APPENDIX D: PERTINENT CORRESPONDENCE

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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

JUL 17 2017

Mr. Larry Williams, Field Supervisor
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, FL 32960

Dear Mr. Williams,

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of an Environmental Assessment (EA) for the Modified Water Deliveries (MWD) to Everglades National Park (ENP) Increment 2 field test that includes continued relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum of 1929 (Figure 1). Implementation of the Proposed Action is anticipated to increase the availability of water deliveries from Water Conservation Area 3A (WCA 3A) to ENP through Northeast Shark River Slough for the benefit of natural resources. The field test is the second in a series of sequential efforts that are intended to incorporate constructed features of the MWD to ENP and Canal 111 South Dade projects into system-wide Central and Southern Florida (C&SF) Project operations. Implementation of the Proposed Action is also being pursued to address the mandated Reasonable and Prudent Alternative of the July 22, 2016 Everglades Restoration Transition Plan Biological Opinion.

The C&SF Project is located in south Florida and includes portions of several counties as well as portions of ENP, Big Cypress National Preserve, and adjacent areas. The 1992 MWD General Design Memorandum defines the project boundary as Shark River Slough and that portion of the C&SF Project north of S-331 to include WCA 3. G-3273 lies within eastern ENP, directly west of 8.5 Square Mile Area (8.5 SMA) (Figure 1).

Pursuant to the Endangered Species Act, as amended, the Corps is requesting written confirmation of species or their critical habitat either listed or proposed for listing that may be present within the referenced project area upon receipt of this letter. The Corps has tentatively determined that the following list of threatened and endangered species may be

present within the project area as illustrated in Tables 1 and 2. If you have any questions, or need further information, please contact Melissa Nasuti by email melissa.a.nasuti@usace.army.mil or telephone 904-232-1368. Thank you for your assistance in this matter.

Sincerely,

Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch

cc:
Mr. Miles Meyer, U.S. Fish and Wildlife Service, 1339 20th Street, Vero Beach, Florida 32960

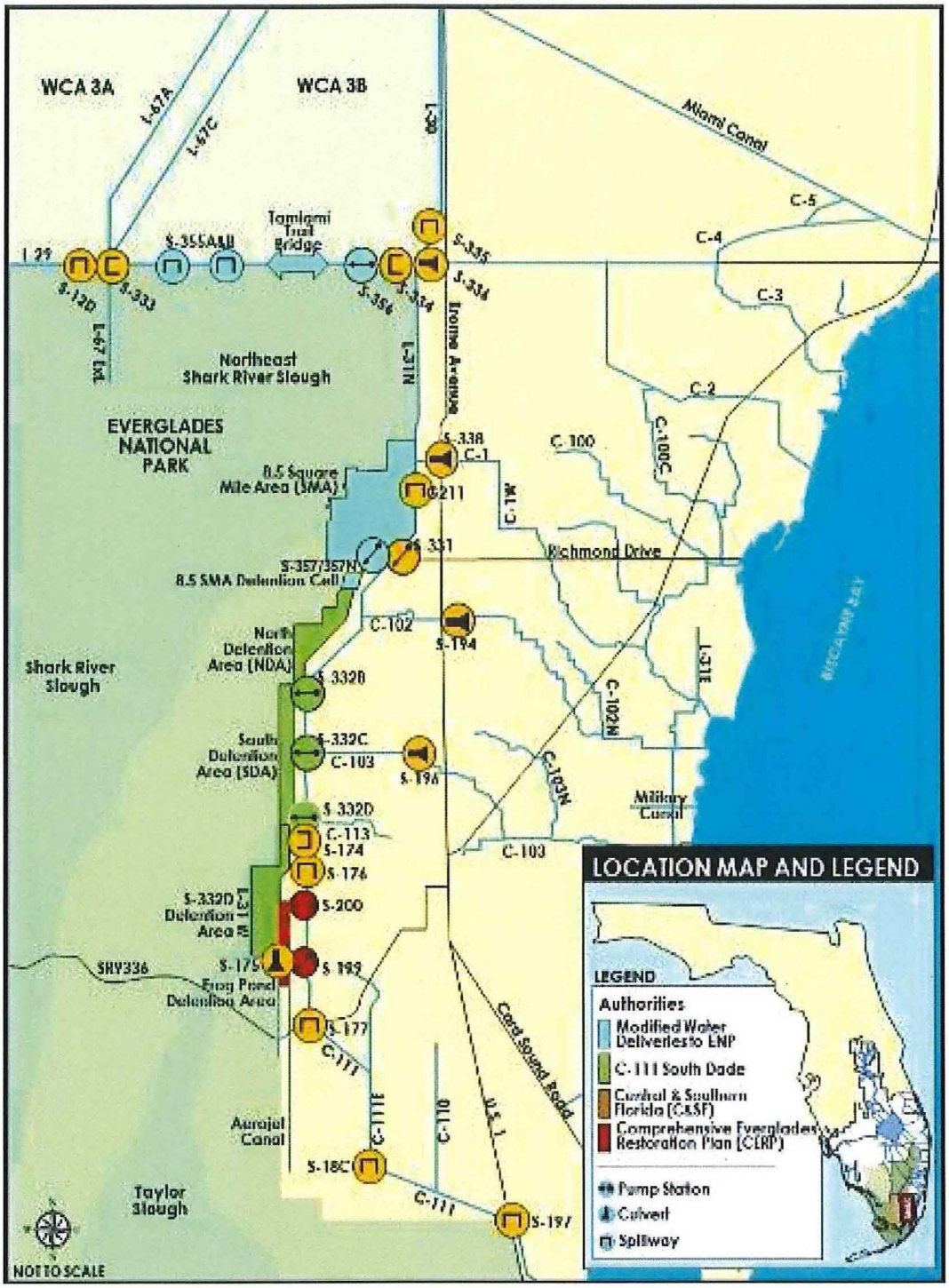

Figure 1. Project Area

Table 1. List of Federally Threatened and Endangered Species within the project area (E: Endangered, T: Threatened, SA: Similarity of Appearance, CH: Critical Habitat, C: Candidate Species)

Common Name	Scientific Name	Status
Mammals		
Florida panther	*Puma concolor coryi*	E
Florida manatee	*Trichechus manatus latirostris*	E, CH
Florida bonneted bat	*Eumops floridanus*	E
Birds		
Cape Sable seaside sparrow	*Ammodramus maritimus mirabilis*	E, CH
Everglade snail kite	*Rostrhamus sociabilis plumbeus*	E, CH
Piping plover	*Charadrius melodus*	T
Red-cockaded woodpecker	*Picoides borealis*	E
Roseate tern	*Sterna dougallii*	T
Wood stork	*Mycteria Americana*	T
Reptiles		
American Alligator	*Alligator mississippiensis*	T, SA
American crocodile	*Crocodylus acutus*	T, CH
Eastern indigo snake	*Drymarchon corais couperi*	T
Gopher tortoise	*Gopherus polyphemus*	C
Green sea turtle*	*Chelonia mydas*	E
Hawksbill sea turtle*	*Eretmochelys imbricate*	E
Kemp's Ridley sea turtle*	*Lipodochelys kempii*	E
Leatherback sea turtle*	*Dermochelys coriacea*	E
Loggerhead sea turtle*	*Caretta*	T
Fish		
Smalltooth sawfish*	*Pristis pectinata*	E
Invertebrates		
Bartram's hairstreak butterfly	*Strymon acis bartrami*	E
Elkhorn coral*	*Acropora palmata*	T, CH
Florida leafwing butterfly	*Anaea troglodyta floridalis*	E
Miami blue butterfly	*Cyclargus thomasi bethunebakeri*	E
Schaus swallowtail butterfly	*Heraclides aristodemus ponceanus*	E
Staghorn coral*	*Acropora cervicornis*	T, CH

Stock Island tree snail	*Orthalicus reses* (not incl. *nesodryas*)	T
Plants		
Crenulate lead plant	*Amorpha crenulata*	E
Deltoid spurge	*Chamaesyce deltoidea spp. deltoidea*	E
Garber's spurge	*Chamaesyce garberi*	T
Johnson's seagrass*	*Halophila johnsonii*	E, CH
Okeechobee gourd	*Cucurbita okeechobeensis* ssp. *okeechobeenis*	E
Small's milkpea	*Galactia smallii*	E
Tiny polygala	*Polygala smallii*	E
Big pine partridge pea	*Chamaecrista lineata* var. *keyensis*	E
Blodgett's silverbush	*Argythamnia blodgettii*	T
Cape Sable thoroughwort	*Chromolaena frustrata*	E, CH
Carter's small-flowered flax	*Linum carteri* var. *carteri*	E, CH
Everglades bully	*Sideroxylon reclinatum spp. austrofloridense*	C
Florida brickell-bush	*Brickellia mosieri*	E, CH
Florida bristle fern	*Trichomanes punctatum* spp. *floridanum*	E
Florida semaphore cactus	*Consolea corallicola*	E, CH
Sand flax	*Linum arenicola*	E

* Marine species under the purview of National Marine Fisheries Service (NMFS), the Corps will conduct a separate consultation with NMFS

Table 2. List of State Listed Species within the project area (E: Endangered, T: Threatened, SC: Species of Special Concern)

Common Name	Scientific Name	Status
Mammals		
Florida black bear	*Ursus americanus floridanus*	T
Everglades mink	*Mustela vison evergladensis*	T
Florida mouse	*Podomys floridanus*	SC
Florida mastiff bat	*Eumops glaucinus floridanus*	E
Birds		
Piping plover	*Charadrius melodus*	T
Snowy plover	*Charadrius alexandrinus*	T
American oystercatcher	*Haematopus palliates*	E
Brown pelican	*Pelecanus occidentalis*	SC
Black skimmer	*Rynchops niger*	SC
Least tern	*Sterna antillarium*	T
White-crowned pigeon	*Columba leucocephalus*	T
Least tern	*Sterna antillarum*	T
Limpkin	*Aramus guarauna*	SC
Little blue heron	*Egretta caerulea*	SC
Tricolored heron	*Egretta tricolor*	SC
Snowy egret	*Egretta thula*	SC
Reddish egret	*Egretta rufescens*	SC
White ibis	*Eudocimus albus*	SC
Roseate spoonbill	*Ajaja ajaja*	SC
Fish		
Mangrove rivulus	*Rivulus marmoratus*	SC
Invertebrates		
Miami blue butterfly	*Cyclargus [=Hermiargus] thomasi bethunebakeri*	E
Florida tree snail	*Liguus fasciatus*	SC
Plants		
Pine-pink orchid	*Bletia purpurea*	T
Lattace vein fern	*Thelypteris reticulate*	E
Eatons spikemoss	*Selaginella eatonii*	E
Wright's flowering fern	*Anemia wrightii*	E
Tropical fern	*Schizaea pennula*	E
Mexican vanilla	*Manilla mexicana*	E

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

July 25, 2017

Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Service Consultation Code: 04EF2000-2014-I-0201
Date Received: July 21, 2017
Project: ERTP-2 Increment 2
Applicant: U.S. Army Corps of Engineers
County: Miami-Dade

Dear Dr. Paduano Ralph:

The U.S. Fish and Wildlife Service (Service) has reviewed the U.S. Army Corps of Engineers' (Corps), Jacksonville District, letter dated July 17, 2017, requesting confirmation on federally-listed species or their designated critical habitat and candidate species for listing that may be present within the Modified Water Deliveries (MWD) to Everglades National Park (ENP) Increment 2 field test that includes continued relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum of 1929. The 'species list' is a National Environmental Policy Act (42 U.S. Code (U.S.C) § 4321) requirement for the environmental analysis. This species list is also provided in accordance with the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). The project site is located within Everglades National Park (ENP) in Miami-Dade County, Florida (Figure 1).

The attached table outlines the Corps determined list of federally threatened or endangered species, candidates, and critical habitat within the project area. The Service concurs with this list. In addition, the candidate species Florida pineland crabgrass, (*Digitaria pauciflora*), and pineland sandmat (*Chaemaesyce deltoidea pinetorium*), (both proposed threatened), and the Florida prairie clover (*Dalea carthagenesis floridana*), (proposed endangered), should be included on the list. This letter is submitted in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*).

Thank you for your cooperation and effort in protecting fish and wildlife resources. The Service looks forward to seeing this project completed in the near future. If you have any questions regarding this project, please contact Richard Fike at 772-469-4262 or by e-mail at richard_fike@fws.gov.

Sincerely yours,

for Donald Progulske
Everglades Program Supervisor
South Florida Ecological Services Office

cc: electronic copy only
Corps, Jacksonville, Florida (Melissa Nasuti)

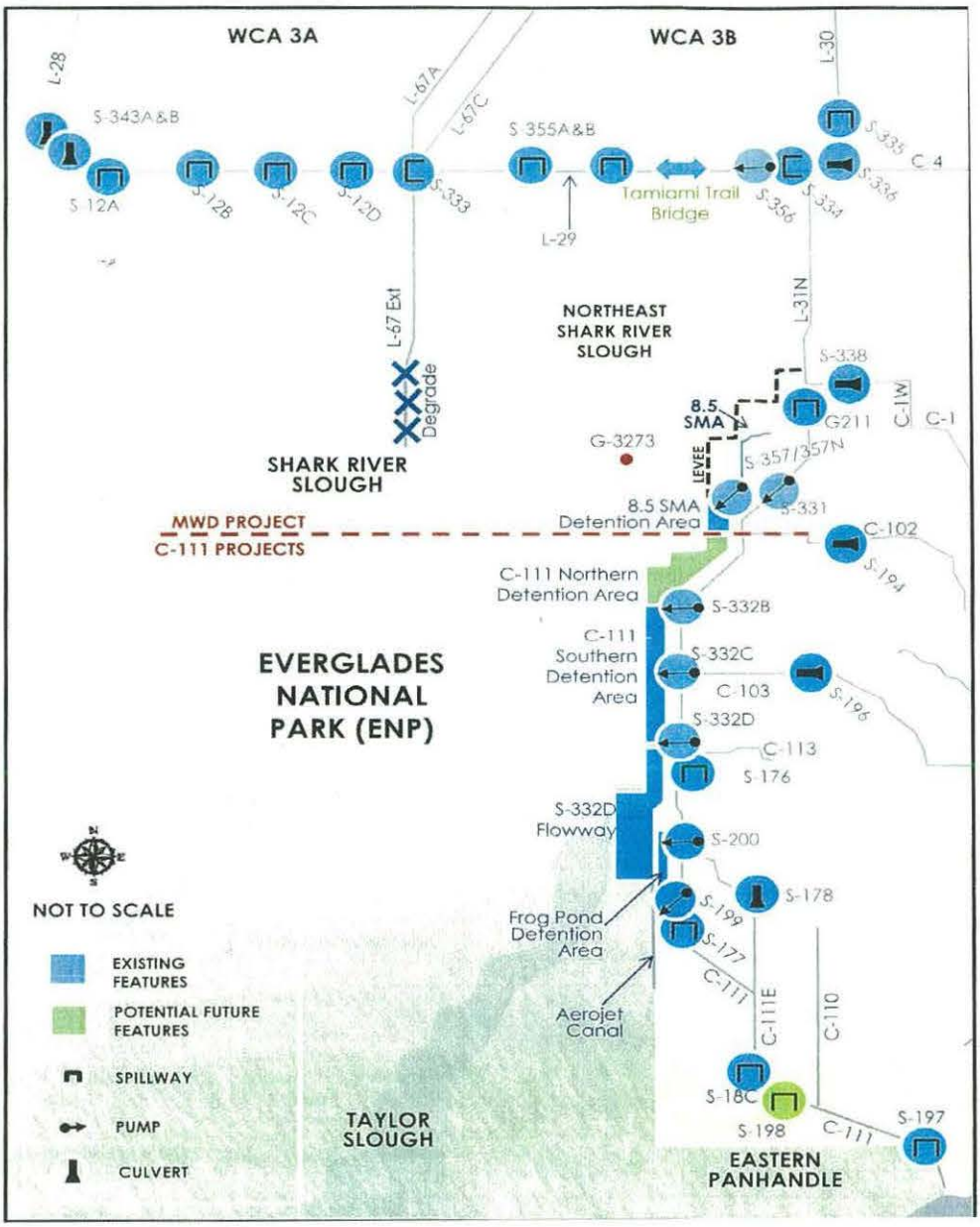

Figure 1. Project location and relevant C&SF project features of the MWD Project and C-111 Projects.

Table 1. List of Federally Threatened and Endangered Species within the project area (E: Endangered, T: Threatened, SA: Similarity of Appearance, CH: Critical Habitat, C: Candidate Species)

Common Name	Scientific Name	Status
Mammals		
Florida panther	*Puma concolor coryi*	E
Florida manatee	*Trichechus manatus latirostris*	E, CH
Florida bonneted bat	*Eumops floridanus*	E
Birds		
Cape Sable seaside sparrow	*Ammodramus maritimus mirabilis*	E, CH
Everglade snail kite	*Rostrhamus sociabilis plumbeus*	E, CH
Piping plover	*Charadrius melodus*	T
Red-cockaded woodpecker	*Picoides borealis*	E
Roseate tern	*Sterna dougallii*	T
Wood stork	*Mycteria Americana*	T
Reptiles		
American Alligator	*Alligator mississippiensis*	T, SA
American crocodile	*Crocodylus acutus*	T, CH
Eastern indigo snake	*Drymarchon corais couperi*	T
Gopher tortoise	*Gopherus polyphemus*	C
Green sea turtle*	*Chelonia mydas*	E
Hawksbill sea turtle*	*Eretmochelys imbricate*	E
Kemp's Ridley sea turtle*	*Lipodochelys kempii*	E
Leatherback sea turtle*	*Dermochelys coriacea*	E
Loggerhead sea turtle*	*Caretta*	T
Fish		
Smalltooth sawfish*	*Pristis pectinata*	E
Invertebrates		
Bartram's hairstreak butterfly	*Strymon acis bartrami*	E
Elkhorn coral*	*Acropora palmata*	T, CH
Florida leafwing butterfly	*Anaea troglodyta floridalis*	E
Miami blue butterfly	*Cyclargus thomasi bethunebakeri*	E
Schaus swallowtail butterfly	*Heraclides aristodemus ponceanus*	E
Staghorn coral*	*Acropora cervicornis*	T, CH

Stock Island tree snail	*Orthalicus reses* (not incl. *nesodryas*)	T
Plants		
Crenulate lead plant	*Amorpha crenulata*	E
Deltoid spurge	*Chamaesyce deltoidea spp. deltoidea*	E
Garber's spurge	*Chamaesyce garberi*	T
Johnson's seagrass*	*Halophila johnsonii*	E, CH
Okeechobee gourd	*Cucurbita okeechobeensis* ssp. *okeechobeenis*	E
Small's milkpea	*Galactia smallii*	E
Tiny polygala	*Polygala smallii*	E
Big pine partridge pea	*Chamaecrista lineata* var. *keyensis*	E
Blodgett's silverbush	*Argythamnia blodgettii*	T
Cape Sable thoroughwort	*Chromolaena frustrata*	E, CH
Carter's small-flowered flax	*Linum carteri* var. *carteri*	E, CH
Everglades bully	*Sideroxylon reclinatum spp. austrofloridense*	C
Florida brickell-bush	*Brickellia mosieri*	E, CH
Florida bristle fern	*Trichomanes punctatum* spp. *floridanum*	E
Florida semaphore cactus	*Consolea corallicola*	E, CH
Sand flax	*Linum arenicola*	E

* Marine species under the purview of National Marine Fisheries Service (NMFS), the Corps will conduct a separate consultation with NMFS

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

JUL 28 2017

The Honorable Marcellus Osceola Jr.
Chairman, Seminole Tribe of Florida
6300 Stirling Road
Hollywood, FL 33024

Dear Chairman Osceola:

The purpose of this letter is to invite you and/or your representative to participate on the Project Delivery Team (PDT) for the Modified Water Deliveries (MWD) Increment 2 field test and to formally initiate Government-to-Government consultation between the Seminole Tribe of Florida and the Jacksonville District, U.S. Army Corps of Engineers (Corps). The Corps is preparing an Environmental Assessment (EA) for the MWD Increment 2 field test that includes continued relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum of 1929 (Figure 1). Implementation of the Proposed Action is anticipated to increase the availability of water deliveries from Water Conservation Area 3A (WCA 3A) to Everglades National Park (ENP) through Northeast Shark River Slough for the benefit of natural resources. The field test is the second in a series of sequential efforts that are intended to incorporate constructed features of the MWD to ENP and Canal 111 South Dade projects into system-wide Central and Southern Florida (C&SF) Project operations. Implementation of the Proposed Action is also being pursued to address the mandated Reasonable and Prudent Alternative of the July 22, 2016 Everglades Restoration Transition Plan Biological Opinion.

The C&SF Project is located in South Florida and includes portions of several counties as well as portions of ENP, Big Cypress National Preserve, and adjacent areas. The 1992 MWD General Design Memorandum defines the project boundary as Shark River Slough and that portion of the C&SF Project north of S-331 to include WCA 3. G-3273 lies within eastern ENP, directly west of 8.5 Square Mile Area (8.5 SMA) (Figure 1).

We intend to pursue an open and public process and recognize the obligations that the Corps has to the Seminole Tribe of Florida including consultation under the National Environmental Policy Act and Section 106 of the National Historic Preservation

Act (NHPA). Pursuant to Executive Order 13175, Section 106 of the NHPA (16 USC 470f) and its implementing regulations (36 CFR 800), and in consideration of the Corps' Trust Responsibilities, I would like to invite the Seminole Tribe of Florida to participate in Government-to-Government consultation and initiate coordination with the Tribal Historic Preservation Office regarding potential effects to cultural resources as part of our obligation for continued coordination. Additionally, the Corps invites you or your designated staff to participate on the PDT that will be conducting the technical analyses and evaluations in support of the Increment 2 field test. If you elect, please identify the appropriate Tribal member(s) or person(s) who could represent the Tribe on the PDT.

If you have any questions regarding the information in this letter, please feel free to contact me or you may contact Melissa Nasuti at 904-232-1368 (Melissa.A.Nasuti@usace.army.mil).

Sincerely,

Tenika M. Wilson
For Jason A. Kirk, P.E.
Colonel, U.S. Army
District Commander

Enclosure

cc:
Dr. Paul N. Backhouse, Ph.D., Seminole Tribe of Florida, 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
Manuel Tiger, Big Cypress General Council Office, Seminole Tribe of Florida, Council Representative, 31000 Josie Billie Highway, Clewiston, FL 33440
Joe Frank, Big Cypress Board Representative, Seminole Tribe of Florida, Inc., Big Cypress Board Office, 31000 Josie Billie Hwy., Clewiston, FL 33440
Jim Shore, General Counsel, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, FL 33024
Michelle Diffenderfer, Lewis, Longman and Walker, 515 N Flagler Drive, Suite 1500, West Palm Beach, FL 33401
Patricia Powers, Bose Public Affairs Group, 2000 M Street, N.W., Suite 520, Washington, D.C. 20036
Stephen A. Walker, Outside Counsel, Lewis, Longman and Walker, 515 North Flagler Drive, Suite 1500, West Palm Beach, FL 33401

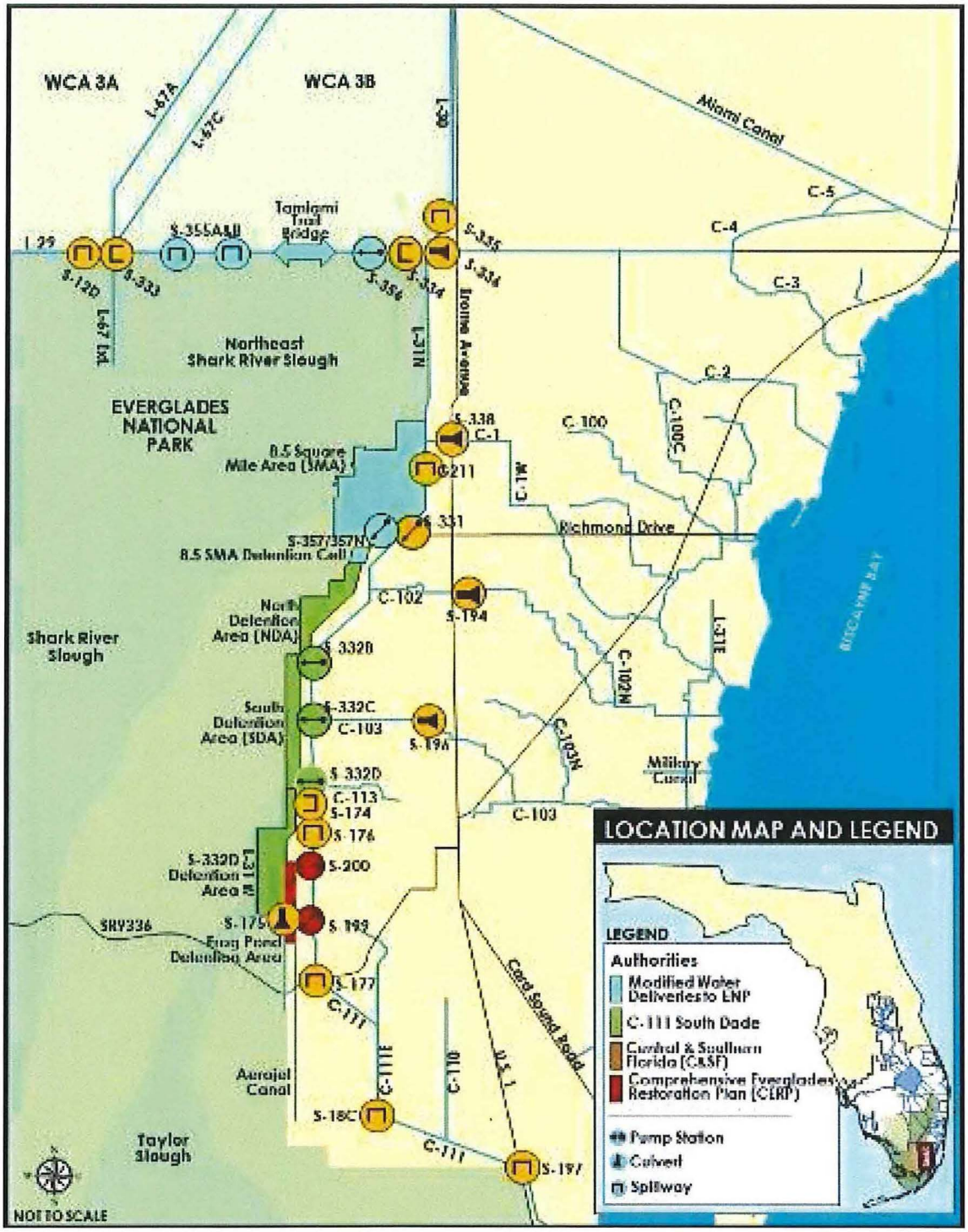

Figure 1. Project Area

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

JUL 28 2017

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

Dear Chairman Cypress:

The purpose of this letter is to invite you and/or your representative to participate on the Project Delivery Team (PDT) for the Modified Water Deliveries (MWD) Increment 2 field test and to formally initiate Government-to-Government consultation between the Miccosukee Tribe of Indians of Florida and the Jacksonville District, U.S. Army Corps of Engineers (Corps). The Corps is preparing an Environmental Assessment (EA) for the MWD Increment 2 field test that includes continued relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum of 1929 (Figure 1). Implementation of the Proposed Action is anticipated to increase the availability of water deliveries from Water Conservation Area 3A (WCA 3A) to Everglades National Park (ENP) through Northeast Shark River Slough for the benefit of natural resources. The field test is the second in a series of sequential efforts that are intended to incorporate constructed features of the MWD to ENP and Canal 111 South Dade projects into system-wide Central and Southern Florida (C&SF) Project operations. Implementation of the Proposed Action is also being pursued to address the mandated Reasonable and Prudent Alternative of the July 22, 2016 Everglades Restoration Transition Plan Biological Opinion.

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We intend to pursue an open and public process and recognize the obligations that the Corps has to the Miccosukee Tribe of Indians of Florida including consultation under the National Environmental Policy Act and Section 106 of the National Historic

Preservation Act (NHPA). Pursuant to Executive Order 13175, Section 106 of the NHPA (16 USC 470f) and it's implementing regulations (36 CFR 800), and in consideration of the Corps' Trust Responsibilities, I would like to invite the Miccosukee Tribe of Indians of Florida to participate in Government-to-Government consultation and initiate coordination with the Tribal Historic Preservation Office regarding potential effects to cultural resources as part of our obligation for continued coordination. Additionally, the Corps invites you or your designated staff to participate on the PDT that will be conducting the technical analyses and evaluations in support of the Increment 2 field test. If you elect, please identify the appropriate Tribal member(s) or person(s) who could represent the Tribe on the PDT.

If you have any questions regarding the information in this letter, please feel free to contact me or you may contact Melissa Nasuti at 904-232-1368 (Melissa.A.Nasuti@usace.army.mil).

Sincerely,

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

Enclosure

cc:
Fred Dayhoff, NAGPRA Representative, Consultant to Miccosukee Tribe, HC 61 SR 68 Old Loop Road, Ochopee, FL 34141
Kevin Donaldson, Real Estate Services, Miccosukee Tribe of Indians of Florida, P.O. Box 440021, Tamiami Station, Miami, FL 33144
Gene Duncan, Director Water Resources Department, Miccosukee Tribe of Indians of Florida, P.O. Box 440021, Tamiami Station, Miami, FL 33144

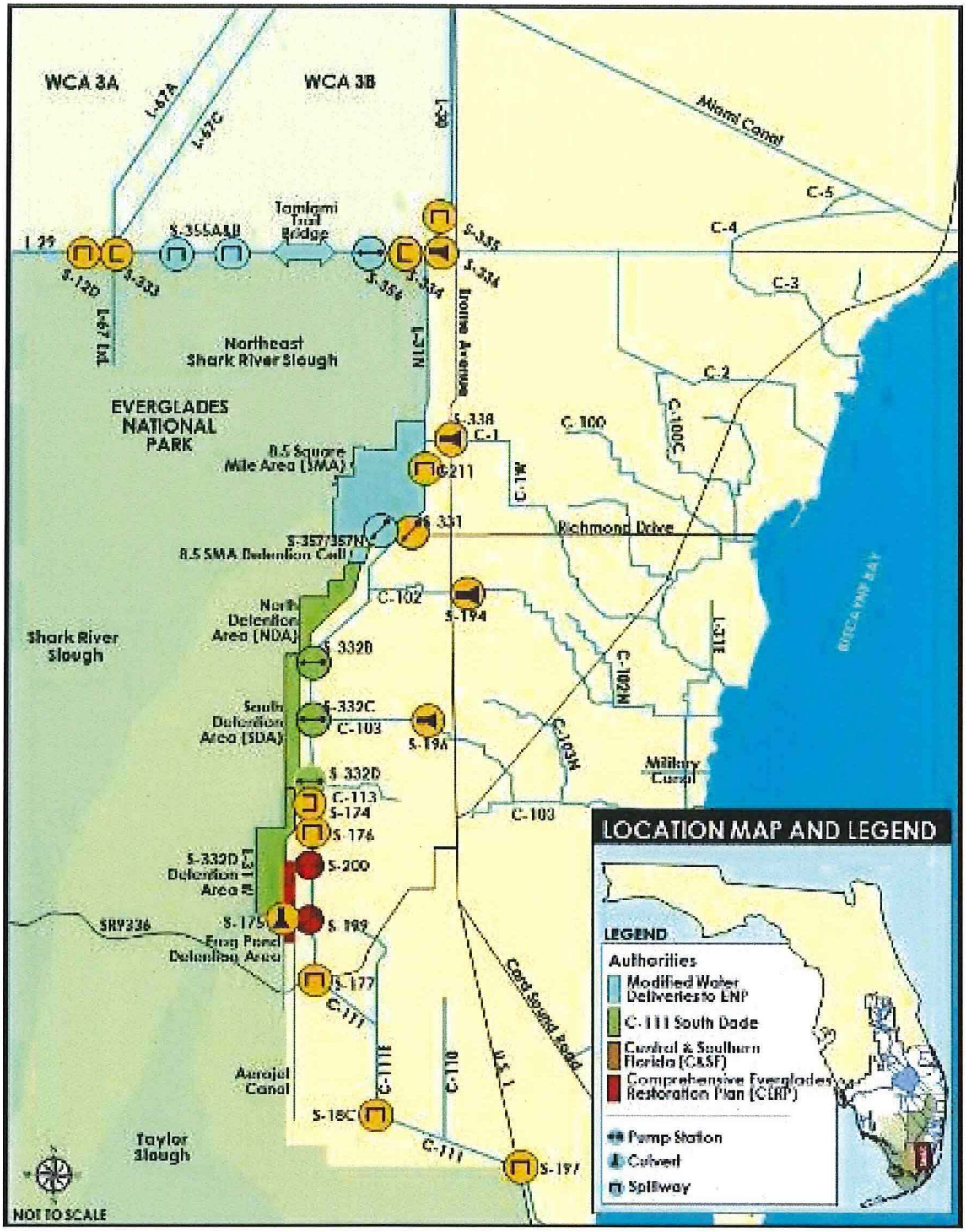

Figure 1. Project Area

Nasuti, Melissa A CIV USARMY CESAJ (US)

From: Bradley Mueller <bradleymueller@semtribe.com>
Sent: Monday, August 14, 2017 2:23 PM
To: Nasuti, Melissa A CIV USARMY CESAJ (US)
Cc: Moreno, Meredith A CIV USARMY CESAJ (US)
Subject: [Non-DoD Source] Modified Water Deliveries Increment 2

SEMINOLE TRIBE OF FLORIDA
TRIBAL HISTORIC PRESERVATION OFFICE
AH-TAH-THI-KI MUSEUM

TRIBAL HISTORIC
PRESERVATION OFFICE

SEMINOLE TRIBE OF FLORIDA
AH-TAH-THI-KI MUSEUM

30290 JOSIE BILLIE HIGHWAY
PMB 1004
CLEWISTON, FL 33440

THPO PHONE: (863) 983-6549
MUSEUM PHONE: (863) 902-1113
FAX: (863) 902-1117

THPO WEBSITE: WWW.STOFTHPO.COM
MUSEUM WEBSITE: WWW.AHTAHTHIKI.COM

TRIBAL OFFICE

MARCELLUS W. OSC
CHAIRMAN

MITCHELL CYPI
VICE CHAIRMA

LAVONNE RO
SECRETARY

PETER A. HA
TREASURER

August 14, 2017

Ms. Melissa Nasuti
Planning & Policy Division
Department of the Army, Jacksonville District Corps of Engineers
PO Box 4970
Jacksonville, FL 32232-0019
Phone: 904-232-1368
Email: Melissa.A.Nasuti@usace.army.mil

Subject: Modified Water Deliveries Increment 2 Consultation
THPO Tracking #: 0028534

Dear Ms. Nasuti,

Thank you for contacting the Seminole Tribe of Florida – Tribal Historic Preservation Office (STOF-THPO) regarding the invitiation to consult and to particpate on the Project Delivery Team for Modified Water Deliveries Increment 2 Consultation. The proposed undertaking does fall within the STOF Area of Interest. The STOF – THPO is prepared to begin consultation on the proposed undertaking at your earliest convenience. Regarding your invitation for the STOF to participate on the Project Delivery team, I will ask the appropriate

individuals for a decision on this and pass their answer along to you. We look forward to consulting with the USACE on this issue. Please feel free to contact us with any questions or concerns.

Respectfully,

Bradley M. Mueller, MA, Compliance Supervisor
STOF-THPO, Compliance Review Section
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440
Office: 863-983-6549 ext 12245
Email: bradleymueller@semtribe.com

Nasuti, Melissa A CIV USARMY CESAJ (US)

From: Robbins, Rick - NRCS, Gainesville, FL <rick.a.robbins@fl.usda.gov>
Sent: Tuesday, August 15, 2017 8:29 AM
To: Nasuti, Melissa A CIV USARMY CESAJ (US)
Subject: [Non-DoD Source] RE: Prime and Unique Farmland: Modified Water Deliveries Operational Field Test

Ms. Nasuti,

Agreed that no permanent conversion of Important Farmlands will take place. In addition, protected lands (ENP) would be exempt since the property is set aside by the NPS. The soil survey team in Fort Myers is currently working on a spatial project to identify areas (urban, protected areas) and to exclude the Important Farmland designation from these areas.

Best,
Rick

Rick Robbins
Soil Scientist
USDA-NRCS
2614 NW 43rd Street
Gainesville, FL 32606
(352) 338-9536

-----Original Message-----
From: Nasuti, Melissa A CIV USARMY CESAJ (US) [mailto:Melissa.A.Nasuti@usace.army.mil]
Sent: Tuesday, August 15, 2017 8:14 AM
To: Robbins, Rick - NRCS, Gainesville, FL <rick.a.robbins@fl.usda.gov>
Subject: Prime and Unique Farmland: Modified Water Deliveries Operational Field Test

Mr. Robbins,

Pursuant to the National Environmental Policy Act (NEPA), the U.S. Army Corps of Engineers (Corps) is preparing an Environmental Assessment (EA) for a deviation to the current Water Conservation Areas (WCAs), Everglades National Park (ENP) to South Dade Conveyance System (SDCS) Water Control Plan. The proposed action is part of a series of sequential efforts that are intended to incorporate constructed features of the Modified Water Deliveries (MWD) and C-111 South Dade Projects into system wide Central and Southern Florida (C&SF) Project operations. The C&SF system-wide project is located in South Florida and includes portions of several counties as well as portions of ENP, Big Cypress National Preserve, and adjacent areas. The proposed action (referred to as Increment 2) within the forthcoming EA would occur within Miami-Dade County, Florida. The action is being conducted under the authority of the MWD Project for purposes of increasing flow into Northeast Shark River Slough within ENP by incrementally raising the maximum operating limit of the L-29 Canal adjacent to Tamiami Trail up to 8.5 feet National Geodetic Vertical Datum of 1929 (NGVD).

Conversion of prime and unique farmland within the project area is not anticipated for the Proposed Action. The Proposed Action is a temporary change to the current water control plan that governs C&SF operations. No construction is proposed. This is the same determination that was made for prior EAs describing incremental

operations related to the MWD Project. Water management operations currently being considered under the Proposed Action are planned to be in place until December of 2019 after which a subsequent change to the current water control plan is anticipated.

I have attached prior correspondence with your office regarding the incremental field tests being conducted pursuant to the MWD Project (i.e. Increment 1 and Increment 1.1 and 1.2). During preparation of the prior EAs for these efforts - it was determined that in this case the FPPPA process does not apply as the Proposed Action is a temporary condition without any conversion of important farmland soils. Under Increment 1 of the operational field tests - we did identify approximately 975 acres of Prime and Unique Farmland located mainly within the boundaries of ENP; but once again made the determination of no conversion of farmland soils due to the temporary nature of the action.

Please let me know if further information is needed for purpose of consultation and/or to ensure compliance under the Farmland Protections Policy Act.

Melissa Nasuti
U.S. Army Corps of Engineers
Planning Division - Jacksonville District
701 San Marco Boulevard
Jacksonville, FL 32207
Office Phone: 904-232-1368

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Nasuti, Melissa A CIV USARMY CESAJ (US)

From: Moreno, Meredith A CIV USARMY CESAJ (US)
Sent: Wednesday, October 11, 2017 12:10 PM
To: Cherise Maples; stacymyers@semtribe.com; Kent Loftin
Cc: Taplin, Kimberley A CIV USARMY CESAJ (US); Nasuti, Melissa A CIV USARMY CESAJ (US); Moreno, Meredith A CIV USARMY CESAJ (US)
Subject: Modified Waters Deliveries Increment 2 Field Test Environmental Assessment
Attachments: Seminole_G2G_Inc2_07_28_2017.pdf

Good morning all,

The Corps is currently working on an EA for the Modified Water Deliveries (MWD) Increment 2 field test (see attached letter to Chairman). Increment 2 includes continued relaxation of the Gage-3273 constraint and raising the maximum operating limit in the L-29 Canal up to 8.5
feet NGVD29. I have scheduled a meeting on October 18th to discuss a determination of effects to cultural resources/tree islands with the THPO. If you are interested, Melissa Nasuti (Environmental) and I (cultural resources) are available to schedule a meeting to discuss the EA alternatives and potential effects with ERMD. We would be happy to travel to your offices or host a webmeeting. If there is a day that works better for the tribe, please let me know and we can try and make ourselves available.

Thank you,

Meredith A. Moreno, M.A., RPA
Archaeologist
Planning Division, Environmental Branch
Jacksonville District, US Army Corps of Engineers
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Nasuti, Melissa A CIV USARMY CESAJ (US)

From: Moreno, Meredith A CIV USARMY CESAJ (US)
Sent: Wednesday, October 11, 2017 12:03 PM
To: Gene Duncan; Craig van der Heiden; Donaldson, Kevin
Cc: Taplin, Kimberley A CIV USARMY CESAJ (US); Nasuti, Melissa A CIV USARMY CESAJ (US); Moreno, Meredith A CIV USARMY CESAJ (US)
Subject: Modified Waters Deliveries Increment 2 Field Test Environmental Assessment
Attachments: Miccosukee_G2G_Inc2_07_28_2017.pdf

Good morning all,

The Corps is currently working on an EA for the Modified Water Deliveries (MWD) Increment 2 field test (see attached letter to Chairman). Increment 2 includes continued relaxation of the Gage-3273 constraint and raising the maximum operating limit in the L-29 Canal up to 8.5
feet NGVD29. If you are interested, Melissa Nasuti (Environmental) and I (cultural resources) are available to schedule a meeting to discuss the alternatives and modeling that I am utilizing to determine effects to cultural resources/tree islands. We would be happy to travel to your offices or host a webmeeting. If there is a day that works better for the tribe, please let me know and we can try and make ourselves available. I will coordinate with Mr. Dayhoff separately if necessary.

Thank you,

Meredith A. Moreno, M.A., RPA
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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

Planning and Policy Division
Environmental Branch

OCT 18 2017

Mr. Larry Williams, Field Supervisor
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, FL 32960

Dear Mr. Williams:

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of an Environmental Assessment (EA) for the Modified Water Deliveries (MWD) to Everglades National Park (ENP) Increment 2 field test that includes continued relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum of 1929 (Figure 1). Implementation of the Proposed Action is anticipated to increase the availability of water deliveries from Water Conservation Area 3A (WCA 3A) to ENP through Northeast Shark River Slough for the benefit of natural resources. The field test is part of a series of sequential efforts that are intended to incorporate constructed features of the MWD to ENP and Canal 111 South Dade projects into system-wide Central and Southern Florida (C&SF) Project operations. Implementation of the Proposed Action is also being pursued to address the mandated Reasonable and Prudent Alternative of the July 22, 2016 Everglades Restoration Transition Plan (ERTP) Biological Opinion (BO).

Pursuant to Section 7 of the Endangered Species Act (ESA), the Corps has determined that Increment 2 will have the following effects on federally listed species and critical habitat as illustrated in Table 1. There has been no change in the operational intent of the Proposed Action that would require the need to re-initiate consultation with the U.S. Fish and Wildlife Service (Service) since the completion of prior resource agency consultation under ERTP. Increment 2 includes the required closure period for S-12A, S-12B, S-343A, S-343B, and S-344 starting 01 October through 15 July consistent with the 2016 ERTP BO in addition to retaining the 'high water strategy' criteria developed by the Corps during ESA consultation to mitigate for the increased frequency and duration of WCA 3A high water stages in excess of the 90th percentile of historical water stages (compared to the 2012 Water Control Plan) associated with the expanded closure periods. The 2016 ERTP BO identifies a set of habitat performance targets that the Service believes will improve conditions for the Cape Sable Seaside Sparrow (*Ammodramus maritimus mirabilis*) (CSSS) and contribute toward the survival and recovery of the species; however the RPA does not prescribe specific South Dade Conveyance System (SDCS) operational changes.

