed (*Phragmities austalis*), common hackberry (*Celtis occidentalis*), elderberry (*Sambucus nigra* subsp. *canadensis*), smartweed (*Polygonum* sp.), southern willow (*Salix caroliniana*), cabbage palm (*Sabal palmetto*), sweetscent (*Pluchea odorata*), day flower (*Commelina* sp.), pennywort (*Hydrocotyle* sp.), Australian pine, water hyacinth, cattails, and water lettuce. Although wetlands present on the landward side of the HHD (toe ditch) may not be considered high quality ecosystems, they host small fishes and invertebrates and provide usable foraging habitat for wading birds, alligators, and turtles. High quality wetland habitat can be found in the extensive littoral zone covering the western side of Lake Okeechobee. This habitat (littoral zone) is outside of the proposed project footprint. DUCK HUNTERS CALL THIS AREA THE SWAMP, OR LAND IN THIS AREA IS GREAT FOR DUCKS

3.8 THREATENED AND ENDANGERED SPECIES

The U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and State of Florida have designated certain species of reptiles, birds, mammals, gastropods, and plants and lichens in Glades, Hendry, and Palm Beach counties as threatened or endangered (**Table 3-6**). Several of these listed species have been observed within the vicinity of the HHD. Additional detail can also be found in the USFWS draft Fish and Wildlife Coordination Act Report (CAR) included in Appendix E.

Table 3-6. Federal and State Listed Plant and Animal Species Occurring in Glades, Hendry, Martin, Okeechobee, and Palm Beach Counties, Florida

Scientific Name	Common Name	Federal Status	State Status
Amphibians			
Rana capito	Gopher frog	Not listed	S*
Reptiles			
Caretta caretta	Loggerhead sea turtle	Threatened	Threatened
Chelonia mydas	Green sea turtle	Endangered	Endangered
Crocodylus acutus	American crocodile	Threatened	Endangered
Drymarchon couperi	Eastern indigo snake	Threatened	Threatened
Eumeces egregius lividus	Bluetail mole skink	Threatened	Threatened
Gopherus polyphemus	Gopher tortoise	Candidate	Threatened
Pituophis melanoleucus mugitus	Florida pine snake	Not listed	S
Birds			

blading, air boating and hiking. Recreation facilities associated with Lake Okeechobee include: 37 picnic sites, 309 individual camp sites, 4 playgrounds, 1 public swimming area, 1 marina with 41 boat slips, 29 boat ramps, 12 general recreation areas, and hundreds of acres open to hunting. Annual visitation based on a five-year average (2006-2010), amounts to 5,616,000 recreation visits per year. Data for specific recreation activities in these years were obtained from the Institute for Water Resources (IWR) "Lakes Gateway" website. According to the IWR 2010 *Lake Level Report*, it is estimated that visitors to Lake Okeechobee spend approximately $172 million per year, directly supporting more than 1,800 local jobs.

Additionally, Lake Okeechobee supports an active commercial and recreational fishing industry. This includes several different types of commercial fishing operations and landside support activities, such as marinas and wholesale and retail distribution facilities. There are commercial fisheries on Lake Okeechobee that harvest the American alligator. Alligators are harvested from the lake population to supplement the stock in alligator farming operations. Recreational fishing tournaments are held on the lake multiple times a year.

The depth of Lake Okeechobee also makes commercial navigation on the lake possible. There are two navigation routes in Lake Okeechobee, including Route 1 through the center of the lake and Route 2 along the south shore of the lake. Only Route 1 is fully maintained at its authorized depth for commercial navigation. Petroleum products, including distillate fuel oil, residual fuel oil, and liquid natural gas, comprise the majority of tonnage shipped. Other commercial navigation includes fleets of day/dinner cruise vessels that operate from Pahokee during the tourist season. As stated in Section 3.11 above, the OWW allows passage of boats between the Atlantic Ocean and the Gulf of Mexico through Lake Okeechobee.

Other than agriculture, recreation, tourism, commercial fishing, and navigation, secondary economic activities include: services (banking, insurance, etc.) healthcare, education, and government activities. Examples of the above include: the Lakeside Medical Center, the Belle Glade Elementary School, Lake Shore Middle School, Glades Central High School, and the West Palm Beach County Technical Education Center. Also, the Town of Moore Haven is the seat of government for Glades County, so there are several public buildings in the town.

3.12.2 Demographics

The majority of the study area is rural and agricultural. However, there are a number of towns and cities located in close proximity to the HHD (see **Figure 3-13** and **Table 3-7**). In most of these communities, homes, business and public buildings can be found within 100 feet of the dike. The largest of the communities is Belle Glade, located near the Hillsboro Canal with a population of more than 17,000 people. The study area also includes the Brighton Seminole Indian Reservation in Glades County, which is home to approximately 600 people.

THESE AREAS ARE ALL SMALL TOWN AREAS IN POOR HOMES AND SMALL BUSINESSES. MOST ARE HIGH CRIME AREAS IN THE POPULATED AREAS. DUE TO VERY SMALL TO NO LAW ENFORCEMENT.