Modeling assumptions for SDCS operations as described in Appendix F of the 2016 ERTP BO have been adjusted under Increment 2 to provide sufficient flexibility for the Corps and South Florida Water Management District (SFWMD) water managers to achieve the intended performance from the RPA while taking into account the multiple purposes of the C&SF Project. The operational ranges for Increment 2 are consistent with what was modeled during the 2016 ERTP ESA consultation. Therefore, the operations for the SDCS have not been subsequently modified in a manner that causes an effect to listed species or critical habitat that is not considered within the 2016 ERTP BO.

A Monitoring Plan has been developed for Increment 2. Interagency workshops to facilitate discussion of field test performance relative to the achievement of goals and objectives are planned to be conducted. Operations updates will be discussed on a weekly basis between water managers from the Corps and SFWMD, as well as ENP when needed, to provide collective interpretation of results and evaluate implementation of operations relative to the goals, objectives, and constraints. Corps, SFWMD, and ENP water managers will meet monthly to discuss the collected data and the results of preliminary analyses, as well as system conditions and Increment 2 operations. Results from these weekly and monthly coordination meetings will be further discussed with the project delivery team during regularly-scheduled interagency meetings to occur four times per year. Additional meetings (i.e. WCA 3 Periodic Scientist Calls) and/or workshops may be conducted in support of Increment 2 on an as-needed basis based upon ongoing or anticipated conditions within WCAs, ENP, and/or the SDCS.

Increment 2 meets the intent of the proposed 2016 ERTP BO operational changes for the WCA 3A control structures and the expanded operational changes within the SDCS. We request your concurrence with our determinations within 30 days of receipt of this letter. If the Service believes additional ESA consultation is necessary, please utilize this letter as our reinitiation request. If you have any questions concerning this project or our determination, please contact Mrs. Melissa Nasuti by email Melissa.A.Nasuti@usace.army.mil or by telephone 904-232-1368. Thank you for your assistance in this matter.

Sincerely,

for

Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch

Enclosures

cc:

Mr. Miles Meyer, U.S. Fish & Wildlife Service, South Florida Ecological Services Office, 1339 20th Street, Vero Beach, Florida 32960-3559
Ms. Lori Miller, U.S. Fish & Wildlife Service, South Florida Ecological Services Office, 1339 20th Street, Vero Beach, Florida 32960-3559
Mr. Richard Fike, U.S. Fish & Wildlife Service, South Florida Ecological Services Office, 1339 20th Street, Vero Beach, Florida 32960-3559

TABLE 1. FEDERALLY THREATENED AND ENDANGERED SPECIES WITHIN THE PROJECT AREA AND SPECIES DETERMINATIONS FOR THE PROPOSED ACTION

Common Name	Scientific Name	Status	May Affect, Likely to Adversely Effect	May Affect, Not Likely to Adversely Effect	No Effect
Mammals					
Florida panther	*Puma concolor coryi*	E			X
Florida manatee	*Trichechus manatus latirostris*	E, CH			X
Florida bonneted bat	*Eumops floridanus*	E		X	
Birds					
Cape Sable seaside sparrow	*Ammodramus maritimus mirabilis*	E, CH		X	
Everglade snail kite	*Rostrhamus sociabilis plumbeus*	E, CH		X	
Piping plover	*Charadrius melodus*	T			X
Red-cockaded woodpecker	*Picoides borealis*	E			X
Roseate tern	*Sterna dougallii*	T			X
Wood stork	*Mycteria Americana*	T		X	
Reptiles					
American Alligator	*Alligator mississippiensis*	T, SA			X
American crocodile	*Crocodylus acutus*	T, CH			X
Eastern indigo snake	*Drymarchon corais couperi*	T			X
Gopher tortoise*	*Gopherus polyphemus*	C			X
Green sea turtle*	*Chelonia mydas*	E			X
Hawksbill sea turtle*	*Eretmochelys imbricate*	E			X
Kemp's Ridley sea turtle*	*Lipodochelys kempii*	E			X
Leatherback sea turtle*	*Dermochelys coriacea*	E			X
Loggerhead sea turtle*	*Caretta*	T			X
Fish					
Smalltooth sawfish*	*Pristis pectinata*	E			X
Invertebrates					
Bartram's hairstreak butterfly	*Strymon acis bartrami*	E			X
Elkhorn coral*	*Acropora palmata*	T, CH			X
Florida leafwing butterfly	*Anaea troglodyta floridalis*	E			X
Miami blue butterfly	*Cyclargus thomasi bethunebakeri*	E			X

Schaus swallowtail butterfly	*Heraclides aristodemus ponceanus*	E			X
Staghorn coral*	*Acropora cervicornis*	T, CH			X
Stock Island tree snail	*Orthalicus reses* (not incl. *nesodryas*)	T			X
Plants					
Crenulate lead plant	*Amorpha crenulata*	E			X
Deltoid spurge	*Chamaesyce deltoidea spp. deltoidea*	E		X	
Garber's spurge	*Chamaesyce garberi*	T		X	
Johnson's seagrass*	*Halophila johnsonii*	E, CH			X
Okeechobee gourd	*Cucurbita okeechobeensis* ssp. *okeechobeenis*	E			X
Small's milkpea	*Galactia smallii*	E		X	
Tiny polygala	*Polygala smallii*	E		X	
Big pine partridge pea	*Chamaecrista lineata* var. *keyensis*	E			X
Blodgett's silverbush	*Argythamnia blodgettii*	T			X
Cape Sable thoroughwort	*Chromolaena frustrata*	E, CH			X
Carter's small-flowered flax	*Linum carteri* var. *carteri*	E, CH			X
Everglades bully	*Sideroxylon reclinatum spp. austrofloridense*	C			X
Florida brickell-bush	*Brickellia mosieri*	E, CH			X
Florida bristle fern	*Trichomanes punctatum* spp. *floridanum*	E			X
Florida semaphore cactus	*Consolea corallicola*	E, CH			X
Sand flax	*Linum arenicola*	E			X
Florida pineland crabgrass	*Digitaria pauciflora*	PT			X
Florida pineland sandmat	*Chaemaesyce deltoidea pinetorium*	PT			X
Florida prairie clover	*Dalea carthagenesis floridana*	PE			X

E: Endangered; T: Threatened; CH: Critical Habitat; C: Candidate Species; SA Similarity of Appearance; PE: Proposed Endangered

* Marine species under the purview of National Marine Fisheries Service (NMFS), the Corps will conduct a separate consultation with NMFS

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1.0 INTRODUCTION

The current U.S. Army Corps of Engineers, Jacksonville District (USACE) Water Control Plan (WCP) governing operations within the Modified Water Deliveries (MWD) Project area is the 2012 WCP. The areas addressed in this plan include the Water Conservation Areas (WCA), Everglades National Park (ENP), and ENP South Dade Conveyance System (SDCS). The 2012 WCP, which provides the operational guidance for the 2012 Everglades Restoration Transition Plan (ERTP), modified the WCA-3A Regulation Schedule (Figure 1) from the 2002/2006 Interim Operational Plan (IOP) for Protection of the Cape Sable Seaside Sparrow (CSSS), including lowering of the top zone (Zone A) of the WCA- 3A Regulation Schedule, expansion of Zone E1 and removal of the CSSS seasonal closure of S-12C. The 2012 WCP changes were expected to reduce the need for S-334 releases from WCA-3A to the SDCS during 2012 WCP Table 7-5, Column 2 operations. In order to achieve the MWD project goal of increasing stages in Northeast Shark River Slough (NESRS), modifications to the Central & Southern Florida Project were necessary. Specifically, construction of additional water management features included within the MWD and C-111 South Dade projects were necessary to provide seepage control along the eastern boundary of ENP, flood mitigation to the 8.5 Square Mile Area (SMA) and to maintain existing levels of flood protection to other adjacent agricultural areas. Since not all flood mitigation and seepage management features envisioned in the MWD and C-111 South Dade Projects are currently constructed, operational limitations of canals within 8.5 SMA, ongoing construction efforts, and remaining needed infrastructure all currently limit flowing additional water into NESRS. Additionally, during the construction timeframe a 2016 US Fish and Wildlife Service (USFWS) Biological Opinion (BO) imposed new constraints on the S-12A, S-12B, S-343A, S-343B and S-344 structures and specified a timeline for a relaxation of the 2012 WCP constraints in the L-29 Canal. The net effect of the BO constraints are to direct additional water away from the western sub-population of the CSSS. Instead, these waters are sent to the NESRS, where they are needed for effective restoration of long-hydroperiod sloughs. As such, the previously-established MWD incremental field test approach schedule was adjusted and the scope expanded to included an additional revised Operational Strategy (Increment 1.1 and 1.2) responsive to both the terms and conditions of the BO as construction features were completed and incorporating new information from the 2016 Temporary Emergency Deviation within the Corps' continued efforts to expediently proceed with future incremental relaxations of the 2012 WCP constraints.

The G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy (Increment 1), was initiated on October 15, 2015 followed by an updated version of Increment 1 (Increment 1.1 and 1.2) initiated on February 27, 2017. Increment 2, formally titled, *2018 L-29 Canal and G-3273 Constraint Relaxations, Including Northern Detention Area (NDA) Revised Operational Strategy*, is the second and final in a series of incremental field test efforts, the results from which will be assimilated into a revision to the 2012 WCP. This update will be integrated within the System Operating Manual (SOM) and will help fulfill the April 2005 Comprehensive Everglades Restoration Plan (CERP) Programmatic Regulation requirement for creating a System Operating Manual. The final modification (a chapter within the SOM) will be referred to throughout this document as the Combined Operational Plan (COP). The incremental approach to develop the COP will 1) allow interim benefits towards restoration of the natural systems, 2) reduce uncertainty of operating the components of the MWD and C-111 South Dade projects, and 3) provide information to complete the COP efficiently.

Increment 1 included relaxing the G-3273 stage constraint on the delivery of water to ENP's NESRS. The duration for Increment 1 was planned for one to two years, until completion of critical components of the MWD and C-111 South Dade projects needed to operate the NDA. Increment 1 was initiated at the earliest opportunity following completion of the National Environmental Policy Act (NEPA) process and when the stage at G-3273 exceeded 6.8 feet, National Geodetic Vertical Datum of 1929 (NGVD)[1]. Prior to Increment 1, the delivery of a net inflow of water to NESRS through S-333 was discontinued (S-333 zero or S-334 must match S-333) when the stage at G-3273 exceeded 6.8 feet, NGVD. Relaxation of G-3273 constraint and operation of S-356 under Increment 1 increased water deliveries to NESRS. As a result, under normal operating conditions, reliance on S-334 releases to the SDCS (Column 2 mode of operations) to assist with lowering of stages in WCA-3A was decreased due to: 1) the increased availability of S-333 to discharge directly into NESRS, and 2) inclusion of new field test criteria restricting when S-334 was used to pass S-333 flows during Column 2 operations (Table 1). The Increment 1 monitoring plan anticipated the potential need for incremental modifications to the operational strategy (within the covered NEPA Environmental Assessment (EA) scope) as a result of the ongoing field test monitoring and technical assessments, with potential updates to be coordinated with the Project Delivery Team (PDT) during regularly scheduled interagency meetings planned to occur four times per year.

During implementation of Increment 1 the USACE proceeded with pre-storm drawdown and flood control operations due to very strong El Niño conditions experienced in the WCAs during the 2015-2016 dry season. The pre-storm drawdown and flood control operations were conducted in accordance with the 2012 WCP, independent of Increment 1. Upon Florida Department of Environmental Protection (FDEP) issuance of an emergency final order (EFO) February 11, 2016 authorizing the South Florida Water Management District (SFWMD) and USACE immediate action to deviate from permitted water management practices to move significant volumes of flood water out of WCA-3A to ENP through Shark River Slough and at the request of SFWMD, on February 15, 2016 the USACE initiated a temporary emergency deviation to the Increment 1 stage maximum operating limit of 7.5 feet, NGVD in the L-29 Canal for purposes of providing high water relief in WCA-3A (hereafter referred to as the 2016 Temporary Emergency Deviation). Upon review of monitoring data associated with Increment 1 and the 2016 Temporary Emergency Deviation, it became apparent that modifications were necessary to the Increment 1 Operational Strategy to maintain the Congressionally authorized flood mitigation requirements within the 8.5 SMA and to facilitate completion of the C-111 South Dade Project's ongoing construction necessary for Increment 2 of the field test and COP. Based on consideration of this new information, the USACE modified Increment 1 to include additional operational flexibility within the revised operational strategy termed Increment 1.1 and 1.2 (or Increment 1 Plus) to operate the L-29 Canal to a maximum of 7.8 feet, NGVD, subject to downstream constraints. Increment 1.1 of the operational strategy, which was implemented on February 21, 2017, maintained the L-29 Canal stage maximum operating limit of 7.5 feet, NGVD. Increment 1.2 will increase the L-29 Canal stage maximum operating limit up to 7.8 feet, NGVD when the necessary construction components are completed and all Real Estate agreements are in place. The Increment 1.1 and 1.2 operational strategy also addressed the mandated terms and conditions of the USFWS July 22,

[1] All elevations in this document are in feet in relation to the National Geodetic Vertical Datum of 1929 (NGVD) unless otherwise stated.

2016 ERTP BO, which included expanded closure periods for S-12A, S-12B, S-343A, S-343B, and S-344 as mandated by the Reasonable and Prudent Alternative (RPA) identified within the BO.

Following the implementation of Increment 1.1 and 1.2 in February 2017, high water levels were also observed in the WCAs during the months of May through June 2017. This led to a request from the SFWMD for a temporary deviation to implement operational flexibilities to alleviate the extreme high water conditions in the WCAs. Operations under the 2017 Planned Temporary Deviation began on June 28, 2017 and may continue until water levels return to the Regulation Schedule. This temporarily disrupted the test operations under Increment 1.1 by making use of the S-12 structures prior to the operational window, as well as, use of other structures outside the defined operational strategy criteria. However, the deviation operations still provided valuable and insightful data that contribute to the development of this Increment 2.0 Operational Strategy and will continue to contribute to the development of COP. As required by the Monitoring Plan, this data is obtainable from the Corps' project website.

Increment 2, scheduled to begin by March 1, 2018, is the next incremental step in development of the COP. Increment 2 of the MWD Project is dependent on construction completion and operation of the C-111 South Dade NDA, in addition to completion of the requirements for transitioning to Increment 1.2, which include operability of the 8.5 SMA C-358 Canal and the necessary land acquisitions along the Tamiami Trail. In the event that the construction for S-357N remains incomplete (current schedule will complete S-357N by February 2018), the temporary C-358 bypass culverts installed during the 2016 Temporary Emergency Deviation will continue to be utilized to manage C-358 canal stages. Also, in the event remaining construction components of the C-111 South Dade Contract 8 are incomplete prior to March 1, 2018 and preclude operation of the NDA as prescribed for Increment 2, the operating criteria previously established under Increment 1.1 and 1.2 will govern for the following structures that are affected by the construction activity (L-29 Canal, including S-333, S-355A, S-355B, and S-356; S-331; S-357; S-357N; and S-332BN). Once construction of the NDA is fully complete, all operations developed under this Increment 2 Operational Strategy will be implemented.

The objectives of the Increment 2 field test are to:

A. Improve hydrological conditions in NESRS through the relaxation of both the G-3273 stage constraint and L-29 Canal maximum operating limit to increase water deliveries from WCA-3A to NESRS, while maintaining other C&SF Project authorized purposes.
B. Continue use of the S-356 pump station to manage higher canal stages in the L-31N Canal resulting from the relaxation of the G-3273 stage constraint and L-29 Canal maximum operating limit, in conjunction with increased flows through the S-333 structure (gated spillway) to NESRS via the L-29 Canal.
C. Improve hydrological conditions in NESRS by maximizing the flexibility and efficiency of the existing infrastructure, including use of S-356, the completed 8.5 SMA project and completed C-111 South Dade project features to complement inflows to NESRS from WCA-3A.
D. Improve hydrological conditions in Taylor Slough, Rocky Glades, and the eastern panhandle of ENP, including use of the completed 8.5 SMA project and completed C-111

South Dade project features to maintain a continuous hydraulic ridge that reduces groundwater seepage losses from eastern ENP between the 8.5 SMA and Taylor Slough.

E. Gather and analyze infrastructure performance, ecologic, hydrologic and water quality data sufficient to support Increment 3 (COP), resulting in the following:
   i. Data gathering sufficient to support water quality certification
   ii. Refined operational criteria for the MWD and C-111 South Dade Projects
   iii. Updates to the 2012 WCP (in the form of Volume 4, Chapter 7 of the System Operations Manual (SOM) in which COP will be a portion of the SOM contents).

A Supplemental EA for the "*2018 L-29 Canal and G-3273 Constraint Relaxations, Including Northern Detention Area (NDA) Revised Operational Strategy, (Increment 2)*" accompanies this operational strategy to provide documentation of the environmental effects resulting from the implementation of these changes to the Increment 1.1 and 1.2 Operational Strategy.

2.0 INCREMENTAL UPDATES TO INCREMENT 1.1 AND 1.2 (INCREMENT 2)

The combined duration of Increments 1, 1.1 and 1.2, and 2 are anticipated to extend three calendar years. Operational criteria not specified within the Increment 2 Operational Strategy will continue to be governed by the 2012 WCP. The Increment 2 Operational Strategy seeks to increase flow to NESRS while providing operational flexibility needed to:

A. maintain operating limits in the L-29 Canal that ensure the stability and safety of the Tamiami Trail (U.S. 41) Highway between S-333 and S-334,

B. support MWD to ENP Project construction for the installation of S-357N, if needed,

C. facilitate the remaining Southern Detention Area (SDA) construction of C-111 South Dade Contract 8A and any remaining construction components of the NDA Contract 8,

D. maintain the authorized flood mitigation for the 8.5 SMA,

E. maintain pre-existing flood protection along the L-31N and C-111 Canals,

F. provide supplemental flows to Taylor Slough to help facilitate the recovery of Florida Bay from the 2015 extreme hyper-salinity event, and

G. provide operational flexibilities for prescribed extreme high water conditions in WCA-3A.

Broad restoration goals and objectives of the MWD Project include improved timing, location and quantities of water deliveries to ENP. Operational constraints as defined for Increment 2 are as follows:

A. L-29 Canal maximum operating limit of 8.5 feet, NGVD to ensure the stability and safety of the Tamiami Trail (U.S. 41) Highway between S-333 and S-334. All inflows to the L-29 Canal shall also be discontinued in advance of certain stage and weather events, as defined in the 2017 Florida Department of Transportation (FDOT) Coordination Letter for the final operating plan with the L-29 Canal limit of 8.5 feet, NGVD (section 6.3).
B. Maintain the authorized purposes of the C&SF Project modified to include:
   i. MWD Project
   ii. C-111 South Dade Project

iii. CERP

C. No reduction in current flood protection or mitigation.
D. Maintain the current multi-species objectives of the 2012 WCP and comply with the requirements of the applicable BO from USFWS, to include the ERTP and the CERP C-111 Spreader Canal Western Project.

While record WCA-3A water levels were set for 30 consecutive days from mid-February to mid-March 2016 and record-high water stages in the WCAs during May- November 2017 created many water management challenges, the 2016 Temporary Emergency Deviation and 2017 Planned Temporary Deviation executed in response to these conditions provided valuable information on the responses within ENP and the SDCS system to raising of the L-29 Canal, including evaluation of operational limitations of the 8.5 SMA flood mitigation project. The information gathered during these events has been used to inform the operational strategy for Increment 2 and will be used for future development of the COP.

Increment 2 is intended to move towards the objectives (A through E, as defined in Section 1.0) described above while providing operational flexibility as listed in items A through G found above (Section 2.0). This operational strategy also specifies the conditions that will allow transition of Increment 1.1 or Increment 1.2 to Increment 2 (refer to Section 4.0). After completion of the MWD 8.5 SMA features and the C-111 South Dade Project NDA, these components can be operated to accommodate increased flow to NESRS while evaluating whether the operational criteria meet the field test objectives and constraints. Incremental changes will be maintained for time periods sufficient to maintain roadway subbase infrastructure along Tamiami Trail Highway in accordance with the September 25, 2008 "Contract between the United States of America and Florida Department of Transportation for Relocation, Rearrangement, or Alteration of Facilities Modified Water Deliveries to Everglades National Park Project (Tamiami Trail Modifications)" (2008 Relocation Agreement) and 2017 FDOT Coordination Letter dated XX prepared in support of the Increment 2 field testThe Relocation Agreement was instrumental for FDOT approval of the MWD design for the Tamiami Trail Highway Modifications completed in 2013. Eventually operating criteria will be developed, evaluated and selected for COP, which will clearly maintain flood risk management while providing the natural system benefits that were used to justify the considerable Federal and State expenditures associated with these projects. The approved COP will be integrated into the SOM and and comply with the NEPA.

There are three distinct modes of water management operations specified in the 2012 WCP: Column 1 Water Supply and no WCA-3A Regulatory Releases to the SDCS, Column 2WCA-3A Regulatory Releases to the SDCS, and Water Supply. Since seasonal closures of the S-12A and S-12B remain in place to promote target hydrologic conditions within CSSS Sub-population A, these three modes were each retained for the Increment 1, Increment 1.1 and Increment 1.2, and Increment 2 to ensure a current level of flood mitigation is maintained throughout the testing operations. The Increment 2 operational strategy continues efforts under the MWD field tests to incrementally reduce reliance on Column 2 operations as stages in NESRS are incrementally increased subject to the L-29 Canal design high water constraints. As initially defined in the 2002 IOP Environmental Impact Statement (EIS) and 2006 IOP Supplemental EIS and retained through the 2012 WCP, Column 1 is the condition when regulatory releases from WCA-3A can be met by normal operation of the WCA-3A regulatory outlets (S-12s, S-333, S-344, S-343s, S-151).

Column 2 is the condition when regulatory releases from WCA-3A are made via S-333 to the L-29 Canal then via S-334 to the L-31N Canal and the SDCS to address the reduction of WCA-3A releases due to the CSSS sub-population A structure closure period (i.e. S-12A/B, S-343A/B and S-344). Column 2 operations generally require the increased use of pumping stations S-331, S-332B, S-332C, and S-332D. During Column 2 operations, the control stages along the L-31N and C-111 Canals are also lowered to help maintain the existing flood risk management along the SDCS and also to provide the necessary downstream gradient for the S-334 releases to reach S-332B, S-332C, and S-332D pump stations. Column 2 operations were established under IOP 2002 to mitigate for potential adverse effects on WCA-3A related to actions taken to protect CSSS Sub-population A within western ENP and the native vegetation of the western marl prairie, including the seasonal closure of the S-12A, S-12B, S-12C, S-343A, S-343B, and S-344 regulatory outlets under IOP. This pattern of release to SDCS to mitigate high water conditions in WCA-3A during the seasonal closure period replaced use of the S-12 A/B/C and S-343A/B structures for this purpose. The S-12 and S-343A/B structures were used until USFWS declared a Jeopardy Opinion for the endangered CSSS first in 1999. One of the questions that these field tests should help answer is what are the required seasonal operational canal ranges within the SDCS to best manage ENP water levels while maintaing flood protection to nearby private properties.

Eventually, the goal is to remove Column 2 flows under revised operations for COP. Until the incremental field tests are complete, reference to Column 2 flows will be retained within Increment 2, although it is expected that use of S-333/S-334 discharges to SDCS for mitigation of the S-12 A/B closures will be reduced with the increase of the L-29 constraint raised up to 8.5 feet, NGVD from 7.5/7.8 feet, NGVD. Consistent with the previous increments of the MWD field tests, this operational strategy specifies further reduced reliance on this S-333/S-334 route during normal operations (Condition 3) through the inclusion of prescribed criteria which preclude the use of Column 2 when the L-29 Canal is operated above 7.8 feet NGVDInflows to the SDCS from S-331 local drainage will also be reduced under Increment 2, since the 8.5 SMA flood mitigation requirements are shifted to an increased reliance on S-357 given full operability of the NDA and a reduced dependency of the 8.5 SMA on S-331. Under conditions 1, 2, 3, and 4 (Sections 5.1 through 5.5 of this document) the operational strategy also includes criteria for limited use of S-334 to expedite lowering of the L-29 Canal stage if the design high water criteria of 8.5 feet NGVD is temporaily exceeded, with the requirement for concurrent closure of L-29 Canal inflows from S-333, S-355A/B, and S-356. The primary use S-333/S-334 discharges will be based on extreme high water events within WCA-3A, as defined in Section 5.7

Increment 2 assumes that the necessary flood mitigation and seepage management features envisioned in the MWD and C-111 South Dade projects have been constructed and are fully operational. In the event that construction of the S-357N structure (8.5 SMA) remains incomplete due to delays (current schedule will complete S-357N by February 2018), the previously installed temporary bypass culverts will continue to be used. Based on the current schedule projections that S-357N construction will not be completed until February 2018, the Increment 2 Operational Strategy retains the Increment 1.1 defined start of testing protocol for S-357N operating criteria following completion of the C-358 seepage collection canal and associated S-357N, and the operational criteria which result from the Increment 2 field test will be subsequently incorporated into the COP.

Information obtained from the previous incremental field tests (e.g. achieving objectives while maintaining constraints, unanticipated results, etc.) has been used to support development of Increment 2 to include, but not be limited to, proposing water management operating criteria to increase the maximum stage allowed in the L-29 Canal (e.g., raise L-29 constraint from elevation 7.5 to 7.8 feet, NGVD to an elevation up to 8.5 feet, NGVD). Similar to Increment 1 and Increment 1.1 and 1.2, the Increment 2 Operational Strategy and the modifications to the 2012 WCP will be supported by appropriate NEPA. Information obtained from all field test increments will be used to support development of the COP. It is anticipated that incremental updates to the Increment 2 may occur as information is gained during field testing, if appropriate, prior to the development of the COP.

2.1 OPERATIONAL CHANGES TO ADDRESS USFWS BIOLOGICAL OPINION

In 2016 in accordance with the Endangered Species Act, the USACE completed consultation with the USFWS to assess effects of the USACE water management operations in the southern part of the Everglades on the endangered CSSS and other listed species. During this consultation, the USFWS determined that current conditions within the sparrow's habitat threaten its survival. The USACE responsibility is to manage its water management system in compliance with the Endangered Species Act, while the USFWS responsibility is to protect and enhance species and their habitats, which includes the endangered CSSS. The USACE coordinated closely with the USFWS to determine what measures the USACE can take within its given authorities to improve the sparrow's habitat and ensure the USACE is able to operate its water management system in compliance with the Endangered Species Act, while also meeting the needs of the multiple congressionally-authorized purposes of the C&SF project.

The BO is a document that states the opinion of the USFWS as to whether a federal action is likely to jeopardize the continued existence of listed species. The USFWS issued the new BO for the ERTP on July 22, 2016 determining that continued operation of the ERTP would jeopardize the endangered CSSS by reducing its likelihood of survival and recovery. The BO recommended operational modifications and an expedited schedule for ongoing restoration initiatives in the southern Everglades to aid in improving suitable nesting habitat for CSSS. For the CSSS, the BO presents a recommendation for a RPA, with numerous elements, to the USACE proposed ERTP action. Main elements of the RPA are: habitat performance targets; actions to move water east; surveys and studies; and adaptive management. The RPA further specifies that the USACE shall proceed as scheduled for completing NEPA analysis on Increment 2 and, as allowable by law, raising L-29 canal levels from 7.8 feet, NGVD to 8.5 feet, NGVD prior to March 1, 2018 and implementation of COP in 2019. Additional terms of the BO will affect the operation of S-12A, S-12B, S-333, S-332B, S-332C and S-332D. Upon conclusion of each NEPA analysis, the USACE will continue to promptly adjust water management operations accordingly. The USACE is taking specific actions to comply with the USFWS terms and conditions specified in the BO and to implement the RPA.

Successful recovery of CSSS requires continued collaborative efforts among federal, tribal and state partnering agencies. The USACE, within its authorities, will continue to work with the

USFWS to find other helpful initiatives which could be enacted by partners and stakeholders to aid in this important effort.

Based on evaluation of the regional modeling conducted in support of the ERTP 2016 Endangered Species Act (ESA) consultation, the components from the BO modeling which require modifications to the 2012 WCPwere previously included in the operational criteria governing Increment 1.1 and 1.2, consistent with the requirements of the RPA, and these components remain unaltered within the Increment 2.0 Operational Strategy. Annex 1 of the Increment 1.1 and 1.2 Operational Strategy provides criteria that must be adheared to during operations to remain in compliance with the 2016 USFWS ERTP BO. The intent of this criteria remains applicable to the Increment 2.0 Operational Strategy. The modeling assumptions for the BO analysis which describe the SDCS operations under Component II were adjusted within the Increment 1.1 and 1.2 operational strategy to provide sufficient flexibility for the USACE and SFWMD water managers to achieve the intended performance from the RPA Proposed Operational Condition. The Increment 2 operational criteria are displayed in Table 1.

3.0 WATER QUALITY

Water deliveries into the ENP Shark River Slough are subject to the water quality criterion for total phosphorus (TP) contained in Appendix A of the 1991 Settlement Agreement (Appendix A). Appendix A compliance is currently assessed by comparing the Long Term Limit (LTL) against the 12-month flow-weighted mean (FWM) TP concentration in parts-per-billion (ppb). This is calculated using the measured flows from the S-12A, S-12B, S-12C, S-12D, S-333 and S-334 structures that distribute flows from WCA-3A into Shark River Slough.

A Technical Oversight Committee (TOC) sub-team is evaluating the Appendix A Settlement Agreement compliance methodology to address additional flows and inflow points and the incorporation of S-356. Water quality compliance will be evaluated separately for the S-356 pump station in a manner prescribed in Appendix A Settlement Agreement. The proposed compliance period for the S-356 pump station is the same as the Appendix A Settlement Agreement compliance period of October 1 through September 30. Increment 1 operations began on October 15, 2015 when G-3273 rose above 6.8 feet, NGVD. Increment 1.1 and 1.2 operations commenced on February 27, 2017. Consistent with TOC coordination conducted for Increment 1, operating plan changes suggested by the water quality compliance analyses, if needed, would be implemented only after the completion of Increment 1.1 and 1.2 test period. For the complete duration of Increment 2, the USACE does not plan to impose operational constraints for water quality that could restrict or otherwise limit inflows to NESRS. Additional discussion on water quality is contained in the EA and the accompanying monitoring plan.

4.0 OPERATIONAL STRATEGY FOR INCREMENT 2 FIELD TEST

Compared to the previous incremental field tests, Increment 2 provides more flexibility to 1) continue to deliver more water to NESRS, Florida Bay and Taylor Slough, 2) provide temporarily increased capacity to convey water to SDCS under Column 2 operations, and 3) flexibility to operate under extreme high water events in WCA-3A while adhering to the field test objectives and constraints. Independent of the MWD incremental field test, the Corps is also proposing to extend the operational window for the S-152 to provide increased water deliveries from WCA 3A

to WCA 3B under the Decomp Physical Model field test, and if approved, these operations will proceed independently from the Increment 2 field test.

The Increment 2 Operational Strategy retains the required S-12A, S-12B, S-343A, S-344B and S-344 seasonal closure period of October 1 through July 14 to protect CSSS sub-population A within western ENP and the native vegetation of the western marl prairie, consistent with the RPA requirement from the 2016 USFWS, ERTP BO. However, under specified high-water conditions within WCA-3A (identified in Table 1), S-12A may remain open through October 31, and S-12B may remain open through November 30. The 2012 WCP, which includes the WCA-3A Regulation Schedule and the Rainfall Plan, will continue to govern water management operations during Increment 2, with the exception of operating criteria for S-12A, S-12B, S-328, S-151, S-331, S-333, S-334, S-335, S-337, S-338, S-343A, S-343B, S-344, S-355A, S-355B, S-356, S-357, S-357N, S-332B, S-332C, S-332D, S-194, S-196, S-176, S-177, and S-197 as contained in the below operational strategy for use during the field test.

Due to the uncertainty of how existing flood protection levels afforded by the SDCS will be maintained, Section 5.7 "Additional Operational Flexibility, for Extreme High Water Levels in WCA-3A" applies to all structures as identified in Section 4.6 and Table 1, and may not be limited to the structures listed above.

Increment 2 will increase the current operating limit up to 8.5 feet, NGVD in the L-29 canal, while continuing to relax the G-3273 constraint for S-333 and utilizing S-356 for control of the seepage to the L-31N Canal. In addition, local gages (Angels and LPG-2) that trigger flood mitigation actions in the 8.5 SMA will be used. During Increment 2, the combined flows through S-333 and S-356 will be more than what would have been discharged through these features under Increment 1.1 and Increment 1.2 operations. S-173 releases and pumping with S-331 have previously been used to: 1) maintain target L-31N Canal stages; 2) provide flood mitigation to the 8.5 SMA eastern areas and assist S-357 in maintaining flood mitigation for the 8.5 SMA when S-357 operational capacity is limited; and 3) convey WCA-3A regulatory releases to the SDCS from S-334 during Column 2 operations. With Increment 2, the 8.5 SMA flood mitigation requirements are shifted to an increased reliance on S-357 given full operability of the NDA and a reduced dependency of the 8.5 SMA on S-331, and Column 2 operations are generally reduced. Under all conditions (1, 2, 3 and 4), the operational strategy also includes criteria for limited use of S-334 to expedite lowering of the L-29 Canal stage if the design high water criteria of 8.5 feet NGVD is temporaily exceeded, with the requirement for concurrent closure of L-29 Canal inflows from S-333, S-355A/B, and S-356. In addition, Increment 2 water management operations will result in increased seepage to the L-31N Canal as the increased flow into NESRS will increase stages along the west side of L-31N. This increase is expected to be fully manageable with operation of the MWD and C-111 South Dade Projects, which will be interconnected. S-333, S-334, S-356, S-197, and S-357N will be operated, as well as S-332B, S-332C, S-332D, S-194, S-196, S-176 and S-177 as identified in Table 1. If available for use, S-355A and S-355B may also be utilized to discharge to the L-29 Canal as indicated in the 2012 WCP and other future associated permit requirements. However, since Increment 2 will be the initial opportunity to gain operational experience with the NDA, Increment 2 will continue to retain the additional water management operating criteria for S-197 (in addition to the S-197 operating criteria defined in the 2012 WCP) to provide flexibility to maintain flood risk management for Southeastern Miami-Dade County, if needed.

The G-3273 stage constraint and L-29 maximum operating limit on inflows to the L-29 Canal (from S-333, S-355A, S-355B, and/or S-356) will be modified under Increment 2, with system conditions regularly monitored by water managers and scientists. Adjustments within the operational strategy provided below will be made as needed for the duration of the field test consistent with the EA. Data will be analyzed during and after Increments 2 as described in the Monitoring and Analysis Appendices to the associated EA. During the development of the original Increment 1 Operational Strategy, the interagency operations sub-team identified a preliminary list of analyses to be conducted to inform future water management actions within the Increment 1 test and future field test operations. For the Increment 2 Monitoring Plan, these analyses were retained from Increment 1.1 and Increment 1.2.

The monitoring gages to be used for the analyses are listed in Table 5. The region containing the existing monitoring gages has been divided into four maps as shown on Figures 5, 6, 7 and 8. These analyses were developed to complement the overall monitoring plan (Appendix C of the 2017 EA) and will continue to be used under Increment 2 to assess and evaluate the achievement of several of the stated water management objectives from the monitoring plan, including to:

A. ensure existing levels of flood protection are maintained within the northern L-31N Basin (between S-335 and S-331);
B. ensure existing levels of flood mitigation are maintained within the protected portion of the 8.5 SMA;
C. determine whether Increment 2 maintains flood protection in C-111 basin; and
D. determine whether Increment 2 operational changes at S-197 ensure existing levels of flood protection are maintained within the C-111 Basin (south of S-176); the evaluation will include an assessment of the low level trigger criteria used for S-197 gate openings and their beneficial effects on Manatee Bay.

Information and operational criteria identified from the Increment 2 field test will be used to develop operations and monitoring criteria for the COP to operate the L-29 Canal up to a maximum of 8.5 feet NGVD, as outlined in the 2008 MWD Tamiami Trail Limited Re-evaluation Report and Final EIS.

Consistent with the coordination structure initially established for Increment 1, field test operations updates and action items will be discussed on a weekly basis between water managers from USACE and SFWMD, as well as ENP when needed, to provide collective interpretation of results and evaluate implementation of field test operations relative to the Increment 2 goals, objectives, and constraints. USACE, SFWMD, and ENP will meet monthly to discuss the collected data and the results of preliminary analyses, as well as system conditions and field test operations. Results from these weekly and monthly coordination meetings, including preliminary recommendations from water managers to incrementally modify the operational strategy (within the covered NEPA EA scope), will be further discussed with the PDT during regularly scheduled interagency meetings to occur four times per year. PDT meetings will also include updates from the water quality and ecological monitoring sub-teams. Additional meetings (e.g. WCA 3 Periodic Scientists Calls) and/or workshops may be conducted in support of the field test on an as-needed basis based upon ongoing or anticipated conditions within the WCAs, ENP, and/or the SDCS.

Additional details corresponding to the operational conditions, Conditions 5.1 through 5.4, are provided in Section 5.0. Table 1 is complementary to the Section 5.0.

TABLE 1

Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
	Operational criteria not specified in Table 1 will utilize 2012 WCP. If there is a perceived conflict between the criteria in this table compared to the criteria described in text of the body of the document or if there the table lacks clarity, then the criteria as described in the body of the text shall be consulted and shall control. The 2012 WCP, which includes the WCA-3A Regulation Schedule and the Rainfall Plan, will continue to govern water management operations during Increment 2, with the exception of operating criteria for S-12A, S-12B, S-328, S-151, S-331, S-333, S-334, S-335, S-337, S-338, S-343A, S-343B, S-344, S-355A, S-355B, S-356, S-357, S-357N, S-332B, S-332C, S-332D, S-194, S-196, S-176, S-177, and S-197 as contained in the below operational strategy for use during the field test The Flood Risk Management (FRM) and Environmental Restoration (ER) operational ranges prescribed below were developed from a combination of operational experience, modeling results, analysis of historical data, and the expected performance of existing and proposed features. These ranges are not the simple ON and OFF ranges used for pumps or the simple OPEN and CLOSE used for gates in C&SF modeling analyses. For example secondary routes are often represented in a model by setting a higher On/Off or Open/Close range for the structure conveying water to this route. Modeling of this nature establishes how often the use of the secondary route is required but not necessarily the optimum use of the conveyance. The operation plan should allow use of the secondary route with clear objectives (e.g. send water to maintain base flow or level or both) and constraints (e.g. maximum flow and stages). When stages are above the FRM&ER HIGH stage criteria, timely action (e.g. gate adjustment or pumping changes) will be made to lower the stage at a rate consistent with the existing conditions (e.g. height above the HIGH stage, rate of rise, recent basin rainfall, and expected inflows) and forecasted conditions. Within the range between the FRM&ER HIGH and FRM&ER LOW stage criteria, the operators have full discretion to adjust pumps or gates or a combination of both to achieve the stage deemed most appropriate for the current and expected conditions. Changes in pumps or pumping rate (number or RPM of pumps) can be implemented to rotate pumps or compensate for unavailable pumps. For basins with high rates of surface and groundwater interactions, compliance with the operation range should be based upon the daily average stage. For canal stages being maintained by pump stations, compliance with the operation range should allow the use of daily averages (0000 to 2400) with the lowest operating stage maintained above the low limit for each pump. When the canal stage falls below the FRM&ER LOW stage criteria timely operational changes will be made to either raise the canal stage back to the operational range or transition into appropriate operational stages below the FRM&ER LOW stage (e.g. water conservation) In this Table, the WCA-3A stage will refer to the WCA-3A 3-station average of gages Site 63, Site 64 and Site 65.	

WCA-3A Interim Regulation Schedule	***WCA-3A Interim Regulation Schedule shown on Figure 7-5A, Figure 7-5B, and Figure 7-5C of the 2012 Water Control Plan. A revised Figure 7-5C is shown in Figure 2 for Increment 2 field test.*** **When in Zone A** S-12s, S-333, S-343A&B, and S-344 subject to conditions below, otherwise, S-12s open full, S-151 make discharges to the East Coast and ENP-SDCS as needed and make maximum allowable discharge when WCA-3B stage (Site 71) is below 8.5 feet, NGVD. S-343A&B and S-344, if non-nesting season (15 July through 30 September), make maximum allowable discharge if downstream conditions permit. **When in Zone D** S-12s, S-333, S-343A&B, and S-344 subject to conditions below, otherwise, S-12s discharge Rainfall Plan target flow for S-12s. S-333 make water supply discharges to the East Coast and ENP-SDCS as needed, discharge Rainfall Plan target flow for S-333 when permitted by downstream conditions. S-151 makes water supply discharges to the East Coast and ENP-SDCS as needed. S-343A&B and S-344 normally closed in this Zone unless water is needed for environmental reasons. Operational intent is to maximize discharge capacity from S-333 prior to utilization of the S-12s, subject to conditions below. **When in Zone E** S-12s, S-333, S-151, S-343A&B, and S-344 subject to conditions below, otherwise, S-12s discharge Rainfall Plan target flow for S-12s. S-333 make water supply discharges to the East Coast and ENP-SDCS as needed, discharge Rainfall Plan target flow for S-333 when permitted by downstream conditions. S-151 makes water supply discharges to the East Coast and ENP-SDCS as needed. S-343A&B and S-344 normally closed in this Zone unless water is needed for environmental reasons. The L-67A Borrow Canal stage (S-333 headwater) should not be drawn down below 7.5 feet, NGVD unless water is supplied from another source. Operational intent is to maximize discharge capacity from S-333 prior to utilization of the S-12s, subject to conditions below. **When in Zone E1**, make up to maximum practicable releases at S-12C, S-12D, S-142, S-151, S-31, S-337, S-335, S-333, S-355 A/B, and S-334 when permitted by downstream conditions. S-12s, S-333, S-151, S-343A&B, and S-344 subject to conditions below, otherwise, S-12s discharge Rainfall Plan target flow for S-12s. Revert to Zone E rules if the FWS has determined that nesting for the CSSS-A has ended, or if the headwater at S-333 falls below 8.25 feet, NGVD. In Zone E1 the goal is to use the available capacity to gradually lower WCA-3A to the bottom of Zone E1 and then keep WCA-3A near the bottom of Zone E1 with a focus of keeping WCA-3A near 9.0 feet, NGVD at the start of the wet season. The use of the capacity available in Zone E1 should consider the Snail Kite recession limits (about 0.33 feet per month).	***WCA-3A Interim Regulation Schedule shown on Figure 7-5A, Figure 7-5B, and Figure 7-5C of the 2012 Water Control Plan. A revised Figure 7-5C is shown in Figure 2 for Increment 2 field test.*** **When in Zone A** S-12s, S-333, S-343A&B, and S-344 subject to conditions in Table 7-1 of the 2012 Everglades Restoration Transiton Plan Water Control Plan (2012 ERTP WCP), otherwise, S-12s open full, S-151 make discharges to the East Coast and ENP-SDCS as needed and make maximum allowable discharge when WCA-3B stage (Site 71) is below 8.5 feet, NGVD. S-343A&B and S-344, if non-nesting season (15 July through 30 September), make maximum allowable discharge if downstream conditions permit. **When in Zone D** S-12s, S-333, S-343A&B, and S-344 subject to conditions below, otherwise, S-12s discharge Rainfall Plan target flow for S-12s. S-333 make water supply discharges to the East Coast and ENP-SDCS as needed, discharge Rainfall Plan target flow for S-333 when permitted by downstream conditions. S-151 makes water supply discharges to the East Coast and ENP-SDCS as needed and make up to maximum allowable discharge when WCA-3B stage (Site 71) is below 8.5 feet, NGVD. S-343A&B and S-344 normally closed in this Zone unless water is needed for environmental reasons. Operational intent is to maximize discharge capacity from S-333 prior to utilization of the S-12s, subject to conditions below. **When in Zone E** S-12s, S-333, S-151, S-343A&B, and S-344 subject to conditions below, otherwise, S-12s discharge Rainfall Plan target flow for S-12s. S-333 make water supply discharges to the East Coast and ENP-SDCS as needed, discharge Rainfall Plan target flow for S-333 when permitted by downstream conditions. S-151 makes water supply discharges to the East Coast and ENP-SDCS as needed. S-343A&B and S-344 normally closed in this Zone unless water is needed for environmental reasons. The L-67A Borrow Canal stage (S-333 headwater) should not be drawn down below 7.5 feet, NGVD unless water is supplied from another source. Operational intent is to maximize discharge capacity from S-333 prior to utilization of the S-12s, subject to conditions below. **When in Zone E1**, make up to maximum practicable releases at S-12C, S-12D, S-142, S-151, S-31, S-337, S-335, S-333, S-355 A/B, and S-334 when permitted by downstream conditions. S-12s, S-333, S-151, S-343A&B, and S-344 subject to conditions below, otherwise, S-12s discharge Rainfall Plan target flow for S-12s. Revert to Zone E rules if the FWS has determined that nesting for the CSSS-A has ended, or if the headwater at S-333 falls below 8.25 feet, NGVD. In Zone E1 the goal is to use the available capacity to gradually lower WCA-3A to the bottom of Zone E1 and then keep WCA-3A near the bottom of Zone E1 with a focus of keeping WCA-3A near 9.0 feet, NGVD at the start of the wet season. The use of the capacity available in Zone E1 should consider the Snail Kite recession limits (about 0.33 feet per month).

Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
Rainfall Plan	Rainfall Plan located in Table 7-1 of the 2012 Water Control Plan. Operational intent is to maximize discharge capacity from S-333 prior to utilization of the S-12s, subject to conditions below. Rainfall Plan target distribution through S-333 may exceed 55% of the Rainfall Plan target. When S-12s capacity is required the structure should be opened from east to west. S-12s/S-333 pre-emptive/proactive releases to better manage high stages in WCA-3A. S-12s and/or S-333 release up to projected WCA-3A inflow based upon system water management operations and/or rainfall to create storage in WCA-3A for expected inflow. Regulatory component of the Rainfall Plan determined by multiplying the distance (in feet) the WCA-3A water level is above Zone E/E1 by 2,500 cfs from 1 January through 30 June and by 5,000 cfs from 1 July through 31 December.	
Pre-Storm/Storm / and Storm Recovery Operations for the SDCS	Pre-Storm/Storm/and Storm Recovery Operations for the SDCS in Table 7-6 of the 2012 Water Control Plan.	
S-343A, S-343B, and S-344	Closed from 1 October through 14 July independent of WCA-3A levels.	

Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
S-12 A/B/C/D	Seasonal Closure Criteria: S-12A closed from 01 October through 14 July with the following limited conditional opening; S-12B closed from 01 October through 14 July with the following limited conditional opening; **S-12A and/or S-12B will be conditionally opened during October under the following conditions.** 1. WCA-3A stage on 30 Sep is greater than 10.5 feet, NGVD; or 2. WCA-3A stage is projected to rise above 10.75 feet, NGVD (IOP Zone A) during October, based on consideration of projected inflows and direct rainfall. 3.S-12A and/or S-12B will be conditionally closed when the WCA-3A stage falls below 10.25 feet, NGVD, OR on 01 November, whichever comes first. **S-12B will be conditionally opened during November under the following conditions.** 1. WCA-3A stage on 31 Oct is greater than 11.0 feet, NGVD; or 2. WCA-3A stage is projected to rise above 11.25 feet, NGVD during November, based on consideration of projected inflows and direct rainfall. 3. S-12B will be closed when the WCA-3A stage falls below 10.75 feet, NGVD, OR on 01 December, whichever comes first. S-12C no closure period. S-12D no closure period. Year-Round Operational Criteria: S-12A Year-round: To provide access to cultural areas, when Rainfall Plan results in S-12 target flows, S-12A up to 100 cfs release. S-12A Cultural Access Release: S-12A up to 100 cfs release available when Rainfall Plan results in S-12 target flows. From 01 October through 14 July, the Tribe and USACE must request informal consultation with FWS to avoid impacts on CSSS-A. During this time, the duration of this release will not exceed five consecutive days. S-12A up to 100 cfs release may only occur when WCA-3A 3-gage average (WCA-3AVG - Sites 63, 64, 65) is greater than 8.4 feet, NGVD. During S-12A up to 100 cfs release, data such as but not limited to NP-205 and area rainfall will be monitored with NP-205 increase or anticipated increase above 5.7 feet, NGVD resulting in closing of S-12A. S-12C/D Year-round: S-12C and/or S-12D release up to WCA-3A Regulation Schedule (Zone A maximum) or Rainfall Plan (target flow). S-12s Flow Distribution: S-12 opening sequence to meet Target Flows is from east (S-12D) to west (S-12A); S-12A/B/C/D Headwater greater than 11.0 feet, NGVD: May be opened an amount only enough to stop overtopping of gates. The USACE will assess the feasibility of leaving the gates closed and allowing overtopping. DOI to install sandbags to prevent flow through culverts under ENP Tram Road by February 1 if necessary.	

Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
S-333	Closed when L-29 Canal stage is above its maximum limits under Increment 2. Refer to L-29 Borrow Canal criteria below. Rainfall Plan target flow for S-333 (to NESRS). Rainfall Plan target distribution through S-333 will be up to maximum practicable of the Rainfall Plan target. When WCA-3A is in Zone E1 or Zone A, up to maximum practicable through S-333 to NESRS. Water Supply and Supplemental Deliveries (up to 250 cfs) to Florida Bay via Taylor Slough may be delivered through this route when it does not conflict with use of S-356. However, more than 250 cfs may be be conveyed to meet other puposes. Water Supply and Supplemental Deliveries may be delivered through the S-151, S-337, S-335 route.	Rainfall Plan target flow for S-333 (to NESRS), plus as much of the remaining Rainfall Plan target flow that the S-12s cannot discharge to be passed through S-334 and subject to capacity constraints, which are 1,350 cfs at S-333, L-29 maximum stage limit, and canal stage limits downstream of S-334. When WCA-3A is in Zone E1 or Zone A, up to maximum practicable through S-333 to NESRS. S-334 flows will not be constrained by S-333 flows, and there is no constraint to require matching S-333 and S-334 flows. S-333/S-334 are operated in accordance with Condition 3. Refer to Section 5.3 in the operational strategy. When daily combined pumping at S-332B, S-332C, and S-332D is less than 1,125 cfs, S-334 may be utilized up to a maximum flow rate of 250 cfs. When daily combined pumping at S-332B, S-332C, and S-332D is less than 1,000 cfs (increased storage capacity may be available within the SDCS), S-334 may be utilized up to 400 cfs.
L-29 Borrow Canal	The L-29 Canal will be operated to ensure the stability and safety of the Tamiami Trail (U.S. 41) Highway between S-333 and S-334, in accordance with the approved LRR, the September 25, 2008 TTMFDOT Relocation Agreement and the 2017 Increment 2 Operations FDOT Coordination Letter, dated XXX,. Once the stage in the L-29 Canal reaches a stage of 8.5 feet, NGVD, input from all structures that discharge into the canal (S-333, S-355A/B, and S-356) shall be stopped until the level in the L-29 Canal recedes beneath 8.5 feet, NGVD. If unexpected high rainfall beyond what was forecasted causes the L-29 Canal to exceed 8.5 feet, NGVD, inflow structures will be operated with the intention of limiting event durations with L-29 Canal stages above 8.5 feet NGVD to a target maximum duration of 72 hours. For each water year (May through April), the L-29 Canal inflow structures will be managed to limit the duration of L-29 Canal stages near 8.5 feet, NGVD to a maximum of 90 consecutive days*, and the conditions of the Tamiami Trail roadway sub-base and roadway will be continuously monitored as detailed in the Increment 2 Monitoring Plan. Monitoring protocals and deployment shall be developed within 45 days of Increment 2 implementation. Continued L-29 structure inflows which result in consecutive durations with L-29 Canal stages at 8.5 feet, NGVD for longer than 90 days will require written approval from the FDOT, given evaluation of the monitoring data by the USACE and FDOT. L-29 canal elevation with regard to this criteria will be measured at the higher of the S-333 Tailwater (S-333 TW) or the S-334 Headwater (S-334 HW). L-29 Event Driven Criteria**: For example, the below Quantitative Precipitation Forecasts (QPF) ranges may be used to maintain L-29 below 8.5 feet, NGVD. 8.4 If the 5-day QPF is for 2 to 3 inches L-29 structural inflows shall be reduced until the stage is below 8.4 feet, NGVD 8.3 If the 5-day QPF is for 3 to 4 inches L-29 structural inflows shall be reduced until the stage is below 8.3 feet, NGVD 8.2 If the 5-day QPF is for 4 to 5 inches L-29 structural inflows shall be reduced until the stage is below 8.2 feet, NGVD 8.1 If the 5-day QPF is for 5 to 6 inches L-29 structural inflows shall be reduced until the stage is below 8.1 feet, NGVD * The number of consecutive days in each period will be measured when L-29 stages exceed 8.3 feet, NGVD. This does not exclude short-term operations to address the L-29 Event Driven Criteria. There will be one period per water year, subject to revision via FDOT approval. ** Stopping flows shall occur in the order prescribed by S-356 and S-333 criteria specified in Conditions 1, 2, 3, and 4 with the intent to achieve the required stage reduction within 72 hours.	

Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
S-355A & S-355B	Follow the same constraints as S-333. Open whenever hydraulic gradient allows flow from WCA-3B to L-29 with low risk of backflow from L-29 to WCA-3B. A. Constraints on the Operation of S-355A and S-355B. The S-355A and S-355B water control structures will be operated to comply with the following constraints: i. The S-355A or S-355B or both shall be opened only when there is sufficient stage difference between the water levels in Water Conservation Area (WCA)-3B at S-355A/S-355B and the L-29 Borrow Canal and whenever the gradient allows for southerly flow from WCA-3B at S-355A/S-355B to L-29 Borrow Canal; ii. Discharges from S-355A or S-355B or a combination of both shall be limited as required to prevent the L-29 Canal stage from exceeding the L-29 Borrow Canal stage constraint as determined by the water control plan; iii. Discharges from S-355A or S-355B or a combination of both shall be limited as required to prevent impacts to the existing project purposes of the C&SF Project including but not limited to flood damage reduction and water supply; and iv. Operations are consistent with, and follow, the existing regulation schedule and water control plan for WCA-3A/3B. B. The S-355A and S-355B water control structures shall be closed if any of the four conditions above are not met, and when there is a potential for reverse flow (from L-29 Borrow Canal to WCA-3B) through the structures. The actual open and close levels of the structures will depend on the water conditions, forecasts, and other system constraints.	

Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
S-334	Water Supply Supplemental Deliveries up to 250 cfs as measured at S-334 or S-337 to Florida Bay via Taylor Slough. However, more than 250 cfs may be conveyed to meet other purposes. Under Conditions 1 through 4, S-334 may be used to maintain the L-29 Canal stage at or below the adjusted constraint of 8.5 feet, NGVD to ensure the stability and safety of the Tamiami Trail (U.S. 41) Highway between S-333 and S-334, in accordance with the 2017 FDOT Coordination Letter. If S-334 is operated in accordance with this condition, S-334 is closed as soon as 8.3 ft, NGVD in L-29 is reached following the post-event recession.	Pass all or partial S-333 flows subject to downstream constraints. S-334 flows will not be constrained by S-333 flows, and there is no constraint to require matching S-333 and S-334 flows. Under Conditions 1 through 4, S-334 may be used to maintain the L-29 Canal stage at or below the adjusted constraint of 8.5 feet, NGVD to ensure the stability and safety of the Tamiami Trail (U.S. 41) Highway between S-333 and S-334, in accordance with the 2017 FDOT Coordination Letter. If S-334 is operated in accordance with this condition, S-334 is closed as soon as 8.3 ft, NGVD in L-29 is reached following the post-event recession. Operated in accordance with Condition 3. Refer to Section 5.3 in the operational strategy. The L-29 Canal must be below 7.8 feet, NGVD. When the daily average stage in L-31N using the HW of S-332B, S-332C, and S-332D can be maintained below 4.4 feet, NGVD then there is no limit on the S-334 discharge as long as the other L-31N canal reaches are maintained within their respective ranges. When daily combined pumping at S-332B, S-332C, and S-332D is less than 1,125 cfs, S-334 may be utilized up to a maximum flow rate of 250 cfs. When daily combined pumping at S-332B, S-332C, and S-332D is less than 1,000 cfs (increased storage capacity may be available within the SDCS), S-334 may be utilized up to 400 cfs. Water Supply Supplemental Water Deliveries up to 250 cfs as measured at S-334 or S-337 to Florida Bay via Taylor Slough. However, more than 250 cfs may be conveyed to meet other purposes.

Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
S-356	Operating Range from 5.5 to 5.8 feet NGVD Operated in accordance with Condition 1, Condition 2, Condition 3 and Condition 4. Refer to the conditions language in the operational strategy. Under normal conditions, the intent will be to use S-356 to maximize flow to NESRS and thereby reduce the use of S-338/G-211 with the exception of water supply and supplemental water deliveries. S-336 will be closed when S-356 is operated. When supplemental water deliveries are being delivered through S-334 and they by themselves or in combination with local rainfall result in S-356 pumping to maintain the canal range below the top of the range, the supplement delivery will be stopped by closing S-334 by the next business day or sooner. Supplemental water can be delivered to Taylor Slough through S-151, S337, S-335 while S-356 is operating. S-356 may be used to divert excess flow from L-30 through S-335 if desired by the agencies (ENP, SFWMD, and USACE). S-335 releases are still dependent on having available downstream capacity. S-356 may be used to send water from WCA-3A to the NESRS by way of the S-151, S-337 and S-335 structures subject to L-29 Canal constraints if agreed upon by the SFWMD, ENP and the USACE. These deliveries are in addition to the Rainfall Plan target deliveries to NESRS. Compliance with the range limits is based on the daily average stage at S-356/S-336 headwaters.	Not Operated
S-151	Water Supply Supplemental Deliveries up to 250 cfs as measured at S-334 or S-337 to to Florida Bay via Taylor Slough. The available capacity of the S-152 structure will be considered any time S-151 is used to deliver water to WCA-3B.	Regulatory releases pursuant to WCA-3A Regulation Schedule during Conditions 3. Refer to the conditions language in the operational strategy. Water Supply Supplemental Deliveries (up to 250 cfs) to to Florida Bay via Florida Bay.

Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
S-337	Water Supply Supplemental Deliveries up to 250 cfs as measured at S-334 or S-337 to, Florida Bay via Taylor Slough. However, more than 250 cfs may be be conveyed to meet other purposes.	Regulatory releases pursuant to WCA-3A Regulation Schedule during Conditions 3. Refer to the conditions language in the operational strategy. Supplemental Water Deliveries up to 250 cfs as measured at S-334 or S-337 to, Florida Bay via Taylor Slough. However, more than 250 cfs may be be conveyed to meet other purposes.
S-335	Condition 1 and Condition 2 Operating Range from 6.5 to 7.0 feet, NGVD Condition 3 and Condition 4 Operating Range from 7.0 to 7.5 feet, NGVD Water Supply Supplemental Deliveries up to 250 cfs as measured at S-334 or S-337 to Florida Bay via Taylor Slough. However, more than 250 cfs may be be conveyed to meet other purposes.	
S-338	Operating Range from 5.5 to 5.8 feet, NGVD	
G-211	Operating Range from 5.5 to 6.0 feet, NGVD Note: If S-331 pumping is limited and the G-211 tailwater rises above 5.3 feet, NGVD then close G-211. Supplemental Deliveries up to 250 cfs as measured at S-334 or S-337 to Florida Bay via Taylor Slough. However, more than 250 cfs may be be conveyed to meet other purposes. It is the expectation that supplemental deliveries will not cause prolonged pumping with two or more units at S-331.	Operating Range from 5.3 to 5.7 feet, NGVD Note: If S-331 pumping is limited and the G-211 tailwater rises above 5.3 feet, NGVD then close G-211. Supplemental Deliveries up to 250 cfs as measured at S-334 or S-337 to Florida Bay via Taylor Slough. However, more than 250 cfs may be be conveyed to meet other purposes. It is the expectation that supplemental deliveries will not cause prolonged pumping with two or more units at S-331.

Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
S-357	S-357 will be the primary water control structure for flood mitigation in the 8.5 SMA. S-357 will be operated according to the below criteria. 1a. Angels < 6.0 feet, NGVD, C-357 will be maintained between 5.5 to 6.0 feet, NGVD. 1b. 6.0 ≤ Angels < 6.4 feet, NGVD, C-357 will be maintained between 5.0 and 6.0 feet, NGVD 1c. Angels ≥ 6.4 feet, NGVD, C-357 will be maintained between 4.5 and 5.5 feet, NGVD 1d. Angels ≥ 6.7 feet, NGVD and LPG2 ≥ 6.6 feet, NGVD, C-357 will be maintained between 4.0 and 5.0 feet, NGVD until LPG2 < 6.4 feet, NGVD 1e. Angels ≥ 7.2 feet, NGVD, and LPG2 ≥ 6.6 feet, NGVD for 7 days or more, C-357 will be maintained between 3.5 and 4.5 feet, NGVD until LPG2 < 6.4 feet, NGVD 2. LPG2 ≥ 7.0 feet, NGVD for more than 24 hours, C-357 will be maintained between 3.5 and 4.5 feet, NGVD until LPG2 < 6.4 feet, NGVD The stage and recession rate of 8.5 SMA gages will be reviewed based on conditions and if necessary the range may be lowered by 0.5 feet increments if the flood mitigation criteria is not being met. This flexibility will be used until LPG2 < 6.6 feet, NGVD. When all available pumps at S-357 and S-331 are operating below 4.0 feet, NGVD for over two weeks and the 8.5 SMA flood mitigation criteria is not being met at LPG2 or LPG1, WCA-3A discharges through S-333 structure to NESRS will be incrementally reduced until the mitigation targets (reference Appendix C, Part 1, Annex 2: MONITORING FOR 8.5 SMA FLOOD MITIGATION of the EA) at either LPG2 or LPG1 are met. Additional Operating Information: When operating near range limits operations may be adjusted to the nearest range without reaching the range. This allows a transition to the next projected range or to avoid rapid changes in operating ranges. When transitioning between the operational ranges, the intent is to transition within a 24 hour period. The North Detention Area will have an initial normal maximum water stage limit of 8.5 feet, NGVD at the NDA1W gauge. However, if the USACE determines that a flood emergency exists the depth of water would be increased to 3.5 feet*, if possible. *The depth limit is derived based on the estimated average across the entire detention area, although operations are limited by the availability of real-time stage monitoring gages.	

Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
S-357N	The testing protocol for S-357N during the Increment 2 field test is designed to establish the operating criteria for S-357N. The Corps and SFWMD will use the S-357N _H gage to develop the testing protocols of S-357N during the Increment 2 field test. The testing protocol for S-357N will be an iterative approach consisting of 4 to 5 weeks of gate changes during the wet season. The S-357N gate changes will be meant to test the hydrologic response of the system to minor adjustments in operations at S-357N in accordance with the S-357N testing protocol. NOTE: • S-357N consists of 3 box type gated concrete control structures. Each structure will be equipped with a manually operated double leaf slide gate system. The double leaf slide gate system was designed to accommodate variable flow regimes: (1) weir flows by lowering the top gate; (2) orifice flows by raising the lower gate; or (3) submerged or un-submerged, uncontrolled flows by raising both the top and bottom gates above the top (crown) of the culvert. • A newly installed water level monitoring gage (S-357N_H) approximately 1,600 feet upstream (west) of S-357N will be observed during S-357 pumping (refer to Figure 5).	
S-331	Initial operations of S-331 will be based on S-331 HW. If necessary, adjustments to the operational range of S-331 will be made after selecting a trigger location and criteria for providing flood mitigation along L-31N. Operational Range 5.0 to 5.5 feet, NGVD with the ability to adjust up to 0.5 feet with the development of a trigger stage. 1. When LPG2 ≥ 7.0 then S331 HW may be maintained between 4.5 to 5.0 until the stage at LPG2 falls below 6.5 feet, NGVD. The stage and recession rate of 8.5 SMA gages, especially LPG-2 will be reviewed based on conditions and if necessary the range may be lowered incrementally by 0.5 feet if the flood mitigation criteria is not being met. Conversely, if the operation ranges consistently provide drainage that exceeds the authorized flood mitigation the ranges will be incrementally raised by 0.5 feet or narrowed to the upper 0.5 feet of the range. However, S-331 will not be operated below 3.0 feet, NGVD. If the required capacity at S-357 is unavailable the operatonal range of S-331 may be lowered using the following criteria: When LPG2 > 7.0 then S331 HW will be maintained between 3.5 and 4.0 until the stage at LPG2 falls below 6.5 feet NGVD.	
Northern Detention Area (NDA)	The NDA connects the 8.5 Square Mile Area (SMA) Detention Cell and encompasses the S-332B North Detention Area. The NDA has a normal maximum water depth limit of 8.5 feet, NGVD at the NDA1W gauge. However, if the USACE determines that a flood emergency exists the depth of water would be increased to 3.5 feet*, if possible. *The depth limit is based on the estimated average across the entire detention area.	

Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
Southern Detention Area (SDA)	The Southern Detention Area (SDA) encompasses what was previously the S-332B West Seepage Reservoir, the S-332C Seepage Reservoir, and the S-332B/C Connector and the western levee of the previous reservoirs. The SDA has a normal maximum water depth limit of 8.5 feet, NGVD at the SDA1 and SDA2 gauges. However, if USACE determines that a flood emergency exists the depth of water would be increased to 3.5 feet*, if possible. * The depth limit is based on the estimated average across the entire detention area.	
The operational components [S-338, S-332B, S-332C, S-332D, S-194, S-196, S-176, S-177, S-18C, S-197 and S-199/S-200 (SFWMD owned and operated] of the following four sections interact differently based on the time of year, local conditions, and regional conditions. Specifically, during the time period from February through July the operation of many of the L-31N and C-111 structures will need to be adjusted to improve the likelihood of achieving stages that will facilitate (or at least reduce the conflict with) Cape Sable Seaside Sparrow (CSSS) nesting and habitat maintenance. Depending on the local and regional conditions, operations are expected to vary from conserving water to maintaining hydroperiod during drier times, to sending considerable flows to tide to moderate stages during periods of high rainfall. With some of these routes subject to downstream conditions the available capacity and routes are expected to change as conditions change; therefore, no fixed hierarchy for the order and location of discharge can be set. Example of Water Distribution During Wet Periods. Adjust the use of S-332B, S-332C, and S-332D in preparation for and during the nesting season by 1) discharging water to tide through S-338 to the extent downstream conditions allow and the desired flow to Taylor Slough is achieved to reduce the use of S-331, 2A) use of S-194 and S-196 to send water to tide through the C-102 and C-103 canal to the extent that downstream conditions allow, and 3) release water through S-176 (SFWMD S-199/S-200 pump stations may use this water in accordance with the permitted operating plan) S-177, S-18C, and S-197 subject to the S-197 flow restriction. Example of Water Distribution During Dry Periods. Use S-332B, S-332C, and S-332D to achieve target stages in southeastern ENP and use of S-332D to achieve target flows to Taylor Slough (up to 250 cfs as measured at S-334 or S-337).		

Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
S-332B and S-332C, and S-332D	S-332B, S-332C, and S-3332D operations are independent of whether other SDCS operations are under Column 1 or Column 2 mode of operations. S-332D Detention Area (S-332D minus S-332DX1) has the following calendar based flow limits • 07/15 through 11/30 No Constraint – May use all pumps (design capacity of 575 cfs) • 12/01 through 01/31 Limit of 3 diesel pumps (design capacity of 325 cfs) • 02/01 through 07/14 Limit of 2 diesel pumps (design capacity of 250 cfs) Operating Range from 4.2 to 4.8 feet, NGVD The NDA and SDA have a normal maximum water stage limit of 8.5 feet, NGVD at the NDA1W and at the SDA1 and SDA2 gauges respectively . However, if the USACE determines that a flood emergency exists the depth of water would be increased to 3.5 feet*, when possible. Use of C-102, C-103, S-199, S-200, S-197 as stages rise above 4.2 feet, NGVD to achieve the desired stage and recession rates for CSSS Sub Populations F, C & D. Since the nesting window extends into the wet season it is expected that meaningful flow will need to be sent to tide to moderate the stage rise along the eastern boundary of ENP. When excess water is being discharged to tide an effort will be made to direct a large portion of the excess water to Biscayne Bay through the C-102/C-103 canal to the extent downstream capacity allows. During the period from 08/01 through 02/14 (outside of the CSSS nesting window), the normal management of water will be to fully maintain the hydraulic ridge and deliver water to eastern ENP using the full available capacity of S-332B, S-332C, and S-332D. If the capacity available at S-332B, S-332C, and S-332D is unable to maintain the operational range then use S-194/S-196/S-197 (Low flow discharges through S-197 available for conditions 1, 2, 3, and 4). To facilitate management of hydroperiods along the eastern boundary of ENP to better meet habitat and nesting targets (2016 B.O.), S-332BN, S-332B, S-332C and S-332D may be operated within an operating range from 3.8 to 4.2 feet, NGVD (highest stage at which water supply is usually initiated). The available capacity with consideration for the CSSS habitat at these pump stations is used before releases through S-177.	
S-332DX1	With the 2016 lowering of an approximately 250 feet long section of S-332D High Head Cell weir to ground surface, the concern of over-using S-332DX1 is lessened; as there is less available head to move water into the SDA. During Increment 2 there is full flexibility in the use of S-332DX1. S-332DX1 may be used to divert a portion of S-332D discharge when the CSSS calendar based flow restrictions limit the flow into the S-332D detention area. Use of S-332DX1 may be minimized to facilitate construction of the SDA L-321S interior berm.	

Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
S-328	The S-328 may be used to increase deliveries to Taylor Slough and provided that an average water depth of at least six inches is maintained in Cell 1 or in accordance with the correlation between S-332D TW/S-332DX1 HW and S-328 HW to be determined once data becomes available.	
S-194 and S-196	Since S-194 and S-196 are currently manually operated structures (no remote control) and require downstream operational changes to effectively move water, these routes will be used to steadily move moderate (e.g. total of 100 to 200 cfs) flows to tide to allow the reduced use of S-332B, S-332C, and S-332D secondarily when this is likely to help achieve better CSSS habitat or nesting conditions. The objecive will be to develop sustainable openings which move enough water to help achieve the desired stage or rate of rise in eastern ENP with relatively infrequent gate changes. Operating Range from 4.2 to 4.8 feet, NGVD S-194 will be replaced due to Krome Avenue road widening within the next 1-2 years. The replacement structure will have remote telemetry and control.	
S-176	Operating Range from 4.75 to 5.0 feet, NGVD When flows at S-332B/C/D are reduced to achieve the CSSS habitat or nesting conditions, up to 200 cfs may be released through S-176 when S-176 HW is below its operational range. It is not the intent of these operations to trigger a S-197 release greater than 400 cfs.	
S-177	Operating Range from 3.6 to 4.2 feet, NGVD If the rainfall over the last 14 days exceeds 5.5 inches, then S-177 may be opened to lower S-177 HW down to 3.3 feet-NGVD. When flows at S-332B/C/D are reduced to achieve the CSSS habitat or nesting conditions, up to 200 cfs may be through S-177 when S-177 HW is below its operational range. It is not the intent of these operations to trigger a S-197 release greater than 400 cfs.	
S-18C	Operating Range from 2.3 to 2.6 feet, NGVD	Operating Range from 2.0 to 2.25 feet, NGVD

Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
S-197	Conditions cited below are referred in Section 4.0 of the Increment 2 Operational Strategy. 1. Conditions 1 and 2 S-18C HW or S-177 HW (feet, NGVD) S-197 Target Flow (cfs) (daily time-weighted average) >3.3 >4.3 2,400 (full) >3.1 >4.2 1,600 (two-thirds) >2.8 >4.1 500 >Table 2B NA minimum (S-176+100, S-177+100, 300) <Table 2B NA minimum (S-176+50, S-177+50, 250) 2. Conditions 3 and 4 S-18C HW or S-177 HW (feet, NGVD) S-197 Target Flow (cfs) (daily time-weighted average) >3.3 >4.3 2,400 (full) >3.1 >4.2 1,600 (two-thirds) >2.8 >4.1 500 > Table 3B NA *minimum (S-176+200, S-177+200, 400) < Table 3B NA *minimum (S-176+100, S-177+100, 300) The criteria for S-177 and S-18C only applies when gate is fully open (or gates out of the water) for 24 hours. The flexibility at S-197 is expected to be used when the available upsteam capacity is insufficient to keep S-176 and S-177 closed. However, S-197 is not intended to be opened greater than 400 cfs when S-18C HW is below 2.8 feet, NGVD or when S-177 HW is above 4.1 feet, NGVD. *No discharges from S-197 when the S-18C HW stage is below 2.3 feet, NGVD.	
TABLE 2B/3B	Month Monthly Median S-18C HW Stage (feet, NGVD) January 2.2 February 2.0 March 2.0 April 1.8 May 2.0 June 2.3 July 2.4 August 2.4 September 2.5 October 2.5 November 2.3 December 2.2	

4.1 S-333 AND S-356 OPERATIONAL STRATEGY

At the start of Increment 2, the L-29 Canal (L-29) will be managed to prevent a sustained stage above 8.5 feet, NGVD (the higher of the S-333 tailwater [TW] or the S-334 headwater [HW]) for longer than 90 days. The L-29 stage will be maintained at or below 8.5 feet, NGVD by ceasing inflow into L-29 when the L-29 stage rises above 8.5 feet, NGVD. Both S-333 and S-356 releases to L-29 will be subject to this constraint. Additionally, S-334 may be use to expidite lowering of the L-29 Canal with the intent to ensure safety and stability of the Tamiami Trail Highway (U.S. 41) in accordance with the criteria defined in Table 1 only when conditions require.

Continuing the adaptive approach initially formulated for Increment 1, the water level constraint at G-3273 will not be a pre-determined constraint under Increment 2, allowing NESRS to receive more water, relative to ERTP, pursuant to the WCA-3A Regulation Schedule and Rainfall Plan. G-3273 may be used as an indicator to define when NESRS is experiencing low, moderate, and high water levels. WCA-3A stage as measured by the three gage average (average of monitoring gage Sites 63, 64 and 65) will continue to be used to define the priority of releases from S-333 and S-356 to L-29/NESRS. Specifically, when WCA-3A stage is above the Increment 1 and 2 Action Line during the S-12A closure period (Figure 1 which varies from 10.0 to 10.75 feet, NGVD), all of the available L-29 capacity will be dedicated to lowering WCA-3A. However if S-333 is operating at capacity according to the Rainfall Plan target and there is capacity remaning in the L-29 Canal then S-356 may be operated. WCA-3A stages relative to the Increment 1 and 2 Action Line will typically be assessed weekly. When WCA-3A stages are falling from above the Increment 1 and 2 Action Line to below it, i.e., moving from conditions described in (3) or (4) to conditions described in (2) below, operations may be adjusted weekly. When WCA-3A stages are increasing from below the Increment 1 and 2 Action Line to above it, i.e., moving from condition 2 to conditions 3 or 4, operations may be adjusted more frequently than weekly. All structures in the MWD Increment 2 field tests will be evaluated and their operating criteria and canal levels will be subject to a complete revision that will be codified in the COP.

4.2 REVISED CONDITIONS OF THE OPERATIONAL STRATEGY

The need to maintain flood mitigation for the 8.5 SMA while facilitating A) completion of the C-358 Canal installation of S-357N (C-358 control structure) and B) completion of C-111 South Dade Contract 8A warrant the following changes to the previous Increment 1.1 and 1.2 Operational Strategy.

- More flexibility in the S-357 range to compensate for the head losses expected due to hydraulic limitation imposed by the S-357N installation including but not limited to:
    - a bypass culvert (two 72 inch diameter CMP) and trench system around the S-357N construction area,
- Short duration or limited use of S-332C and/or S-332DX1 during Contract 8A construction completion within the SDA, as these structures discharge near the southern extent of the Contract 8A work.

4.3 UNVARYING CONDITIONS OF THE OPERATIONAL STRATEGY

a) WCA-3A Zone A Operations. When the WCA-3A 3-gage average is in Zone A if the regulation schedule maximum discharges will be made through the S-12A/B/C/D and S-333 to the NESRS in accordance with the Rainfall Plan subject to downstream constraints and the 2016 ERTP BO closure dates. S-151 discharges may also be maximized to WCA-3B and to tide subject to downstream constraints. S-343A, S-343B and S-344 discarges may also be maximized subject to the 2016 ERTP BO closure dates.

b) L-29 Canal. The L-29 Canal will be operated to ensure the stability and safety of the Tamiami Trail (U.S. 41) Highway between S-333 and S-334, in accordance with the 2017 FDOT Coordination Letter.

   In accordance with Table 1, the L-29 Canal inflow structures (S-333, S-355A/B, and S-356) will be operated with the intention of limiting event durations with L-29 Canal stages above 8.5 feet NGVD to a target maximum duration of 72 hours. For each water year (May through April), the L-29 Canal inflow structures will be managed to limit the cumulative duration of L-29 Canal stages above 8.3 feet to a maximum of 90 days, and the conditions of the Tamiami Trail roadway sub-base and roadway will be continuously monitored as detailed in the Increment 2 Monitoring Plan. Continued L-29 structure inflows which result in cumulative durations with L-29 Canal stages above 8.3 feet for longer than 90 days will require written approval from the FDOT, given evaluation of the monitoring data by FDOT.

c) S-151, S-337, S-335 and S-356. S-356 may be used to send water from WCA-3A to the NESRS by way of the S-151, S-337 and S-335 structures subject to L-29 Canal constraints if agreed upon by the SFWMD, ENP and the USACE. These deliveries are in addition to the Rainfall Plan target deliveries to NESRS. These operations are intended to be secondary to S-356's primary purpose of controling the stage in L-31N.

d) S-333, S-355A, S-355B, S-356 and S-334 for the L-29 Canal if stage exceeds 8.5 feet NGVD. All inflows to the L-29 canal which include S-333, S-355A, S-355B and S-356 will be secured in order to allow the canal to recede below 8.5 feet NGVD. S-334 may be used to maintain the L-29 Canal stage at or below the FDOT constraint of 8.5 feet, NGVD to ensure the stability and safety of the Tamiami Trail (U.S. 41) Highway between S-333 and S-334, in accordance with the 2017 FDOT Coordination Letter. As soon as 8.3 ft, NGVD in L-29 is reached following the post-event recession, S-334 is closed. The S-334 discharges will be as follows:
   i) When the daily average stage in L-31N using the HW of S-332B, S-332C, and S-332D can be maintained below 4.4 feet, NGVD the S-334 may discharge as necessary to maintain the L-29 Canal constraints defined in Table 1 as long as the other L-31N canal reaches are maintained within their respective ranges.
   ii) When the average stage in L-31N at the HW of S-332B, S-332C, and S-332D cannot be maintained below 4.4 feet, NGVD then:
      a) When daily combined pumping at S-332B, S-332C, and S-332D is less than 1,125 cfs, S-334 may be utilized up to a maximum flow rate of 250 cfs.

b) When daily combined pumping at S-332B, S-332C, and S-332D is less than 1,000 cfs (increased storage capacity may be available within the SDCS), S-334 may be utilized up to 400 cfs.

It is expected that during drier times the need to deliver supplemental flow to Taylor Slough would diminish the use of S-356 compared to Increment 1 if water was delivered through S-334. Water may be delivered through the S-151, S-337, S-335 route to reduce this conflict. During the wet season it is expected that supplemental deliveries will be relatively small and occurring during dry periods. At the end of the wet season it is expected that the supplemental deliveries be larger and more persistent. Deliveries through S-332D/S-332DX1 will still comply with the seasonal discharge limits for nesting of the CSSS.

e) S-357 and S-331 for the 8.5 SMA. To help maintain 8.5 SMA flood mitigation, S-357 will conditionally operate up to its full capacity according to Table 1. S-331 will be operated as described in Table 1. Construction of the 8.5 SMA features and C-111 South Dade Contracts 8 and 8A will be considered functionally complete when the USACE construction manager with input from the USACE water managers and USACE Engineering Division formally communicate it to the SFWMD project manager and water managers. Once functionally complete, such that construction conflicts with water management of canal levels are resolved, the S-331 HW range specified In Table 1 may be raised by up to 0.5 feet and the S-357 HW range may be evaluated with the effects of this change.

f) L-31N Canal Reach from S-331 to S-176. S-332B, S-332C, S-332D, S-176, S-194, and S-196 will be operated to maintain the L-31N Canal reach between S-331 and S-176 in accordance with Table 1 except during hydraulic testing of the NDA and SDA. The S-328 structure (eight 60 inch diameter CMP with gates) located in the southwest corner of Cell 1 of the S-332D Detention Area may be used to increase deliveries to Taylor Slough up to 250 cfs provided that an average water depth of at least six inches is maintained in Cell 1 or in accordance with the correlation between S-332D TW/S-332DX1 HW and S-328 HW to be determined once data becomes available. Prior to initial operation of S-328 in September 2017, construction of the three L-31W Canal plugs proposed between S-328 and the L-31W gap were completed as components of the SFWMD proposal to move more water to Taylor Slough and Florida Bay.

g) C-111 Canal Reach from S-176 to S-177. Operating Range for S-177 is from 3.6 to 4.2 feet, NGVD. If the rainfall over the last 14 days exceeds 5.5 inches, or if water is being released through S-334 into L-31N and being passed through S-331, then S-177 may be opened to lower S-177 HW down to 3.3 feet-NGVD. When flows at S-332B/C/D are reduced to achieve the CSSS habitat or nesting conditions, up to 200 cfs may be through S-177 when S-177 HW is below its operational range. It is not the intent of these operations to trigger a S-197 release greater than 400 cfs.

h) Supplemental Water Deliveries to Florida Bay via Taylor Slough. SDCS operations for increment 2 will utilize the C-111 South Dade SDA and the S-332D Detention Area to maintain canal stage targets in the lower L-31N and C-111 canals. S-176, S-177 and S-

18C will be used to pass water to the marsh downstream of S-18C and utilize S-197 as needed.

Prolonged use of the C-111 South Dade detention areas, particularly following significant rain events, has the tendency to set up a large stage difference between the marsh to the west and the canal stage in the lower L-31N and C-111. This is expected and is how the system is designed to work, as it is the water level in the detention areas that provides the hydraulic ridge that supports this stage difference. However, after the rain event has passed through the system, the hydraulic ridge can dissipate quickly following an abrupt cessation of pumping. This abrupt cessation can lead to a rapid drainage of the marsh. While drydown of the marsh occurs naturally during dry seasons, the rate of marsh recession that can occur when pumping is halted after significant rain event is much faster than naturally induced recession rates, and rapid recession can be particularly harmful to fish communities. It is important to manage the operations in such a way that marsh recession resembles the natural recession rates that have beneficial effects for wildlife communities.

To mitigate for this potential rapid drainage of the marsh, Increment 2 will include the operational flexibility for water managers to convey water from WCA-3A to avoid excessive drainage of the marsh to the west of the detention areas. Supplemental water deliveries from WCA-3A will be limited to conditions when WCA-3A is above its floor elevation of 8.0 feet, NGVD. These deliveries, if provided, will be conducted under the authority of the SFMWD water supply in coordination with ENP and USACE. This flow limit will be measured at S-334 or S-337. Measurements are made at these locations to tie back to WCA-3A stage. This operation is intended to support gradual recession rates in the marsh by providing additional water to the S332D pump station, or maintain a canal stage in a range conducive gradual recession rates. Data collected during the incremental test will be assessed to evaluate the effectiveness of this operation as we move forward with a the COP. The effects of supplemental water deliveries will be discussed among the USACE and SFWMD during monthly meetings and prior to initiation of flows.

5.0 INCREMENT 2 OPERATIONAL STRATEGY CONDITIONS

5.1 <u>CONDITION 1.</u> Year-round when WCA-3A stage is below the Increment 1 and 2 Action Line (Figure 1) (S-333 has priority; S-356 use is secondary to S-333 but S-356 can and should be used subject to L-29 stage limitations):

a) <u>S-333 and S-334</u>. S-333 will be used to release up to the full rate prescribed by WCA-3A Regulation Schedule and the Rainfall Plan into NESRS subject only to the L-29 adjusted constraint. The combined flow from the S-333, S-12A, S-12B, S-12C, and S-12D should not exceed the total prescribed by the Rainfall Plan except as allowed by the 2012 WCP and constrained by the ERTP BO's stage and recession limits. The latitude to deliver water from WCA-3A via S-333/S-334 to supply water to Taylor Slough remains as long as WCA-3A's stage is above 8.0 feet, NGVD. Deliveries through S-332D will still comply with the seasonal discharge limits for nesting of the CSSS Sub Population C. This supplemental delivery from WCA-3A will only occur when it does not conflict with the ability to maintain canal stages within their operational ranges and is expected to occur

during relatively drier conditions at which time this magnitude of flow will become important as it will help sustain the hydraulic ridge at S-332C and S-332D.

b) S-356. S-356 may be used to control the stage in L-31N between 5.5 and 5.8 feet NGVD to the extent there is capacity in L-29. Compliance with the range limits is based on the daily average stage at S-356/S-336 headwaters. The operator of S-356 may operate the pumpswithin this range. Using S-356 to maintain the L-31N Canal range to 5.5 to 5.8 feet, NGVD allows the flexibility to keep G-211 and S-338 closed or reduce G-211 and S-338 discharge if conditions make this desirable.

c) L-30 Canal and S-335. Excess flow from L-30 through S-335 may be diverted into NESRS using S-356. Delivery of water from WCA-3A (through S-151, S-337, and S-335) is allowed. When S-335 HW is above 6.5 feet, NGVD, the SFWMD has full latitude to make the S-335 discharge required to maintain the desired stage in the L-30 Canal and also provide S-335 discharge to reduce pump unit cycling at S-356 or S-331 (by releasing the flow required to maintain steady pumping at S-331 through G-211) or both. S-335 releases are still dependent on having available downstream capacity.

d) S-197. For Increment 2, additional S-197 flexibility will be allowed to achieve the objectives. S-197 will be operated based upon S-18C HW or S-177 HW stage as prescribed below in Condition 2 (Tables 2A and 2B). These additional S-197 operating criteria do not change the existing S-197 operating criteria for openings prescribed by the conditions at S-177. The flexibility at S-197 is expected to be used when the available upsteam capacity is insufficient to keep S-176 and S-177 closed. However, S-197 is not intended to be opened greater than 400 cfs when S-18C HW is below 2.8 feet, NGVD or when S-177 HW is above 4.1 feet, NGVD.