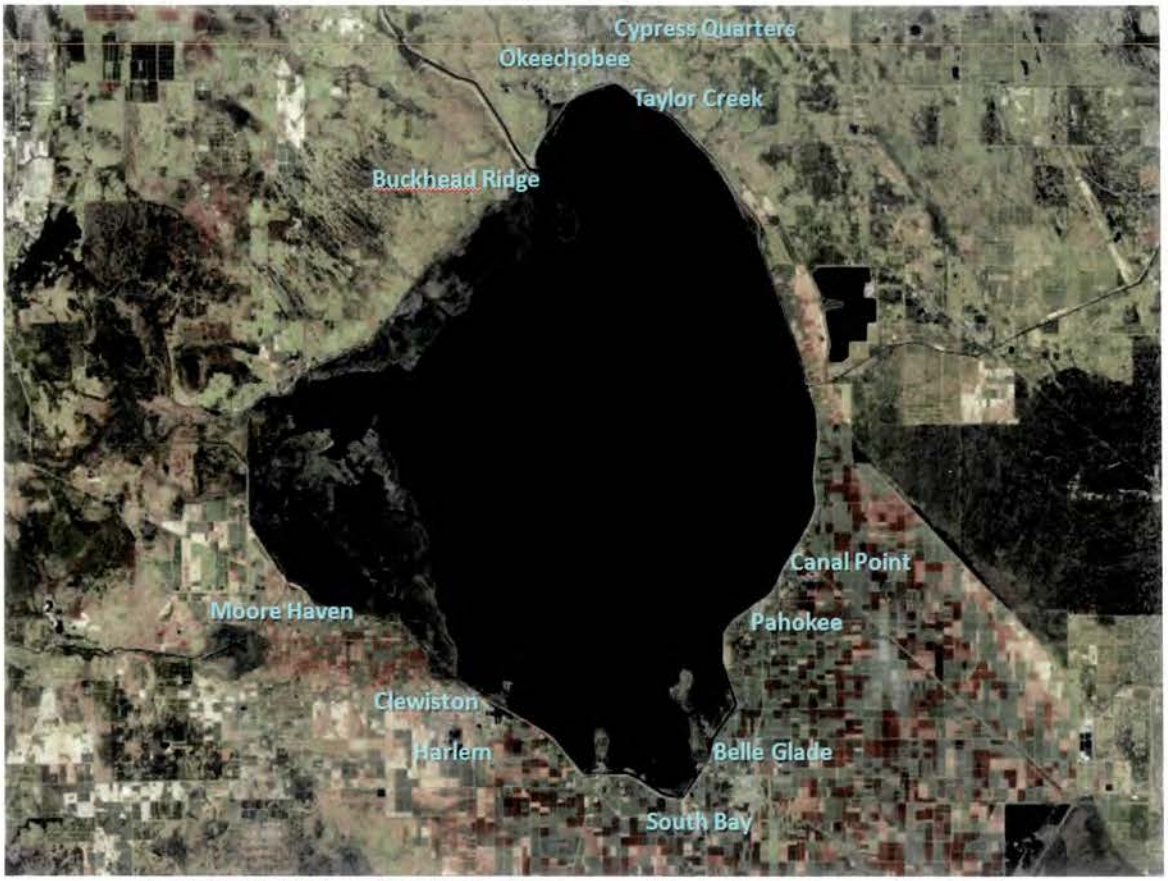

Figure 3-13. Major cities in study area considered in demographics study.

Table 3-7. Major Population Centers Subject to Flooding*

City / Town	County	2010 Population
Pahokee	Palm Beach	5,649
Belle Glade	Palm Beach	17,467
South Bay	Palm Beach	4,876
Clewiston	Hendry	7,155
Harlem	Hendry	2,658
Moore Haven	Glades	1,680
Buckhead Ridge	Glades	1,450
Okeechobee	Okeechobee	5,621
Taylor Creek	Okeechobee	4,348
Cypress Quarters	Okeechobee	1,215

*Please note: Population estimates in this table do not include very small towns (Canal Point, Lake Harbor, Bryant, Lakeport, etc.) in the inundation zones or population at risk in unincorporated areas of Palm Beach, Martin, Hendry, Glades, and Okeechobee counties. The table also does not include population associated with the Brighton Indian Reservation in Glades County.

In general, these are diverse, relatively low income communities. Hendry, Glades, and Okeechobee counties all have median household incomes that are less than the state average. They also have a relatively high proportion of households below the poverty line (**Table 3-8**). Palm

POOR PEOPLE RELATE TO HIGH CRIME AREAS

Beach County has an above average median income, but the communities in the county near the HHD (Pahokee, Belle Glade, and South Bay) have socioeconomic characteristics much more similar to Hendry and Glades counties.

Table 3-8. Economic characteristics of counties adjacent to Lake Okeechobee

	Median Household Income	Persons below poverty line
State of Florida	$47,827,000	14.70%
Hendry County	$37,989,000	26.00%
Glades County	$39,611,000	19.50%
Okeechobee County	$36,929,000	23.70%
Palm Beach County	$52,951,000	13.30%

The primary economic activity throughout the study area is agriculture. The Everglades Agricultural Area (EAA), located directly south of Lake Okeechobee consists of more than 700,000 acres of productive agricultural land, the vast majority of which is under active sugarcane cultivation. In addition to sugarcane, crops grown near the lake include citrus and winter vegetables. Some pasture lands for livestock are also located near the lake. AGRICULTURE RUN-OFF IS OUR MAJOR PROBLEM FOR LAKE OKEECHOBEE

3.13 PUBLIC SAFETY

The HHD system is paramount to public safety. With six times more inflow capacity to the lake versus outflow capacity, the dike provides flood risk management not only to towns immediately adjacent to the dike, but to a vast area south of the lake. Due to signs of dike instability during high water stages in the lake after 2004 and 2005 hurricanes in South Florida, the SFWMD contracted for an expert review panel of the stability and safety of the HHD. Particular emphasis was placed on the structural stability of the dike with regard to seepage and water pressures within the embankment and erosion and potential overtopping concerns during large storm events. The technical review concluded that the current condition of the HHD poses imminent risk to the people and the environment of South Florida (BCI 2006). Throughout the life of HHD and the recent Dam Safety Modification Study, the Corps has also conducted many modeling studies to determine the risk to the public if a breach were to occur.

The term "dike failure" implies a catastrophic breaching of some portion of the HHD system. This situation would result in widespread flooding, as waters from Lake Okeechobee pass through the breach and onto adjacent lands. NOTE - ALL BREACHED WATER WILL RUN TO THE SOUTH AWAY FROM AREA TO THE EVERGLADES AREAS

3.14 REAL ESTATE

The geographic area for the project is located in southern Florida encircling Lake Okeechobee. The lands encircling Lake Okeechobee known as the HHD are approximately 143 miles of real estate that cross several counties in the State of Florida. The Federal Government has approximately 7,802 acres of interests in real estate to support construction and the operation and maintenance (including staging areas, borrow, or disposal sites) for the HHD. These lands are on the north side near Okeechobee in CIZ E, Segments 18A and 18B, and CIZ F, Segments 19A, 19A-2, 19A-3, 19B, and 19C and on the south side near CIZ A, Segments 22, 23, 24, 1, 2, and 3 and CIZ B, Segments 4, 5-2, 5, 6, 7, 8, 9, and 10. The SFWMD has approximately 2,413 acres of interests in real estate that have been certified to the Federal Government to support construction, operation and maintenance (including staging areas, borrow, or disposal sites) for the HHD. These

lands are in CIZ C, Segments 11, 12, 13 and 14A, CIZ D, Segments 14B, 15, and 16, and CIZ E, Segments 17 and 18A-2. Currently, there are a number of public roads providing access to the HHD.

3.15 HAZARDOUS, TOXIC AND RADIOACTIVE WASTES

NOTE- THE ARE ITSELF IS USED FOR SEPARANDE HANDLING PRA-TICE. JUST ONE CRASH WE COULD SEE LARGE FUEL SPILL RMD GOOD IDEA HERE

Hazardous, toxic, and radioactive waste (HTRW) surveys have been conducted as part of EAs and EISs prepared as part of the prior HHD rehabilitation efforts. In December 2007, a HTRW survey of the HHD was conducted using aerial imagery and a contaminated site and petroleum storage site database compiled by the FDEP. A visual survey was conducted to verify the findings of the desktop survey. The survey was updated in August 2009 for the Reach 1A Supplemental EIS (USACE 2010) and in February 2010 for L-D1 and L-D2 and January 2014 for additional levees and remaining Federal right-of-way. The purpose of the additional surveys was to preliminarily identify potential contamination sites within 500 feet of the HHD in remaining reach areas. The results of these surveys show that agricultural and rural residential development has resulted in the HTRW contamination in areas adjacent to the HHD. A subsequent survey conducted as part of this EIS found 27 locations where petroleum has been stored or released within 100 ft of the levee right-of-way. **Table 3-9** is a list of these sites by location, ownership, and status. Five of these sites have been closed and the storage tank or release has been removed. Twelve of the petroleum storage sites are operational and require ongoing monitoring for releases. Seven sites have been closed and required no clean up action. Two sites require clean up actions. The S-12A and S-127 structures have contamination present such that cleanup is required. As of August 2014, there is no plan to remediate the S-127 site. At the S-12A structure in Reach 1, the FDEP spill database shows that a release of approximately 4,000 gallons of diesel occurred in 1991. The Corps and FDEP are coordinating remediation actions to minimize disruption of construction during the replacement of the S-12A structure which will began in early 2015.