* Note: For the time period from January 1st through near the end of May that a stage of 6.6 at G-3273 reflect a very wet (above median and near P75). For the period from mid-May through December 6.6 is near (+/- 0.2 feet) median (P50) conditions.

5.2 CONDITION 2. Year-round when stage at G-3273 is above 6.6 feet, NGVD * and the WCA-3A stage is below the Increment 1 and 2 Action Line (Figure 1) (S-356 has limited priority over S-333):

The following criteria will be triggered when G-3273 rises above 6.6 feet, NGVD for more than 24 hours and will remain in effect until G-3273 declines to 6.5 feet, NGVD.

a) S-333 and S-334. S-333 will be used to release up to the full rate prescribed by the WCA-3A Regulation Schedule and the Rainfall Plan into NESRS subject to the L-29 adjusted constraint and an assured minimum available capacity of 3 units at S-356 (375 cfs) when the L-29 constraint is up to 8.5 feet, NGVD. If the assured minimum available capacity indicated at S-356 is not possible due to the L-29 constraint, then S-333 releases will be reduced to allow S-356 to achieve the specified minimum available capacity.

b) S-356. S-356 may be used to control the stage in L-31N Canal between 5.5 and 5.8 feet, NGVD with an assured minimum available capacity of 3 units (375 cfs) when the L-29 constraint is up to 8.5 feet, NGVD. Compliance with the range limits is based on the daily average stage at S-356/S-336 headwater. The operator of S-356may operate the pumps within this range. Using S-356 to maintain the L-31N Canal between 5.5 and 5.8 feet NGVD, allows the flexibility to keep G-211 and S-338 closed or reduce G-211 and S-338 discharge if conditions make this desirable.

c) L-30 Canal and S-335. Excess flow from L-30 through S-335 may be diverted into NESRS using S-356. Delivery of water from WCA-3A (through S-151, S-337, and S-335) is allowed. When S-335 HW is above 6.5 feet, NGVD, the SFWMD has full latitude to make the S-335 discharge required to maintain the desired stage in the L-30 Canal and also provide S-335 discharge to reduce pump unit cycling at S-356 or S-331 (by releasing the flow required to maintain steady pumping at S-331 through G-211) or both. S-335 releases are still dependent on having available downstream capacity.

d) S-18C. S-18C will be operated in accordance with the Column 1 (operating range of 2.3 to 2.6 feet NGVD) of the 2012 WCP.

e) S-197. For Increment 2, additional S-197 flexibility will be allowed to achieve the objectives. S-197 will be operated based upon S-18C HW or S-177 HW stage as prescribed below (Tables 2A and 2B). These additional S-197 operating criteria do not change the existing S-197 operating criteria for openings prescribed by the conditions at S-177. The flexibility at S-197 is expected to be used when the available upsteam capacity is insufficient to keep S-176 and S-177 closed. However, S-197 is not intended to be opened greater than 400 cfs when S-18C is below 2.8 feet, NGVD or when S-177 HW is above 4.1 feet, NGVD.

* Note: For the time period from January 1st through near the end of May a stage of 6.6 at G-3273 reflects a very wet (above median and near P75) condition. For the period from mid-May through December 6.6 is near (+/- 0.2 feet) median (P50) conditions.

TABLE 2A: S-197 Operating Criteria

S-18C HW (feet, NGVD)	or	S-177 HW (feet, NGVD)	Maximum S-197 Flow (cfs) (daily time-weighted average)
> 3.3		> 4.3	2,400 (full)
> 3.1		> 4.2	1,600 (two-thirds)
> 2.8		> 4.1	500
> Table 2B		NA	minimum(S-176+100, S-177+100, 300)
< Table 2B		NA	minimum(S-176+50, S-177+50, 250)
The criteria for S-177 and S-18C only applies when gate is fully open (or gates out of the water) for 24 hours.			

TABLE 2B: Monthly Median S18C HW Stages (POR 1978-2015)

Month	Monthly Median S-18C HW Stage
January	2.2 feet, NGVD
February	2.0 feet, NGVD
March	2.0 feet, NGVD
April	1.8 feet, NGVD
May	2.0 feet, NGVD
June	2.3 feet, NGVD
July	2.4 feet, NGVD
August	2.4 feet, NGVD
September	2.5 feet, NGVD
October	2.5 feet, NGVD
November	2.3 feet, NGVD
December	2.2 feet, NGVD

5.3 CONDITION 3. When WCA-3A stage is above the Increment 1 and 2 Action Line (Figure 1) during S-12A seasonal closure window from 01 October (or initial S-12A closure date) through 14 July *(S-333 has priority; S-356 use is secondary to S-333 but S-356 can and should be used subject to L-29 stage limitations):

The following criteria will be triggered when WCA-3A three gage average exceeds the Increment 1 and 2 Action line for more than 24 hours and will remain in effect the three gage average declines to 0.1 feet below the Increment 1 and 2 Action line for 48 hours.

a) S-356. S-356 may be used to control the stage in L-31N between 5.5 and 5.8 feet NGVD to the extent there is capacity in L 29. S-333 releases have priority over S-356 pumping. Compliance with the range limits is based on the daily average stage at -S-356/S-336 headwaters. The operator of S-356 may turn pump units on and off within this range. Using S-356 to maintain the L-31N Canal range to 5.5 to 5.8 feet, NGVD allows the flexibility to keep G-211 and S-338 closed or reduce G-211 and S-338 discharge if conditions make this desirable.

b) S-333 and S-334. S-333 makes maximum releases to NESRS subject to the L-29 constraint. When the L-29 canal is below 7.8 feet, NGVD (operations are comparable to conditions under Increment 1.1 and Increment 1.2) and is reached or exceeded, S-334 may be used to maintain the L-29 Canal stage at or below the adjusted constraint by delivering a portion of the WCA-3A regulatory releases to the SDCS (including the use of pumping stations S-331, S-332B, S-332C, and S-332D) when the following conditions (i, ii, and iii) are met:

i) S-12C and S-12D are full open.
ii) The discharge to tide from all of the WCAs are maximized to the extent that downstream conditions allow.
iii) The SDCS has available capacity (as defined in paragraph "iv)" below) while maintaining L-31N canal stage between S-335 and G-211 below 4.6 feet, NGVD.

Under these conditions (i, ii, and iii), the following criteria (iv, v, and vi) will govern S-334 operation, including maximum discharge limits:

iii) When the daily average stage in L-31N using the HW of S-332B, S-332C, and S-332D can be maintained below 4.4 feet, NGVD then there is no limit on the S-334 discharge as long as the other L-31N canal reaches are maintained within their respective ranges.
iv) S-334 will not be operated when L-29 is above 7.8 feet, NGVD (subject to L-29 lowering operations per FDOT constraint and Section 5.7 Additional Operational Flexibility, for Extreme High Water Levels in WCA-3A). When L-29 is below 7.8 feet, NGVD the below constraints established under Increment 1.1 and 1.2 will be followed:
    (1) When the average stage in L-31N at the HW of S-332B, S-332C, and S-332D cannot be maintained below 4.4 feet, NGVD then:
        (a) When daily combined pumping at S-332B, S-332C, and S-332D is less than 1,125 cfs, S-334 may be utilized up to a maximum flow rate of 250 cfs.
        (b) When daily combined pumping at S-332B, S-332C, and S-332D is less than 1,000 cfs (increased storage capacity may be available within the SDCS), S-334 may be utilized up to 400 cfs.
v) S-334 flows will not be constrained by S-333 flows, and there is no constraint to require matching S-333 and S-334 flows.

* The use of S-334 based on criteria "i)" through "v)" may continue long enough past the end of the S-12A and S-12B closure period (14 July) to release the volume of water that would have been released, according to the WCA-3A Regulation Schedule, had the S-12s been allowed to be open, but in no case beyond August 15th. The determination of the extent to which the S-12 closures cause water to be retained in WCA-3A beyond that expected during the pre-ISOP schedule for WCA-3A (1993 Experimental Program, including no seasonal closure of the S-12s) will be computed monthly by USACE water managers and reported annually by the USACE for the period from 1 October through 14 July. When the combined WCA-3A releases from the S-12s and S-333 are less than the releases computed for the pre-ISOP schedule, a WCA-3A "discharge deficit" resulting in additional accumulation of water in WCA-3A is indicated for the period from 1 October through 14 July. For this WCA-3A accounting computation, S-333 discharges to NESRS computed under the pre-ISOP schedule will be based on inclusion of the G-3273 constraint of 6.8 feet, NGVD. S-334 deliveries will be discontinued when S-334 capacity is no longer required to meet the discharge prescribed by the Rainfall Plan and the WCA-3A storage volume accumulated due to the discharge deficit (the balance) is discharged but in no case beyond August 15th. S-334 discharges to the SDCS under all conditions and S-333 deliveries to NESRS when G-3273 (S-333 flows greater than S-334 flows) will both count as flows to be subtracted from the WCA-3A balance computed through 14 July.

I. S-334 will not be used after 14 July during periods when the WCA-3A stage is below the Increment 1 and 2 Action Line. S-334 may be used to discharge accumulated water from 15 July through 14 August if WCA-3A stage is above the Increment 1 and 2 Action Line. Regardless of conditions within WCA-3A or any residual WCA-3A storage deficit balance, the use of S-334 to deliver a portion of WCA-3A regulatory releases to the SDCS will be discontinued on 15 August. The WCA-3A storage deficit balance resultant from the S-12 closures, if applicable for the prior period from 1 November through 14 July, will zero-out on 15 August and will preclude a balance carryover into the next year.

II. If more water was released from WCA-3A under Increment 2 than computed for the pre-ISOP schedule, a WCA-3A "discharge surplus" balance is indicated for the period from 1 November through 14 July, and S-334 will not be utilized for WCA-3A regulatory releases to the SDCS during the period from 15 July through start of S-12A Seasonal Closure window on 30 September.

e) L-30 Canal. Delivery of water from WCA-3A (through S-151, S-337, and S-335) is allowed. Net flow from the L-30 Canal should be minimized with the corresponding lowering of the C-4 Canal (opening G-119 and S-380) if downstream conditions allow. When S-335 HW is above 7.0 feet, NGVD, the SFWMD has full latitude to make the S-335 discharge required to maintain the desired stage in the L-30 Canal below 7.5 feet, NGVD if there is capacity available downstream. When S-335 HW is above 7.0 feet, NGVD discharge from the L-30 canal through S-335 may be used to reduce pump unit cycling at S-331 (by releasing the flow required to maintain steady pumping at S-331 through G-211). Delivery of water from WCA-3A through S-151, S-337, and S-335 is allowed.

f) S-18C. Operation of S-18C will be in accordance with the Column 2 of the 2012 WCP with an operating range from 2.0 to 2.25 Feet, NGVD~~.~~

g) S-197. S-197 will be operated based upon S-18C HW or S-177 HW stage as described below. These additional S-197 operating criteria do not change the existing S-197 operating criteria based on conditions at S-177 and contained in the 2012 WCP.

TABLE 3A: S-197 Operating Criteria

S-18C HW (feet, NGVD)	or	S-177 HW (feet, NGVD)	Maximum S-197 Flow (cfs) (daily time-weighted average)
> 3.3		> 4.3	2,400 (full)
> 3.1		> 4.2	1,600 (two-thirds)
> 2.8		> 4.1	500
> Table 3B		NA	minimum(S-176+200, S-177+200, 400)
< Table 3B		NA	minimum(S-176+100, S-177+100, 300)
The criteria for S-177 and S-18C only applies when gate is fully open (or gates out of the water) for 24 hours.			

TABLE 3B: (same as Table 2B): Monthly Median S-18C HW Stages (POR 1978-2015)

Month	Monthly Median S-18C HW Stage
January	2.2 feet, NGVD
February	2.0 feet, NGVD
March	2.0 feet, NGVD
April	1.8 feet, NGVD
May	2.0 feet, NGVD
June	2.3 feet, NGVD
July	2.4 feet, NGVD
August	2.4 feet, NGVD
September	2.5 feet, NGVD
October	2.5 feet, NGVD
November	2.3 feet, NGVD
December	2.2 feet, NGVD

Within these operational ranges, S-197 gates may be adjusted to maintain the daily average flow rates and stages within the appropriate and corresponding ranges. If a flow or stage is outside of the corresponding range for more than one day (24 hour average) then the appropriate gate change will be made no later than the next working day.

Water managers may use any or all of the four gates at S-197 to achieve the daily average flows prescribed by the stage ranges while, when possible keeping gate openings small enough to prevent manatee movement.

5.4 CONDITION 4. When WCA-3A stage is above the Increment 1 and 2 Action Line (Figure 1) from 15 July through start of S-12A Seasonal Closure window on 30 September (or initial S-12A closure date) (S-333 has priority; S-356 use is secondary to S-333 but S-356 can and should be used subject to L-29 stage limitations and no use of S-334):

The following criteria will be triggered when WCA-3A three gage average exceeds the Increment 1 and 2 Action line for more than 24 hours and will remain in effect until the WCA-3A three gage average declines to 0.1 feet below the Increment 1 and 2 Action line for 48 hours.

a) S-356. S-356 may be used to control the stage in L-31N between 5.5 and 5.8 feet NGVD to the extent there is capacity in L-29. S-333 releases have priority over S-356 pumping. Compliance with the range limits is based on the daily average stage at S-356/-S-336 headwaters. The operator of S-356 may turn pump units on and off within this range. Using S-356 to maintain the L-31N Canal range to 5.5 to 5.8 feet, NGVD allows the flexibility to keep G-211 and S-338 closed or reduce G-211 and S-338 discharge if conditions make this desirable.S-334 remains closed.

b) S-333. S-333 makes maximum releases to NESRS subject only to the L-29 constraint.

c) L-30 Canal. Delivery of water from WCA-3A (through S-151, S-337, and S-335) is allowed. Net flow from the L-30 Canal should be minimized with the corresponding lowering of the C-4 Canal (opening G-119 and S-380) if downstream conditions allow. When S-335 HW is above 7.0 feet, NGVD, the SFWMD has full latitude to make the S-335 discharge required to maintain the desired stage in the L-30 Canal below 7.5 feet NGVD, if there is capacity available downstream. When S-335 HW is above 7.0 feet NGVD, discharge from the L-30 canal through S-335 may be used to reduce pump unit cycling at S-331 (by releasing the flow required to maintain steady pumping at S-331 through G-211) or both if the flow at S-334 is insufficient.

e) S-18C. Operation of S-18C will be in accordance with the Column 2 of the 2012 WCP.

f) S-197. S-197 will be operated based upon S-18C HW or S-177 HW stage as described below. These additional S-197 operating criteria do not change the existing S-197 operating criteria based on conditions at S-177, and contained in the 2012 WCP.

TABLE 4A: (same as Table 3A): S-197 Operating Criteria

S-18C HW (feet, NGVD)	or	S-177 HW (feet, NGVD)	Maximum S-197 Flow (cfs) (daily time-weighted average)
> 3.3		> 4.3	2,400 (full)
> 3.1		> 4.2	1,600 (two-thirds)
> 2.8		> 4.1	500
> Table 4B		NA	minimum(S-176+200, S-177+200, 400)
< Table 4B		NA	minimum(S-176+100, S-177+100, 300)
The criteria for S-177 and S-18C only applies when gate is fully open (or gates out of the water) for 24 hours.			

TABLE 4B: (same as Table 2B and Table 3B): Monthly Median S18C HW Stages (POR 1978-2015)

Month	Monthly Median S-18 HW Stage
January	2.2 feet, NGVD
February	2.0 feet, NGVD
March	2.0 feet, NGVD
April	1.8 feet, NGVD
May	2.0 feet, NGVD
June	2.3 feet, NGVD
July	2.4 feet, NGVD
August	2.4 feet, NGVD
September	2.5 feet, NGVD
October	2.5 feet, NGVD
November	2.3 feet, NGVD
December	2.2 feet, NGVD

Within these operational ranges, S-197 gates may be adjusted to maintain the daily average flow rates and stages within the appropriate and corresponding ranges. If a flow or stage is outside of the corresponding range for more than one day (24 hour average) then the appropriate gate change will be made no later than the next working day.

Water managers may use any or all of the four gates at S-197 to achieve the daily average flows prescribed by the stage ranges while, when possible keeping gate openings small enough to prevent manatee movement.

5.5 PRE-STORM, STORM/POST-STORM OPERATIONS

These operations remain unchanged from the 2012 WCP, Table 7-6.

5.6 OPERATIONAL FLEXIBILITY (CONDITIONS 1, 2, 3 and 4):

The following areas have been identified to have some uncertainties which may require some additional operational flexibilities:

- Operational range of L-30 may be adjusted by +/- 0.5 feet
- Operational range for S-338 may be adjusted by +/- 0.5 feet
- Operational range for S-194 may be adjusted +/- 0.5 feet

- Operational range for S-196 may be adjusted +/- 0.5 feet
- During the period when pumping at S-332B, S-332C, S-332D combined is restricted to less than 1,125 cfs total due to the operational restrictions associated with the RPA targets of the 2016 ERTP BO or maintenance/repair issues which result in reduced pump capacity or a combination of both, the operational range for S-176 may be lowered 0.5 feet from the operating range of 4.75 to 5.0 feet, NGVD.
- During the period when pumping at S-199 and S-200 combined is restricted to less than 300 cfs total due to the operational restrictions associated with the RPA targets of the 2009 C-111 Spreader Canal Western Project BO and/or 2016 ERTP BO or maintenance/repair issues which result in reduced pump capacity, the operational range for S-177 may be lowered 0.2 feet from the operating range of 3.6 to 4.2 feet, NGVD (the adjusted lower limit of S-177 HW is 3.4 feet, NGVD).
- Operational flexibility for S-357 and S-357N is included within the 8.5 SMA test operations which includes adjustments up to +/- 0.5 feet after the initial + 0.5 feet change. S-357 will not be operated below 3.0 feet, NGVD.

5.7 ADDITIONAL OPERATIONAL FLEXIBILITY, FOR EXTREME HIGH WATER LEVELS IN WCA-3A: (WCA-3A Stage is above the Extreme High Water Actin Line or SFWMD position analysis shows a 10 percent probability of WCA-3A, 3-station average exceeding 12.7 feet NGVD)

The purpose of this flexibility is to allow for adaptive management to provide a response to extreme high water levels in the WCA-3A. The operational flexibilities are not expected to be triggered frequently. When comparing the Exteme High Water Action Line to the historical WCA-3A 3-gage average these operations would have been triggered five times within the past 15 years (See Figure 3). Emergency events will be addressed following all levee and dam safety regulations separate from Increment 2.0 operations.

Extreme high water levels in WCA-3A is defined as when either of these two conditions are met:

1. WCA-3A is above the Extreme High Water Action Line. See figure 2.
2. SFWMD position analysis (monthly, semi-monthly) shows at least a 10 percent probability of WCA-3A, 3-station average exceeding 12.7 feet NGVD along with other forecast information prior to September 15th.

Under Section 5.7 operations (Additional Operational Flexibility, for Extreme High Water Levels in WCA-3A), Increment 2 will include the following additional operational flexibility for the extreme high water condition:

a) <u>WCA-3A.</u> WCA-3A discharges through the SDCS may continue beyond the date at which the deficit due to S-12 closures has been met or past the cutoff date of 15 August.

b) <u>L-29.</u> When L-29 is maintained above 7.8 feet NGVD, and either extreme high-water condition is likely, S-334 will not be constrained to the closure period window. S-334 discharges will be subject to the following downstream conditions:

1. When the daily average stage in L-31N using the HW of S-332B, S-332C, and S-332D can be maintained below 4.4 feet, NGVD then there is no limit on the S-334 discharge as long as the other L-31N canal reaches are maintained within their respective ranges.
2. When the average stage in L-31N at the HW of S-332B, S-332C, and S-332D cannot be maintained below 4.4 feet, NGVD then:
    a) When daily combined pumping at S-332B, S-332C, and S-332D is less than 1,125 cfs, S-334 may be utilized up to a maximum flow rate of 250 cfs;
    b) When daily combined pumping at S-332B, S-332C, and S-332D is less than 1,000 cfs (increased storage capacity may be available within the SDCS), S-334 may be utilized up to 400 cfs.

c) S-197 discharges may increase up to 1200 cfs when the flow through S-334 exceeds 600 cfs and the flow through S-176 exceeds 300 cfs to handle up to maximum discharges from WCA-3A to the SDCS using S-333/S-334 while retaining capacity to manage local basin runoff. For flows at S-197 exceeding 600 cfs the expectation is to maximize upstream discharges including S-194 and S-196 to the extent practicable in 24 hrs. Available capacity at S-197 will decrease to 600 cfs when S-18C HW falls below median elevation provided in Table 2B/3B. S-199 and S-200 available capacities are subject to CSSS criteria. When L-29 is maintained above 7.8 feet NGVD and a forecast of one of the extreme high water level conditions are expected, S-197 may be increased up to 2400 cfs.

Section 5.7 operations (Additional Operational Flexibility, for Extreme High Water Levels in WCA-3A) will be ceased when the WCA-3A 3-gage average is at least 0.1 feet below the Extreme High Water Action Line and not projected to rise above the line with in the next month.

5.8 OPERATIONAL FLEXIBILITY GUIDANCE

Increment 2 field test will be followed until COP is approved by SAD and is implemented. Prior to the initiation of operations under COP, the revisions made to the 2012 WCP will be fully coordinated through the NEPA process to assess the operational criteria defined in the COP. During the field testing period of up to three years, the Increment 2 criteria will have to respond to considerable variations in weather, flows, stages, and structural conditions including constructed minor and major operational features. To do so effectively, considerable operational flexibility was incorporated into the operational criteria for each of the four operational conditions detailed in Table 1 and Sections 5.1 through 5.4 of this Operational Strategy.

It has also been demonstrated that along the L-31N Canal reach, operation of the SDA has maintained the hydraulic ridge and effectively held stages in eastern ENP higher, while also simultaneously maintaining lower L-31N Canal levels to prevent or reduce seepage under the L-31N. This has been observed during recent operations. Both operational experience and modeling conducted under the 2015-2016 SFWMD South Dade Investigation study show that operational levels within the L-31N and C-111 Canals need to transition up (become higher) as conditions become dry (reducing availability of water to maintain the hydraulic ridge within the NDA/SDA). An abrupt shut down of S-332B, S-332C, and S-332D when water levels decline in

the early dry season below the flood control level causes flow to Taylor Slough from S-332D to end abruptly, as well as undesirable recession rates in ENP and undesirable seepage to the east. The following bullets describe guidance that the additional operational flexibility will use to ensure that the use of the operational flexibility does not have unintended impacts:

- When WCA-3A is in Zone A of the WCA-3A Regulation Schedule Use Upstream Discharges to Tide to Reduce Inflows. The operational flexibility included in the 2012 WCP will continue to be used to increase the delivery of water to NESRS, while also continuing to use existing ERTP operational flexibility to reduce inflows into WCA-3A by discharging water to tide as required to moderate the use of Column 2 deliveries to the SDCS. This includes short-term holding of additional water in WCA-2A to provide more opportunity to discharge excess water to tide through S-38/S-34.

- Supplemental water deliveries to Florida Bay via Taylor Slough. The volume supplied will be limited to 250 cfs or less (measured at S-337 or S-334) supplied to Taylor Slough to reduce water supply impacts. This delivery is only available while WCA-3A three gage average is above 8.0 feet, NGVD.

- Maintain Operational Flexibility of Remaining Structures in Miami-Dade County. The SFWMD retains its authority to lower the operational ranges of the remaining structures in eastern Miami-Dade County in response to rain, direct flows from Increment 2 operations, and increased seepage from Increment 2 Operations. These structures include all structures not listed in Table 7-5 of the ERTP (April 2012). Specific structures included are S-148, S-21, S-165, S-21A, S-167, S-179, S-20F, and S-178.

5.9 WATER SUPPLY OPERATIONS

Consistent with the 2015 G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy, no changes to water supply operations are proposed. It is anticipated that water supply deliveries to the SDCS will not be needed when S-356 is pumping. If S-356 is pumping and S-334 and/or S-335 are to be utilized to deliver water supply to SDCS, then S-356 will stop pumping.

5.10 HYDRAULIC TESTING FOR DETENTION AREAS

During Increment 2, there may also be hydraulic testing to support analyses undertaken to define the performance of Increment 2. Based on preliminary analysis by the SFWMD, the historical flow data for periods with low rainfall has consistently shown that, in absence of the operation of the C-111 Spreader Canal Western Project S-200 pump station, approximately half of the water pumped into the S-332D Detention Area flows as groundwater to the C-111 Canal. Hydraulic testing may include the use of S-332B North (pumps to NDA), S-332B (pumps to SDA), S-332C (pumps to SDA), and S-332D, as well as the C-111 Spreader Canal Western Project (C-111SC) S-199 and S-200 pump stations (currently operated by SFWMD) and all associated detention areas. The operational levels allowed by Increment 2 provide sufficient flexibility for the proposed hydraulic testing.

Hydraulic testing for both the L-31N and C-111 should not exceed one month duration. Hydraulic testing of the L-31N Canal should not lower the canal below the water supply level of 4.0 feet, NGVD. Hydraulic testing of the C-111 Canal should not lower the canal below the water supply level of 3.0 feet, NGVD.

5.11 OPERATIONAL STRATEGY FOR 8.5 SQUARE MILE AREA

During Increment 2, the 8.5 SMA structures (S-357 and S-357N) and Canals (C-357, C-358) will be operated and managed to provide the authorized flood mitigation.

During Increment 2, S-331 will be used to 1) provide flood risk management for the lands located along the east side of the L-31N Canal; 2) convey excess water from WCA-3A to the C-111 Detention Areas and the C-111 Canal as required by this field test; 3) provide water supply to Taylor Slough, the L-31N, and C-111 Canals; and 4) act as a partial or complete replacement to S-357 should mechanical issues, or seepage impacts limit or preclude the use of S-357.

The operational criteria in conditions 1 through 4 provide the criteria and ranges which will continue to inform development of the final operating criteria under COP. Though construction for the MWD S-357N structure may be delayed beyond the start of Increment 2, continued incremental testing of criteria with Increment 2 may still occur as long as the temporary C-358 bypass culverts installed during the 2016 Temporary Emergency Deviation from Increment 1 Field Test remains in place and fully operational. The temporary by-pass culverts provide a simple hydraulic connection without the operational flexibility which will be provided by S-357N, but the design capacity is approximately equivalent to the 325 cfs provided by S-357N.

The 2012 WCPdoes not contain water management operating criteria for the S-357Nlocated upstream of S-357, at the intersection of C-357 and the newly constructed seepage collection canal (C-358). The 2012 Design Refinement for the 8.5 SMA EA did not address water management operating criteria for S-357N or C-358 and stated that all gates would be in the closed position until a new operational protocol is developed for S-357N as part of the MWD Project.

The testing protocol for S-357N during the Increment 2 field test is designed to establish the operating criteria for S-357N. The testing protocol remain unchanged from the criteria initially proposed for Increment 1, since delays during construction have resulted in S-357N being unavailable for testing to date under Increment 1 and Increment 1.1. A newly installed water level monitoring gage (with telemetry) upstream of S-357N will be observed during S-357 pumping. The testing protocol for S-357N will be an iterative approach consisting of 4 to 5 weeks of gate changes during the wet season. The S-357N gate changes will test the hydrologic response of the system to minor adjustments in operations at S-357N. S-357N consists of 3 box type gated concrete control structures. Each structure will be equipped with a manually operated double leaf slide gate system. The double leaf slide gate system was designed to accommodate variable flow regimes: (1) weir flows to by lowering the top gate; (2) orifice flows by raising the lower gate; or (3) submerged or un-submerged, uncontrolled flows by raising both the top and bottom gates above the top (crown) of the culvert.

As a prerequisite to raising the L-29 Canal constraint above 7.8 feet, NGVD (Increment 1.2 upper limit), the C-111 South Dade Project NDA will be functionally operable to receive and store inflows from S-357 including modification of the S-360W outlet weir for the 8.5 SMA detention area. Operating criteria for the S-357N will be further developed and refined during Increment 2 for inclusion in the COP.

Operation Limit for this Test Phase

The following operational limits will be maintained or relaxed during test phases conducted concurrent with Increment 2:

- No limit to S-357 pumping (up to 575 cfs); to allow testing of C-358 and S-357N.
- Stage limit of 8.5 feet, NGVD within the Northen Detention Area (NDA1W)
- If there is insufficient water for sustained pumping with two units and:
  - (1a) Angels < 6.0 feet, NGVD, C-357 will be maintained between 5.5 to 6.0 feet, NGVD.
  - (1b) 6.0 ≤ Angels < 6.4 feet, NGVD, C-357 will be maintained between 5.0 and 6.0 feet, NGVD
  - (1c) Angels ≥ 6.4 feet, NGVD, C-357 will be maintained between 4.5 and 5.5 feet, NGVD
  - (1d) Angels ≥ 6.7 feet, NGVD and LPG2 ≥ 6.6 feet, NGVD, C-357 will be maintained between 4.0 and 5.0 feet, NGVD until LPG2 < 6.4 feet, NGVD
  - (1f) Angels ≥ 7.2 feet, NGVD, and LPG2 ≥ 6.6 feet, NGVD for 7 days or more, C-357 will be maintained between 3.5 and 4.5 feet, NGVD until LPG2 < 6.4 feet, NGVD
  - (2) LPG2 ≥ 7.0 feet, NGVD for more than 24 hours, C-357 will be maintained between 3.5 and 4.5 feet, NGVD until LPG2 < 6.4 feet, NGVD
- It is preferred that sustained pumping can be achieved while not lowering the C-357 below 5.0 feet, NGVD. If this flexibility is used the stage in the L-31N Canal between G-211 and S-331 should be allowed to rise to the top half of the operation range. Operational flexibility under wet conditions could allow S-357 stage range to be lowered to 5.0 to 3.0 feet, NGVD.
- During testing phases S-331 HW operational range will lower as the stage at LPG2 rises as long as there is downstream capacity. Providing capacity for the operational ranges prescribed below will be a higher priority than regulatory releases from WCA-3A to S-331.
  - (1) When 6.0 < LPG2 < 6.5 then S331 HW will be maintained between 4.5 and 4.0
  - (2) When 5.5 < LPG2 < 6.0 then S331 HW will be maintained between 5.0 and 4.5.
  - (3) When LPG2 < 5.5 then S331 HW will be maintained between 6.0 and 5.0.
- Limit sustained flow from S-357N to less than 200 cfs (40 percent of the total capacity of S-357). It is generally expected that S-357N discharge will be less than 100 cfs.

When there is sufficient excess water for sustained pumping with one to two units at S-357 (e.g. 75, 125, 200, or 250) a test phase may be initiated. Each Test Phase should be at least four weeks in duration to gain experience over a representative range of conditions. A Test Phase Form summarizing the criteria, desired pumping rates, constraints, desired duration, initial setting for S-357N, strategy for adjusting S-357N in response to changes, and the operational monitoring required will be prepared for each test in advance. During conditions with sufficient excess water at least one test will try to achieve sustained pumping with two units at S-357 (either two diesel

pump units for a total discharge rate of about 250 cfs, or one diesel pump unit and one electric pump for a total discharge of about 200 cfs).

Test Phases should be designed and executed to achieve the required groundwater control (prescribed levels above) and to prevent daily average discharges through S-357N exceeding 200 cfs (40% of S-357 total capacity).

Example of a Test Phase

During conditions with sufficient excess water at least one test will try to achieve sustained pumping with two units at S-357 (either two diesel pump units for a total discharge rate of about 250 cfs or one diesel pump unit and one electric pump for a total discharge of about 200 cfs). The duration of this test will be four to six weeks. The water manager will determine the sustainable pumping rate and try to keep it unchanged. However, pumping between 200 and 250 cfs is allowed. Pumping should be reduced from 250 to 200 if the C-357 stage falls below 5.7 for more than 24 hours. If the C-357 canal stage falls below 5.5 feet for more than 24 hours, then S-357 should be reduced (e.g. to 200 cfs, or 125 cfs, or 75 cfs) to allow the C-357 canal stage to rise to above 5.7, and this reduced pumping rate should be maintained until water levels rise enough to support the targeted pumping rate.

The three upper (weir) gates at S-357N should be opened (lowered) one foot from about 6.5 feet to 5.5 feet, NGVD. These opening are expected to result in a sustained discharge of about 80 cfs. When sufficiently steady conditions occur, flow measurements at S-357 should be scheduled to the extent they are required to collect enough data to develop a refined flow equation for S-357N. If the discharge from S-357N is insufficient to provide water levels that meet (or are expected to meet) the prescribed levels above criteria within three days, then the openings at S-357N should be increased by either 0.5 or 1.0 feet based on what is expected to achieve compliance with the prescribed levels within three days. Conversely, if the S-357N discharges are resulting in an undesirable/untenable drawdown then the S-357N opening should be reduced by raising the weirs in 0.2 feet increments. Subsequent to the initial changes, based upon discussions with SFWMD and ENP, the USACE shall determine through iterative changes fixed weir elevations which will result in adequate levels.

TABLE 5: HYDRO-METEOROLOGIC MONITORING LOCATIONS

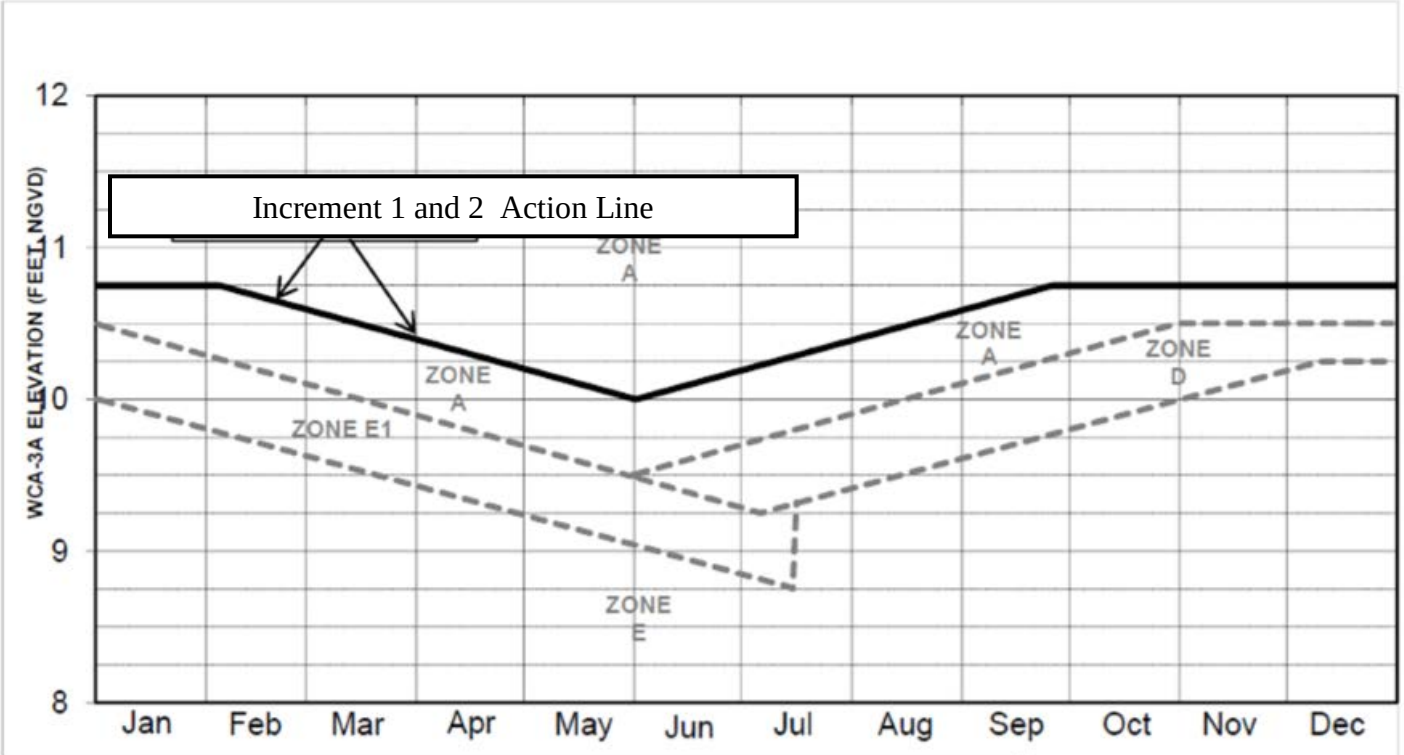
Feature	Parameter	Purpose
S-12A	HW, TW, Q	Flow volume
S-12B	HW, TW, Q	Flow volume
S-12C	HW, TW, Q	Flow volume
S-12D	HW, TW, Q, Precipitation	Flow volume
S-343A	HW, TW, Q	Flow volume
S-343B	HW, TW, Q	Flow volume
S-344	HW, TW, Q	Flow volume
SRS1	Stage	Depth, duration, recession
3B-71	Stage	Depth, duration, recession
S-151	HW, TW, Q	Flow volume (to L-31N/S-356 or Taylor Slough)

S-337	HW, TW, Q	Flow volume (to L-31N/S-356 or Taylor Slough)
S-335	HW, TW, Q	Flow volume (to L-31N/S-356 or Taylor Slough)
S-333	HW, TW, Q	Canal level, flow volume
S-334	HW, TW, Q	Canal level, flow volume
S-336	HW, TW, Q	Canal level, flow volume
S-355A	HW, TW, Q	Canal level, flow volume
S-355B	HW, TW, Q	Canal level, flow volume
S-356	HW, TW, Q	Canal level, flow volume
G-3273	Stage	Depth, duration, recession
S-357N	HW, Q	Canal level, flow volume
S-357	HW, TW, Q	Canal level, flow volume
S-331	HW, TW, Q, Precipitation	Canal level, flow volume
S-338	HW, TW, Q	Canal level, flow volume
S-332B	HW, TW, Q	Canal level, flow volume
S-332C	HW, TW, Q	Canal level, flow volume
S-194	HW, TW, Q	Canal level, flow volume
S-196	HW, TW, Q	Canal level, flow volume
S-332D	HW, TW, Q	Canal level, flow volume
S-328	HW, TW, Q	Flow volume
RG4	Stage	Depth, duration, recession
NTS18	Stage	Depth, duration, recession
S-332DX1	HW, TW, Q	Depth, duration, recession, flow volume
G-3574	Stage	Depth, duration, recession
G-3576	Stage	Depth, duration, recession
G-3577	Stage	Depth, duration, recession
G-3578	Stage	Depth, duration, recession
G-3272	Stage	Depth, duration, recession
G-596	Stage	Depth, duration, recession
G-3626	Stage	Depth, duration, recession
G-3627	Stage	Depth, duration, recession
Feature	**Parameter**	**Purpose**
G-3628	Stage	Depth, duration, recession
G-3437	Stage	Depth, duration, recession
Angel's Well	Stage	Depth, duration, recession
LPG1	Stage	Depth, duration, recession
LPG2	Stage	Depth, duration, recession
LPG3	Stage	Depth, duration, recession
LPG5	Stage	Depth, duration, recession
LPG7	Stage	Depth, duration, recession
LPG8	Stage	Depth, duration, recession
LPG11	Stage	Depth, duration, recession
LPG12	Stage	Depth, duration, recession
LPG13	Stage	Depth, duration, recession

LPG14	Stage	Depth, duration, recession
LPG15	Stage	Depth, duration, recession
NE1	Stage	Depth, duration, recession
NE2	Stage	Depth, duration, recession
NE4	Stage	Depth, duration, recession
G-3557	Stage	Depth, duration, recession
G-3558	Stage	Determine duration, recession rates
S-177	HW, TW, Q	Canal level, flow volume
S-178	TW, Q	Canal level, flow volume
S-18C	HW, TW, Q, Precipitation	Canal level, flow volume
S-197	Q	flow volume
G-613	Stage	Depth, duration, recession
G-864A	Stage	Depth, duration, recession
G-3336	Stage	Depth, duration, recession
G-3338	Stage	Depth, duration, recession
G-3350	Stage	Depth, duration, recession
G-3355	Stage	Depth, duration, recession
G-3620	Stage	Depth, duration, recession
G-3901	Stage	Depth, duration, recession
G-789	Stage	Depth, duration, recession
ENP-TSB	Stage	Depth, duration, recession
C-358	Stage	Canal level
G-211	HW, TW, Q	Canal level, flow volume
S-199	HW, TW, Q	Canal level, flow volume
S-200	HW, TW, Q	Canal level, flow volume

Notes: HW– headwater stage; TW– tailwater stage; Q– discharge (cfs)

Figure 1: WCA-3A Regulation Schedule with the Increment 1 and 2 Action Line



NOTES:

WCA-3A Elevation is the average of Sites 63, 64 and 65.

Increment 1 and 2 Action Line is not part of the 2012 WCA-3A Interim Regulation Schedule. For ease of reference, the Increment 1 and 2 Action Line is shown with the 2012 WCA-3A Interim Regulation Schedule Zones.

The Increment 1 and 2 Action Line to be referenced as indicated in the G-3273 Relaxations/S-356 Fielt Test and S-357N Operational Strategy.