Table 3-9. List of Petroleum Storage Facilities within 100 ft. of HHD Right-of-Way (Listed in clockwise order from Port Mayaca)

Site Name	Reach	Operator	Status
S-308 (Port Mayaca Lock)	1	Corps	Ongoing Monitoring
Pahokee Camp Ground	1	City of Pahokee	Ongoing Monitoring
S-12	1	East Shore W. Control District	Cleanup Completed
S-12A	1	New Hope Sugar Company	Cleanup Underway
Torry Island	1	SFWMD	Cleanup not required
S-2 Pump Station	1	SFWMD	Cleanup Completed
Maintenance Shop	3	South Bay	Cleanup not required
South Shore Pump Station	3	South Shore Drainage District	Ongoing Monitoring
Spill Site	2	Hialeah Transport Inc.	Cleanup Completed
S-3 Pump Station	2	SFWMD	Ongoing Monitoring
S-236 Pump Station	2	SFWMD	Ongoing Monitoring
S-310 Pump Station	2	SFWMD	Cleanup not required
S-169 Structure	2	SFWMD	Cleanup not required
S-4 Pump Station	2	SFWMD	Cleanup not required
Diston Island Pump #1	2	Diston Island	Ongoing Monitoring
Diston Island Pump #2	2	Diston Island	Ongoing Monitoring

Site Name	Reach	Operator	Status
S-78 (Moorehaven Lock)	4	Corps	Ongoing Monitoring
Road Dept. Maintenance Facility	4	Glades County	Ongoing Monitoring
Pierce Property Pump	4	SFWMD	Ongoing Monitoring
S-131 Structure	6	SFWMD	Cleanup completed
S-129 Structure	6	SFWMD	Ongoing Monitoring
S-127 Structure	8	SFWMD	Cleanup Required
S-133 Structure	5	SFWMD	Ongoing Monitoring
S-193 Structure	5	SFWMD	Cleanup completed
S-191 Structure	5	SFWMD	Cleanup not required
G-36 Structure	5	SFWMD	Cleanup not required

3.16 RECREATIONAL RESOURCES

A general discussion of recreational resources is described in Section 3.12.1.

Lake Okeechobee Scenic Trail (LOST)

The LOST circles the entire lake on top of the dike. The LOST is located on lands held in fee simple title by the State of Florida. This is a mostly double-track trail that offers recreation opportunities for hiking, biking, horseback riding, roller-blading and fishing around the lake. Many portions of the trail are paved. Pedestrians and mountain bikers are able to access the trail from many locations in towns adjacent to the HHD. Informational signs along the roadways direct recreational users to the LOST access points as well as wildlife viewing locations. Equestrians are able to access the trail from various locations in the project area as well.

Fishing and Boating

Lake Okeechobee offers a wide-range of fishing opportunities. There are more than 60 species of fish in the lake, the most sought-after game fish being largemouth bass, catfish, and black crappie. Fishing tournaments are regularly held throughout the year. Boats can access the lake through navigation locks and boat ramps. Public boat ramps are available for use at the Moore Haven Lock and Dam, Alvin Ward Park, Lake Observation Point (Bare Beach), the Clewiston Recreation Area, and the South Bay Boat Ramp. Another fishing and boating resource in the area includes Uncle Joe's Fish Camp at Liberty Point, which dates back to the 1940s. FROM OCT THRU APRIL WE SEE A LARGE LAKE USE AND POPULATION TRIPPLE IN SIZE

3.17 AESTHETIC RESOURCES

There are many public access points to view Lake Okeechobee from the elevated vantage point of the length of the HHD crest. In addition, the LOST runs atop the HHD around the entire lake, totaling approximately 110 miles.

The HHD crest affords panoramic views of the flat agricultural (mostly sugarcane) fields and rim canal to the south, southwest, and southeast. The extensive littoral zone on the west side of the lake's perimeter can be viewed from the dike in Reach 2. The littoral zone plant community is composed of a mosaic of emergent and submerged plant species. Emergent vegetation within the littoral zone is dominated by cattail, spike rush, and torpedo grass.

NOTE - OUR WINTER GUEST ARRIVE ON NOV OF ONE YEAR AND STAY UNTIL APRIL ON THE NEXT YEAR

Rita Island dominates the landscape when looking northward from the dike in Lake Harbor. Also in this area is John Stretch Park, which is located adjacent to the south side of the dike near the Miami Canal. This park includes a pond, picnic areas, restrooms, a large grassy field, an outdoor basketball court and a boat ramp. There are several parks adjacent to the HHD, and along the northern area. These parks include resources such as ponds, bird viewing areas, picnic areas, restrooms, grassy fields, boat ramps, and other amenities.

3.18 CULTURAL RESOURCES

The earliest widely accepted date of occupation by aboriginal inhabitants of Florida dates from around 12,000 years ago. This earliest cultural period, called the Paleo-Indian period, lasted until about 7500 B.C. Few Paleo-Indian archeological sites are recorded in Florida, and none are identified by the Florida Master Site Files near the HHD. During the Archaic period (ca. 7500 B.C. - ca. 500 B.C.), a wider range of resources was exploited and may have led to a more sedentary existence. Few Archaic period archeological sites are recorded in south Florida. Known sites are clustered along the Atlantic and Gulf coasts and inland waterways. No Archaic period sites are located near the dike, as recorded in the Florida Master Site File (FMSF). In the Okeechobee Basin, the Belle Glades culture sequence (ca. 500 B.C. - A.D. 1500) follows the Archaic. Black earth middens, low sand mounds and circular and linear earthworks are Belle Glade site types located near the HHD, as recorded in the FMSF.

During the early historic period, beginning with the first Spanish colonial period (1513 - 1763), the Calusa, a native tribe, inhabited southern Florida. Their population was decimated by European-introduced diseases, warfare, enslavement, and migration out of Florida. The Miccosukee and the Seminole migrated into Florida in the 18th and 19th centuries from Georgia and Alabama. Throughout the mid-1800s, the U.S. relentlessly pursued a policy of Indian removal in Florida, and the Seminole, resisting removal, eventually established themselves in the Everglades, Big Cypress Swamp, and the Ten Thousand Islands. Several important battles of the Seminole Wars occurred around Lake Okeechobee including the largest and bloodiest battle of the Second Seminole War, the Battle of Okeechobee on Christmas Day in 1837. The Okeechobee Battlefield site is located at the north end of Lake Okeechobee and is a National Historic Landmark site. Other Seminole battle and habitation sites, predominantly on tree islands, are located near the HHD.

NOTE- THIS IS WHEN OUR WATER PROBLEM BEGAN ALSO

American settlement around Lake Okeechobee began in earnest in the late 19th century when efforts to drain and reclaim the Everglades began. Agriculture began in the Everglades, south of Lake Okeechobee after drainage projects of the 1906-1927 era. By 1921, there were 16 settlements on or near Lake Okeechobee, with a total estimated population of 2,000. By the 1940's, a number of homes had been built in this area forming historic districts potentially eligible for listing on the National Register of Historic Places.

A review of the FMSF lists both prehistoric and historic archeological sites located in the near vicinity of the HHD. Prehistoric Native American sites consist of middens, mounds and earthworks. Historic sites include buildings, shipwrecks, canoes, cemeteries, and an early 19th century Fort McRae. An historic dugout canoe and artifacts associated with early military exploration of the Everglades was discovered in the lake near the entrance of the St. Lucie River. Early 20th century homes and historic districts have been recorded along the shoreline of Lake Okeechobee. The HHD, including various locks, dams, buildings and hurricane gates associated with it, is eligible for listing on the National Register and is recorded by the FMSF in each county

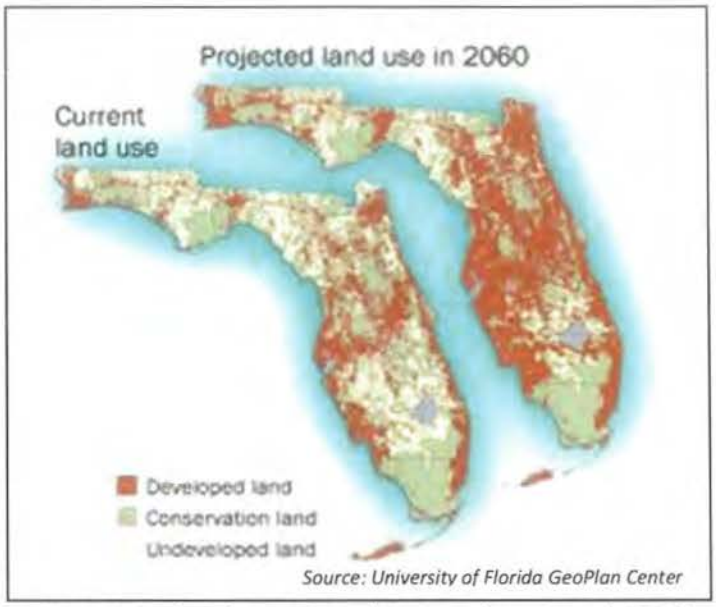

Figure 4-1. Florida Land Use (2005 and Projected 2060)

One major constraint to future development in the future with the No Action Alternative is the Federal Emergency Management Agency (FEMA) flood insurance program. Currently, this Federal program offers flood insurance in the communities near Lake Okeechobee. However, without rehabilitation of the HHD, flood insurance rates are expected to increase significantly in the future. Development and population growth pressures in South Florida would be offset by the increased cost of developing and maintaining property in the areas near the HHD.

For all of the above reasons, major changes in land use are not expected in the future without project condition. The area is primarily rural and agricultural. It is expected to remain rural and agricultural in the foreseeable future. AGRICULTURE RUN-OFF WATER TO LAKE OKEECHOBEE IS WHERE WE GET POLLUTED WATER FROM.

It should be noted though that there is tremendous uncertainty with regard to population changes and land use changes over such a long planning horizon, it is impossible to predict all potential changes over a 100-year period. The assumptions presented here represent conservative assumptions based on best available information, therefore, there would be a minor, long term effect on land use due to the No Action Alternative.

4.4 HYDROLOGY & HYDRAULICS

NOTE - WE HAVE A 36FT DROP IN ELEVACTION FROM NORTH TO SOUTH INTO OUR LAKE

Surface Water

General

The hydrology and hydraulics of the Lake Okeechobee watershed as described in Section 3 of the report would remain essentially unchanged. However, there are a few notable exceptions regarding population growth that are described above in Section 4.3 Land Use.

Increased development can often lead to increased surface water runoff due to natural pervious areas being converted to impervious areas (i.e., parking lots, roadways, roofs). However, increased regulation of stormwater by permitting agencies has tempered the potential for increased surface water runoff by requiring new developments and infrastructure projects to both

WE KNOW THAT 80% OF RUN-OFF IS FROM AGRICULTURE SO WE CAN SAY AGRICULTURE IS THE MAIN POLLUTER

detain a certain volume of runoff on their property and to ensure that post-project peak discharge rates do not exceed pre-project discharge rates. THEIR IS NO ENFORCEMENT ACTION TAKEN HERE AT ALL "NONE"

In the future, Lake Okeechobee would remain the hydrologic hub of the Greater Everglades System. Presently, there are large competing demands for the water stored in Lake Okeechobee: urban water supply for the Florida Lower East Coast, agricultural water supply, environmental releases to the estuaries and water for the downstream natural systems. The competition for this water is intense since it represents the most available and economical source of freshwater. Even though there would be environmental consequences for lake ecology if Lake Okeechobee were to store more water, without rehabilitation of the HHD and under continuance of the Future Without condition, the lack of the internal storage option for Lake Okeechobee would by necessity drive water managers to seek and develop alternate freshwater sources for the Greater Everglades System. The most practical of these storage options is to divert Lake Okeechobee watershed runoff into storage reservoirs that would be developed. Also, the freshwater needs of the Florida Lower East Coast, particularly in the face of sea level rise and expanding saltwater intrusion, would need to consider desalinization of brackish waters pumped from deeper aquifers and perhaps some reliance on desalinization of seawater.

~~ASS~~/ASSUME ~~ASS~~ OUT OF YOU AND ME.

Key assumptions for the Future Without Condition that can affect hydrology within Lake Okeechobee, within the Lake Okeechobee watershed, and on related projects and downstream areas are presented below:

LORS 2008 in-place

Prior to the LORS 2008, Lake Okeechobee operated under the WSE. The 2006-2008 LORS study was initiated because of adverse environmental impacts that the WSE had on the lake and estuary ecology. Dam safety was later added as a performance criterion since lowering of the lake, as the LORS study was pursuing, is one of the basic Interim Risk Reduction Measures implemented for deficient dams until appropriate remediation is effectuated. The WSE held Lake Okeechobee stages approximately 1.0 – 1.5 ft. higher than the 2008 LORS under wet conditions. Studies for the remediation of the HHD are based on the 2008 LORS.

When it was approved in April 2008, the LORS was identified as an interim schedule. The Corps expects to operate under the LORS 2008 until there is a need for revisions due to the earlier of either of the following actions: (1) system-wide operating plan updates to accommodate CERP Band 1 Projects, or (2) completion of sufficient HHD remediation for all reaches and associated culvert improvements as determined necessary to lower the DSAC rating from Level 1.