CENTRAL AND SOUTHERN PROJECT
2018 L-29 Canal and G-3273 Constraint Relaxations, Including Northern Detention Area (NDA) Revised Operational Strategy

Increment 1 and 2 Action Line

DATED: August 2017
US ARMY ENGINEER DISTRICT
JACKSONVILLE, FLORIDA

Figure 2: WCA-3A 3-Gage Average with the Extreme High Water Action Line

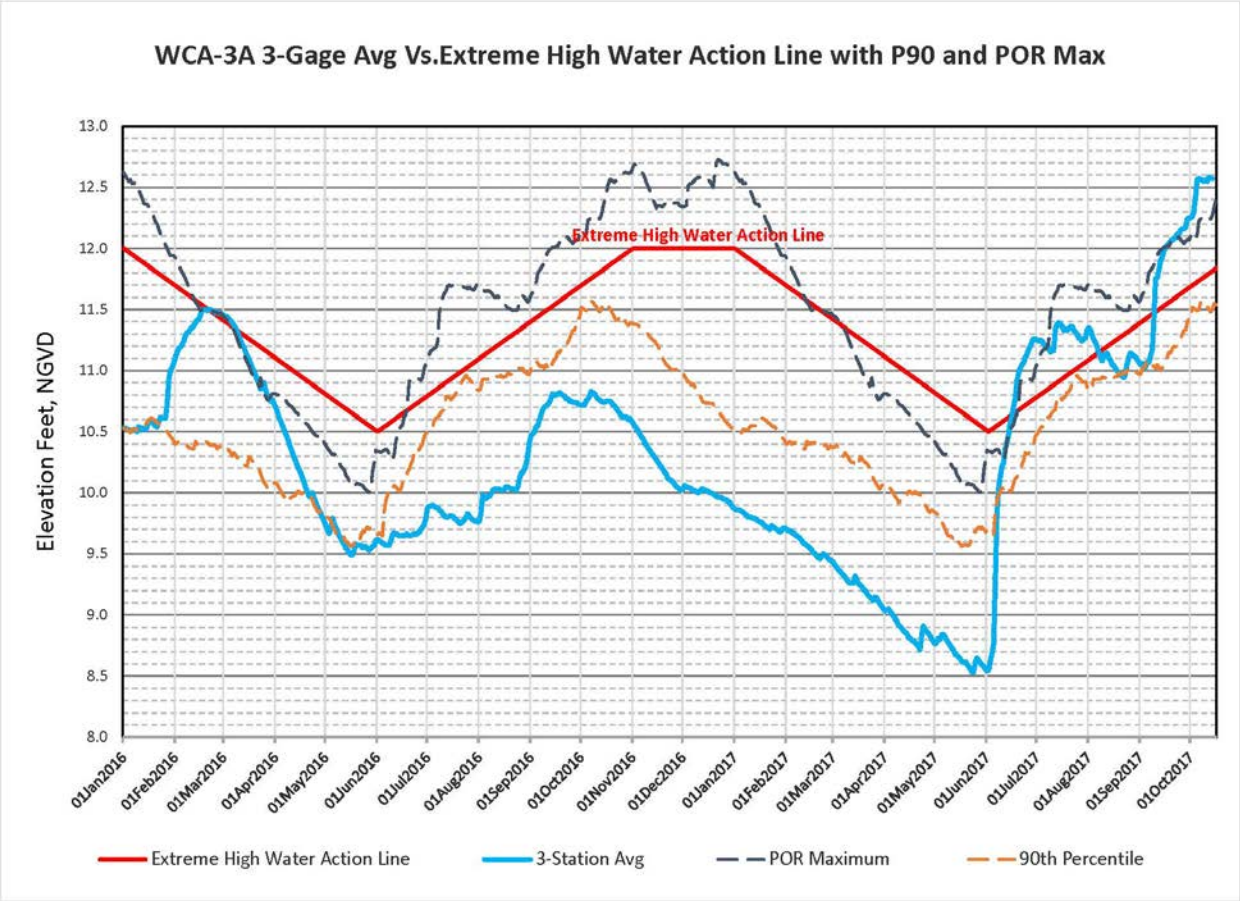


Figure 3: Historical WCA-3A 3-Gage Average with the Extreme High Water Action Line

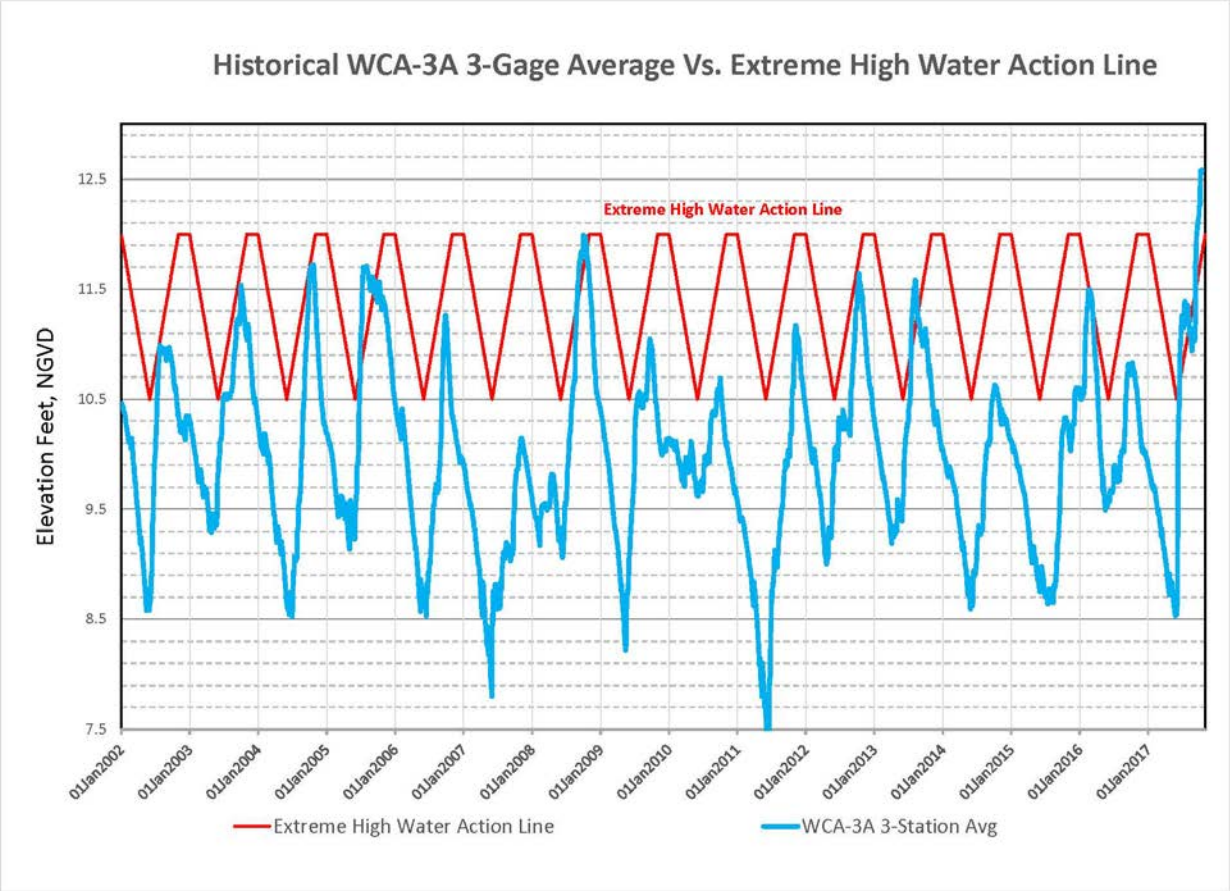
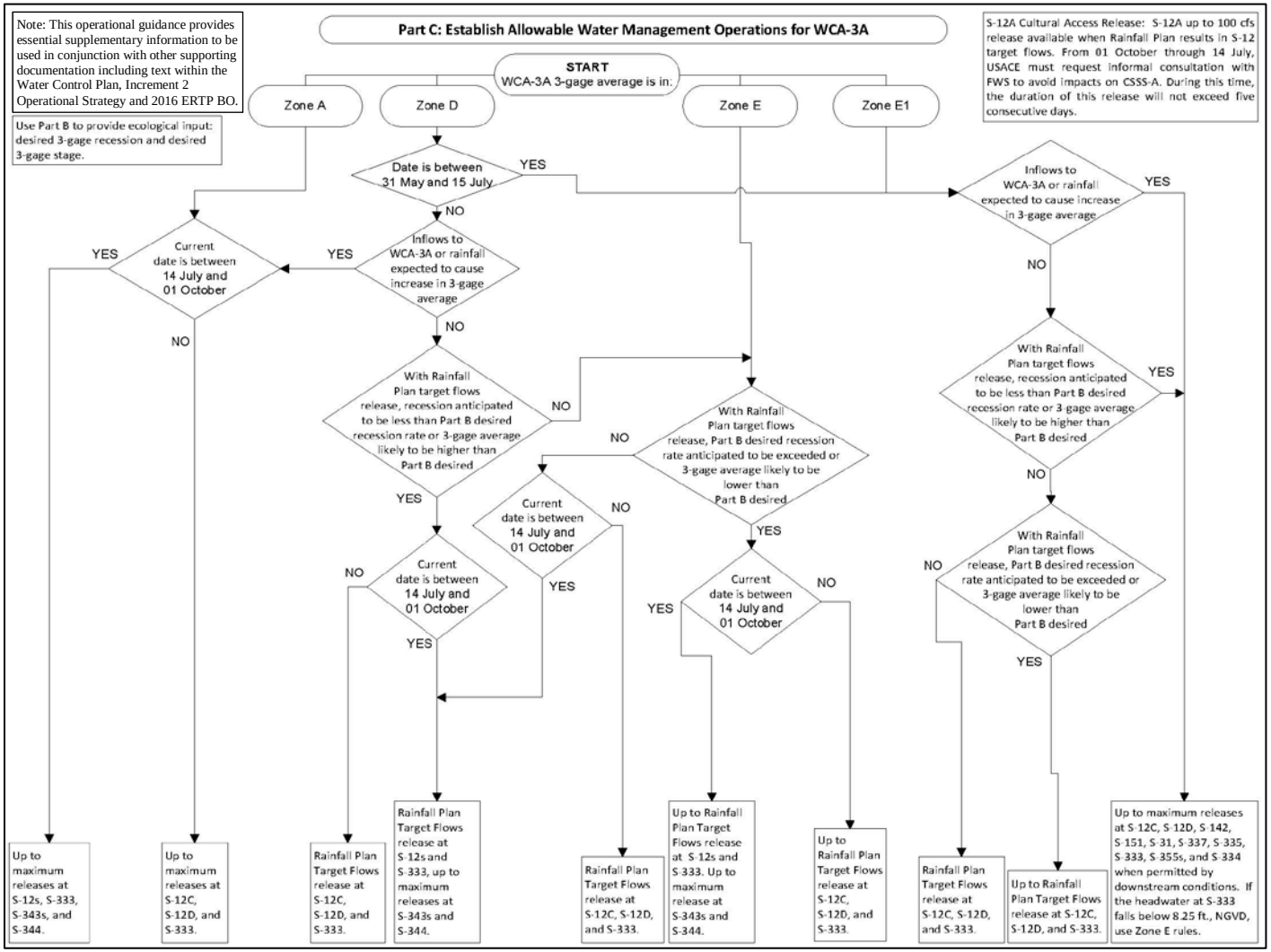


Figure 4: WCA-3A Regulation Schedule Revised Figure 7-5C



<u>Note:</u> S-12A and S-12B operations in October and November are subject to WCA-3A high water strategy (please refer to Table 1)

Figure 5: Hydro-meteorologic Monitoring Location

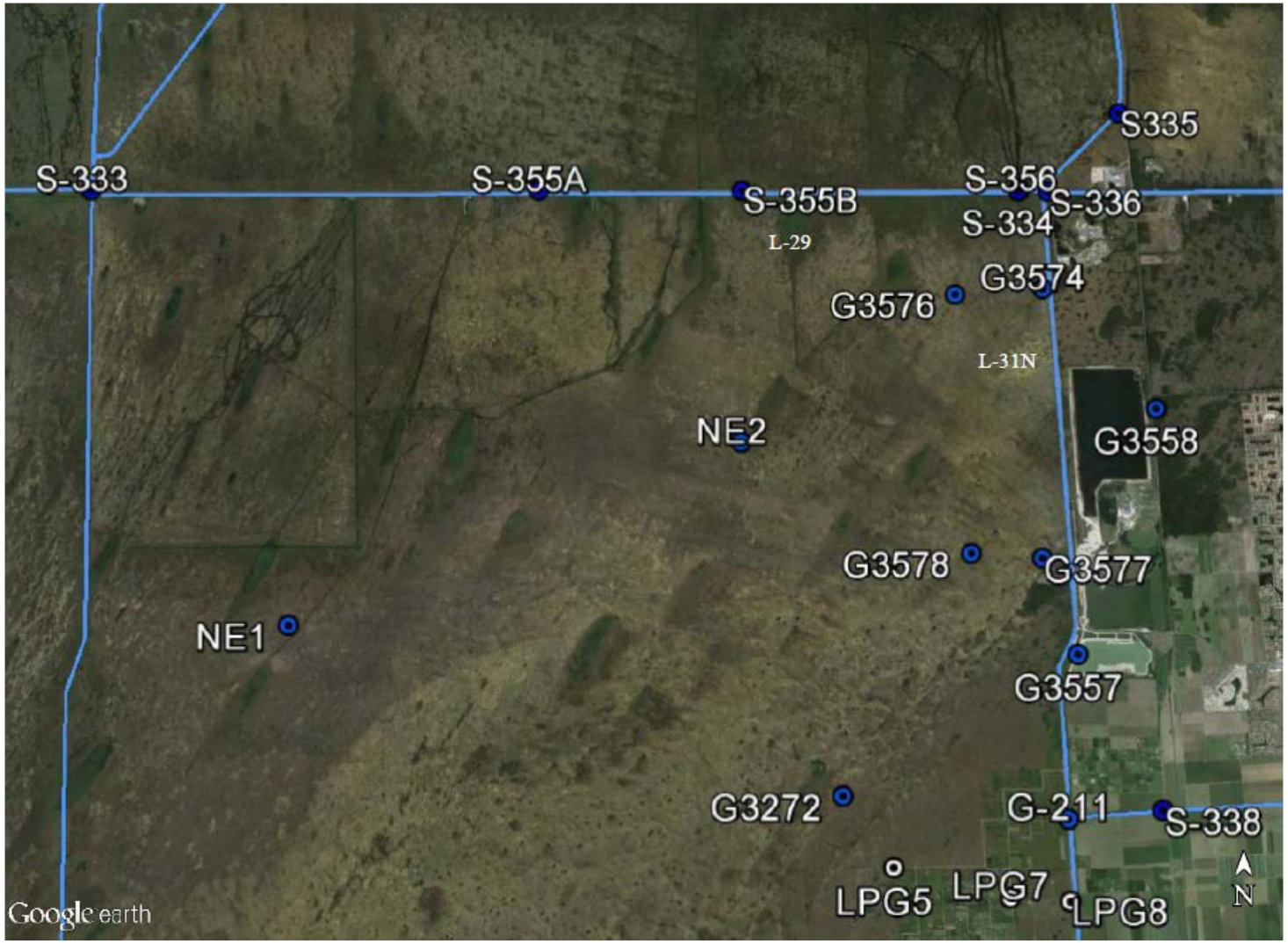


Figure 6: Hydro-meteorologic Monitoring Location (continued)

Figure 7: Hydro-meteorologic Monitoring Location (continued)

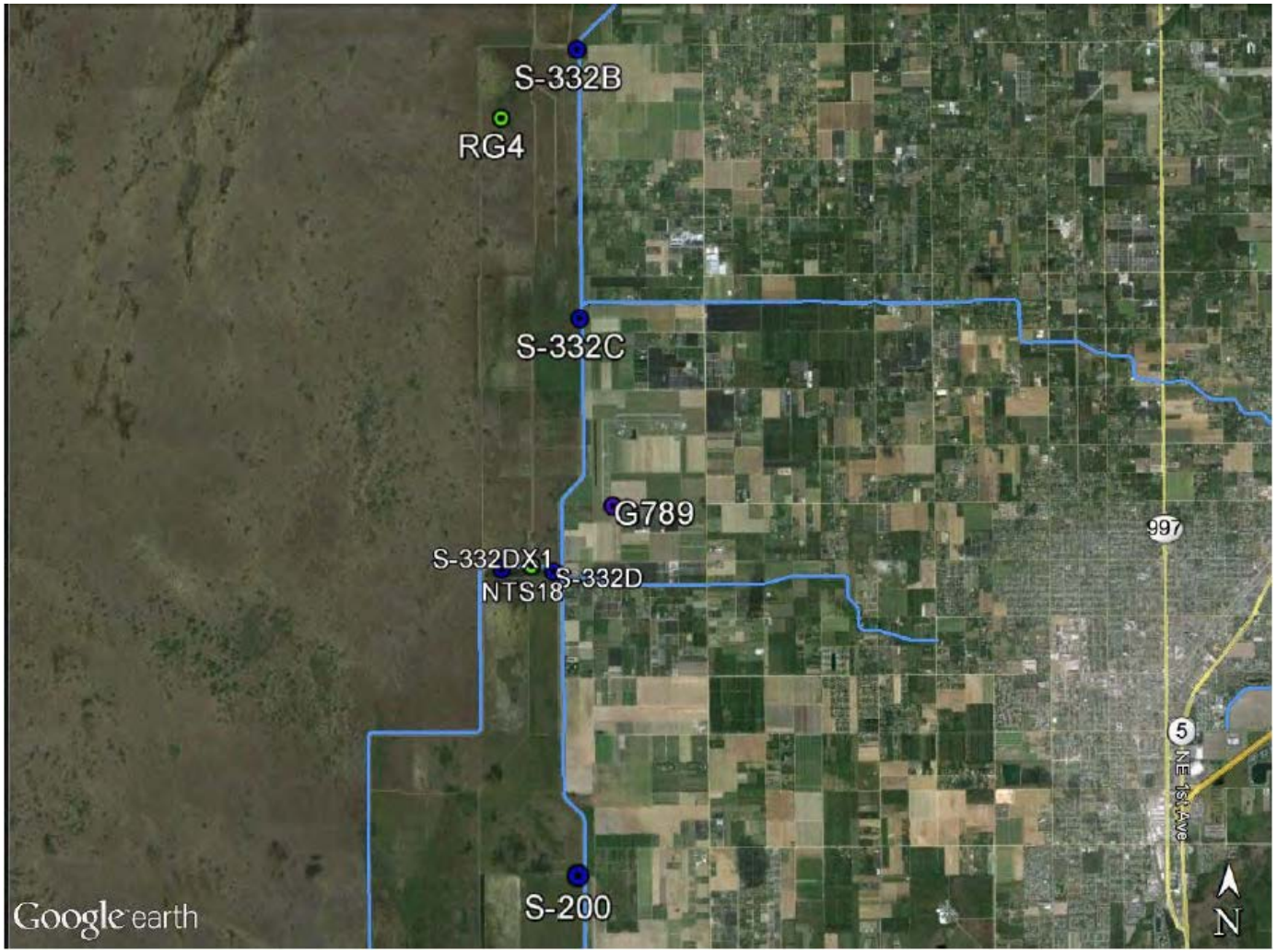
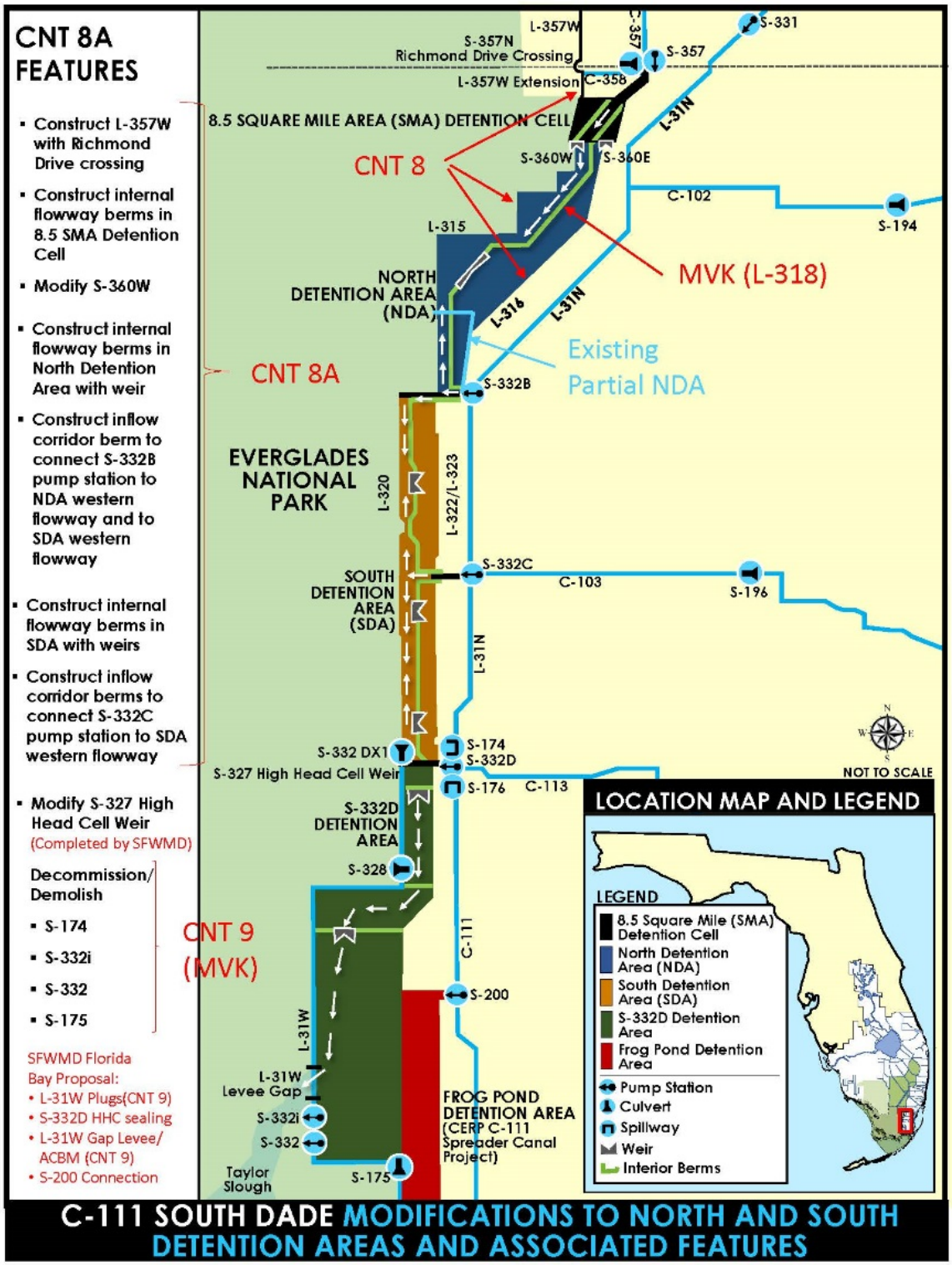


Figure 8: Hydro-meteorologic Monitoring Locations (continued)

Figure 9: C-111 South Dade Contracts 8 and 8A Features



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

NOV 0 1 2017

Mr. Pedro Ramos
Superintendent
Everglades National Park
40001 State Road 9336
Homestead, Florida 33034-6733

Re: L-29 Canal and G-3273 Constraint Relaxation Revised Operational Strategy (Increment 2)

Dear Mr. Ramos:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is studying the environmental effects for a deviation to Water Conservation Area 3 (WCA), Everglades National Park (ENP) to South Dade Conveyance System (SDCS) Water Control Plan (Corps 2012). The proposed action (hereafter referred to as Increment 2) is an update to Increment 1.1 and 1.2 (G-3273/S-356 Field Test and S-357N Operational Strategy Increment 1 Plus), which was initiated on February 21, 2017 and is also a deviation to the plan. The Increment 2 field test is being conducted as part of a series of related, sequential efforts that will result in a comprehensive integrated water control plan, referred to as the Combined Operating Plan (COP), for the operation of water management infrastructure connected to the Modified Water Deliveries (MWD) to ENP and C-111 South Dade Projects. The purpose of Increment 2 is to increase restoration flows to Northeast Shark River Slough (NESRS) in ENP while ensuring flood mitigation within the developed East Everglades area (also referred to as the 8.5 Square-Mile Area). The implementation of Increment 2 is a mandated requirement of the July 22, 2016 Everglades Restoration Transition Plan (ERTP) U.S. Fish and Wildlife Service Biological Opinion. Specific modifications involve raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodectic Vertical Datum of 1929 (NGVD), while replacing the G-3273 stage constraint for S-333 with local gages that trigger flood mitigation actions in 8.5 SMA and utilize S-356 for control of seepage into the L-31N Canal.

As the project is a planned deviation from the Corps' current water regulation schedule, it is an undertaking defined by Section XIV (A) Deviations under the ERTP Programmatic Agreement (PA) entitled: *Programmatic Agreement Among The U.S. Army Corps Of Engineers, The Advisory Council On Historic Preservation, and The Florida State Historic Preservation Officer Regarding The Everglades Restoration Transition Plan For Features of The Central and Southern Florida Project In Southern Florida*. This PA was signed by the Florida State Historic Preservation Officer on August 8, 2012 and remains in effect in regards to the project for which it was designed. Under this section of the PA, the Corps has been actively consulting with interested parties in conjunction with its obligations under Section 106 of the National Historic Preservation Act and the ERTP PA.

Based on hydrologic modeling of the alternatives considered as part of the Increment 2 evaluation, the proposed action has the potential to change water levels within the area of potential effects (APE) as a result of raising the L-29 Canal Stage maximum operation limit from 7.8 feet, NGVD to 8.5 feet, NGVD. During the Corps' consultation efforts, some interested parties have raised concerns about potential impacts of increased water deliveries on cultural resources. In order to address expressed concerns, the Corps developed a detailed analysis of the potential effects of Increment 2 on cultural resources using the Everglades Depth Estimation Network (EDEN) and the Regional Simulation Model for the Everglades and the Lower East Coast Service Areas hydrologic modeling.

As a result of this analysis, Increment 2 has the potential to produce slight water level increases in ENP and minor decreases in WCA 3A during wet hydrologic conditions; however, significant changes from current conditions are not expected. Differences in water levels from the existing condition (Increment 1.1 and 1.2) are projected to vary from north to south. In northern WCA 3A, implementation of Increment 2 may decrease water levels an average of 0.5 inches. In southern WCA 3A, implementation of Increment 2 may decrease water levels an average of 1.2 inches. During wet hydrologic conditions, Increment 2 would result in drier conditions within northwestern ENP due to the continued closure of the S-12A, S-12B, S-343A, S-343B, and S-344 structures (as per 2016 ERTP BO); however, the remainder of ENP would experience increased flows. Water levels may increase an average of 2.2 inches in northern and central ENP, and 0.1 inches in southern and western ENP as a result of implementation of Increment 2.

Overall, the analysis predicts minimal changes to the average water levels within WCA 3A and ENP. Increment 2 will continue to include the seasonally varying WCA 3A water level of 10.0 to 10.75 feet, NGVD, as measured by the 3-gage average, previously defined under the Increment 1 and Increment 1.1 and 1.2 water control plans. Increment 2 also includes additional operational flexibility by inclusion of an Extreme High Water Action Line to allow for a rapid response to extreme high water levels in WCA 3A, which would help to prevent conditions of prolonged periods of inundation within WCA 3A. Prolonged periods of inundation result in negative impacts to tree islands, which are intrinsically connected to archaeological sites in the Everglades. Increment 2 also has the potential to provide minor beneficial effects on tree islands within ENP. Improved hydroperiods within NESRS and ENP have the potential to aid in the restoration of tree islands and stabilize associated cultural resources.

It is important to note that hydrologic changes to tree islands and their associated cultural resources within the APE are only expected during wet hydrologic conditions. During dry hydrologic conditions regional water availability would generally enable raising the L-29 Canal maximum operating limit above 8.3 feet, NGVD for limited durations of 0-1 months. The above referenced modeling of tree islands only predicts water levels that may be expected when the L-29 Canal stage is held at 8.5 feet, NGVD on a permanent basis. Therefore, changes to water levels expected to be less than those discussed above.

However, any changes to water levels as a result of Increment 2 are expected to be within the range of levels experienced historically. Tree islands that have not been subject to seasonal inundation historically will not be inundated as a result of Increment 2.

Based upon this analysis, the limited duration of the field test, and as no inundation of tree islands is expected other than those typically experienced during seasonal operations, implementation of Increment 2 is anticipated to have no adverse effects on cultural resources. These factors combine to limit antecedent conditions that could result in any measurable effects, as well as limit flow velocity to avoid any potential for erosion. In addition, as part of the ERTP PA, the Corps is currently monitoring water levels at 394 known tree islands (112 of which contain known cultural resources) within the APE. This monitoring will continue throughout the operational field test to provide further information to inform future water management plans and ensure oversight of this determination.

In summary, the Corps has determined that implementation of Increment 2 will have no adverse effects on historic properties listed or eligible for listing in the National Register of Historic Places. 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 your comments on the determination of no adverse effect. If there are any questions or comments, please contact Ms. Meredith Moreno at (904) 232-1577 or by e-mail at Meredith.A.Moreno@usace.army.mil.

Sincerely,

Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch

cc:
Penelope Del Bene, Chief, Cultural Resources, Everglades National Park, 40001 State Road 9336 Homestead, Florida 33034-6733

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

NOV 0 1 2017

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

Re: L-29 Canal and G-3273 Constraint Relaxation Revised Operational Strategy (Increment 2)

Dear Mr. Dayhoff:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is studying the environmental effects for a deviation to Water Conservation Area 3 (WCA), Everglades National Park (ENP) to South Dade Conveyance System (SDCS) Water Control Plan (Corps 2012). The proposed action (hereafter referred to as Increment 2) is an update to Increment 1.1 and 1.2 (G-3273/S-356 Field Test and S-357N Operational Strategy Increment 1 Plus), which was initiated on February 21, 2017 and is also a deviation to the plan. The Increment 2 field test is being conducted as part of a series of related, sequential efforts that will result in a comprehensive integrated water control plan, referred to as the Combined Operating Plan (COP), for the operation of water management infrastructure connected to the Modified Water Deliveries (MWD) to ENP and C-111 South Dade Projects. The purpose of Increment 2 is to increase restoration flows to Northeast Shark River Slough (NESRS) in ENP while ensuring flood mitigation within the developed East Everglades area (also referred to as the 8.5 Square-Mile Area). The implementation of Increment 2 is a mandated requirement of the July 22, 2016 Everglades Restoration Transition Plan (ERTP) U.S. Fish and Wildlife Service Biological Opinion. Specific modifications involve raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodectic Vertical Datum of 1929 (NGVD), while replacing the G-3273 stage constraint for S-333 with local gages that trigger flood mitigation actions in 8.5 SMA and utilize S-356 for control of seepage into the L-31N Canal.

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Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

NOV 0 1 2017

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

Re: L-29 Canal and G-3273 Constraint Relaxation Revised Operational Strategy (Increment 2)

Dear Dr. Backhouse:

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Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch

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

NOV 01 2017

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

Re: L-29 Canal and G-3273 Constraint Relaxation Revised Operational Strategy (Increment 2)

Dear Dr. Parsons:

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Sincerely,

Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch

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

NOV 14 2017

To Whom It May Concern,

Pursuant to the National Environmental Policy Act (NEPA) and the U.S. Army Corps of Engineers (Corps) Regulation 33 CFR 230.11, this letter constitutes the Notice of Availability of the Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) for a deviation to the current Water Conservation Areas (WCAs), Everglades National Park (ENP), and ENP to South Dade Conveyance System Water Control Plan. The Corps is proposing to raise the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodectic Vertical Datum of 1929; replace the G-3273 stage constraint for S-333 inflows to Northeast Shark River Slough (NESRS) with local gages that trigger flood mitigation actions in 8.5 Square Mile Area and continue utilizing S-356 for control of seepage into the L-31N Canal. Implementation of the Proposed Action is anticipated to increase the availability of water deliveries from WCA 3A to ENP through NESRS for the benefit of natural resources. The Increment 2 Field Test is being conducted as part of a series of related, sequential efforts that will result in a comprehensive integrated water control plan, referred to as the Combined Operational Plan for the operation of water management infrastructure connected to the Modified Water Deliveries and C-111 South Dade Projects. The Proposed Action is located within the Everglades of southeastern Miami-Dade County.

The EA and Proposed FONSI are available for your review on the Corps Environmental planning website and the project website:

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

http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/G3273andS356PumpStationFieldTest.aspx

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

Miami-Dade Public Library
Main Branch
101 West Flagler Street
Miami, FL 33130

Miami-Dade Public Library
Homestead Branch
700 N Homestead Blvd.
Homestead, FL 33030

Any comments you may have must be submitted in writing to the letterhead address within 60 days of the date of this letter. Questions concerning the Increment 2 Field Test can be submitted to Mrs. Melissa Nasuti at the letterhead address or to Melissa.A.Nasuti@usace.army.mil. Mrs. Nasuti may also be reached by telephone at 904-232-1368.

Sincerely,

Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch

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

NOV 14 2011

Chris Stahl, Coordinator
Florida State Clearinghouse
Florida Department of Environmental Protection
2600 Blair Stone Road, M.S. 47
Tallahassee, FL 32399-2400

Mr. Stahl

Pursuant to the National Environmental Policy Act (NEPA) and the U.S. Army Corps of Engineers (Corps) Regulation 33 CFR 230.11, this letter constitutes the Notice of Availability of the Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) for a deviation to the current Water Conservation Areas (WCAs), Everglades National Park (ENP), and ENP to South Dade Conveyance System Water Control Plan. The Corps is proposing to raise the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodectic Vertical Datum of 1929; replace the G-3273 stage constraint for S-333 inflows to Northeast Shark River Slough (NESRS) with local gages that trigger flood mitigation actions in 8.5 Square Mile Area and continue utilizing S-356 for control of seepage into the L-31N Canal. Implementation of the Proposed Action is anticipated to increase the availability of water deliveries from WCA 3A to ENP through NESRS for the benefit of natural resources. The Increment 2 Field Test is being conducted as part of a series of related, sequential efforts that will result in a comprehensive integrated water control plan, referred to as the Combined Operational Plan for the operation of water management infrastructure connected to the Modified Water Deliveries and C-111 South Dade Projects. The Proposed Action is located within the Everglades of southeastern Miami-Dade County.

The Corps is requesting a consistency determination pursuant to the Coastal Zone Management Act through the circulation of this EA. The EA and Proposed FONSI are available on the Corps Environmental planning website and the project website:

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

http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/G3273andS356PumpStationFieldTest.aspx

Any comments you may have must be submitted in writing to the letterhead address within 60 days of the date of this letter. Questions concerning the Increment 2 Field Test can be submitted to Mrs. Melissa Nasuti at the letterhead address or to Melissa.A.Nasuti@usace.army.mil. Mrs. Nasuti may also be reached by telephone at 904-232-1368.

Sincerely,

Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch

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

NOV 1 4 2017

Miami-Dade Public Library
Main Branch
101 West Flagler Street
Miami, FL 33130

Dear Librarian:

Enclosed is a copy of the Environmental Assessment (EA) and Proposed Finding of No Significant Impact for the Increment 2 Field Test. The Increment 2 Field Test is being conducted as part of a series of related, sequential efforts that will result in a comprehensive integrated water control plan, referred to as the Combined Operational Plan for the operation of water management infrastructure connected to the Modified Water Deliveries and C-111 South Dade Projects. The proposed action within the EA would occur within the Everglades of southeastern Florida in Miami-Dade County.

This EA is being provided for public review pursuant to the National Environmental Policy Act and the U.S. Army Corps of Engineers Regulation 33 CFR 230.11. 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 the copy of the report may be disposed. Thank you for your assistance in this matter. If you have any questions or need further information, please contact Mrs. Melissa Nasuti at 904-232-1368.

Sincerely,

Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch

Enclosure

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

NOV 1 4 2017

Miami-Dade Public Library
Homestead Branch
700 N Homestead Blvd
Homestead, FL 33030

Dear Librarian:

Enclosed is a copy of the Environmental Assessment (EA) and Proposed Finding of No Significant Impact for the Increment 2 Field Test. The Increment 2 Field Test is being conducted as part of a series of related, sequential efforts that will result in a comprehensive integrated water control plan, referred to as the Combined Operational Plan for the operation of water management infrastructure connected to the Modified Water Deliveries and C-111 South Dade Projects. The proposed action within the EA would occur within the Everglades of southeastern Florida in Miami-Dade County.

This EA is being provided for public review pursuant to the National Environmental Policy Act and the U.S. Army Corps of Engineers Regulation 33 CFR 230.11. 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 the copy of the report may be disposed. Thank you for your assistance in this matter. If you have any questions or need further information, please contact Mrs. Melissa Nasuti at 904-232-1368.

Sincerely,

Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch

Enclosure

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

NOV 14 2017

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

Dear Chairman Cypress:

Pursuant to the National Environmental Policy Act (NEPA) and the U.S. Army Corps of Engineers (Corps) Regulations (33 CFR 230.11), this letter constitutes the Notice of Availability of the Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) for a deviation to the current Water Conservation Areas (WCAs), Everglades National Park (ENP), and ENP to South Dade Conveyance System Water Control Plan. The Corps is proposing to raise the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodectic Vertical Datum of 1929; replace the G-3273 stage constraint for S-333 inflows to Northeast Shark River Slough (NESRS) with local gages that trigger flood mitigation actions in 8.5 Square Mile Area and continue utilizing S-356 for control of seepage into the L-31N Canal. Implementation of the Proposed Action is anticipated to increase the availability of water deliveries from WCA 3A to ENP through NESRS for the benefit of natural resources. The Increment 2 Field Test is being conducted as part of a series of related, sequential efforts that will result in a comprehensive integrated water control plan, referred to as the Combined Operational Plan for the operation of water management infrastructure connected to the Modified Water Deliveries and C-111 South Dade Projects. The Proposed Action is located within the Everglades of southeastern Miami-Dade County.

The EA and Proposed FONSI are available for your review on the Corps Environmental planning website and the project website:

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

http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/G3273andS356PumpStationFieldTest.aspx

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

Miami-Dade Public Library
Main Branch
101 West Flagler Street
Miami, FL 33130

Miami-Dade Public Library
Homestead Branch
700 N Homestead Blvd.
Homestead, FL 33030

We intend to pursue an open and public process and recognize the obligations that the Corps has to its tribal partners. The Corps is currently coordinating this action with the appropriate staff members and will continue to consult with your staff through implementation of this project. Any comments you may have must be submitted in writing to the letterhead address within 60 days of the date of this letter. If you have any questions regarding the information in this letter, please feel free to contact me or you may contact Melissa Nasuti at 904-232-1368 or by email at melissa.a.nasuti@usace.army.mil.

Sincerely,

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

Encl

cc:
Fred Dayhoff, NAGPRA Representative, Consultant to Miccosukee Tribe, HC 61 SR 68 Old Loop Road, Ochopee, FL 34141
Kevin Donaldson, Real Estate Services, Miccosukee Tribe of Indians of Florida, P.O. Box 440021, Tamiami Station, Miami, FL 33144
Gene Duncan, Director Water Resources Department, Miccosukee Tribe of Indians of Florida, P.O. Box 440021, Tamiami Station, Miami, FL 33144
Craig Van der Heiden, Ecological Resources Coordinator, 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

NOV 14 2017

The Honorable Marcellus Osceola Jr.
Chairman, Seminole Tribe of Florida
6300 Stirling Road
Hollywood, FL 33024

Dear Chairman Osceola:

Pursuant to the National Environmental Policy Act (NEPA) and the U.S. Army Corps of Engineers (Corps) Regulations (33 CFR 230.11), this letter constitutes the Notice of Availability of the Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) for a deviation to the current Water Conservation Areas (WCAs), Everglades National Park (ENP), and ENP to South Dade Conveyance System Water Control Plan. The Corps is proposing to raise the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodectic Vertical Datum of 1929; replace the G-3273 stage constraint for S-333 inflows to Northeast Shark River Slough (NESRS) with local gages that trigger flood mitigation actions in 8.5 Square Mile Area and continue utilizing S-356 for control of seepage into the L-31N Canal. Implementation of the Proposed Action is anticipated to increase the availability of water deliveries from WCA 3A to ENP through NESRS for the benefit of natural resources. The Increment 2 Field Test is being conducted as part of a series of related, sequential efforts that will result in a comprehensive integrated water control plan, referred to as the Combined Operational Plan for the operation of water management infrastructure connected to the Modified Water Deliveries and C-111 South Dade Projects. The Proposed Action is located within the Everglades of southeastern Miami-Dade County.

The EA and Proposed FONSI are available for your review on the Corps Environmental planning website and the project website:

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

http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/G3273andS356PumpStationFieldTest.aspx

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Miami-Dade Public Library
Main Branch
101 West Flagler Street
Miami, FL 33130

Miami-Dade Public Library
Homestead Branch
700 N Homestead Blvd.
Homestead, FL 33030

We intend to pursue an open and public process and recognize the obligations that the Corps has to its tribal partners. The Corps is currently coordinating this action with the appropriate staff members and will continue to consult with your staff through implementation of this project. Any comments you may have must be submitted in writing to the letterhead address within 60 days of the date of this letter. If you have any questions regarding the information in this letter, please feel free to contact me or you may contact Melissa Nasuti at 904-232-1368 or by email at melissa.a.nasuti@usace.army.mil.

Sincerely,

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

Enclosure

cc:
Dr. Paul N. Backhouse, Ph.D., Seminole Tribe of Florida, Tribal Historic Preservation Officer, Ah Tah Thi Ki Museum, 30290 Josie Billie Hwy, PMB 1004, Clewiston, FL 33440
Cherise Maples, Director, Environmental Resource Management, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, FL 33024
Manuel Tiger, Big Cypress General Council Office, Seminole Tribe of Florida, Council Representative, 31000 Josie Billie Highway, Clewiston, FL 33440
Joe Frank, Big Cypress Board Representative, Seminole Tribe of Florida, Inc., Big Cypress Board Office, 31000 Josie Billie Hwy., Clewiston, FL 33440
Jim Shore, General Counsel, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, FL 33024
Michelle Diffenderfer, Lewis, Longman and Walker, 515 N Flagler Drive, Suite 1500, West Palm Beach, FL 33401
Patricia Power, Bose Public Affairs Group, 2000 M Street, N.W., Suite 520, Washington, DC 20036
Stephen A. Walker, Lewis, Longman and Walker, 515 North Flagler Drive, Suite 1500, West Palm Beach, FL 33401

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

November 15, 2017

Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch
U.S. Army Corps of Engineers
701 San Marco Boulevard, Room 372
Jacksonville, Florida 32207-8175

Service CPA Code: 2015-F-0241
Date Received: October 18, 2017
Project: ERTP-2 Increment 2 Field Test
Applicant: U.S. Army Corps of Engineers
County: Miami-Dade

Dear Dr. Paduano Ralph:

The U.S. Fish and Wildlife Service (Service) has reviewed the U.S. Army Corps of Engineers' (Corps), Jacksonville District, request for concurrence of their determinations of effects dated October 18, 2017, for the Modified Water Deliveries (MWD) to Everglades National Park (ENP) Increment 2 field test as part of the 2016 Everglades Restoration Transition Plan (ERTP-2016) Increment 2 (Project). The Corps determined that the proposed Project may affect but is not likely to adversely affect the federally endangered Florida bonneted bat (*Eumops floridanus*), endangered Cape Sable seaside sparrow (CSSS, *Ammodramus maritimus mirabilis*), endangered Everglade snail kite (*Rostrhamus sociabilis plumbeus*), endangered deltoid spurge (*Chamaesyce deltoidea spp. deltoidea*), endangered Small's milkpea (*Galactia smallii*), endangered tiny polygala (*Polygala smallii*), threatened wood stork (*Mycteria americana*), and threatened Garber's spurge (*Chamaesyce garberi*). The Corps also determined that the project would have no effect on the endangered Florida panther (*Puma* (=*Felis*) *concolor coryi*), endangered West Indian manatee (*Trichechus manatus*), endangered red-cockaded woodpecker (*Picoides borealis*), endangered Bartram's hairstreak butterfly (*Strymon acis bartrami*), endangered Florida leafwing butterfly (*Anaea troglodyta floridalis*), endangered Miami blue butterfly (*Cyclargus thomasi bethunebakeri*), endangered Schaus swallowtail butterfly (*Heraclides aristodemus ponceanus*), endangered crenulate lead plant (*Amorpha crenulata*), endangered Okeechobee gourd (*Cucurbita okeechobeensis ssp. okeechobeenis*), endangered Big Pine partridge pea (*Chamaecrista lineata var. keyensis*), endangered Cape Sable thoroughwort (*Chromolaena frustrata*), endangered Carter's small flowered flax (*Linum carteri var. carteri*), endangered Florida brickell-bush (*Brickellia mosieri*), endangered Florida bristle fern (*Trichomanes punctatum spp. floridanum*), endangered Florida semaphore cactus (*Consolea*

corallicola), endangered sand flax (*Linum arenicola*), and the threatened wintering piping plover (*Charadrius melodus*), threatened roseate tern (*Sterna dougallii*), threatened (similarity of appearance) American alligator (*Alligator mississippiensis*), threatened American crocodile (*Crododylus acutus*), threatened eastern indigo snake (*Drymarchon corais couperi*), threatened Stock Island tree snail (*Orthalicus reses (not incl. nesodryas)*), and the threatened Blodgett's silverbush (*Argythamnia blodgettii*). The Corps also determined that the project would have no effect on the candidate Everglades bully (*Sideroxylon reclinatum spp. austrofloridense*), the proposed threatened Florida pineland crabgrass (*Digitaria pauciflora*), proposed threatened Florida pineland sandmat (*Chaemaesyce deltoidea pinetorium*), and the proposed endangered Florida prairie clover (*Dalea carthagenesis floridana*). These species have now been officially listed as threatened (Everglades bully, Florida pineland crabgrass, Florida pineland sandmat), and endangered (Florida prairie clover). Finally, the Corps determined that critical habitat for the Cape Sable seaside sparrow and Everglade snail kite would be affected but not adversely, and critical habitat for the Florida manatee, American crocodile, Cape Sable thoroughwort, Carter's small-flowered flax, Florida brickell-bush, and Florida semaphore cactus would not be affected. This letter is submitted in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). The project site is located within Everglades National Park (ENP) in Miami-Dade County, Florida (Figure 1).