CERP Band 1 Projects In-Place

The 1999 CERP, which was approved as a framework for restoring the south Florida ecosystem while providing for other water-related needs of the region in the 2000 WRDA, also recognized the need to modify the Lake Okeechobee Regulation Schedule. Modifications are necessary to reduce the extreme high and extreme low lake levels that adversely impact lake ecology, while improving the management of intermediate water levels and maintaining the capability to manage the lake to balance the requirements of the C&SF Project purposes, including water supply storage. The CERP proposed modifications to the Lake Okeechobee Regulation Schedule (Run 25 at the time of the CERP, prior to Water Supply and Environmental Regulation Schedule [WSE] implementation in 2000) were dependent on additional regional water storage capability north of Lake Okeechobee and new Lake Okeechobee regional aquifer storage and recovery (ASR).

CERP also included water storage components within the C-43 Basin (west of Lake Okeechobee) and the C-44 Basin (east of Lake Okeechobee) to improve the timing, quantity, and quality of freshwater flows to the Caloosahatchee River and Estuary and the Saint Lucie Estuary. South of Lake Okeechobee, CERP proposed an additional water storage component to capture a portion of the high volume freshwater discharges sent from Lake Okeechobee to the Caloosahatchee and St. Lucie Estuaries, to increase the quantity and improve the timing of freshwater flows sent south to the Everglades system, and to provide increased water supply storage within the EAA Basin.

Construction has begun on the first generation of CERP projects already authorized by Congress. These include the Indian River Lagoon Project, the Picayune Strand Restoration Project, and the Site 1 Impoundment Project. The second generation of CERP projects, authorized in WRRDA 2014, include the Biscayne Bay Coastal Wetlands Project, Broward County Water Preserve Areas Project, the Caloosahatchee River West Basin Storage Reservoir, and the C-111 Spreader Canal Western Project. The first generation and second generation of authorized CERP projects listed here were previously referenced as the CERP "Band 1" Projects in the 2005 CERP Master Implementation Sequencing Plan, with the "Band 1" list also originally included the Acme Basin B, Loxahatchee River Watershed, and the EAA Storage Reservoir (Part 1) CERP projects.

CERP Central Everglades Planning Project (CEPP) – In Place

The Corps and the SFWMD initiated the Central Everglades Planning Project (CEPP) as the next proposed increment of the CERP Program in November 2011. The purpose of the CEPP is to improve the quantity, quality, timing and distribution of water flows to the Northern Estuaries, central Everglades (Water Conservation Area 3 (WCA 3) and Everglades National Park (ENP), and Florida Bay while increasing water supply for municipal, industrial and agricultural users. The CEPP draft Project Implementation Report (PIR) was released for public and agency review in August 2013, and the Record of Decision (ROD) was signed August 31, 2015. The recommended plan would achieve these benefits by reducing the large pulses of regulatory flood control releases sent from Lake Okeechobee by redirecting approximately 210,000 acre-feet of water on an annual basis to the historical southerly flow path.

WATER MUST GO SOUTH AWAY FROM LAKE IN A SHEET FLOW TO THE EVERGLADES

CEPP benefits gained from sending new water south from Lake Okeechobee are derived in part from operational refinements that can take place within the existing, inherent flexibility of the LORS 2008, and in part with refinements that are beyond the schedule's current flexibility. Modifications to LORS 2008 would be required to optimally utilize the added storage capacity of the A-2 Flow Equalization Basin (FEB) to send the full 210,000 acre-feet per year of new water available in CEPP south to the Everglades, while maintaining compliance with requirements for water supply and flood control performance levels. The CEPP "new" water accounts for the additional volume of regulatory releases able to be made from Lake Okeechobee to the southerly WCAs, releases that are not currently assumed to be delivered under the pre-CEPP conditions with the 2008 LORS and the State of Florida's Restoration Strategies Project due to water quality constraints.

Most of the LORS 2008 refinements applied in the CEPP modeling lie within the bounds of the operational limits and flexibility available in the current LORS 2008, with the exception of the adjustments made to the class limits for the Lake Okeechobee inflow and climate forecasts. Under some hydrologic conditions, the class limit adjustments made to the Lake Okeechobee inflow and climate forecasts reduced the magnitude of allowable discharges from the Lake, thereby resulting in storage of additional water in the Lake in order to optimize system-wide performance and

ensure compliance with Savings Clause requirements. However, these class limit changes represent a change in the flow chart guidance that extends beyond the inherent flexibility in the current LORS 2008.

Independent of CEPP implementation, the CEPP PIR assumes that revisions to the LORS 2008 would be needed following the implementation of other CERP projects and the HHD infrastructure remediation. When the HHD remediation is completed and the HHD DSAC Level 1 rating is lowered, higher maximum lake stages and increased frequency and duration of high lake stages may be possible to provide the additional storage capacity assumed with the recommended plan. The future LORS which may be developed in response to actions (1) and/or (2) is unknown at this time. It is anticipated that the need for modifications to the 2008 LORS would be initially triggered by non-CEPP actions and that these actions would occur earlier than implementation of CEPP.

Kissimmee River Restoration (KRR) Project Complete

Completion of the KRR Project construction features is scheduled for 2019. Currently, outstanding construction features include Reaches 2 and 3 backfill, the S-69 U-Shaped Weir at the downstream terminus of Reach 3 backfill, removal of the S-65C spillway and tieback levees and completion of the additional spillway capacity at S-65E. However, completion of the KRR project also includes implementation of operational changes in the Upper (i.e., Headwaters Revitalization) and Lower Basins that would provide for restoration as well as maintain existing levels of flood protection. In order to maintain existing levels of flood protection within the Kissimmee River Upper Basin, the KRR Project included canal improvements within the Chain of Lakes and additional spillway capacity at S-65 (the outlet from Lake Kissimmee), increasing the design discharge from 11,000 cfs up to 18,000 cfs. Spillway additions as part of the KRR Project also increased the design discharge of S-65D from 21,300 cfs up to 31,000 cfs and the design discharge of S-65E from 24,000 cfs up to 34,000 cfs. Additional discharge capacity beyond existing levels at some of these spillways is expected for events larger than the 50-yr and the full additional discharge would likely only be required for a basin-wide SPF event. Ongoing studies as part of the Kissimmee Basin Modified Water Control Plan continue to develop flood operations for the anticipated future state of the KRR Project.

With LORS 2008 in-place as an interim risk reduction measure for the HHD Future Without Project condition, there would not be the option to store additional water within Lake Okeechobee (for purposes such as water supply or in order to buffer large releases to the coastal estuaries) because of continued concerns with the structural integrity of the HHD. Since the Kissimmee River basin comprises between 40 to 60 percent of the inflows to Lake Okeechobee, there is instead impetus to intercept and store these excess flows (i.e., during floods) before they reach Lake Okeechobee.

GOOD IDEA THIS WILL STOP AGRICULTURE POLLUTED WATER GETTING TO LAKE OKEECHOBEE.

SFWMD Northern Everglades and Estuaries Protection Program

The SFWMD, the Corps cost-share sponsor for the C&SF Project, continues to study storage options as part of the Northern Everglades and Estuaries Protection Program, established in 2007 to strengthen protection for the Northern Everglades by expanding the LOPA. One particularly relevant plan component is "The Lake Okeechobee Watershed Construction Project, Phase II Technical Plan". The Plan identifies projects and urban and agricultural best management practices needed to achieve water quality targets for Lake Okeechobee. In addition, it includes projects for increasing water storage north of Lake Okeechobee to achieve healthier lake levels and reduce harmful discharges to the Caloosahatchee and St. Lucie Rivers and Estuaries.

SFWMD Dispersed Water Management Program

Since 2005, the SFWMD has been working with a coalition of agencies, environmental organizations, ranchers and researchers to enhance opportunities for storing excess surface water on public and private lands. Over the years, these partnerships have made thousands of acre-feet of water retention and storage available throughout the greater Everglades system, including the Northern Everglades. In addition to utilizing regional public projects, the SFWMD's Dispersed Water Management Program encourages private property owners to retain water on their land rather than drain it and/or accept and detain regional runoff for storage. Landowners typically become involved in the program through cost-share cooperative projects, easements or payment for environmental services. BMAS ARE A VOLUNTARY SYSTEM AND ARE NOT ENFORCED AND COWBOY RANCHERS "DO NOT VOLUNTEER"

Managing water on these lands is one means of reducing the amount of water delivered into Lake Okeechobee during the wet season. With Lake Okeechobee's water levels high from months of above-average rainfall during the 2013 rainy season, the SFWMD utilized this storage while taking further actions to capture and store water throughout the regional water management system. Holding water on these lands helped reduce the amount of water flowing into Lake Okeechobee and/or discharged to the Caloosahatchee and St. Lucie Estuaries during the high water conditions throughout south Florida.

Water control Structures, Culverts, Lock Structures, Pump Stations & Spillways, Canals, Embankments

The structures, as described in Section 3 (Existing Conditions), are not expected to change from what is currently in place. Further, it is expected the structures, canals, and embankments would be operated in much the same manner, except as noted for related projects discussed above. As mentioned previously, the 28 Federal culverts are currently being replaced as discussed in the 2010 HHD Culvert Removal and Replacement EA. The culverts are being replaced in kind, and therefore would not be expected to change the future function of water flows. Construction of the replacement culverts is expected to be completed in 2020. NOTE- CULVERTS THAT NOW CONNECT AGRICULTURE LANDS WATER-RUN-OFF TO FLOWING WATER MUST BE STOPPED AND REDUCED.

4.5 WATER QUALITY

Surface Water

POLLUTED AGRICULTURE RUN-OFF WATER MUST STOP SOON 40E-61 40E-63 ENFORCED

Regardless of the condition of the dike, the highly eutrophic condition of Lake Okeechobee is expected to persist for the foreseeable future due to past and future nutrient loading. Increased population may result in some change to surface water quality; however, the most significant source of surface water pollution will continue to be agricultural operations in the area. If a breach in the dike were to occur, mud sediments from Lake Okeechobee would be transported to nearby waterways, resulting in localized elevated total suspended solids and phosphorus concentrations that might be higher than typical depending upon the affected water body. It is possible that a breach might result in the entrainment of HTRW contaminants into flood waters; however, dispersion and dilution would likely result in few limited areas where water quality standards would be exceeded. No significant effects outside the immediate area of the breach would be expected. Without dike rehabilitation, the lake would be operated at lower stages, which may improve water quality conditions somewhat in the littoral zone of the lake. However, because of the dike's current lack of structural integrity, high-volume freshwater releases are required during flood events to avoid the possibility of a breach in the dike. These releases affect the lake's two primary outlets: the St. Lucie and Caloosahatchee Rivers. Water released from the lake contains elevated nutrient concentrations that contribute to degradation of water quality in

the St. Lucie and Caloosahatchee Rivers and Estuaries. None of the projects or assumptions discussed in the Section 4.4 Hydrology & Hydraulics will result in significant changes to water quality in the project area. Since Florida Water Quality Standards were recently revised, it is not likely that the State will develop stronger more effective regulations in the foreseeable future. A Total Maximum Daily Limit for Phosphorus, the limiting nutrient in Lake Okeechobee, was established for the Lake in 2002. Efforts to attain the TMDL limit through the implementation of Basin Management Plans are likely to continue. STOP VOLUNTARY BMPS AND ENFORCE TMDL REQUIREMENTS 40E-61-40E-63 ADMIT-40 APPS TO LAKE OKEECHOBEE

Groundwater

Increased population in the vicinity of the HHD is likely to result in greater use of the Floridan Aquifer as a source of potable water where its quality supports such use. The FAS groundwater quality conditions are not expected to change in the vicinity of the HHD in the foreseeable future with or without rehabilitation. Along the perimeter of the lake from Port Mayaca southwest to Moorehaven, the quality of the shallow surficial aquifer groundwater is expected to become more saline due to overdraining of the EAA lands which results in the continued upward flow of relatively deep saline connate groundwater into the upper freshwater portion of the surficial aquifer. Preliminary measurements in Reach 1 (Port Mayaca to Belle Glades) indicate the possibility that this upward flow of connate groundwater has accelerated in some areas directly adjacent to the cutoff wall installed between Port Mayaca and Belle Glade. The upward movement of connate groundwater in Reaches 2 and 3 are not expected to impact surface water quality.

From Port Mayaca northwest towards Okeechobee City and Lake Port, the groundwater is not likely to change significantly in the absence of a rehabilitated HHD. This area is expected to experience increased population over the next 50 years which is likely to be the largest driver of changes to surficial groundwater quality conditions as this aquifer is likely to be used as a source for landscape irrigation. STOP UNPERMITTED USE AND ENFORCE ACTION TO CONTROL LANDSCAPE IRRIGATION

4.6 VEGETATION

The No Action Alternative is expected to continue to provide conditions for which the same vegetation, as described in **Section 3** (Existing Conditions), would occur. The HHD itself would continue to be covered with mixed grasses and mowed on a regular basis. Wetland vegetation would likely continue to be found in the toe ditch between operation and maintenance mowing activities.

Open water and freshwater marsh habitats are expected to continue lakeward of the HHD within Lake Okeechobee. It is expected the littoral zone, as described in **Section 3**, would continue on the lake's western edge and on the islands in its southern shore (Kraemer Island, Torry Island, and Ritta Island). The littoral zone would support emergent, submerged, and floating-leaf plants. Depending on the effects of climate change (temperature and rainfall especially), plant community structure within the littoral zone of Lake Okeechobee may change. Further, changes in special extent and distribution of the Lake Okeechobee littoral zone are anticipated as the regulation schedule for Lake Okeechobee may need to be revised as a result of implementation of the CEPP (USACE 2013). In addition, it is anticipated that species composition and abundance within submerged, emergent and floating-leaf communities would likely be altered as a result of changes in lake stage or regulation.