Project Description

As part of the project, the Corps is proposing continued relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum of 1929 (Figure 1). Implementation of the Proposed Action is anticipated to increase the availability of water deliveries from Water Conservation Area 3A (WCA-3A) to ENP through Northeast Shark River Slough for the benefit of natural resources. The Project is part of a series of sequential efforts that are intended to incorporate constructed features of the MWD to ENP and Canal 111 South Dade projects into system-wide Central and Southern Florida (C&SF) Project operations. Implementation of the Proposed Action is also intended to address the mandated Reasonable and Prudent Alternative (RPA) of the July 22, 2016, ERTP-2016 Biological Opinion (BO).

Background

Pursuant to section 7 of the Endangered Species Act, the Corps has determined that Increment 2 will have the previously described effects on federally listed species and critical habitat. There has been no change in the operational intent of the Proposed Action that would require the need to re-initiate consultation with the Service since the completion of prior resource agency consultation as part of ERTP-2016. Increment 2 includes the required closure period for S-12A, S-12B, S-343A, S-343B, and S-344 starting October 1 through July 15, consistent with the ERTP-2016 BO in addition to retaining the high water strategy criteria developed by the Corps during ESA consultation to mitigate for the increased frequency and duration of WCA-3A high water stages in excess of the 90th percentile of historical water stages (compared to the 2012 Water Control Plan) associated with the expanded closure periods. These potential closures are further outlined in the ERTP-2016 BO, which also discusses how to address potential openings

between October and November if certain high water criteria affecting the critical flood control function of these structures are met. Extreme high water conditions, such as that which have occurred in 2016 and 2017, may necessitate further extended openings of these structures. During Increment 2, the Corps will operate the C&SF infrastructure within the intent of the ERTP-2016 BO. The ERTP-2016 BO identifies a set of habitat performance targets that were determined in coordination with the Corps, to improve conditions for the Cape Sable seaside sparrow (CSSS) and contribute toward the survival and recovery of the species. Operational flexibility for the South Dade Conveyance System (SDCS) operations has been outlined that allows the Corps and South Florida Water Management District (District) to achieve the intended performance of the RPA and satisfy the multiple purposes of the C&SF Project. Operational ranges for Increment 2 are consistent with modeling provided during the ERTP-2016 consultation. Therefore, the Corps concluded that operations for Increment 2 and the SDCS have not been subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered within the ERTP-2016 BO. The Service concurs with this assessment and the Corps' determination for these species and critical habitat.

A monitoring plan has been developed for Increment 2. Interagency workshops to facilitate discussion of field test performance relative to the achievement of goals and objectives are planned. Operations updates will be discussed on a weekly basis between water managers from the Corps, SFWMD, and ENP when needed, to provide collective interpretation of results and evaluate implementation of operations relative to the goals, objectives and constraints. Water managers will meet monthly to review the collected data and the results of preliminary analyses, as well as system conditions and Increment 2 operations. Results from these meetings will be discussed in addition with the project delivery team during interagency meetings scheduled quarterly. Supplemental meetings (i.e. WCA-3 Periodic Scientist Calls) and/or workshops may be conducted in support of Increment 2 on an as-needed basis based upon ongoing or anticipated conditions within the WCAs, ENP, and the SDCS.

Thank you for your cooperation and effort in protecting fish and wildlife resources. The Service looks forward to seeing this project completed in the near future. If you have any questions regarding this project, please contact Richard Fike at 772-469-4262 or by e-mail at Richard_Fike@fws.gov.

Sincerely yours,

for Donald Progulske
Everglades Program Supervisor
South Florida Ecological Services Office

cc: electronic copy only
Corps, Jacksonville, Florida (Melissa Nasuti)

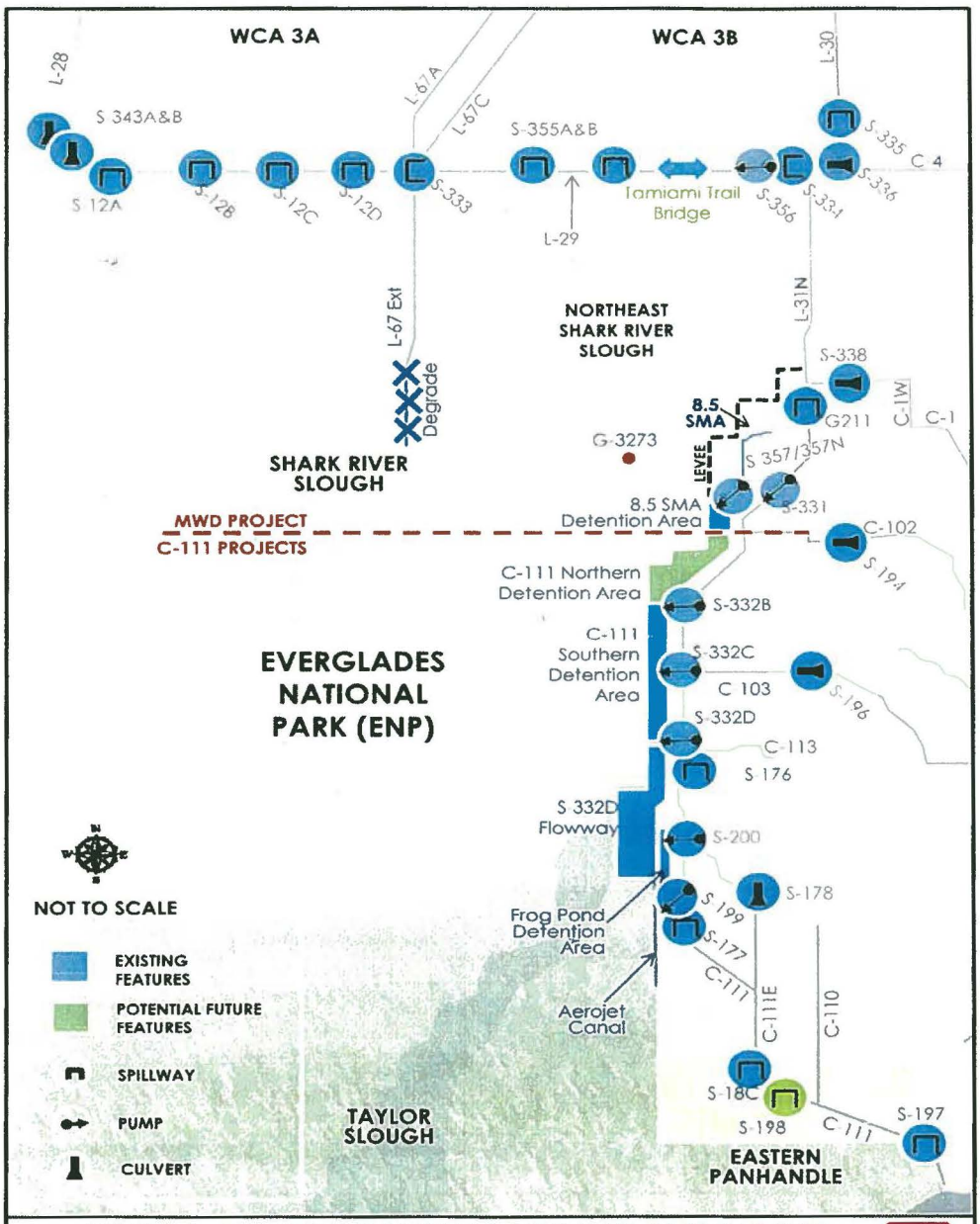

FIGURE 1. PROJECT LOCATION & RELEVANT C&SF PROJECT FEATURES OF THE MWD PROJECT & C-111 PROJECTS

Nasuti, Melissa A CIV USARMY CESAJ (US)

From: George, Donna S CIV USARMY CESAJ (US)
Sent: Thursday, November 16, 2017 8:47 AM
To: Nasuti, Melissa A CIV USARMY CESAJ (US)
Subject: FW: FDOT Support Letter for Operational Strategy

Donna S. George, P.E.
Senior Project Manager
Ecosystem Projects Section, Ecosystem Branch
Programs & Project Management Division (PPMD)
US Army Corps of Engineers
Jacksonville District
Office: 904-232-1766
Blackberry: 904-327-9289
donna.s.george@usace.army.mil

-----Original Message-----
From: Salazar, Ricardo [mailto:Ricardo.Salazar@dot.state.fl.us]
Sent: Wednesday, November 15, 2017 5:23 PM
To: George, Donna S CIV USARMY CESAJ (US) <Donna.S.George@usace.army.mil>; Vega, Manuel <Manuel.Vega@dot.state.fl.us>; Alex Vazquez, P.E. (avazquez@adaeng.net) <avazquez@adaeng.net>
Cc: Williams, Olice E CIV USARMY CESAJ (US) <Olice.E.Williams@usace.army.mil>; Kinsey, Tamela J CIV USARMY CESAJ (US) <Tamela.J.Kinsey@usace.army.mil>; Crawford, Daniel E (Dan) CIV USARMY CESAJ (US) <Daniel.E.Crawford@usace.army.mil>
Subject: [EXTERNAL] RE: FDOT Support Letter for Operational Strategy

Donna and everyone copied,

After going over the previous teleconference and all information provided we agree with the operating strategy that you have presented to us.

Please let me know, If you need a letter from us.

Ricardo F. Salazar Jr., P.E.

District Design Six Drainage Engineer

District Six – Drainage Design Unit

Adam Leigh Cann Building

1000 NW 111th Avenue, Room No. 6211

Miami, Florida 33172

Phone No.: 305-470-5264

Fax No.: 305-470-5293

ricardo.salazar@dot.state.fl.us

-----Original Message-----
From: George, Donna S CIV USARMY CESAJ (US) [mailto:Donna.S.George@usace.army.mil]
Sent: Thursday, November 02, 2017 4:41 PM
To: Vega, Manuel <Manuel.Vega@dot.state.fl.us>; Salazar, Ricardo <Ricardo.Salazar@dot.state.fl.us>
Cc: Williams, Olice E CIV USARMY CESAJ (US) <Olice.E.Williams@usace.army.mil>; Kinsey, Tamela J CIV USARMY CESAJ (US) <Tamela.J.Kinsey@usace.army.mil>; Crawford, Daniel E (Dan) CIV USARMY CESAJ (US) <Daniel.E.Crawford@usace.army.mil>
Subject: FDOT Support Letter for Operational Strategy

Manual/Ricardo,

At one of our meetings the Corps team asked if FDOT could provide a letter of support for the L-29 canal operations. We are looking for concurrence that the L-29 canal operations as outlined in the Relocation Agreement were coordinated and correctly interpreted in our operational strategy. We plan to send the documents out for public and agency review on 14 November so we would need in hand by the 13th.

Thanks, Donna

Donna S. George, P.E.

Senior Project Manager

Ecosystem Projects Section, Ecosystem Branch Programs & Project Management Division (PPMD) US Army Corps of Engineers Jacksonville District

Office: 904-232-1766

Blackberry: 904-327-9289

donna.s.george@usace.army.mil <mailto:donna.s.george@usace.army.mil>

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Gina P. Ralph, Ph.D.
Chief, Environmental Branch
Department of the Army
Jacksonville District Corps of Engineers
701 San Marco Boulevard
Jacksonville, Florida 32207-8175

December 12, 2017

RE: DHR Project File No.: 2016-5159, Received by DHR: November 7, 2017
Project: *L-29 Canal and G-3273 Constraint Relaxation Revised Operational Strategy, (Increment 2)*

Dr. Ralph:

Thank you for providing our office with an opportunity to review and comment regarding the implementation of Increment 2. Based on our previous consultation with Corps' staff and the data provided by the Corps at this time, we concur with the Corps' determination of no adverse effect to historic properties listed, or eligible for listing, in the National Register of Historic Places. As noted in your letter, the Corps will continue monitoring water levels throughout the operational field test to provide further information to inform future water management plans and ensure oversight of the no adverse effect determination.

I appreciate the effort by the Corps' staff to personally update our office on the implementation of Increment 2 and to provide the necessary information to evaluate the effects of these activities on historic properties. If you have any questions, please contact me by email at *Jason.Aldridge@dos.myflorida.com*, or by telephone at 850-245-6344.

Sincerely,

Jason Aldridge
For

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

TABLE D.1 – COMMENTS RECEIVED IN RESPONSE TO THE PUBLIC REVIEW OF THE INCREMENT 2 ENVIRONMENTAL ASSESSMENT AND PROPOSED FINDING OF NO SIGNIFICAT IMPACT

COMMENTER	AGENCY/PUBLIC COMMENT	U.S. ARMY CORPS OF ENGINEERS (USACE) RESPONSE
FEDERAL AGENCY		
UNITED STATES ENVIRONMETAL PROTECTION AGENCY (EPA)		
Comment Date: January 11, 2018		
EPA-1	**Flooding and Extreme Rain Events:** On page 4-33 (second paragraph), the USACE discusses flooding impacts to South Dade County and states, Consistent with the requirements of the February 2017 re-issued C-111Spreader Canal regulatory permit from the Corps, the SFWMD is continuing to assess south Miami-Dade water conditions and existing operations, including those of the C-111 Spreader Canal Project, on a quarterly basis for a minimum of five years to ensure project features are constructed and operated not to adversely affect adjacent lands outside and within the C-111 Spreader Canal Western Project boundary with regards to water quantity, water quality, and/or flooding. The purpose of the assessment and quarterly reports are to ensure the SFWMD has the best available information to determine what operational system changes, if any, are necessary to avoid adverse water levels on adjacent lands. The EPA is concerned that the USACE does not discuss what would happen should the adverse water levels be realized on adjacent lands. The EPA also is concerned that there is no adaptive management plan in place to appropriately react should flooding occur on adjacent lands. **Recommendations:** The EPA recommends the USACE describe any adaptive management plans or protocols in place that would trigger action to mitigate to adverse water levels on adjacent lands in the Final EA. If there are no plans in place, the EPA recommends the USACE and South Florida Management District develop an adaptive management plan for reacting to rising water levels and to avoid impacts to adjacent lands.	As mentioned within Section 4.24 of the EA the Corps commits to avoiding, minimizing or mitigating for adverse effects. All practicable means to avoid or minimize environmental effects were incorporated into the Proposed Action. A monitoring plan has been developed for Increment 2. Reference **Appendix C**. Interagency workshops to facilitate discussion of field test performance relative to the achievement of field test goals and objectives are planned to be conducted. Field Test operations updates and action items will be discussed on a weekly basis between water managers from the Corps and SFWMD, as well as ENP when needed, to provide collective interpretation of results and evaluate implementation of field test operations relative to the goals, objectives, and constraints. Corps, SFWMD, and ENP water managers will meet monthly to discuss the collected data and the results of preliminary analyses, as well as system conditions and field test operations; additional technical staff from these agencies who are involved in the monitoring and data assessment efforts will also participate in the monthly coordination meetings, as needed. Results from these weekly and monthly coordination meetings, including preliminary recommendations from water managers to incrementally modify the Operational Strategy (within the covered NEPA EA scope), will be further discussed with the project delivery team (PDT) during regularly-scheduled interagency meetings to occur four times per year. PDT meetings will also include updates from the water quality and ecological monitoring sub-teams. Additional meetings (*i.e.* WCA 3 Periodic Scientist Calls) and/or workshops may be conducted in support of the field test on an as-needed basis based upon ongoing or anticipated conditions within WCAs, ENP, and/or the SDCS. Implementation of the Proposed Action will extend until the implementation of COP currently anticipated January 1, 2020. As detailed in Appendix C, if the Increment 2 operational strategy needs to be modified and proposed adjustment are within the NEPA scope, the Increment 2 Field test may be modified. For necessary changes outside the NEPA scope, a Supplemental NEPA report will be required. Following each interagency PDT meeting where potential operational adjustments are discussed, the justification for modifications to Increment 2 water management operations will be documented, including consideration of agency and/or stakeholder input provided during each workshop. Pending execution of the Project Partnership Agreement (PPA) for the C-111 Spreader Canal Western Project, operation of the C-111 Spreader Canal Western Project is not included as part of the 2012 WCAs, ENP, and ENP to SDCS Water Control Plan (hereafter referred to as the 2012 Water Control Plan) or within the MWD incremental field tests. As detailed in Section 1.3.3 of the EA, concurrent with the MWD Increment 1.1 and 1.2 and the proposed Increment 2 field test, the SFWMD will continue to operate their expedited C-111 Spreader Canal Western Project. Consistent with the requirements of the February 2017 re-issued C-111 Spreader Canal regulatory permit from the Corps, the SFWMD is continuing to assess south Miami-Dade water conditions and existing operations, including those of the C-111 Spreader Canal Western Project, on a quarterly basis for a minimum of five years to ensure project features are constructed and operated not to adversely affect adjacent lands outside and within the C-111 Spreader Canal Western Project boundary with regards to water quantity, water quality, and/or flooding.
EPA-2	On pages 4-38 and 4-39, the USACE discusses the extreme rain events (including Hurricane Irma) of 2017 and the impacts to 8.5 square mile area (SMA). On the page 4-39 (second paragraph), the USACE states, "With all units pumping at S-357 (575 cfs design capacity) into the 8.5 SMA	Based on the stated constraints of the Increment 2 field test (Section 1.6 of the EA) to maintain the authorized purposes of the MWD Project, which includes the authorized flood mitigation requirements, water levels within the L-29 Canal and NESRS will not be raised above 7.5 feet, NGVD except under conditions that ensure adherence with the flood mitigation requirements for the 8.5 SMA. Increment 2 of the MWD Project is also dependent on construction completion and operation of the C-111

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	Detention Cell, water within the cell exceeded 4 feet depth and was overtopping the S-360E southern weir directly into the C-111 South Dade NDA construction site." The USACE goes on to discuss measures taken to alleviate the elevated waters during these high rain events. In the following paragraph, the USACE states, "Despite implementation of the described emergency measures, the combined effects from the Hurricane Irma rainfall and nearly one week of elevated L-29 canal stages with concurrent elevated stages in the 8.5 SMA Detention cell prior to enabling discharges into the NDA have resulted in continuous and still-ongoing inundation period of 28 days for LPG-2 through October 7, 2017 (time of report preparation;…)." The EPA acknowledges that the description of the events is very detailed and important; however, there is no discussion regarding the impacts to the residential property that 8.5 SMA project is meant to protect. It is unclear as to whether flooding actually occurred in the 8.5 SMA residential area or if any property damages were incurred because of Hurricane Irma. **Recommendations:** The EPA recommends the USACE elaborate on the outcome of Hurricane Irma and the other high rain events on the 8.5 SMA residential area. Additionally, the EPA recommends the detailed technical description of high rain events to the 8.5 SMA project relate back to the 8.5 SMA residential area it was designed to protect.	South Dade NDA. The real-time assessment of 8.5 SMA flood mitigation requires recognition of the hydrologic relationships observed between the L-29 Canal, stages within NESRS proximal to the 8.5 SMA (G-3273 is used for this analysis, given its historical utilization as a constraint for inflows to NESRS), and stages observed within the 8.5 SMA protected area. The COP development will utilize regional hydrologic modeling in order to balance the ecological restoration objectives of the MWD and C-111 South Dade projects while demonstrating compliance with the project constraints, which will include requirements to maintain the mitigation for project induced flood damages in the 8.5 SMA and to maintain the level of flood damage reduction associated with the 1994 C-111 GRR Recommended Plan. The results from the future COP development will be used to update the flood mitigation analysis for the MWD 8.5 SMA GRR, including an updated flood impacts analysis for the 8.5 SMA; however, to continue accrual of interim benefits towards restoration of the natural systems, the MWD incremental field test (including Increment 2) is proceeding without availability of the detailed modeling analyses planned for COP. Therefore, prior to completion of the regional hydrologic modeling under the COP, and prior to further raising the maximum operating stage limit for the L-29 Canal, the hydrologic monitoring for the Increment 1.1 and 1.2 field test will continue to conduct real-time monitoring of 8.5 SMA flood mitigation performance. The assessment methodology for 8.5 SMA flood mitigation will continue to be informed by new information collected during the MWD incremental field test, and may be periodically revised if warranted by new information, such as Emergency Deviation operations. Refer to **Annex 2** of the Monitoring Plan (**Appendix C**) for a complete discussion of the evaluation methodology established by the Corps to support real-time evaluations of 8.5 SMA flood mitigation requirements during the Increment 1.1 and 1.2 and Increment 2 field tests. Consistent with the Corps' authorizing documents, throughout all phases of the MWD field test, operations cannot cause the 8.5 SMA to endure a greater duration of high water than they would have experienced prior to construction of the MWD project and prior to MWD implementation of increased flows to ENP. In 2000, the USACE prepared the MWD General Reevaluation Report (GRR) and a Final Supplemental Environmental Impact Statement (SEIS) to assist in the selection of a Recommended Plan for providing flood mitigation to the 8.5 SMA while allowing for restoration of the Northeast Shark River Slough (NESRS) as authorized by the MWD Project. Consistent with the 1992 GDM analysis, it was a requirement of the reevaluation to analyze alternatives that provided no increase in flooding above and beyond what existed prior to the authorization of the MWD Project. The GRR/SEIS presented hydrologic modeling simulations, social impact assessments, policy analysis, real estate information, engineering design and cost analysis, environmental impact assessment, economics calculations and review of public concerns. The Corps' Record of Decision (ROD) for the 8.5 SMA GRR/SEIS stated that it would be implemented with added assurances and conditions described there in. One of those assurances and conditions is that "periodic flooding of landowners east of the proposed levee, before and after project implementation, will remain unchanged from conditions in existence prior to implementation of the MWD Project except where flowage easements are required." Given the nature of these constraints, raising of the L-29 Canal maximum operating limit under the Increment 2 field test is planned to be implemented incrementally with continuous monitoring of conditions both along the Tamiami Trail roadway and within the 8.5 SMA. The 8.5 SMA S-357 pump station was initially operated in June 2009. Prior to completion of the COP, since no new comprehensive hydrologic modeling study for the 8.5 SMA has been completed since the 2000 GRR, pre-project conditions are characterized using the historical response of the 8.5 SMA basin to rainfall events prior to completion of the MWD 8.5 SMA levees, seepage collection canals, and pump station. Angel's Well, located 0.25 miles west of the current 8.5 SMA leveed area, provides a surrogate for pre-project inundation duration (hydroperiod above ground surface) within the western 8.5 SMA (the area closest to ENP, where MWD will increase water levels); the current LPG-1 and LPG-2 monitoring gauges were not installed until 2009. As detailed in Annex 2 of Appendix C, the pre-project response delineates target operational criteria for

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		both a "target" performance range and an "acceptable" performance range during Increment 1 operations. Hydrologic response is intended to be continually analyzed across a wide range of temporal scales, including daily (early detection metrics), weekly, monthly, seasonal, and annual (water year) periods to inform real-time operations and identify potential performance limitations of the current 8.5 SMA and C-111 South Dade infrastructure configuration.
EPA-3	**Native American:** On page 4-63 (4.12.1), the USACE discusses Native American impacts and states that the USACE has contacted both the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida. The EPA notes that the USACE states that "Under Alternative B, the duration of water above the marsh surface is expected to improve. Alternative B may have a temporary minor beneficial effect on tree islands within ENP by reducing the potential for devastating fires." The USACE also discusses impacts to native American cultural resources that are located on tree islands on page 4-64 (4.13) and states, "Presentations and face-to-face meetings were conducted, as well as email and phone correspondence with state, federal, and tribal government staff members to brief them on project development and to discuss issues of concern." The EPA understands that the USACE has outreached to both Tribes; however, the draft EA does not discuss what the Tribes think about this EA's preferred alternative. **Recommendation:** The EPA recommends the USACE describe what the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida think about the preferred alternative and document any outcomes from the consultation process in the Final EA. EPA encourages continued consultation and coordination with the Tribes at all levels of decision-making.	Section 4.13 and 4.25.4 have been updated to indicate outcome of SHPO and Tribal coordination. The Proposed Action has been coordinated with the Florida State Historic Preservation Officer (SHPO) and the appropriate Federally-recognized Tribes in accordance with the National Historic Preservation Act and consideration given under the National Environmental Policy Act. The Corps has determined that the Proposed Action will have no adverse effect on historic properties eligible or potentially eligible for listing in the National Register of Historic Places. The SHPO concurred with the Corps' determination of no adverse effects and the Seminole Tribe of Florida "have no objections to the project at this time." No formal comments were received from the Miccosukee Tribe of Indians of Florida.
EPA-4	**Cultural Resources:** On page 4-64, the USACE discusses consultation efforts with the State Historic Preservation Office (SHPO) and the respective Tribe Historic Preservation Office (THPO). The EPA acknowledge the efforts of the USACE in hydrological modeling efforts by USACE to determine impacts to tree island and cultural resources on those tree islands. The EPA notes that the modeling runs indicate that the preferred alternative "…will decrease water levels in WCA 3A and smaller stage increases for NESRS..". However, there is no discussion as to whether the SHPO or THPOs agree with these findings or any feedback regarding these findings. **Recommendation:** The EPA recommends the USACE include a discussion regarding the SHPO and THPOs feedback or any other recommendations that they might have suggested during the consultation process in the Final EA.	Section 4.13 and 4.25.4 have been updated to indicate outcome of SHPO and Tribal coordination. The Proposed Action has been coordinated with the Florida State Historic Preservation Officer (SHPO) and the appropriate Federally-recognized Tribes in accordance with the National Historic Preservation Act and consideration given under the National Environmental Policy Act. The Corps has determined that the Proposed Action will have no adverse effect on historic properties eligible or potentially eligible for listing in the National Register of Historic Places. The SHPO concurred with the Corps' determination of no adverse effects and the Seminole Tribe of Florida "have no objections to the project at this time." No formal comments were received from the Miccosukee Tribe of Indians of Florida.
EPA-5	**Endangered Species:** On page 4-76 (4.25.2), the USACE discusses compliance with the Endangered Species Act (ESA) and states, "Correspondence dated October 18 2017 was	Section 4.25.2 of the EA has been updated to indicate that the Proposed Action has been fully coordinated under the Endangered Species Act. The Corps requested written confirmation of federally listed threatened and endangered species that are either known to occur or are likely to occur within the project area from USFWS by correspondence dated July 17, 2017. A revised

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	provided to the USFWS requesting concurrence on species determinations as a result of the Proposed Action, noting that the conclusion of ESA consultation on Increment 2 presented within the EA is previously covered under the 2016 ERTP BO." The EPA notes that there appears to be no documentation regarding the USFWS concurring with the USACE determination that ESA consultation is being covered under the 2016 ERTP BO. R**ecommendation:** The EPA recommends the USACE document USFWS's concurrence with their determination that ESA consultation is covered under the 2016 ERTP BO in the Final EA.	species list was provided by the USFWS through correspondence dated July 25, 2017. Correspondence dated October 18, 2017 was provided to the USFWS requesting concurrence on species determinations as a result of the Proposed Action, noting that the conclusion of ESA consultation on Increment 2 presented within this EA is previously covered under the 2016 ERTP BO. The USFWS concurred with this assessment by correspondence dated November 15, 2017, noting that the Everglades bully (*Sideroxylon reclinatum spp. austofloridense*), the proposed threatened Florida pineland crabgrass (*Digitaria pauciflora),* proposed threatened Florida pineland sandmat (*Chaemaesyce deltoidea pinetorium*), and the proposed endangered Florida prairie clover (*Dalea carthagenesis floridana*) have now been officially listed as threatened (Everglades bully, Florida pineland crabgrass, Florida pineland sandmat), and endangered (Florida prairie clover).
EPA-6	**Alternatives Analysis**: On page 2-34 and 2-35, the USACE discusses Alternative C and states that Alternative C, "is expected to improve hydrologic conditions in NESRS; however uncertainty exists regarding the ability of Alternative C to ensure the stability and safety of Tamiami Trail (U.S. 41)." The USACE lists constraints outlined in the Relaxation Agreement and then states, "If the above conditions were met the Corps would prepare a revised FONSI to implement Alternative C. This may result in realization of additional benefits closer to those characterized in Alternative C under Section 4.0)." As written, it is unclear as to whether the USACE is still considering Alternative C as a viable alternative. **Recommendations:** The EPA recommends the USACE elaborate on the prospects of Alternative C being revisited as the preferred alternative in the Final EA. The EPA recommends USACE briefly discuss the likelihood of these constraints being removed and any discussions or information provided by the Florida Department of Transportation (FDOT) that led to these operational constraints. Also, the EPA recommends the USACE describe the timing of any supplemental NEPA documentation in relationship to the development of the Combined Operations Plan EIS.	Clarification has been added to Section 2.4. The Corps considers Alternative C as a viable alternative, pending the constraints outlined within this section which include: (1) written approval from FDOT to remove the L-29 Canal constraint identified in Appendix A, Part 1 (*i.e.* limited duration of L-29 Canal stages near 8.5 feet, NGVD to a maximum period of 90 consecutive or cumulative days) based on a joint evaluation of monitoring data by the Corps and the FDOT; and (2) demonstration of the capability of the completed MWD Project components (including S-357N) to maintain flood mitigation requirements for the 8.5 SMA under the raised L-29 Canal maximum operating limit of up to 8.5 feet, NGVD. If the above conditions were met the Corps would prepare a revised FONSI to implement Alternative C in place of Alternative B. Additional language has also been added to the FONSI for purposes of clarification. Regarding timing, it is anticipated that at a minimum data analysis from a complete wet season would need to be obtained, therefore the earliest potential update would be before the wet season of 2019.
EPA-7	**Water Quality:** The EPA has consulted with Everglades National Park water quality experts and we suggest the attached edited text. **4.11 WATER QUALITY** **4.11.1 ALTERNATIVE A: NO ACTION ALTERNATIVE** The No Action Alternative is expected to have no changes to water quality conditions as there are no changes in flows or routing of flows. Water deliveries to ENP and NESRS are subject to the water quality limit for TP contained in Appendix A of the 1991 Everglades Settlement Agreement. Appendix A compliance is currently assessed by comparing the annual long term limit (LTL) against the 12-month flow weighted mean concentration (FWMC) TP concentration in ppb, calculated using the measured total annual flows from the S-12A, S-12B, S-12C, S-12D, and S-333 (S-333 flows expressed as S-333 minus S-334) structures that distribute flows from WCA 3A into SRS. The LTL equation from the Appendix A has an inverse relationship with flow: as flow into SRS increases, the LTL gradually falls until reaching	Text has been revised to incorporate EPA/ENP comments. Also added additional text below. The exact mechanism for the nutrient pulses that occur at the S333 after drought conditions in the WCA's followed by wet season conditions is not completely understood at this time. The dried out marsh soils/vegetation in the WCA's upstream of the S333 after drought conditions/marsh rehydration is apparently part of the nutrient pulse loading that is delivered to the S333. Data collected at the S12's does not closely track with the nutrient spikes at the S333 observed after drought conditions followed by rehydration/wet season conditions. That may indicate that the area most proximate to the S12's have recovered nutrient assimilation function more quickly than areas further upstream of the S12's/S333. Untreated canal water deliveries from S9 and sediments accumulated in the canal system upstream of the S333 are the other two most likely primary sources for the dry season/wet season transition nutrient pulses observed at the S333. It has been observed in the Corps PSTA mescosm study that nutrients spikes were observed after dry conditions were followed by rehydration before the marsh cell being studied recovered nutrient uptake function. It is assumed that something similar is happening in the WCA's, particularly in Northern 3A which typically experiences dryout conditions more consistently as compared to the rest of the WCA. A similar short term nutrient spike was observed in the S332D detention area following effective rehydration of cells within the S332D detention area. If the marsh dryout conditions in the northern portion of WCA 3A could be reduced, the peak of the nutrient pulses during the dry season to wet season condition, could also be reduced at the S333. That action is dependent on water availability and efforts are currently made to minimize northern WCA 3A drought conditions with available water not allocated to other

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	the 7.6 ppb minimum for flow volumes equal or greater than 1,061x10^3 AF per year. Although the effect of Increment 2 is largely to redistribute existing flows, with respect to the Appendix A LTL, operations are expected to result in higher flow volumes through the S-333 structure, lower flow volumes through the S-334 structure, and moderately lower flow volumes through the S-12D structure. Under specific limited operational conditions, there may be a short-term increase in TP concentrations at S333 with more water being routed through this structure, but that may not result in the annual FWMC exceeding the LTL (for example WY2015). The Settlement Agreement requires that new sources to the SRS must be considered in the SRS compliance calculation. At present, TP concentrations/flows measured at the S-356 pump station, a new SRS source, are not included in the Appendix A calculation. However, the TOC is continuing to determine how this structure will be incorporated in future Appendix A calculations. Currently it is reported provisionally until the exact method is determined. For the first year of testing as part of the process to incorporate the S-356 flows into the SRS FWMC compliance evaluation, the FWMC and LTL were calculated with and without the S356 flows. For WY 2016, each calculation method yielded the same FWMC and LTL (7.2ppb/7.6 ppb respectively). S-356 flows/concentrations are in compliance with the FDEP/SFWMD proposed annual guidelines for the first year of testing and are likely to be in compliance with the multi-year compliance assessment methodology for flows entering ENP, an Outstanding Florida Water (OFW). The proposed S-356 OFW compliance criteria are FWM TP concentration no greater than 11 parts per billion (ppb) on an annual basis and no greater than 9 ppb on a three-year average annual basis. The February 2017 Increment 1.1 and 1.2 EA and FONSI estimated a 10 to 20 percent increase in the frequency of exceedance of the Appendix A LTL for flows entering ENP at the L-29 Canal compared to the 2012 Water Control Plan (USACE 2015). No adverse impact to water quality conditions in WCA 3A, WCA 3B, the L-30 Canal, L-31N Canal, or C-111 Basins were predicted with Increment 1.1 and 1.2. Significant changes in the potential for mercury methylation or bioaccumulation of mercury by aquatic species in ENP or WCA 3A and WCA 3B were not expected. Water quality monitoring and analyses during Increment 2 testing will be used to help identify potential changes to the operating rules that could increase the probability of water quality compliance for additional flows entering NESRS. A water quality assessment will be evaluated at the S-356 pump station in accordance with the FDEP test authorization to conduct Increment 2 testing. Concurrently, compliance with the LTL will be determined in accordance with the Settlement Agreement Appendix A requirements on an annual basis during Increment 2 testing and S-356 flows will be evaluated for Settlement Agreement compliance. Operating plan changes resulting from the S-356 water quality assessment, if needed because of Increment 1 operations, would be implemented only after the conclusion of the Increment 2 test period. During Increment 2 test operations the Corps does not plan to impose operational	uses. Until more water is available during dry season conditions, the dryout duration periods in northern 3A will not be decreased.

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	constraints for water quality that could restrict or otherwise limit inflows to NESRS. Water quality conditions in the vicinity of the L-29 Canal and L-31N Canal might be affected by implementation of the project. **4.11.2 ALTERNATIVE B: RELAXATION OF G-3273 STAGE CONSTRAINT AND L-29 CANAL UP TO 8.5 FEET NGVD (PREFERRED ALTERNATIVE)** Implementation of Alternative B would allow greater deliveries to SRS due to the higher L-29 stages and will result in somewhat reduced flows through S-12D. This alternative is basically an amplification of Increment 1.1 and 1.2. Dependent on rainfall conditions this alternative could result in the LTL declining to the minimum of 7.6 ppb more frequently than in the No Action Alternative. The impacts to the FWM will be more strongly influenced by the rainfall pattern than from the implementation of this alternative. Higher flows through S-333 will be allowed as L-29 stage is relaxed to 8.5 feet, NGVD. If high flows through the S-333 occur while water levels are low at the headwater to the structure and the annual pattern of concentrating TP is evident, more high concentration water will be routed into SRS. This pattern can result in a higher short-term TP concentration at S333, but that may not result in the annual FWMC exceeding the LTL (for example WY2015).	
STATE AGENCY		
MIAMI DADE COUNTY DEPARTMENT OF REGULATORY AND ECONOMIC RESOUCES		
Comment Date: December 12, 2017		
MD-1	On page 148, the FONSI states that, more recently, areas within ENP, including NESRS, have been exposed to TP concentrations at or in excess of 0.10 mg/L (SFWMD 2010). The report also states that "the Proposed Action will not adversely affect water quality and will be in compliance with the appropriate conditions in the Everglades Forever Act Permit (File No. 0246512-10) and consistent with the Clean Water Act". Documentation supporting this statement was not provided in the report.	To address the TP at or excess of 10ppb question please see the Settlement Agreement Reports (available on SFWMD website in the Technical Oversight Committee (TOC) link page) for the years 2010-present for data showing number of events where individual sampling events for structure inflows into the Shark River Slough(SRS)/north boundary of ENP exceeded 10 ppb. For example for WY 2016, for the month of October the observed percent of SRS biweekly samples exceeding 10ppb was 11.1% (provisional data) and in July 2016, 22.7% of the SRS samples were above 10ppb. No modeling was performed for this next operational phase and the statement on water quality was based on a qualitative assessment. Increases in the nutrient levels in the marshes and canals is strongly linked to weather patterns, droughts followed high rainfall events at the beginning the wet season normally result in the highest nutrient levels in the water column.. To address question regarding "…..will not adversely affect water quality…" increment 2 is not introducing any new nutrient sources or water to the ENP/C111 system and does not involve any construction activity that could cause a temporary elevation in suspended solids in the project area water column. Increment 2 simply involves rerouting of existing water deliveries. Weather conditions have a significant impact on nutrient concentrations for water deliveries to the ENP.
MD-3	The FONSI needs to demonstrate if the three basic objectives of data collection have been achieved (water budget, mass balance, seepage quantification), providing a summary of the results to support the statements, for all discharges into Shark Slough, Taylor Slough and L-31N canals.	Through the analysis and reporting periods covered by the Increment 1 and Increment 1.1 and 1.2 field tests, insufficient data is presently available for data analysis of field test performance since the relevant field test Operational Strategy guidance for L-29/G-3273 and the SDCS was only followed during limited continuous periods from (a) October 15, 2015 to December 1, 2015; (b) December 1, 2016 to February 21, 2017; and (c) February 21, 2017 to June 28, 2017. These limited periods do not account for a representative range of hydrologic conditions needed to effectively evaluate the system response to the MWD field test operations, consistent with the objectives of the field tests' monitoring plans. Preliminary seepage analysis for the 8.5 SMA, in response to raised L-29 Canal stages, direct rainfall, and operations, are detailed in Annex 2 of Appendix C.