4.7 WETLANDS

The No Action Alternative is expected to continue to provide conditions for which the same wetlands, as described in **Section 3** (Existing Conditions), would occur. Low quality wetlands would continue to occur in the toe ditches around HHD, providing foraging opportunities for wildlife. High quality wetland habitat would be expected to continue in the littoral zone currently on the western side of Lake Okeechobee with the same lake stages as are provided for by the LORS 2008. Lake Okeechobee would continue to hydraulically feed wetlands beyond the HHD, providing freshwater for the Florida Everglades to the south and for the WCAs in Palm Beach and Broward Counties. STOP IMPROVED PASTURES FROM DESTORING WETLANDS AND ORANGE CROP OPERATIONS

If a breach of the HHD were to occur in the southern reaches, it is expected the EAA, the STAs, the WCAs, and ENP could be negatively impacted as a result of the flow of water from Lake Okeechobee. In addition to flooding and destroying the crops within the agricultural areas, water would more than likely overwhelm the STAs and WCAs and continue to move south towards ENP.

4.8 THREATENED AND ENDANGERED SPECIES

The habitat surrounding the HHD is expected to remain similar to that described in **Section 3** (Existing Conditions) and the same species are expected to remain in the area. The No Action Alternative, with continued current conditions, would not have adverse effects on protected species. However, if the dike were to fail, species and habitats directly on the dike and within the path of the water would be negatively impacted, and snail kite critical habitat could be negatively impacted due to lower lake levels.

Further, if a breach were to occur along the southern portions of the HHD, flooding would occur within the EAA and further south, through the WCAs, and eventually to Everglades National Park. There are many state and federally protected species within south Florida that would be negatively impacted due to a loss of habitat from flooding resulting from a breach of the HHD.

4.8.1 Federally Listed Species Expected to Occur Within the Study Area

4.8.1.1 Audubon's Crested Caracara

The No Action Alternative is not expected to affect the caracara. Caracara typically nest in open fields and ranch lands. If the dike were to breach, ranch lands could be flooded and negative impacts to nesting trees could occur. Changes in land use are expected to have a greater impact to the caracara than a potential breach in the HHD.

4.8.1.2 Eastern Indigo Snake

The Eastern indigo snake is expected to continue to have the potential to be found on the HHD embankment with the No Action Alternative. If the dike were to breach, snakes within the breach zone could be swept away due to the loss of water from Lake Okeechobee.

4.8.1.3 Everglade Snail Kite

The snail kite is expected to continue to be present within the littoral zone of Lake Okeechobee with the No Action Alternative. If the dike were to breach, negative effects to the littoral zone could occur due to loss of water within Lake Okeechobee. The littoral zone in Lake Okeechobee is designated as critical habitat for the Everglade snail kite and loss of this habitat would have a

negative effect on the snail kite. Further, it is safe to assume the LORS would be updated during the planning horizon. Changes to the LORS could have the potential to affect the snail kite, however, these effects would be analyzed in a separate NEPA document for an updated regulation schedule for Lake Okeechobee.

4.8.1.4 Okeechobee Gourd

The Okeechobee gourd is expected to be found along or adjacent to the HHD with the No Action Alternative. If the dike were to breach, plants along and within the breach zone would be swept away due with the flow of water from Lake Okeechobee.

4.8.1.5 West Indian Manatee

The manatee is expected to continue to inhabit Lake Okeechobee and the canals adjacent to the HHD with the No Action Alternative. If the dike were to breach and a manatee was in the water near the breach zone, it could be caught up in the water flow and potentially be stranded on dry land.

4.8.1.6 Wood Stork

The wood stork is expected to continue to nest adjacent to the HHD and forage within Lake Okeechobee with the No Action Alternative. If the dike were to beach, temporary impacts to foraging due to loss of water within the littoral zone are expected.

4.8.1.7 Florida Panther

The Florida panther is expected to inhabit the lands surrounding the HHD with the No Action Alternative. The Florida panther continues to extend its territory northward from the southwest Florida region as its population grows. A breach of the HHD could negatively impact the panther if it is caught in the flood waters resulting from a breach.

4.8.1.8 Florida Bonneted Bat

The bonneted bat is expected to continue to inhabit lands north and west of Lake Okeechobee with the No Action Alternative. A breach of the dike could negatively impact foraging habitat of the bat within Lake Okeechobee or adjacent wetlands depending on the location of the breach and flow path of the water.

4.8.2 State Listed Species Expected to Occur Within the Study Area

With the No Action Alternative, the gopher tortoise, burrowing owl, and many wading birds are likely to continue to use the HHD for foraging and nesting. The wading bird species that could potentially occur in the project area are listed in Table 3-6 and would have similar effects as listed for the wood stork.

4.8.2.1 Gopher Tortoise

The gopher tortoise is expected to continue to be found on the HHD embankment with the No Action Alternative. If the dike were to breach, tortoises within the breach zone could be swept away due to the loss of water from Lake Okeechobee.

4.8.2.2 Burrowing Owl

The burrowing owl is expected to continue to be found on the HHD embankment with the No Action Alternative. If the dike were to breach, owls within the breach zone could be swept away due to the loss of water from Lake Okeechobee.

4.9 NOISE

Noise sources and levels are not expected to change significantly from that described in Section 3 (Existing Conditions) with the No Action Alternative. Vehicular traffic on local roadways is expected to increase along with increased population; however, noise conditions are not expected to significantly change. The project area is expected to remain predominantly rural with pockets of low-density residential.

4.10 AIR QUALITY

The No Action Alternative would not affect air quality. Relative to the existing condition, it is expected that traffic and other practices affecting air quality would increase marginally in most areas of the study area due to moderate population growth.

4.11 TRANSPORTATION AND UTILITIES

Transportation and utilities are not expected to be impacted due to the No Action Alternative. If a breach were to occur, impacts to highways and the railroad would be extensive. Structures nearest the breach could be destroyed. Further, travelers or freight on the roads or railroad could be endangered. Even moderate flooding from a low velocity breach would likely cause road closures and traffic delays. The utility infrastructure located on lands adjacent to HHD could be destroyed, resulting in communication and power outages.

4.12 SOCIOECONOMICS

4.12.1 Socioeconomic Characteristics of the Study Area

As described in **Section 3.0** (Existing Conditions, Socioeconomics), the areas surrounding Lake Okeechobee are largely rural with some small towns and cities dispersed throughout agricultural areas. The primary economic activity is agriculture; secondary activities include: recreation, commercial fishing, commercial navigation, services (banking, insurance, etc.) healthcare, education, and government activities.

The general economic characteristics of the study area are not expected to change significantly in the foreseeable future. The economic engine of the region is agriculture and to a lesser extent tourism associated with Lake Okeechobee. This is unlikely to change much over time. If a breach were to occur, thousands of acres of productive farmland (almost entirely sugarcane) would be inundated and likely out of production for several growing seasons. In addition, Zone A (Reaches 2 and 3, see **Figure 2-2**) has the greatest potential for economic damage, which could be significant with a breach. Relative to the other zones, urban damages are highest in Zone A. Agricultural damages are also the largest for Zones A and B due to the close proximity to the EAA.

4.12.2 Demographic Changes Over Time

In most of the communities surrounding Lake Okeechobee, population growth has been slow in recent decades (less than 1% per year). It is reasonable to assume that slow population growth

would continue into the foreseeable future. The State of Florida's Office of Population and Demographic Research provides projections for all Florida Counties through 2040. The projections are summarized in **Table 4-1**. The table also shows percent increase in the total population from 2010 to 2040.