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		A monitoring plan has been developed for Increment 2, building on the monitoring plan previous established for Increment 1 and Increment 1.1 and 1.2. Reference Appendix C. Interagency workshops to facilitate discussion of field test performance relative to the achievement of field test goals and objectives will continue to be conducted. Field Test operations updates and action items will be discussed on a weekly basis between water managers from the Corps and SFWMD, as well as ENP when needed, to provide collective interpretation of results and evaluate implementation of field test operations relative to the goals, objectives, and constraints. Corps, SFWMD, and ENP water managers will meet monthly to discuss the collected data and the results of preliminary analyses, as well as system conditions and field test operations; additional technical staff from these agencies who are involved in the monitoring and data assessment efforts will also participate in the monthly coordination meetings, as needed. Results from these weekly and monthly coordination meetings, including preliminary recommendations from water managers to incrementally modify the Operational Strategy (within the covered NEPA EA scope), will continue to be further discussed with the project delivery team (PDT) during regularly-scheduled interagency meetings to occur four times per year. PDT meetings will also include updates from the water quality and ecological monitoring sub-teams. Additional meetings (i.e. WCA 3 Periodic Scientist Calls) and/or workshops may be conducted in support of the field test on an as-needed basis based upon ongoing or anticipated conditions within WCAs, ENP, and/or the SDCS.
MD-4	Items 3-20 and 4.11 of the FONSI , do not include a discussion on nutrient load changes into Shark Slough, Taylor Slough and L-31N canals, resulting proposed operational schedule, operation of the S-357 pump station, and the new features, included in the C-111 South Dade Contracts 8 and 8A, such as S-357N and , C-358 connection to the C-357 canal. Please provide estimates on nutrient load changes resulting of the implementation of alternatives B, C and G, based on the latest monitoring results, and nutrient removal estimates along the 8.5 SMA, North and South Detention Areas.	Please see response to MD-3 and below. No modeling was performed for this next phase of testing operations therefore nutrient load changes can only be addressed in a qualitative manner at this time. Under the current and proposed operations leading up to the Combined Operations Plan, continuous assessment of water quality conditions is being evaluated and shared with the group. Based on the lessons learned during the phases leading up to the Combined Operations Plan (COP) implementation, modeling incorporating the lessons learned will be performed. The modeling to be performed for COP will allow quantitative evaluation of load changes for deliveries into the SRS. There are no direct surface water discharges (under conditions experienced thus far) from the 8.5 SMA or the C111 detention system.
MD-5	The Report should also include an assessment on the phosphorus target for S-356 and S-357 discharges, sources of nutrients, quantifying water quality interactions associated with the test performed.	Please see response to MD-3 and below. S-356 has only been operated under non deviation conditions for less than one month. Based on the limited information collected for that time period and the period the S356 was operated during the FDEP emergency orders there were no negative impacts observed relative to phosphorus concentrations at the S356 discharge for inflows in the ENP. All indications from the limited data available thus far from the S356 operations support that the S356 intake is primarily composed of seepage from WCA/ENP and bypass from the WCA via the L30N. S356 FWM met the permit phosphorus targets (do not exceed 11ppb FWM for 1 yr, not to exceed 9ppb 3 yr average) thus far during the non deviation operational period. A longer period of operation will be required to determine S356 FWM compliance for all permit requirements. The results thus far has been reported separately and the S356 FWM was well below 8 ppb . There are no S357 discharge phosphorus targets. The S357 discharges into an enclosed detention system that has not discharged outside of the detention system for environmental conditions that have been experienced in SF in recent history (hurricanes included) and is not expected to discharge from the detention system. .
MD-6	Monitoring results show that return seepage from the 8.5 SMA Detention cell still affects the water levels in the C-357 canal, due to seepage. The report should include discussion on the effect of S-357 seepage and the solution for the problem, based on monitoring results, and estimates for new features, in the C-111 South Dade Project, including water budget and water quality load estimates.	Please see response to comment MD-3 and below. The hydraulic connection between the 8.5 SMA Detention Cell and the C-111 South Dade NDA, which remains a prerequisite for MWD Increment 2, will enable the S-357 pump station to move water further away from the protected portion of the 8.5 SMA, thereby reducing the frequency of operational restrictions on the S-357 pump station caused by storing water within the 8.5 SMA detention cell. By not allowing significant water storage depths within the 8.5 SMA Detention Cell and by constructing the internal flow-way to convey water through the 8.5 SMA Detention Cell more efficiently, the potential for backwater drainage effects on the southwest corner of the 8.5 SMA caused by retardation of the regional groundwater flow to the southeast will also be significantly reduced. As described in Section 4.6.2.2 of the EA, with all units pumping at S-357 (575 cfs design capacity) into the 8.5 SMA Detention Cell immediately after Hurricane Irma in September 2017, water within the cell exceeded 4 feet depth and was overtopping the S-360E southern weir directly into the C-111 South Dade NDA construction site. Temporary removal of a portion of the L-359 Levee along the southern 8.5 SMA Detention Cell was needed to move water out of the 8.5 SMA Detention Cell, minimize return seepage north into the 8.5 SMA

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		interior, and allow a more efficient open channel flow from the S-357 pump station to the NDA. Although this temporary connection was maintained through the end of the 2017 WCA 3A Temporary Planned Deviations (January 2018), continued monitoring and data assessment is needed to verify the effectiveness of the 8.5 SMA flood mitigation system for the entire protected area of the 8.5 SMA under normal, non-emergency water management operations and across a broader range of hydrologic conditions.
MD-7	The Appendix A, Part 1, item 5 should include language to provide operational flexibilities for prescribed extreme high water conditions for the L-29 borrow canal, since additional monitoring wells are going to be installed. See page A.1-18, for operational schedule.	Operational criteria for the L-29 Canal and associated inflow structures are detailed in Table 1 of Appendix A. No additional operational flexibilities, outside of the criteria in Table 1, are prescribed for the L-29 Canal during Extreme High Water Conditions. The L-29 Canal will be operated to ensure the stability and safety of the Tamiami Trail (U.S. 41) Highway between S-333 and S-334, based upon coordination with the Florida Department of Transportation (FDOT) concerning implementation of the Relocation Agreement dated September 25, 2008. Continued L-29 structure inflows which result in either cumulative or consecutive durations with L-29 Canal stages between 8.3-8.5 feet, NGVD for longer than 90 days will require written approval from the FDOT, given evaluation of the monitoring data by the USACE and FDOT. Based on coordination with the FDOT, concurrent with the development of the Increment 2 Operational Strategy, USACE will install six pressure transducers in four transects along the Tamiami Trail to monitor the effects of the increased L-29 water levels on the roadway (FIGURE C.1-9). Piezometers, soil moisture sensors, and surface water stage recorders will be installed at specified locations along Tamiami Trail between S-333 and S-334 Spillways. The piezometers and soil moisture sensors will be installed along FDOT right-of-way along the Tamiami Trail. Installation of the additional roadway monitoring is expected to be completed prior to implementation of Increment 2. Further details are provided in the Monitoring Plan (Appendix C), Section C.1.7.1.2.
FLORIDA DEPARTMENT OF Agriculture and Consumer Services (FDACS)		
Comment Date: December 22, 2017		
FDACS-1	FDACS supports the Increment 2 effort and completion of the C-111 South Dade Project to increase operational flexibility and the capacity to convey more water west towards Everglades National Park (ENP) and the headwaters of Taylor slough. Both ENP and the agricultural areas adjacent to ENP will benefit from increased opportunities to move water away from the private lands where it is not needed and into the restoration project areas.	Thank you for your comments.
FDACS-2	Agricultural lands in Miami-Dade County rely on the appropriate operation of the South Dade Conveyance System (SDCS), the C-111 South Dade project and the C-111 Spreader Canal Project to maintain flood protection. The Increment 2 field test should maintain flood protection capacity for private lands in local basins adjacent to ENP. We believe that implementation of the proposed revised operational strategy will result in negative impacts to privately owned agricultural lands in Miami-Dade County that rely on the SDCS unless operational flexibility is employed to offset the negative impacts to increasing canal levels back to ranges that do not maintain flood protection due to persistent high groundwater tables and the routine, unauthorized diversion of flood waters from other areas into the SDCS. Our concerns are detailed below.	Thank you for your comments.
FDACS-3	S-334 and S-331 are not authorized for Water Conservation Conservation Area (WCA) 3A regulatory flood release flows but have been identified to be used for that purpose and to achieve the sharp reduction in L-29 stages required by the "Contract between the United states of America and the Florida Department of Transportation (FDOT) for Relocation, Rearrangement, or Alternative of Facilities Modified Water Deliveries to Everglades	All structures in the MWD Increment 2 field tests will be evaluated and their operating criteria and canal levels will be subject to a complete revision that will be codified in the COP. Operations for the incremental field tests are approved as deviations to the 2012 Water Control Plan (WCP) which included Column 2 operations to make regulatory release flows. The Increment 1 and Increment 1.1 and 1.2 Field Tests were approved with the use of Column 2. The Corps has worked towards reducing reliance on Column 2 operations with the intent to eliminate

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	National Park Project." These unauthorized operations should not be unofficially authorized by Increment 2 and carried forward into the Combined Operational Plan (COP). Distribution of water during wet periods should concentrate on maximizing deliveries of water to NESRS. The goal of Increment 2 should be steps to eliminate Column 2 operations and WCA 3A high water discharges into the SDCS barring emergency conditions.	the use entirely if possible under COP. Until the full project build-out can be tested with the higher water levels maintained in ENP, the Column 2 operations provide assurance for maintaining protections to public life and safety. As described in Section 2.0 of the Operational Strategy (Appendix A), eventually, the goal is to remove Column 2 flows under revised operations for COP. Until the incremental field tests are complete, reference to Column 2 flows will be retained within Increment 2, although it is expected that use of S-333/S-334 discharges to SDCS for mitigation of the S-12 A/B closures will be reduced with the increase of the L-29 constraint raised up to 8.5 feet, NGVD from 7.5/7.8 feet, NGVD. Consistent with the previous increments of the MWD field tests, this operational strategy specifies further reduced reliance on this S-333/S-334 route during normal operations (Condition 3) through the inclusion of prescribed criteria which preclude the use of Column 2 when the L-29 Canal is operated above 7.8 feet NGVD. Inflows to the SDCS from S-331 local drainage will also be reduced under Increment 2, since the 8.5 SMA flood mitigation requirements are shifted to an increased reliance on S-357 given full operability of the NDA and a reduced dependency of the 8.5 SMA on S-331. Under conditions 1, 2, 3, and 4 (Sections 5.1 through 5.5 of Appendix A), the operational strategy also includes criteria for limited use of S-334 to expedite lowering of the L-29 Canal stage if the design high water criteria of 8.5 feet NGVD is temporarily exceeded, with the requirement for concurrent closure of L-29 Canal inflows from S-333, S-355A/B, and S-356. The primary use S-333/S-334 discharges will be based on extreme high water events within WCA-3A, as defined in Section 5.7.
FDACS-4	We are also concerned that Increment 2 will continue the use of S-331 to convey flood waters from 8.5 SMA into the SDCS if the current project is not adequate to provide the flood protection needed. If the 8.5 SMA project requires additional work to meet performance standards, that should be identified by Increment 2 so the use of S-331 to alleviate flooding in the 8.5 SMA is not incorporated into the COP.	Increment 2 provides a built-in restriction that provides assurances that S-331 will not be over utilized for addressing flood waters from the 8.5 SMA into the SDCS. Operations are restricted when LPG2 is greater than 7 feet NGVD which effectively ceases flows once this stage trigger is met. Development of the COP will be informed by the MWD Increment 1, Increment 1.1 and 1.2, and Increment 2 field tests. Constraints included in the monitoring plans for the field tests may result in discontinuation of the field tests if adverse impacts to flood damage reduction are indicated as a result of the field test operations. Prior to completion of the regional hydrologic modeling under the COP, and prior to further raising the maximum operating stage limit for the L-29 Canal, the hydrologic monitoring for the Increment 1.1 and 1.2 field test and the proposed Increment 2 field test will continue to conduct real-time monitoring of 8.5 SMA flood mitigation performance. Hydrologic response from increased stages in NESRS and the observed effects within the 8.5 SMA are continually analyzed across a wide range of temporal scales, including daily (early detection metrics), weekly, monthly, seasonal, and annual (water year) periods to inform real-time operations and identify potential performance limitations of the current 8.5 SMA and C-111 South Dade infrastructure configuration. Complete details regarding the ongoing flood mitigation assessment methodology for the 8.5 SMA, continued from Increment 1.1 and 1.2, is provided in the Increment 2 monitoring plan (**Appendix C**, **Part 1**, **Annex 2**). All structures in the MWD Increment 2 field tests will be evaluated and their operating criteria and canal levels will be subject to a complete revision that will be codified in the COP.
FDACS-5	Higher canal stages and operations that convey flood waters into the SDCS results in more water in the canals and detention areas, increasing the flood risk for properties east of ENP. Potential impacts to private lands must be addressed. Operational stages protective of private agricultural lands do not require a reduction in environmental benefits. The Increment 1 Field Test, the 2016 Temporary Emergency Operations and Deviations, and the 2017 Planned and Emergency Deviations demonstrate that along the L-31 Canal reach, operation of the south Detention Area (SDA) has been able to maintain the hydraulic ridge and effectively holds stages in eastern ENP higher while also simultaneously maintaining lower L-31N Canal levels to	Operations under Increment 2 within the SDCS are either at or below levels operated under the 2002 Interim Operating Plan (IOP). The canal levels have been lowered in an attempt to continue to provide the level of flood protection in the area and maintain agricultural interests. Even lower canal levels will be evaluated further under modeling efforts for the COP. Increased flood control releases from S-197 and lower L-31N Canal operating ranges were included within the operational strategies for Increment 1, 1.1 and 1.2 to mitigate for potential risks to flood protection for areas within South Miami-Dade County, which may be affected during the field tests by increased seepage to the L-31N Canal south of the S-331 pump station, prior to the construction and operation of the C-111 South Dade Project NDA. This increased seepage is expected to be fully manageable with operation of the C-111 South Dade Project NDA. However, since Increment 2 will be the initial opportunity to gain operational experience with the NDA, Increment 2 will continue to retain the management operating criteria for S-197 as provided in the No Action Alternative. This provides flexibility to maintain flood risk management for southeastern Miami Dade County, if needed.

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	prevent or reduce seepage under the L-31N. Given this success, lower canal levels east of ENP adjacent to agricultural lands should be used to protect against root zone flooding.	All structures in the MWD Increment 2 field tests will be evaluated and their operating criteria and canal levels will be subject to a complete revision that will be codified in the COP.
FDACS-6	Agricultural lands in Miami-Dade County also rely on the appropriate operation of the SDCS, the C-111 South Dade project and the C-111 Spreader Canal Project to maintain water supply deliveries during dry times. During the drafting of Increment 2, we recommended maintaining the current WCA-3A three gage average operating criteria for supplemental flows to Taylor Slough of 8.0 feet NGVD in April and May and 8.5 feet NGVD in all other months. Lowering the stages for supplemental deliveries year-round could have an adverse impact on other water supply deliveries. Without analyses of the potential impact, we do not support a year-round 3 gage average stage of 8.0 feet NGVD as this may be too low.	The Incremental Field Tests provide an opportunity for varying operations within a reasonable range that allows for the assessment of effects. While water supply deliveries may be made year round dependent upon the constraint of 7.5 feet, NGVD measures at the S-333 HW, the Increment 2 Operational Strategy works to address potential concern from both the water supply and environmental restoration perspectives by implementing an operational constraint of 8.0 feet, NGVD as opposed to the 7.5 or 8.5 feet, NGVD. In the event that water levels reach 7.5 feet, NGVD, water supply deliveries from WCA-3A may be made if water is supplied from another source into WCA-3A. "The L-67A borrow canal (measured at S-333 HW) stage should not be drawn down below 7.5 feet, NGVD unless water is supplied from another source" (in accordance with the WCA-3A Regulation Schedule).
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP)		
Comment Date: January 2, 2018		
FDEP-1	The Department has provided input and guidance throughout the planning process and is supportive of raising levels in the L-31N canal up to 8.5 feet NGVD to enable increased inflows to NESRS as was envisioned under the Modified Water Deliveries to Everglades National Park (MWD) Project. The Department recognizes that the Increment 2 Field Rest is being conducted as an effort that will result in the Combined Operational Plan for the operation of water management infrastructure connected to the Modified Water Deliveries and C-111 South Dade Projects. The Department recommends a re-evaluation of the proposed change in utilizing the current trigger gages (LPG1 and LPG2) to Angels Well for operations of the S-357 Pump Station for 8.5 SMA flood mitigation. Angels Well is located west of the L-357W levee in wetlands that are intended to have increased hydroperiods and are expected to be restored by the MWD Project. Moving the trigger gage into an area that was intended for enhancement and restoration appears to be in conflict with the objective of enhancing hydroperiods of the natural areas. The Department is concerned that the proposed operations may over drain wetlands that are located west of the L-357 levee, and finds that this EA does not adequately evaluate the potential impacts associated with moving the trigger well. The Department recommends continuing the use of LPG1 and LPG2 as trigger gages for operations of S-357.	LPG1 and LPG2 are both located within the 8.5 SMA and are not appropriate trigger gages for determining operations to maintain the authorized level of flood mitigation. Operations triggered as a result of stages at these gages would occur much too late to provide an appropriate response time to operate S-357 effectively. In the 2012 Water Control Plan, the operational strategies used G-3273 as a constraint for inflows to NESRS, which limited the potential duration of elevated water stages within NESRS adjacent to the 8.5 SMA while the trigger gage for operations of the S-357 pump station relied on the gradient between Angel's Well and LPG-1. Under Increment 2, Angels Well (not located within ENP but outside 8.5 SMA), was proposed as a means of identifying a more accurate trigger gage that would ensure an adequate level of flood mitigation is maintained in 8.5 SMA while also providing increased water stages in ENP. The G-3273 gage is located much farther upstream than Angels which makes Angels a more predictive gage to stages in 8.5 SMA. As further detailed in Section 4.6.2.2 of the EA, based on review and consideration of the 2016 and 2017 operations for the 8.5 SMA, the Increment 2 operational strategy in **Appendix A, Part 1** proposes a tiered set of criteria for operating S-357 based on the stage at Angel's Well (0.25 miles west of LPG-2), the stage at LPG-2, and the duration of stages above the local ground elevation at LPG-2. Generally, as the stage at Angel's Well continues to rise and increase the stage gradient towards the 8.5 SMA, or as LPG-2 hydroperiod durations continue to increase, the tiered operations allow continued, gradual lowering of the C-357 operational level in order to ensure flood mitigation is maintained for the 8.5 SMA. As detailed in the Increment 2 operational strategy (**Appendix A, Part 1**), the C-357 Canal will generally be maintained between 4.0-6.0 feet, NGVD. Under the following two conditions, C-357 may be temporarily maintained within a range of 3.5-4.5 feet, NGVD: (1) If Angel's > 7.19 feet and LPG-2 > 6.59 feet, NGVD for 7 days or longer; or (2) If LPG-2 > 6.99 feet, NGVD for longer than 24 hours. The stage and recession rate of 8.5 SMA gages will be reviewed based on conditions and if necessary the range may be lowered by 0.5 feet increments to meet flood mitigation requirements. Similar to conditions experienced following Hurricane Irma in 2017, the Increment 2 Operational Strategy also specifies that if the condition exists whereby all available pumps at S-357 and S-331 are operating below 4.0 feet, NGVD for over two weeks and the 8.5 SMA flood mitigation criteria is not being met at LPG2 or LPG1, WCA 3A discharges through S-333 structure to NESRS will be incrementally reduced until the mitigation targets at either LPG2 or LPG1 are met.
FDEP-2	As recognized by the Corps, the Department has issued several emergency orders over the past few years to alleviate High Water Levels within the WCAs; these emergency orders have provided flexibility to deviate from the current operational strategy. The Department appreciated the incorporation of the additional operational flexibility for extreme High	The Preferred Alternative (Alternative B) is expected to benefit ENP by increasing flows to NESRS, as detailed throughout the EA. Alternative B best accomplishes this objective while meeting project constraints. Based on the stated constraints of the Increment 2 field test (Section 1.6 of the EA) to maintain the authorized purposes of the MWD Project, which includes the authorized flood mitigation requirements, water levels within the L-29 Canal and NESRS will not be raised above 7.5 feet, NGVD except under conditions that ensure adherence with the flood mitigation requirements for the 8.5 SMA. Increment 2 of

COMMENTER	AGENCY/PUBLIC COMMENT	U.S. ARMY CORPS OF ENGINEERS (USACE) RESPONSE
	Water Levels in WCA 3A within the selected alternative. The Department has concerns about the proposed operational strategy for the 8.5 SMA, including provisions for restricting flow through the S-333 from WCA 3A to NESRS when flood mitigation targets are not being met in the 8.5 SMA. The Department recommends additional justification be added to the EA to support this proposed operational strategy and reduce the need for emergency orders for future operations.	the MWD Project is also dependent on construction completion and operation of the C-111 South Dade NDA. The real-time assessment of 8.5 SMA flood mitigation requires recognition of the hydrologic relationships observed between the L-29 Canal, stages within NESRS proximal to the 8.5 SMA (G-3273 is used for this analysis, given its historical utilization as a constraint for inflows to NESRS), and stages observed within the 8.5 SMA protected area. COP will be implemented by January 1, 2020, such that the Increment 2 field test operations are expected to govern system-wide operations for less than 2 years. The COP development, which will be conducted concurrent with the first year under Increment 2, will utilize regional hydrologic modeling in order to balance the ecological restoration objectives of the MWD and C-111 South Dade projects while demonstrating compliance with the project constraints, which will include requirements to maintain the mitigation for project induced flood damages in the 8.5 SMA and to maintain the level of flood damage reduction associated with the 1994 C-111 General Reevaluation Report (GRR) Recommended Plan. The results from the future COP development will be used to update the flood mitigation analysis for the MWD 8.5 SMA GRR, including an updated flood impacts analysis for the 8.5 SMA; however, to continue accrual of interim benefits towards restoration of the natural systems, the MWD incremental field test (including Increment 2) is proceeding without availability of the detailed modeling analyses planned for COP. Therefore, prior to completion of the regional hydrologic modeling under the COP, and prior to further raising the maximum operating stage limit for the L-29 Canal, the hydrologic monitoring for the Increment 1.1 and 1.2 field test will continue to conduct real-time monitoring of 8.5 SMA flood mitigation performance. The assessment methodology for 8.5 SMA flood mitigation will continue to be informed by new information collected during the MWD incremental field test, and may be periodically revised if warranted by new information, such as Emergency Deviation operations. Refer to **Annex 2** of the Monitoring Plan (**Appendix C**) for a complete discussion of the evaluation methodology established by the Corps to support real-time evaluations of 8.5 SMA flood mitigation requirements during the Increment 1.1 and 1.2 and Increment 2 field tests. Consistent with the Corps' authorizing documents, throughout all phases of the MWD field test, operations cannot cause the 8.5 SMA to endure a greater duration of high water than they would have experienced prior to construction of the MWD project and prior to MWD implementation of increased flows to ENP. The Corps has an obligation to provide flood mitigation to the 8.5 SMA. The Increment 2 Operational Strategy has built in as much flexibility as reasonably possible to reduce the need for emergency orders for future operations while still achieving the goal of sending more flows to NESRS and maintaining the authorized level of flood mitigation. The restricted flows through the S-333 from WCA-3A to NESRS when flood mitigation targets are not being met in the 8.5 SMA do not distract from the project's ability to provide more water to NESRS.
FDEP-3	The Department recommends a review of the current project operation strategies associated with the authorized Department permits to ensure consistency with the proposed operational strategy described in this EA. If modifications are warranted for consistency, please coordinate with the Department prior to the implementation of this operational strategy.	Information regarding Increment 1 has been submitted to FDEP per specific condition 18 of the Comprehensive Everglades Restoration Plan Regulation Act (CERPRA) permit number 0246512-003. FDEP has issued a testing approval for a one year extension to Increment 1 testing operations associated with the S-356 pump station under the test authorization provision (specific condition no. 22 of CEPRA permit number 0246512-003). Operational authorization for S-356 has been turned over to the SFWMD; SFWMD obtained Permit No. 0317422-004 for operations of S-356. Coastal Zone Management Act coordination may involve modifications to the following, subject to further coordination with the SFWMD and FDEP: 1. Modification to File No. 0306639-003, S-197 Control Structure Project, Environmental Resource Permit: SFWMD permit 2. Modification to File No. 0246512-0004, Modified Water Deliveries to the Everglades National Park Project, CERPRA permit: SFWMD permit 3. Modification to File No. 0317442-003, 8.5 SMA S-357 Pump Station Project, CERPRA permit: SFWMD permit

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		4. Modification to File No. 0246512-012, C-111 South Dade and Modified Water Deliveries to Everglades National Park Project: Corps permit 5. Modification, if deemed necessary by FDEP for revised operations to S-333 S-335, S-337,S-343A, S-343B and S-344 to the Non Everglades Construction Everglades Forever Act Permit File No. 0237803-001: SFWMD permit 6. Modification to the C-111 South Dade Emergency Order No. 9 may be required to adjust the operations for S-332B/C/D and S-328. Under evaluation by FDEP. Acquisition of the required FDEP authorization for the EO 9 structures is not expected to delay implementation of Increment 2. 7. A gated control structure (S-357N), as per Increment 1 Test Authorization, currently planned to be constructed by February 2018, will connect the C-358 seepage collection canal to the existing C 357 Canal, upstream of S-357. The Corps commits to working with FDEP to obtain any required Department permits.
FLORIDA FISH AND WILDLIFE CONSERVATION COMMISION (FWC)		
Comment Date: December 18, 2017		
FWC-1	The Water Control Plan operations proposed by Increment 2 Field Test affect an area within the C&SF Project located in south Florida, including portions the Everglades and Francis S. Taylor Wildlife Management Area (EWMA), ENP, Big Cypress National Preserve (BCNP), and adjacent areas. The FWC has fish and wildlife and land management responsibilities for the EWMA which includes WCA-2, WCA-2B, WCA-3A, and WCA-3B, and has found that hydrology, water depth, and duration of standing water are very important components of wildlife and habitat protection. The preferred alternative (Alternative B), raises the maximum operational limit of the L-29 canal to 8.5 feet NGVD and allows more water to move from the EWMA and into NESRS. Additionally, the preferred alternative incorporates operational flexibility through adaptive management to allow for a rapid response to extreme high-water levels in Water Conservation Area 3A. The FWC has participated on the Project Delivery Team (PDT) for the Increment 2 Field Test and supports USACE's efforts to raise the operational constraints of the L-29 canal to increase flows to Northeast Shark River Slough. Additionally, the FWC previously commented on the Increment 1.1 and Increment 1.2 EA on January 20, 2017, and most recently provided comments for the scoping of the Combine Operation Plan on October 24, 2017. The FWC continues to support operations that alleviate constraints on the L-29 canal stage to facilitate moving water from the EWMA to Northeast Shark River Slough and on to Florida Bay. We find this project consistent with FWC's authorities under the Coastal Zone Management Act/Florida's Coastal Management Program and we will continue to work with partnering agencies to conserve Florida's fish and wildlife resources.	Thank you for your comments. The Corps agrees to maintain an open and cooperative communication with the Florida Fish and Wildlife conservation Commission during operations of the Proposed Action.
SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD)		

COMMENTER	AGENCY/PUBLIC COMMENT	U.S. ARMY CORPS OF ENGINEERS (USACE) RESPONSE
Comment Date: January 9, 2018		
SFWMD-1	The SFWMD supports the next incremental field test (2.0) as the next step towards a Combined Operational Plan. It will increase the operating limit of the L-29 Canal up to 8.5 ft NGVD while testing the performance of the 8.5 SMA mitigation features. The expectation is that more information will be available to confirm which gauges and stages should be applied to trigger operation of the S-357 and S-331 pump stations. It is unfortunate that the C-111 South Dade project's Northern Detention Area may not be functional until after the 2018 wet season, as its ability to receive and retain water from S-357 pump station is essential to fully understanding the potential performance of the new infrastructure to provide flood protection while restoring the NESRS.	Thank you for your comments. Although the Corps will have completed NEPA requirements to allow raising the maximum operating limit in the L-29 Canal up to 8.5 feet NGVD, subject to downstream constraints, actual raising of the L-29 Canal constraint above 7.8 feet NGVD (as currently allowable under Increment 1.2) is dependent upon completion of critical features necessary to operate the Canal 111 South Dade Project North Detention Area (NDA). Due to impacts associated with Hurricane Irma, construction of these critical features has been delayed. Based upon the latest construction schedule estimate, the critical features will likely be completed by June 2018, pending the outcome of negotiations of the NDA contract modification. Once the NDA critical features have been constructed and accepted by the Corps, the Corps will have the ability to raise the L-29 Canal maximum operating limit up to 8.5 feet NGVD subject to downstream constraints identified in the Increment 2 NEPA.
SFWMD-2	In the interim, flexibility to operate the 8.5 SMA mitigation features may be key to understanding its performance limits and the potential need for additional infrastructure modifications. The successful (accurate and sufficiently precise) representation of the 8.5 SMA in the COP modeling will rely substantively on using and being able to match the behavior demonstrated with the 2017 conditions and operations. It is expected that our collective experience with S-357N will provide valuable information on how best to use this structure in the future.	The 1983 Base Condition identifies the level of flood mitigation for the 8.5 SMA that will be maintained in the COP process; Base 1983 represents the conditions in the 8.5 SMA before MWD was implemented, consistent with the requirements set forth in the 8.5 SMA 2000 GRR Record of Decision. The MWD field test increments were developed based on extensive evaluation of historical operations data, which have been detailed in the corresponding Environmental Assessment reports. The monitoring plans for surface water hydrology and groundwater hydrology for the MWD Incremental Field Tests (refer to Annex 2 of the Increment 2 Monitoring Plan Appendix C) will continue to provide data to assess performance of the 8.5 SMA project components, including S357 and S-357N (pending construction completion), to maintain the surface water and groundwater levels within the project areas of the 8.5 SMA, between the L-357W Levee and the L-31N Levee at the same levels as existed prior to the implementation of any MWD Project components. As included in the original Increment 1 Operational Strategy, Increment 1.1/1.2 and Increment 2 will also implement a testing protocol to assist in defining operating criteria for the new 8.5 SMA S-357N water control structure following completion of construction (currently anticipated in February 2018). During the development of the COP hydrologic modeling tools (the MD-RSM model will be used to evaluate 8.5 SMA flood mitigation), the COP interagency modeling team will continue efforts to ensure the successful (accurate and sufficiently precise) representation of the 8.5 SMA in the COP modeling, consistent with previously-identified validation checks which will rely substantively on using and being able to match the behavior demonstrated with the 2017 conditions and operations (which included temporary operation of the interim NDA components).
SFWMD-3	SFWMD also strongly supports the continued use of S-197 to provide flood protection including the low flow levels (<400 cfs) as a means to reduce the frequency of first level flow releases (<800 cfs). Since the incremental field tests have been in place and included low flows at S-197, SFWMD has demonstrated that during wet or flood conditions more water can be sent to all three natural areas, ENP Panhandle, Manatee Bay and Taylor Slough, and maintain flood protection. The operational criteria for S-197 prescribe very small releases when S-177 is closed, meaning the capacity of S-332B, S-332C, S-33D, S-199 and S-200 are sufficient. This small capacity is an appropriate measure to help mitigate the risk of increased seepage which, as demonstrated by the challenges with the 8.5 SMA, tend to be under estimated by the models. By setting a minimum stage for S-197 low flow	It is the intent of the Corps to re-evaluate operational criteria previously defined for S-197 during COP, if supported by the analysis of the data collected after the field tests. Concurrent with the MWD Increment 1.1 and 1.2 and the proposed Increment 2 field test, the SFWMD will continue to operate their expedited C-111 Spreader Canal Western Project. Consistent with the requirements of the February 2017 re-issued C-111 Spreader Canal regulatory permit from the Corps, the SFWMD is continuing to assess south Miami-Dade water conditions and existing operations, including those of the C-111 Spreader Canal Western Project, on a quarterly basis for a minimum of five years to ensure project features are constructed and operated not to adversely affect adjacent lands outside and within the C-111 Spreader Canal Western Project boundary with regards to water quantity, water quality, and/or flooding. The purpose of the assessment and quarterly reports are to ensure the SFWMD has the best available information to determine what operational system changes, if any, are necessary to avoid adverse water levels on adjacent lands. The enhanced reporting by SFWMD will also benefit the monitoring objectives of the current Increment 1.1 and 1.2 field test and the future

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	openings and limiting the S-197 flows to less than 400 cfs, water stages rise upstream forcing water over the C-111 Canal bank upstream of S-197 and S-18C and into the ENP Panhandle. These opportunistic operations continued through much of the 2017 Planned and Emergency Temporary Deviation and recovery period. In addition, with greater certainty that low flow releases will continue through S-197 based on S-18C stages, a portion of the available water can continue to be diverted west directly towards Taylor slough via S-332D, S-328, S-200 and G-737. This type of operation benefits all the natural resources in the C-111 Basin regardless of status of infrastructure upstream or conditions.	Increment 2 field test. It is presently anticipated that additional information generated from the ongoing SFWMD monitoring within the C-111 Spreader Canal Western Project area will be considered during development of the COP. The Corps is supportive of SFWMD continuing to facilitate interagency discussions during COP, similar to the SFWMD South Dade Investigation workshops during 2015-2016, regarding potential opportunities to modify S-197 operations to best balance restoration benefits and flood protection requirements.
SFWMD-4	SFWMD has three additional comments on the EA; Water Quality Section 3.12 and 3.12.1 (Water Quality – Page 3.20: The water quality of the study area is largely controlled by Lake Okeechobee and the EAA to the north…" While this may have been true many years ago, there is more current scientific evidence to support that there is no water quality signal from either Lake Okeechobee or the EAA present in the WCA 3A today.	Since the bypass of the STA's has been essentially eliminated (except under extreme environmental conditions), the water quality of the project area is primarily influenced by legacy loading, untreated discharges from the S-9 and weather conditions/rainfall patterns. Dryout conditions in marsh/urban areas served by the S-9 and within the WCA's, followed by high rainfall events are very likely associated with release of nutrients into the water column from sediments/vegetation. The northern WCAs are fed from Lake Okeechobee as well as runoff from the EAA. Typically under normal conditions all water from Lake Okeechobee and the EAA is routed through the Stormwater Treatment Areas (STAs). Water deliveries to the Everglades has been greatly improved by the implementation of the STA's
SFWMD-5	Nutrients – Page 3.21: Due to the unusual record high rainfall events during June 2017 that followed a prolonged dry period in the WCAs, sudden high flows with high phosphorous concentrations during June and subsequent months resulted. Due to the flows/concentrations during June 2017, ~~it is predicted that~~ the preliminary SRS FWMM for WY 2017 ~~will~~ exceeded the SRS long term limit by 2.1 ppb.	Thank you for your comments. The EA has been revised to incorporate the suggested changes.
PUBLIC (ENVIRONMENTAL STAKEHOLDERS AND PRIVATE CITIZENS)		
Everglades Law Center, National Parks Conservation Association, Everglades Foundation, Audubon Florida		
NGO-1	We again oppose operations which would lower S-18C canal stages and/or increase S-197 discharges, 1 which are counter to restoration goals and operating plans for the C-111 Western Spreader Canal Project, are not reflected in the original Mod Waters plan, and set a dangerous precedent. As we have in our prior comments, we emphasize that these operations – contrary to CERP – should not be allowed to continue as part of the Combined Operations Plan (to be implemented in 2020) absent clear data and analysis demonstrating that they are needed to address increases in flooding risk as a result of increased flows in Northeast Shark River Slough ("NESRS").	The SFWMD has implemented features of the C-111 Spreader Canal Western Project under the State Expedited Construction program (i.e. Accelerate Everglades Restoration Project [Acceler8]) for the purpose of expediting design and construction of a number of critical restoration projects consistent with the CERP. A Department of Army permit (SAJ-2005-9856 [IP-AAZ]) was issued to the SFWMD on October 14, 2009 for the construction and operation of the project. Initial construction of the C-111 Spreader Canal Western Project was completed in January 2012 with completion of the Frog Pond Detention Area, partial Aerojet Canal features, plugs in the C-110 Canal, and a plug at S-20A. Construction of the remaining two southern weirs along the Aerojet Canal began in November 2014 and was completed in early 2015. Construction of a new water control structure in the lower C-111 Canal (*i.e.* S-198, which would be located south of S-18C) and incremental increases in the open/close stage triggers at S-18C have not yet been implemented. The SFWMD initiated operation of the C-111 Spreader Canal Western Project constructed components in June 2012, in accordance with the Project Operating Manual (POM) developed with the PIR. At the request of SFWMD, a revised POM was approved in June 2016. Steps will be taken in the future to incorporate the project into the federally authorized C&SF Project once the project's consistency with the 2014 WRRDA authorized project has been documented and approved by the Corps, and a Project Partnership Agreement (PPA) between the Corps and SFWMD has been executed. Pending execution of the PPA, operation of the C-111 Spreader Canal Western Project is not included as part of the 2012 WCAs, ENP, and ENP to SDCS Water Control Plan (hereafter referred to as the 2012 Water Control Plan) (USACE 2012c) or within the scope of COP. The SFWMD will continue to operate their expedited C-111 Spreader Canal Western Project. Consistent with the requirements of the February 2017 re-issued C-111 Spreader Canal regulatory permit from the Corps, the SFWMD is continuing to assess south Miami-Dade water conditions and existing operations, including those of the C-111 Spreader Canal Project, on a quarterly

COMMENTER	AGENCY/PUBLIC COMMENT	U.S. ARMY CORPS OF ENGINEERS (USACE) RESPONSE
		basis for a minimum of five years to ensure project features are constructed and operated not to adversely affect adjacent lands outside and within the C-111 Spreader Canal Western Project boundary with regards to water quantity, water quality, and/or flooding. The purpose of the assessment and quarterly reports are to ensure the SFWMD has the best available information to determine what operational system changes, if any, are necessary to avoid adverse water levels on adjacent lands. It is presently anticipated that additional information generated from the ongoing SFWMD monitoring within the C-111 Spreader Canal Western Project area will be considered during development of the COP.
NGO-2	We have long supported implementation of Mod Waters, with its operations that move more water south through the historic Everglades flowway – through NESRS, Shark River Slough, Taylor Slough and into Florida Bay. We want to reiterate that a central element of this project is to reestablish the historic connection that occurred when water in NESRS would pond high enough during the wet season that a direct flow connection from NESRS to Taylor Slough was established annually across the Rocky Glades and that this flow persisted well into the dry season. The proposal now under consideration – the third stage in the incremental implementation of operational changes, known as Increment 2 – would allow water levels in the L-29 canal to rise as high as 8.5 feet NGVD and adjusts operations at many structures in the southern portion of the Central and Southern Florida System ("C&SF System"). This ensures protection for the Cape Sable Seaside Sparrow ("Sparrow") populations with habitat both east and west of Shark River Slough as well as to allow flexibility to maintain levels of flood protection in a residential area west of the L-31N canal and in agricultural lands in the southern portion of the system, east of the C-111 canal. See, generally, November 2017 Draft EA/FONSI. The November 2017 Draft EA/FONSI suggests that Increment 2 could increase water deliveries into NESRS by almost 400,000 acre-feet. Id. at 4-19. We strongly support moving ahead with operations that allow for Everglades restoration without delay. However, there are some issues of concern that remain within the Preferred Alternative (Alternative B). **Increasing flows through S-197** We have repeatedly raised concerns about plans to increase discharges from the S-197 structure, purportedly to mitigate increased flood risks being taken on by agricultural landowners in South Dade County as a result of increased flows in the historic Everglades flowway. The need for and adverse effects of increased S-197 discharges have not been evaluated in a data-based analysis.[2] To the contrary, as we have stated in past comments, the NEPA documentation for these operations has generally been loaded with conditional terms such as "potential flood risks," "may be affected," and "may result in," although the best available data suggest that any increased flood risks are unrelated to Mod Waters/Combined Operations Plan operations. See November 2017 Draft EA/FONSI at 4-33 ("To mitigate for ***potential*** increased risk to flood protection in south Miami-Dade County areas, which ***may*** be affected by increased water levels in NESRS and	Thank you for your comments. A stated goal of the 1994 C-111 South Dade GRR and EIS includes the reduction of damaging freshwater discharges to Manatee Bay and Barnes Sound while maintaining flood protection to agricultural lands east of the C-111 Canal. Goals also include the extension of hydroperiods within the ENP Eastern Panhandle, and the promotion of additional overland flows across the ENP Eastern Panhandle towards northeast Florida Bay. Implementation of COP is anticipated to increase the availability of water deliveries from WCA 3A to ENP through NESRS and improve hydrologic conditions in Taylor Slough, the Rocky Glades, and the eastern panhandle of ENP by defining operations for the completed components of the MWD and C-111 South Dade Projects. Implementation of the MWD operational field tests (*i.e.* Increment 1, 1.1, 1.2 and 2) included operational criteria that increased the potential for additional low volume releases at S-197. This additional operational flexibility was included within the MWD operational field tests due to uncertainty resulting from increased stages in NESRS and the potential for increased seepage to the L-31N Canal south of S-331. It is the intent of the Corps to re-evaluate operational criteria previously defined for this structure during COP.

COMMENTER	AGENCY/PUBLIC COMMENT	U.S. ARMY CORPS OF ENGINEERS (USACE) RESPONSE
	associated water management operations within south Miami-Dade County during the field test, low volume releases from S-197 are included as components of the No Action Alternative.”)[3]As we noted in prior comments, data show that the amount of water discharged through S-197 in 2015-16 was much more than necessary to keep agricultural lands dry. To similar effect, data presented in the November 2017 Draft EA/FONSI suggest that daily outflows from the S-197 structure exceeded daily inflows into the lower portion of the C-111 canal (through the S-18C structure) during portions of emergency operations in the Fall of 2017. *See* November 2017 Draft EA/FONSI at 4-27. The November 2017 Draft EA/FONSI suggests the potential for increased discharges from the S-197 structure under both “normal” operations and emergency high water operations under the Preferred Alternative. First, in “normal” operations, increased stages in the L-29 canal “will result in increased seepage to the L-31N canal as increased flow into NESRS will likely increase stages along the west side of L-31N.” *Id.* at 4-47. Although the November 2017 Draft EA/FONSI anticipates that completion of the C-111 South Dade Project will allow that additional water to be effectively used to help create and maintain a hydraulic ridge separating the wetlands of Everglades National Park from the L-31N canal to their east, “this will be the initial opportunity to gain operational experience with the [project], and thus Alternative B continues to allow water managers flexibility to make discharges out of the S-197 structure even when there is not an emergency high water situation.”[4] *Id.; see also id.* at 4-35 (“The normal management of water will be to fully maintain the hydraulic ridge and deliver water to eastern ENP using the full available capacity of [various structures]. If the capacity [of those structures] is unable to maintain the operational range then S-194/S-196/S-197 may be additionally used (low flow discharges through S 197 available . . .).”); and at 4-47(“Alternative B has expanded the use of low volume S-197 operations to include drier periods).[5] Second, Alternative B adds an “Extreme High Water Action Line” that enables water managers to reduce water levels in WCA-3A more rapidly than they could under prior operations. Id. at 4-28. Although the November 2017 Draft EA/FONSI predicts small effects as a result of the Extreme High Water Action Line – it highlights that the line would have been exceeded only five times in the past 15 years, with an average duration of 51 days – the document fails to model the effects of this change, implicitly recognizing the uncertainty about how this change may undermine the project restoration goals. And it does acknowledge that “operational actions taken as a response to extreme high water conditions resulted in high flow rates through the S-197 structure” and that without the additional criteria, there would be fewer discharges from S-197. Id. at 4-26.	

COMMENTER	AGENCY/PUBLIC COMMENT	U.S. ARMY CORPS OF ENGINEERS (USACE) RESPONSE
	The 1994 General Reevaluation Report determined that the use of the S-197 structure was harmful to Barnes Sound and Manatee Bay and its use should be eliminated. Discharges through S-197 directly reduce the amount of water that is able to enter Florida Bay through Taylor Slough. To prevent repeated hyper-salinity in Florida Bay, flows through S-197 must be reduced as part of Increment 2 operations and eliminated as part of the Combined Operations Plan. We continue to oppose operations that run counter to CERP, and which are purportedly designed to protect against unsubstantiated claims of increased flooding risks. *2 For example, in the November 2017 Draft EA/FONSI, the Corps dismisses potential adverse effects to nearshore areas:* *Alternative B may result in minor to moderate increases in the frequency and duration of low-volume (less than 500 cfs) S-197 discharges to Manatee Bay and Barnes Sound consistent with the No Action Alternative. Potential minor adverse impacts associated with salinity fluctuations under Alternative B, would be temporary and spatially limited to nearshore areas within the southern estuaries. Manatee Bay and Barnes Sound are relatively large bodies of water with open connections to Card Sound and the Atlantic Ocean. Waters within Manatee Bay and Barnes Sound have been documented to have shorter residence times and experience more tidal flushing relative to northeastern Florida Bay (Marshall 2014).* *3 Even with almost six years of monitoring, the effects of increased water levels and flows have not been clearly documented. See November 2017 Draft EA/FONSI ("The SFWMD efforts to monitor the impacts of the project operation and ensure protection of privately-owned lands in the vicinity of the C-111 Spreader Canal Western Project area remain ongoing and inconclusive based on the limited period of monitoring data collected since June 2012.")* *4 It is worth noting that regulatory releases into the SDCS – what historically provided the justification for discharges from S-197 – are predicted to be greatly reduced as a result of these operational changes. Id. at 4-28 (noting 81% reduction in number of days with regulatory discharges from WCA 3A into the SDCS, and accumulated volume of discharges into the SDCS by 85%).* *5 These additional opportunities for low-flow discharges out of the S-197 structure were inserted into earlier increments of Combined Operations Plan implementation for different reasons -- most recently, to allow water managers flexibility to keep dry the areas where construction of critical restoration projects is being expedited. See December 2016 Supplemental Environmental Assessment and Proposed Finding of No Significant Impact -- G-3273 Constraint Relaxation/S-356 Field Test and S-357N Revised Operational Strategy: Increment 1 Plus (Increment 1.1/ 1.2) ("December 2016 Draft Supplemental EA") at 4-35 ("The Increment 1.1/1.2 operational strategy proposes to generally lower the target operational ranges for the . . . L-31N Canal . . . in order to facilitate the construction of C-111 South*	
NGO-3	**Increasing Stages at S-18C**	Thank you – please see response to comment NGO-2 above.