Table 4-1. Projected population growth by county from 2010 to 2040

	2010	2015	2020	2025	2030	2035	2040	% Increase
Palm Beach	1,320,134	1,377,239	1,465,309	1,545,998	1,616,867	1,678,101	1,733,331	**31.30%**
Hendry	39,140	38,463	39,750	40,847	41,700	42,468	42,861	**9.51%**
Glades	12,884	13,035	13,744	14,389	14,950	15,519	15,860	**23.10%**
Okeechobee	39,996	40,530	42,105	43,461	44,574	45,464	46,186	**15.48%**
Martin	146,318	151,983	160,964	169,130	176,238	182,322	187,765	**28.33%**

Source: State of Florida Office of Population and Demographic Research. *Florida Population by County: 1977 through 2040*

It should be noted that Palm Beach County and Martin County are projected to grow much more quickly than the other counties. This is primarily due to expected growth in the coastal areas in each county. The communities near the HHD in Palm Beach County (South Bay, Belle Glade, and Pahokee) are not likely to grow as quickly as coastal cities such as West Palm Beach, Jupiter, and Boca Raton. Therefore, the growth rate for Palm Beach County (31.3% over 30 years) is probably overly aggressive for the communities near the HHD. Instead, the growth rate for Hendry County (9.5% over 30 years) is more realistic projection. Hendry County is adjacent to Palm Beach County, and its demographic characteristics are much more similar to Belle Glade and Pahokee than those cities are to West Palm Beach. For Martin County, the growth rate for Okeechobee County (15.5% years) is more realistic for unincorporated areas near the HHD. In this case, Okeechobee is also an adjacent county with similar demographic and socioeconomic characteristics.

4.13 PUBLIC SAFETY

It is expected the inflow capacity versus outflow capacity of Lake Okeechobee would be as described in the existing conditions. The HHD would continue to provide flood risk management not only to towns immediately adjacent to the dike, but to a vast area south of the lake in the future. OUR PROBLEM IS DUE TO ENCROACHMENT OF AGRICULTURE UNCONTROLLED NO ENFORCEMENT

NO WONDER STATE CAN NOT MEET THE LAW OF 14 OMT 40 APB NO ENFORCEMENT DONE

Though major demographic and land-use changes are not expected, the No Action Alternative assumes that reasonable risk management measures would be taken by state and local authorities regardless of Federal action. This is an important assumption, because it ensures that the Federal government would not be making large investments based on poor local planning and preparedness. In other words, risk reduction should be shared responsibility, not an exclusively Federal objective.

In the case of the HHD, several specific local planning changes are assumed in the future condition.

- Improved public warning systems (Reverse 911 and warning sirens)
- Improved Public Awareness and education (more effective pre-breach evacuation warnings)
- Improved evacuation planning (more efficient evacuation plans during breach scenarios)

All of the above changes result in more effective public evacuation in the case of a dike breach. If all of the above actions are taken, life loss associated with a breach is expected to decrease over time (i.e. No Action Alternative), however, it would not decrease below tolerable risk guidelines. The earliest year in which these measures could realistically be implemented by local authorities is 2020, which is a key assumption of the consequences analysis.

4.14 REAL ESTATE

A breach in the HHD would result in widespread flooding of lands and the structures located on them as waters from Lake Okeechobee pass through the breach and onto adjacent lands. The risk to lands and structures located within the vicinity of the HHD is substantial. Inundation mapping and flood stage hydrographs indicate that flooding would be severe. Agricultural lands would also suffer damage, possibly for several growing seasons.

4.15 HAZARDOUS, TOXIC AND RADIOACTIVE WASTES

WHY NOW SAME ONGOING PROBLEMS

The No Action Alternative is not expected to result in any HTRW concerns. However, if there is a breach in the dike, some lands adjacent to the dike breach may potentially be subject to HTRW contamination as a result of the dispersion of otherwise contained pollutants on private lands.

4.16 RECREATIONAL RESOURCES

It is expected that Lake Okeechobee and the HHD would continue to host a variety of recreational activities year-round as described in **Section 3** (Existing Conditions). The OWW should continue to allow transit between the Gulf of Mexico and the Atlantic Ocean using the Caloosahatchee River (west coast) through Lake Okeechobee and reaching the Atlantic Ocean through the St. Lucie River. Recreational resources in the project area include the LOST, fishing and boating opportunities, campgrounds, hunting, and park areas. Additional opportunities for recreation could be developed by local entities as population numbers increase in the future. NORTHERN QUEST

ACTIVES ARE ONLY PEAK TIMES OCT OF ONE YEAR UNTIL APRIL OF ANOTHER YEAR

4.17 AESTHETIC RESOURCES

With the No Action Alternative, the HHD crest would continue to provide panoramic views of the flat agricultural (mostly sugarcane) fields and rim canal to the south, southwest, and southeast of Reaches 2 and 3. The extensive littoral zone on the west side of the lake's perimeter can be viewed from the dike in Reach 2, as well as Reaches 4, 6, and 8. The littoral zone plant community is composed of a mosaic of emergent and submerged plant species. Emergent vegetation within the littoral zone is dominated by cattail, spike rush, and torpedo grass. Along Reach 3, submerged vegetation is abundant along the lakeshore. There are several parks adjacent to the HHD. These parks include resources such as ponds, picnic areas, restrooms, grassy fields, boat ramps, and other amenities.

As stated above in the Socioeconomics Section, the general economic characteristics of the study area are not expected to change significantly in the foreseeable future. Therefore, land use is expected to remain the same with a large amount of agricultural practices continuing in the future and excessive development is not expected. Depending on the effects of climate change (temperature and rainfall especially), plant community structure within the littoral zone of Lake Okeechobee may change.

4.18 CULTURAL RESOURCES

Compared to the existing conditions in **Section 3.18**, the No Action Alternative would not have any expected impacts to cultural resources. In the event of a breach failure in the HHD, there would be a potential for adverse effects to both recorded and unrecorded historic properties, including the HHD itself which is eligible for listing on the National Register of Historic Places. Depending on the location and severity of the breach, impacts from flooding, erosion, and standing water could cause varying adverse effects to historic properties within the vicinity of the HHD. DUE TO THE FACT AGRICULTURE "Rules"

4.19 TRIBAL RESOURCES

The Seminole Brighton Reservation on the northwest side of Lake Okeechobee would still exist under the No Action Alternative. It is expected the Seminole Tribe would continue to use the HHD for hunting and fishing as discussed in Section 3 (Existing Conditions). If a breach were to occur, lands within the Seminole Brighton Reservation would be inundated, potentially causing adverse effects to hundreds of recorded and as yet, unrecorded historic properties depending upon the severity of the breach.

TRIBE IS NORTH OF LAKE OKEECHOBEE SO POINT OF VIEW, POLLUTION WILL GO INTO LAKE OKEECHOBEE. NOTE = ELEVATION DROP TO LAKE OKEECHOBEE IS NORTH TO SOUTH. AT "AS" WATER SEEKS LOWEST POINT AT A 36 FOOT DROP PEOPLE