COMMENTER	AGENCY/PUBLIC COMMENT	U.S. ARMY CORPS OF ENGINEERS (USACE) RESPONSE
	We reiterate that the Final Project Implementation Report and Environmental Impact Statement ("FPIR/FEIS") for the C-111 Spreader Canal Western Project indicates that the Western Project is intended to implement incremental changes to raise water levels at S-18C. While the project has been operational for five years, no increase at S-18C has occurred. The FPIR/FEIS Executive Summary lists "incremental operational changes at S-18C" as one of the project components, up to four 0.1 foot incremental adjustments. See Final C-111 PIR/EIS at es-xi, xii. The detailed discussion of the selected plan (starting on page 6-1) again emphasizes that "incremental changes at existing structure S-18C" are part of this project. Failure to raise the canal stage at S-18C results in seepage from Taylor Slough into the entire length of the C-111 canal from S-200 south to S-18C. Water budgets of C-111 flow indicate that much of this seepage is the same water that is later discharged at S-197. Therefore, raising the canal stage at S-18C will have the dual benefits of moving more water into Taylor Slough where it is needed and preventing the need to discharge extreme amount of water through S-197. We strongly urge you to push forward on implementing stepwise increases in the allowable stage at the S-18C structure as contemplated in the FPIR/FEIS, as part of the COP.	
NGO-4	**Flood Control for the 8.5 Square Mile Area** We look forward to the opportunity to assess correlations between increased canal stages in the L-29 canal and water levels in NESRS and the 8.5 Square Mile Area to the east, now that flood control measures have been (or are about to be) fully constructed and implemented. The November 2017 Draft EA/FONSI makes clear that the relationship between increasing flows in NESRS and flooding impacts on the 8.5 Square Mile Area remains unclear. It suggests that data compiled this past fall during and around Hurricane Irma show ***combined*** effects of local rainfall and elevated L-29 canal stages, but does not untangle the two causes of flooding. *Id.* at 4-39. Nonetheless, the November 2017 Draft EA/FONSI acknowledges significant changes have been made to operations to provide flood mitigation purportedly due to increased seepage as a result of the high canal stages. *See id.* at 4-38. Moreover, going forward, the November 2017 Draft EA/FONSI states that if agencies determine that ground water levels in the 8.5 Square Mile Area do not subside enough and quickly enough, they may need to restrict the L-29 operating limited below its authorized level of 8.5 feet NGVD. Given that altering proposed operations to address the 8.5 Square Mile Area water levels can have significant adverse effects on restoration progress, we emphasize the need to be careful in attributing flooding within this residential community to implementation of Increment 2 operations. We remain confident that once construction is finalized in the 8.5 Square Mile Area we will be able to raise canal stages in the L-29 canal to allow water to flow under Tamiami	Please refer to response to EPA-2. Refer to **Annex 2** of the Monitoring Plan (**Appendix C**) for a complete discussion of the evaluation methodology established by the Corps to support real-time evaluations of 8.5 SMA flood mitigation requirements during the Increment 1.1 and 1.2 and Increment 2 field tests. The completed MWD Project will provide additional inflows to ENP by conditionally raising the maximum operating limit of the L-29 Canal up to 8.5 feet NGVD following the acquisition of the required real estate interests along the Tamiami Trail roadway by the Corps and DOI/ENP and functional completion of the C-111 NDA, while maintaining adherence to both the FDOT constraints for protection of the Tamiami Trail roadway and the 8.5 SMA flood mitigation constraints. Real estate acquisition along eastern Tamiami Trail was completed in August 2017, although the implementation timeline for the cures may also need to be considered by the Corps prior to raising the L-29 Canal operating limits. Prior to completion of the regional hydrologic modeling under the COP, and prior to further raising the maximum operating stage limit for the L-29 Canal, the hydrologic monitoring for the Increment 1.1 and 1.2 and Increment 2 field tests will continue to conduct real-time monitoring of 8.5 SMA flood mitigation performance. The assessment methodology for 8.5 SMA flood mitigation will continue to be informed by new information collected during the MWD incremental field test, and may be periodically revised if warranted by new information, such as Emergency Deviation operations. The 8.5 SMA, when fully constructed and operational, is designed provide mitigation for the increased water levels that will occur once the MWD project is fully implemented and the associated additional water flows are delivered to ENP. The 8.5 SMA flood mitigation features do not work independently, as full mitigation is dependent on both the MWD 8.5 SMA features and the C-111 South Dade project features. The MWD project and the C-111 South Dade project work together, and more water deliveries (out of WCA 3A and into the ENP) cannot occur without adversely impacting private property within the 8.5 SMA until the C-111 South Dade NDA is constructed, operational, and connected to the 8.5 SMA Detention Cell. Limited operational experience from the 2017 temporary operation of the interim NDA is insufficient to support establishment of definitive correlations for the L-29 Canal stage and potential effects on 8.5 SMA, and this correlation will continue to

COMMENTER	AGENCY/PUBLIC COMMENT	U.S. ARMY CORPS OF ENGINEERS (USACE) RESPONSE
	Trail as it was envisioned without impacting that community. Moving forward, the Corps must ensure it accurately represents conditions in the 8.5 Square Mile Area and the extent to which flooding there is caused by increases in the L-29 canal stage so that it does not unnecessarily undermine restoration progress.	be investigated and evaluated under a wider range of hydrologic and operational conditions under Increment 2. These evaluations will also be supplemented by the detailed COP modeling evaluations, which include assessment for the 8.5 SMA flood mitigation constraint. High Water associated with 2016 El Niño, 2017 Rainfall Extreme Events and Hurricane Irma delayed contractor progress for completion of the NDA during the 2017 wet season months. The C-111 South Dade Contract 8 (including the NDA components) terminated for government convenience in September 2017, and the Contract 8A (including the SDA internal levees) suspended September 2017 through December 2017. The current revised targeted completion date for C-111 South Dade NDA features is June 2018, pending the outcome of a contract modification negotiation with the Contract 8A contractor.
NGO-5	**Protecting the Cape Sable seaside sparrow** *Subpopulation A* The Preferred Alternative would continue to implement the Reasonable and Prudent Alternative ("RPA") set forth in the July 2016 Biological Opinion for the Everglades Restoration Transition Plan ("July 2016 ERTP BiOp"). However, modeling has still not been done to assess what the Corps refers to as the "high water strategy" – an exception to the extended closure period for the S-12A and S-12B structures, allowing those structures to open in October and November under specified conditions to mitigate the need for later openings to avoid "overtopping" the structures (which can threaten their structural integrity). We continue to request that monitoring be implemented to assess the need for and effect of violating the extended closure periods for S-12A/B, and support the U.S. Fish and Wildlife Service's ("Service's") request that the Corps evaluate other operational strategies to avoid overtopping the S-12 gates in high water.[6] 6 The Service asked: . . . that the Corps provide a strategy for pre-emptively operating structures in order to avoid the need for the exit strategy openings of the S-12A/B. The Service requests that discharges prior to October 1 be aggressive enough to allow as much water to be moved towards the east as possible. Pre-emptive operations should strive to avoid S-12A/B openings in October and November, when practicable. December 2016 Draft Supplemental EA at Appendix E-7/8.	Implementation of Increment 2 is being conducted pursuant to the 2016 ERTP BO. Inclusion of the high water strategy in relation to the opening of S-12A and S-12B is mandated per the RPA. As mentioned within Section 4.24 of the EA the Corps commits to avoiding, minimizing or mitigating for adverse effects. All practicable means to avoid or minimize environmental effects were incorporated into the Proposed Action. A monitoring plan has been developed for Increment 2. The monitoring plan has been reviewed by the USFWS. Furthermore, separate monitoring is being carried out as dictated by the July 2016 ERTP BO under that authority.
NGO-6	*Eastern Subpopulations* Although modeling of the Preferred Alternative shows benefits to Subpopulation A, it shows "variable effects" on the eastern subpopulations. *See* July 2016 ERTP BiOp at 205. Of particular concern are potential effects on Subpopulation E. *Id*. As the Service has emphasized, the effects on eastern Sparrow subpopulations must be closely monitored, and adaptive management is critical to ensure their protection and conservation. *Id*. at 205-06. The July 2016 ERTP BiOp sets targets for all subpopulations, reconsultation triggers,	Thank you for your comment. Please see response to NGO-5 above.

COMMENTER	AGENCY/PUBLIC COMMENT	U.S. ARMY CORPS OF ENGINEERS (USACE) RESPONSE
	and monitoring of habitat conditions and breeding success. We urge the agencies to work expeditiously to advance Everglades restoration while continuing to ensure an adequate nesting window for all Sparrow subpopulations and hydrologic regimes that support the bird's habitat – short-hydroperiod freshwater marl prairies in the southern Everglades.	
NGO-7	**S-328 and S-332D Operations and Water Quality** The Preferred Alternative includes increased discharges out of the S-328 and S-332D structures. Data have not yet been compiled showing whether discharges from the S-328 structure cause water quality problems in Taylor Slough. See November 2017 Draft EA/FONSI at 4-13. We look forward to reviewing the results of monitoring as operational changes are implemented and evaluated. In addition, the November 2017 Draft EA/FONSI Preferred Alternative again[7] allows for additional flows out of S-332D (and potentially other neighboring structures). The November 2017 Draft EA/FONSI does not discuss the potential for water quality problems as a result of these operations.[8] We again note that point flows will result in localized disruptions to flora and fauna, as they are entirely inconsistent with natural Everglades flow patterns. We emphasize the need to gather and evaluate data along the eastern boundary of Everglades National Park about the specific operations included in the Preferred Alternative to ensure they are not harmful from a water quality perspective. 7 In prior increments, additional discharges into Taylor Slough from S-332D were justified by other operational changes that were designed to move water away from Everglades restoration project construction areas along the South Dade canals. *See* December 2016 Draft Supplemental EA at 4-21; *see also id.* at 4-40. 8 The December 2016 Draft Supplemental EA explained at page 4-40: Experimentation with surface water flow to Taylor Slough and its effect on the vegetation within and adjacent to the slough has been well studied (Armentano et al. 2000, 2006, Nott et al. 1998, Olmstead et al. 1980, Van Lent et al. 1993, 1999). From 1980-1999, as part of the C&SF Project, various amounts of overland flow were discharged through the now decommissioned S-332 pump station which was located in the south western corner of L-31W. Rapid vegetation changes were observed where habitats dominated by short hydroperiod species such as Muhlenbergia were replaced by sawgrass and where sawgrass dominated habitats were replaced by more aquatic species such as Eleocharis. Cattail also became established near the pumping station potentially due to increased phosphorous loading.	Thank you for your comment. Agree that additional data and analysis needs to be conducted for the S-328/S-332D operations. The initial limited water quality data collected from the increased discharges out of the S-332D and new S-328 discharges has been encouraging (below 10ppb) but will need to continue to be evaluated under what is basically a start up condition. The S-332D detention system has been so leaky until the modifications by the SFWMD to reduce seepage were completed that no surface water from the S-332D was reaching the S-328. This resulting in woody vegetation etc within the detention area. As water continues to be routinely delivered to the S-332D detention system (as allowed by the seepage reduction projects), the upland conditions are expected to transition to area with more wetland characteristics. This type of system is expected to be more resilient in terms of handling nutrient loading. The impacts downstream of the S-328 discharges is being studied by ENP/SFWMD and that data will be shared as it becomes available.

Nasuti, Melissa A CIV USARMY CESAJ (US)

From: Steelman, Marcia (RER) <Marcia.Steelman@miamidade.gov>
Sent: Tuesday, December 12, 2017 10:58 AM
To: Nasuti, Melissa A CIV USARMY CESAJ (US)
Cc: Blanco-Pape, Marina (RER); Ayala, Ricardo (RER); Grossenbacher, Craig (RER)
Subject: [EXTERNAL] RE: EA and Proposed FONSI for MWD Increment 2 Field Test available for 60-day review
Attachments: CommentsNov2017_FONSI.docx

Mellissa,

Please find attached the Miami-Dade County RER's comments on the EA and FONSI for MODWATERS Increment 2.

Let us know if you have any questions.

Regards,

Marcia Steelman, CFM, Engineer 3
Water Management Division
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-----Original Message-----
From: Nobles, Nakeir L CIV USARMY CESAJ (US) [mailto:Nakeir.L.Nobles@usace.army.mil]
Sent: Tuesday, November 14, 2017 11:11 AM
To: !craft
Subject: EA and Proposed FONSI for MWD Increment 2 Field Test available for 60-day review

*** Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) for the Modified Water Deliveries (MWD) Project Increment 2 Field Test available for 60-day public and agency review ***

The EA and Proposed FONSI for the MWD Increment 2 Field Test is now available for public and agency review. Comments will be accepted through January 12, 2018. The Increment 2 Field Test is being conducted as part of a series of related, sequential efforts that will result in a comprehensive integrated water control plan, referred to as the Combined Operational Plan for the operation of water management infrastructure connected to the MWD and C-111 South Dade Projects. The Corps is proposing to raise the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum of 1929; replace the G-3273 stage constraint for S-333 inflows to Northeast Shark River Slough (NESRS) with local gages that trigger flood mitigation actions in 8.5 Square Mile Area and continue utilizing S-356 for control of seepage into the L-31N Canal. Implementation of the Proposed Action is anticipated to increase the availability of water deliveries from Water Conservation Area 3A to Everglades National Park through NESRS for the benefit of natural resources. The Proposed Action is located within the Everglades of southeastern Miami-Dade County.

View the EA and Proposed FONSI

Blockedhttp://www.saj.usace.army.mil/Missions/Environmental/Ecosystem-Restoration/G-3273-and-S-356-Pump-Station-Field-Test/

Blockedhttp://www.saj.usace.army.mil/About/DivisionsOffices/Planning/EnvironmentalBranch/EnvironEnvironmentalDo.aspx

Comments will be accepted through January 12, 2018, and can be sent electronically to melissa.a.nasuti@usace.army.mil, or mailed to:

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

-30-

Comments on "Environmental Assessment and Proposed Finding of No Significant Impact (FONSI), November 2017 - 2018: L-29 Canal and G-3273 Constraint Relaxation Including the Northern Detention Area (Revised Operational Strategy Increment 2)"

a. On page 148, the FONSI states that, more recently, areas within ENP, including NESRS, have been exposed to TP concentrations at or in excess of 0.10 mg/L (SFWMD 2010). The report also states that "the Proposed Action will not adversely affect water quality and will be in compliance with the appropriate conditions in the Everglades Forever Act Permit (File No. 0246512-10) and consistent with the Clean Water Act". Documentation supporting this statement was not provided in the report.

b. The FONSI needs to demonstrate if the three basic objectives of data collection have been achieved (water budget, mass balance, seepage quantification), providing a summary of the results to support the statements, for all discharges into Shark Slough, Taylor Slough and L-31N canals.

c. Items 3-20 and 4.11 of the FONSI , do not include a discussion on nutrient load changes into Shark Slough, Taylor Slough and L-31N canals, resulting proposed operational schedule, operation of the S-357 pump station, and the new features, included in the C-111 South Dade Contracts 8 and 8A, such as S-357N and , C-358 connection to the C-357 canal. Please provide estimates on nutrient load changes resulting of the implementation of alternatives B, C and G, based on the latest monitoring results, and nutrient removal estimates along the 8.5 SMA, North and South Detention Areas.

d. The Report should also include an assessment on the phosphorus target for S-356 and S-357 discharges, sources of nutrients, quantifying water quality interactions associated with the test performed.

e. Monitoring results show that return seepage from the 8.5 SMA Detention cell still affects the water levels in the C-357 canal, due to seepage. The report should include discussion on the effect of S-357 seepage and the solution for the problem, based on monitoring results, and estimates for new features, in the C-111 South Dade Project, including water budget and water quality load estimates.

f. The Appendix A, Part 1, item 5 should include language to provide operational flexibilities for prescribed extreme high water conditions for the L-29 borrow canal, since additional monitoring wells are going to be installed. See page A.1-18, for operational schedule.

Florida Fish and Wildlife Conservation Commission

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Chairman
Panama City

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Managing fish and wildlife resources for their long-term well-being and the benefit of people.

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December 18, 2017

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 #FL201711168199C, Department of the Army, Jacksonville District Corps of Engineers – Increment 2 Field Test Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) for the L-29 Canal and G-3273 Constraint Relaxation Including the Northern Detention Area (Revised Operational Strategy Increment 2) - Miami Dade County.

Dear Mr. Stahl:

The Florida Fish and Wildlife Conservation Commission (FWC) has reviewed the above-referenced assessment, and provides the following comments in accordance with FWC's authorities under Chapter 379, Florida Statutes; Chapter 68, Florida Administrative Code; and Article 4, Section 9, of the Florida Constitution.

Project Description

The U.S. Army Corps of Engineers, Jacksonville District (Corps), is proposing to modify the Operational Strategy currently defined in the February 2017 Increment 1.1 and Increment 1.2 EA to increase restoration flows to Northeast Shark River Slough (NESRS) in the Everglades National Park (ENP), while continuing to ensure flood mitigation within 8.5 Square Mile Area (SMA). National Environmental Policy Act (NEPA) documentation for Increment 1.1 and 1.2 was completed on February 16, 2017 with signing of a Finding No Significant Impact (FONSI). The Increment 2 field test is being conducted as part of a series of related, sequential efforts that will result in a comprehensive integrated water control plan, referred to as the Combined Operational Plan, for the operation of water management infrastructure connected to the MWD to ENP and C-111 South Dade Projects.

The Corps is proposing to raise the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum of 1929 (NGVD), while replacing the G-3273 stage constraint for S-333 inflows to NESRS with local gages that trigger flood mitigation actions in 8.5 SMA and continuing to utilize the S-356 pump station for control of seepage into the L-31N Canal.

Increment 2 is a deviation to the *Central and Southern Florida Project Water Control Plan for Water Conservation Areas, Everglades National Park, and ENP-South Dade Conveyance System, 2012* (Water Control Plan) and implementation of Increment 2 is a mandated requirement of the U.S Fish and Wildlife Service Biological Opinion for the Everglades Restoration Transition Plan, July 22, 2016. Implementation of the proposed action and operations under Increment 2 will extend until the implementation of the Combined Operational Plan. The following six alternatives are being considered under the proposed action:

- The No Action Alternative would continue Central and Southern Flood (C&SF) water management operations as defined in the February 2017 Increment 1.1 and 1.2 EA and FONSI for the operation of the water management infrastructure connected to the MWD

and C-111 South Dade Projects. The maximum operational limit of the L-29 canal is 7.8 feet National Geodetic Vertical Datum 1929 (NGVD) under the no action alternative.

- Alternative B proposes the relaxation of the G-3273 stage constraint and raising the maximum operational limit of the L-29 canal to 8.5 feet NGVD allowing NESRS to receive more water. Alternative B allows for adaptive management during high-water conditions and additional operational flexibility to respond to extreme high-water levels in Water Conservation Area (WCA) 3A.

- Alternative C proposes all component of Alternative B with the exception of the Florida Department of Transportation operational constraints to ensure the stability and safety of Tamiami Trail (U.S. 41).

- Alternative D proposes all component of Alternative B without Column 2 operations that provide for regulatory releases from WCA-3A.

- Alternative E proposes all component of Alternative B, except for those criteria utilized to define operations for structures S-331 and S-357.

- Alternative F proposes all component of Alternative B without operational changes at structure S-197.

Comments and Recommendations

The Water Control Plan operations proposed by Increment 2 Field Test affect an area within the C&SF Project located in south Florida, including portions the Everglades and Francis S. Taylor Wildlife Management Area (EWMA), ENP, Big Cypress National Preserve (BCNP), and adjacent areas.

The FWC has fish and wildlife and land management responsibilities for the EWMA which includes WCA-2, WCA-2B, WCA-3A, and WCA-3B, and has found that hydrology, water depth, and duration of standing water are very important components of wildlife and habitat protection. The preferred alternative (Alternative B), raises the maximum operational limit of the L-29 canal to 8.5 feet NGVD and allows more water to move from the EWMA and into NESRS. Additionally, the preferred alternative incorporates operational flexibility through adaptive management to allow for a rapid response to extreme high-water levels in Water Conservation Area 3A.

The FWC has participated on the Project Delivery Team (PDT) for the Increment 2 Field Test and supports USACE's efforts to raise the operational constraints of the L-29 canal to increase flows to Northeast Shark River Slough. Additionally, the FWC previously commented on the Increment 1.1 and Increment 1.2 EA on January 20, 2017, and most recently provided comments for the scoping of the Combine Operation Plan on October 24, 2017. The FWC continues to support operations that alleviate constraints on the L-29 canal stage to facilitate moving water from the EWMA to Northeast Shark River Slough and on to Florida Bay.

We find this project consistent with FWC's authorities under the Coastal Zone Management Act/Florida's Coastal Management Program and we will continue to work with partnering agencies to conserve Florida's fish and wildlife resources. If you need any further assistance, please do not hesitate to contact out office by email at FWCConservationPlanningServices@MyFWC.com. If you have specific technical questions

regarding the content of this letter, please contact James M. Erskine by phone at (561) 882-5704 or by email at James.Erskine@MyFWC.com.

Sincerely,

James Erskine, Everglades Coordinator
Office of Executive Director

jme/jh

From: Bradley Mueller
To: Ralph, Gina P CIV USARMY CESAJ (US)
Cc: Moreno, Meredith A CIV USARMY CESAJ (US)
Subject: [EXTERNAL] RE: Increment 2 letter
Date: Wednesday, December 20, 2017 11:40:29 AM
Attachments: image002.png

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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30290 JOSIE BILLIE HIGHWAY
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LAVONNE ROSE
SECRETARY

PETER A. HAHN
TREASURER

December 20, 2017

Ms. Gina Paduano Ralph, Ph.D.
Environmental Branch Chief, Planning and Policy Division
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Subject: USACE CW – Water Control Plan Deviation, Increment 2 Field Test
THPO Compliance Tracking Number: 0028534

Dear Ms. Ralph,

Thank you for contacting the Seminole Tribe of Florida – Tribal Historic Preservation Office (STOF-THPO) regarding the Water Control Plan Deviation, Increment 2 Field Test. The proposed undertaking does fall within the STOF Area of Interest. We have reviewed the documents the USACE provided including the recent Environmental Assessment and Proposed Finding of No Significant Impact and completed our project assessment pursuant to Section 106 of the National Historic Preservation Act as amended 2014, and its implementing authority, 36 CFR 800. We have no objections to the project at this time. Please consult with us if any unanticipated impacts from the field test are observed. Thank you and feel free to contact us with any questions or concerns.

Respectfully,

Bradley M. Mueller

Bradley M. Mueller, MA, Compliance Supervisor
STOF-THPO, Compliance Review Section
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440

-----Original Message-----
From: Moreno, Meredith A CIV USARMY CESAJ (US) [mailto:Meredith.A.Moreno@usace.army.mil]
Sent: Wednesday, December 20, 2017 11:18 AM
To: Bradley Mueller

Subject: Increment 2 letter

Attached is the Increment 2 letter. Comment period on the EA ends on January 12, so if you would like any comments included in the final EA let me know by then.

Thanks and have a great holiday!

Meredith A. Moreno, M.A., RPA
Archaeologist
Planning Division, Environmental Branch
Jacksonville District, US Army Corps of Engineers
Office: 904-232-1577
Mobile: 904-861-9967

OFFICE OF AGRICULTURAL WATER POLICY
(850) 617-1700

THE MAYO BUILDING
407 SOUTH CALHOUN STREET
TALLAHASSEE, FLORIDA 32399-0800

FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

COMMISSIONER ADAM H. PUTNAM

December 22, 2017

Mr. Chris Stahl
Florida State Clearinghouse
Florida Department of Environmental Protection
2600 Blair Stone Road, M.S. 47
Tallahassee, FL 32399-2400

RE: Department of the Army, Jacksonville District Corps of Engineers – Increment 2 Field Test Environmental Assessment and Proposed Finding of No Significant Impact for the L-29 Canal and G-3273 Constraint Relaxation Including the Northern Detention Area (Revised Operational Strategy Increment 2) Miami-Dade County, Florida dated November 2017 - SAI # FL 201711168199C

Dear Mr. Stahl:

The Florida Department of Agriculture and Consumer Services (FDACS) appreciates the opportunity to provide comments on the Increment 2 Field Test Environmental Assessment and Proposed Finding of No Significant Impact for the L-29 Canal and G-3273 Constraint Relaxation Including the Northern Detention Area (Revised Operational Strategy Increment 2) Miami-Dade County, Florida, dated November 2017. We are submitting the following comments for consideration as part of the Florida State Clearinghouse consistency evaluation.

FDACS supports the Increment 2 effort and completion of the C-111 South Dade Project to increase operational flexibility and the capacity to convey more water west towards Everglades National Park (ENP) and the headwaters of Taylor Slough. Both ENP and the agricultural areas adjacent to ENP will benefit from increased opportunities to move water away from the private lands where it is not needed and into the restoration project areas.

Agricultural lands in Miami-Dade County rely on the appropriate operation of the South Dade Conveyance System (SDCS), the C-111 South Dade project and the C-111 Spreader Canal Project to maintain flood protection. The Increment 2 Field Test should maintain flood protection capacity for private lands in local basins adjacent to ENP. We believe that implementation of the proposed revised operational strategy will result in negative impacts to privately owned agricultural lands in Miami-Dade County that rely on the SDCS unless operational flexibility is employed to offset the negative impacts of increasing canal levels back to ranges that do not maintain flood protection due to persistent high groundwater tables and the routine, unauthorized diversion of flood waters from other areas into the SDCS. Our concerns are detailed below.

S-334 and S-331 are not authorized for Water Conservation Area (WCA) 3A regulatory flood release flows but have been identified to be used for that purpose and to achieve the sharp reduction in L-29 stages required by the "Contract between the United States of America and the Florida Department of Transportation (FDOT) for Relocation, Rearrangement, or Alteration of Facilities Modified Water Deliveries to Everglades National Park Project". These unauthorized operations should not be unofficially authorized by Increment 2 and carried forward into the Combined Operational Plan (COP). Distribution of water during wet periods should concentrate on maximizing deliveries of water to NESRS. The goal of Increment 2 should be steps to eliminate Column 2 operations and WCA-3A high water discharges into the SDCS barring emergency conditions.

We are also concerned that Increment 2 will continue the use of S-331 to convey flood waters from the 8.5 Square Mile Area (SMA) into the SDCS if the current project is not adequate to provide the flood protection needed. If the 8.5 SMA project requires additional work to meet performance standards, that should be identified by Increment 2 so the use of S-331 to alleviate flooding in the 8.5 SMA is not incorporated into the COP.

Higher canal stages and operations that convey flood waters into the SDCS results in more water in the canals and detention areas, increasing the flood risk for properties east of ENP. Potential impacts to private lands must be addressed. Operational stages protective of private agricultural lands do not require a reduction in environmental benefits. The Increment 1 Field Test, the 2016 Temporary Emergency Operations and Deviations, and the 2017 Planned and Emergency Deviations demonstrate that along the L-31′ Canal reach, operation of the South Detention Area (SDA) has been able to maintain the hydraulic ridge and effectively hold stages in eastern ENP higher while also simultaneously maintaining lower L-31 N Canal levels to prevent or reduce

seepage under the L-31N. Given this success, lower canal levels east of ENP adjacent to agricultural lands should be used to protect against root zone flooding.

Agricultural lands in Miami-Dade County also rely on the appropriate operation of the SDCS, the C-111 South Dade project and the C-111 Spreader Canal Project to maintain water supply deliveries during dry times. During the drafting of Increment 2, we recommended maintaining the current WCA-3A three gage average operating criteria for supplemental flows to Taylor Slough of 8.0 feet NGVD in April and May and 8.5 feet NGVD in all other months. Lowering the stages for supplemental deliveries year-round could have an adverse impact on other water supply deliveries. Without analyses of the potential impact, we do not support a year-round 3 gage average stage of 8.0 feet NGVD as this may be too low.

Thank you for the opportunity to provide Clearinghouse comments. We look forward to continued progress for all areas impacted by the construction and operations of the South Dade restoration projects and working with our state and federal partners to improve system-wide capabilities and restoration success. 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
Environmental Manager
Office of Agricultural Water Policy

Memorandum

TO: Chris Stahl, Florida State Clearinghouse

THROUGH: Edward C. Smith, Director
Office of Ecosystem Projects

FROM: Inger Hansen and Alyssa Freitag
Office of Ecosystem Projects

DATE: January 02, 2018

SUBJECT: Department of the Army, Jacksonville District Corps of Engineers — Increment 2 Field Test Environmental Assessment and Proposed Finding of No Significant Impact for the L-29 Canal and G-3273 Constraint Relaxation Including the Northern Detention Area (Revised Operational Strategy Increment 2) — Miami-Dade County, Florida.

SAI #: FL201711168199C

Summary:

The Jacksonville District U.S. Army Corps of Engineers (Corps) has prepared an Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) for a deviation to the current Water Conservation Areas (WCAs), Everglades National Park (ENP), and ENP to South Dade Conveyance System Water Control Plan. The Corps is proposing to raise the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum of 1929; replace the G-3273 stage constraint for S-333 inflows to Northeast Shark River Slough (NESRS) with local gages that trigger flood mitigation actions in 8.5 Square Mile Area and continue utilizing S-356 for control of seepage into the L-31 N Canal. Implementation of the Proposed Action is anticipated to increase the availability of water deliveries from WCA 3A to ENP through NESRS for the benefit of natural resources. The Increment 2 Field Test is being conducted as part of a series of related, sequential efforts that will result in a comprehensive integrated water control plan, referred to as the Combined Operational Plan for the operation of water management infrastructure connected to the Modified Water Deliveries and C-111 South Dade Projects.

Background:

The Florida Department of Environmental Protection (FDEP/Department) has previously provided both verbal and written comments regarding the incremental relaxation of the G-3272 constraint for deliveries to the ENP throughout the joint planning efforts and the State's Coastal Zone Management Program responses.

Our comments on similar proposals were provided in the following letters and authorization submitted to the Corps:

- January 18, 2017, FDEP Memo to the State Clearinghouse regarding the Corps' Supplemental EA and Proposed FONSI for Increment 1 Plus
- September 30, 2016, FDEP Conditional Authorization to Conduct a Multi-Year Operational Test of the S-356 Pump Station (Increment 1 Plus)
- March 27, 2015, FDEP Clearinghouse letter for Draft EA and FONSI, Proposed G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy (SAI # FL201502067180C)
- March 13, 2015, FDEP Conditional Authorization to Conduct a Multi-Year Operational Test of the S-356 Pump Station (Increment 1)
- October 24, 2014, FDEP Conditional Authorization to Conduct a 21-Day Operational Test of the S-356 Pump Station (Increment 0)
- July 14, 2014, FDEP Clearinghouse letter for Scoping Notice — Proposed Operations Field Test (SAI # FL201308236696C)
- September 6, 2013, FDEP Memo with the South Florida Water Management District (SFWMD) comments on the Corps' Draft EA for the Proposed G-3273 Planned Deviation from the 2012 WCAs, ENP, and ENP-South Dade Conveyance System Water Control Plan (SAI # FL201308236696C)
- November 16, 2012, FDEP letter requesting additional information for a two-year S-356 Pump Station and G-3273 constraint relaxation field test request for the MWD to ENP Project (FDEP File No. 0246512). The letter contained both SFWMD and FDEP comments on the proposed testing project.
- July 8, 2011, FDEP Clearinghouse letter for Scoping Notice — Combined Operations Plan, MWD (SAI # FL201105255769)
- November 9, 2010, FDEP Memo to the State Clearinghouse regarding the Corps' Draft EA for Temporary Deviation from Interim Operation Plan (IOP) Table ES-1; S-333: G-3273 Constraint (SAI # FL10-5486C)
- December 9, 2009, FDEP Memo to Susan Conner (Corps) providing comments on the G-3273 Modification field test.

Comments:

The Department has provided input and guidance throughout the planning process and is supportive of raising levels in the L-31N canal up to 8.5 feet NGVD to enable increased inflows to NESRS as was envisioned under the Modified Water Deliveries to Everglades National Park (MWD) Project. The Department recognizes that the Increment 2 Field Test is being conducted as an effort that will result in the Combined Operational Plan for the operation of water management infrastructure connected to the Modified Water Deliveries and C-111 South Dade Projects.

The Department recommends a re-evaluation of the proposed change in utilizing the current trigger gages (LPG1 and LPG2) to Angels Well for operations of the S-357 Pump Station for 8.5 SMA

flood mitigation. Angels Well is located west of the L-357W levee in wetlands that are intended to have increased hydroperiods and are expected to be restored by the MWD project. Moving the trigger gage into an area that was intended for enhancement and restoration appears to be in conflict with the objective of enhancing hydroperiods of the natural areas. The Department is concerned that the proposed operations may over-drain wetlands that are located west of the L-357 levee, and finds that this EA does not adequately evaluate the potential impacts associated with moving the trigger well. The Department recommends continuing the use of LPG1 and LPG2 as trigger gages for operations of S-357.

As recognized by the Corps, the Department has issued several emergency orders over the past few years to alleviate High Water Levels within the WCAs; these emergency orders have provided flexibility to deviate from the current operational strategy. The Department appreciates the incorporation of the additional operational flexibility for Extreme High-Water Levels in WCA 3A within the selected alternative. The Department has concerns about the proposed operational strategy for the 8.5 SMA, including provisions for restricting flow through the S-333 from WCA 3A to NESRS when flood mitigation targets are not being met in the 8.5 SMA. The Department recommends that additional justification be added to the EA to support this proposed operational strategy and reduce the need for emergency orders for future operations.

The Department recommends a review of the current project operation strategies associated with the authorized Department permits to ensure consistency with the proposed operational strategy described in this EA. If modifications are warranted for consistency, please coordinate with the Department prior to the implementation of this operational strategy.

The Department sincerely appreciates the opportunity to comment and looks forward to continuing our partnership with the Corps. Should you have any questions regarding our comments, please contact Natalie Barfield at (850) 245-3197.

Electronic copies to:
Ed Smith
Frank Powell
Kelli Edson
Chad Kennedy
Inger Hansen
Rhapsodie Osborne
Jordan Pugh
Paul Julian
Alyssa Freitag
Tom Behlmer

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

January 9, 2018

Mr. Chris Stahl
Florida Department of Environmental Protection
Florida State Clearinghouse
2600 Blair Stone Road, MS 47
Tallahassee, FL 32399-2400

Subject: **FL2017168199C, Department of the Army, Jacksonville District Corps of Engineers - Increment 2 Field Test Environmental Assessment and Proposed Finding of No Significant Impact for the L-29 Canal and G-3273 Constraint Relaxation Including the Northern Detention Area (Revised Operational Strategy Increment 2) - Miami Dade County, Florida.**

Dear Mr. Stahl,

The Jacksonville District U.S. Army Corps of Engineers (Corps) has prepared an Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI) for a deviation to the current Water Conservation Areas (WCAs), Everglades National Park (ENP), and ENP to South Dade Conveyance System Water Control Plan. The Corps is proposing to raise the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum of 1929 (NGVD); replace the G-3273 stage constraint for S-333 inflows to Northeast Shark River Slough (NESRS) with local gauges that trigger flood mitigation actions in 8.5 Square Mile Area and continue utilizing S-356 to mitigate canal stages in the L-31 N Canal. Implementation of the Proposed Action is anticipated to increase the availability of water deliveries from WCA 3A to ENP through NESRS for the benefit of natural resources. The Increment 2 Field Test is being conducted as part of a series of related, sequential efforts that will result in a comprehensive integrated water control plan, referred to as the Combined Operational Plan for the operation of water management infrastructure connected to the Modified Water Deliveries and C-111 South Dade Projects.

The South Florida Water Management District (SFWMD) supports the next Incremental Field Test (2.0) as the next step towards a Combined Operational Plan. It will increase the operating limit of the L-29 Canal up to 8.5 ft NGVD while testing the performance of the 8.5 Square Mile Area mitigation features. The expectation is that more information will be available to confirm which gauges and stages should be applied to trigger operation of the S-357 and S-331 pump stations. It is unfortunate that the C-111 South Dade project's Northern Detention Area may not be functional until after the 2018 wet season, as its ability to receive and retain water from S-357 pump station is essential to fully understanding the potential performance of the new infrastructure to provide flood protection while restoring the NESRS.

In the interim, flexibility to operate the 8.5 SMA mitigation features may be key to understanding its performance limits and the potential need for additional infrastructure modifications. The successful (accurate and sufficiently precise) representation of the 8.5 SMA in the COP modeling will rely substantively on using and being able to match the behavior demonstrated with the 2017

conditions and operations. It is expected that our collective experience with S-357N will provide valuable information on how best to use this structure in the future.

SFWMD also strongly supports the continued use of S-197 to provide flood protection including the low flow levels (<400 cfs) as a means to reduce the frequency of first level flow releases (<800 cfs). Since the Incremental Field Tests have been in place and included low flows at S-197, SFWMD has demonstrated that during wet or flood conditions more water can be sent to all three natural areas, ENP Panhandle, Manatee Bay and Taylor Slough, and maintain flood protection. The operational criteria for S-197 prescribe very small releases when S-177 is closed, meaning the capacity of S-332B, S-332C, S-332D, S-199 and S-200 are sufficient. This small capacity is an appropriate measure to help mitigate the risk of increased seepage which, as demonstrated by the challenges with the 8.5 SMA, tend to be under estimated by the models. By setting a minimum stage for S-197 low flow openings and limiting the S-197 flows to less than 400 cfs, water stages rise upstream forcing water over the C-111 Canal bank upstream of S-197 and S-18C and into the ENP Panhandle. These opportunistic operations continued through much of the 2017 Planned and Emergency Temporary Deviation and recovery period. In addition, with greater certainty that low flow releases will continue through S-197 based on S-18C stages, a portion of the available water can continue to be diverted west directly towards Taylor Slough via S-332D, S-328, S-200 and G-737. This type of operation benefits all the natural resources in the C-111 Basin regardless of status of infrastructure upstream or conditions.

SFWMD has three additional comments on the EA; Water Quality Section 3.12 and 3.12.1 Water Quality – Page 3.20:

> *The water quality of the study area is largely controlled by Lake Okeechobee and the EAA to the north…".* While this may have been true many years ago, there is more current scientific evidence to support that there is no water quality signal from either Lake Okeechobee or the EAA present in the WCA-3A today.

Nutrients – Page 3.21:

> *Due to the unusual record-high rainfall events during June 2017 that followed a prolonged dry period in the WCAs, sudden high flows with high phosphorus concentrations during June and subsequent months resulted.*
>
> *Due to the flows / concentrations during June 2017, ~~it is predicted that~~ the preliminary SRS FWM for WY 2017 ~~will~~ exceeded the SRS long term limit by 2.1 ppb.*

Sincerely,

John P. Mitnik, P.E.
Chief District Engineer

Jacksonville District, US Army Corps of Engineer (USACE)
L-29 Canal and G-3273 Constraint Relaxation including Northern Detention Area (Increment 2)
Environmental Assessment (EA)
US Environmental Protection Agency (EPA)
January 11, 2018

Water Quality: The EPA has consulted with Everglades National Park water quality experts and we suggest the attached edited text (See Attachment A).

Flooding and Extreme Rain Events:

- On page 4-33 (second paragraph), the USACE discusses flooding impacts to South Dade County and states,

  Consistent with the requirements of the February 2017 re-issued C-111Spreader Canal regulatory permit from the Corps, the SFWMD is continuing to assess south Miami-Dade water conditions and existing operations, including those of the C-111 Spreader Canal Project, on a quarterly basis for a minimum of five years to ensure project features are constructed and operated not to adversely affect adjacent lands outside and within the C-111 Spreader Canal Western Project boundary with regards to water quantity, water quality, and/or flooding. The purpose of the assessment and quarterly reports are to ensure the SFWMD has the best available information to determine what operational system changes, if any, are necessary to avoid adverse water levels on adjacent lands.

  The EPA is concerned that the USACE does not discuss what would happen should the adverse water levels be realized on adjacent lands. The EPA also is concerned that there is no adaptive management plan in place to appropriately react should flooding occur on adjacent lands.

  <u>Recommendations:</u> The EPA recommends the USACE describe any adaptive management plans or protocols in place that would trigger action to mitigate to adverse water levels on adjacent lands in the Final EA. If there are no plans in place, the EPA recommends the USACE and South Florida Management District develop an adaptive management plan for reacting to rising water levels and to avoid impacts to adjacent lands.

- On pages 4-38 and 4-39, the USACE discusses the extreme rain events (including Hurricane Irma) of 2017 and the impacts to 8.5 square mile area (SMA). On the page 4-39 (second paragraph), the USACE states, "*With all units pumping at S-357 (575 cfs design capacity) into the 8.5 SMA Detention Cell, water within the cell exceeded 4 feet depth and was overtopping the S-360E southern weir directly into the C-111 South Dade NDA construction site.*" The USACE goes on to discuss measures taken to alleviate the elevated waters during these high rain events. In the following paragraph, the USACE states, "*Despite implementation of the described emergency measures, the combined effects from the Hurricane Irma rainfall and nearly one week of elevated L-29 canal stages with concurrent*

elevated stages in the 8.5 SMA Detention cell prior to enabling discharges into the NDA have resulted in continuous and still-ongoing inundation period of 28 days for LPG-2 through October 7, 2017 (time of report preparation;…)." The EPA acknowledges that the description of the events is very detailed and important; however, there is no discussion regarding the impacts to the residential property that 8.5 SMA project is meant to protect. It is unclear as to whether flooding actually occurred in the 8.5 SMA residential area or if any property damages were incurred because of Hurricane Irma.

Recommendations: The EPA recommends the USACE elaborate on the outcome of Hurricane Irma and the other high rain events on the 8.5 SMA residential area. Additionally, the EPA recommends the detailed technical description of high rain events to the 8.5 SMA project relate back to the 8.5 SMA residential area it was designed to protect.

Native American: On page 4-63 (4.12.1), the USACE discusses Native American impacts and states that the USACE has contacted both the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida. The EPA notes that the USACE states that "*Under Alternative B, the duration of water above the marsh surface is expected to improve. Alternative B may have a temporary minor beneficial effect on tree islands within ENP by reducing the potential for devastating fires.*" The USACE also discusses impacts to native American cultural resources that are located on tree islands on page 4-64 (4.13) and states, "*Presentations and face-to-face meetings were conducted, as well as email and phone correspondence with state, federal, and tribal government staff members to brief them on project development and to discuss issues of concern.*" The EPA understands that the USACE has outreached to both Tribes; however, the draft EA does not discuss what the Tribes think about this EA's preferred alternative.

Recommendation: The EPA recommends the USACE describe what the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida think about the preferred alternative and document any outcomes from the consultation process in the Final EA. EPA encourages continued consultation and coordination with the Tribes at all levels of decision-making.

Cultural Resources: On page 4-64, the USACE discusses consultation efforts with the State Historic Preservation Office (SHPO) and the respective Tribe Historic Preservation Office (THPO). The EPA acknowledge the efforts of the USACE in hydrological modeling efforts by USACE to determine impacts to tree island and cultural resources on those tree islands. The EPA notes that the modeling runs indicate that the preferred alternative "…*will decrease water levels in WCA 3A and smaller stage increases for NESRS.*.". However, there is no discussion as to whether the SHPO or THPOs agree with these findings or any feedback regarding these findings.

Recommendation: The EPA recommends the USACE include a discussion regarding the SHPO and THPOs feedback or any other recommendations that they might have suggested during the consultation process in the Final EA.

Endangered Species: On page 4-76 (4.25.2), the USACE discusses compliance with the Endangered Species Act (ESA) and states, "*Correspondence dated October 18 2017 was*

provided to the USFWS requesting concurrence on species determinations as a result of the Proposed Action, noting that the conclusion of ESA consultation on Increment 2 presented within the EA is previously covered under the 2016 ERTP BO." The EPA notes that there appears to be no documentation regarding the USFWS concurring with the USACE determination that ESA consultation is being covered under the 2016 ERTP BO.

Recommendation: The EPA recommends the USACE document USFWS's concurrence with their determination that ESA consultation is covered under the 2016 ERTP BO in the Final EA.

Alternatives Analysis: On page 2-34 and 2-35, the USACE discusses Alternative C and states that Alternative C, "*is expected to improve hydrologic conditions in NESRS; however uncertainty exists regarding the ability of Alternative C to ensure the stability and safety of Tamiami Trail (U.S. 41)*." The USACE lists constraints outlined in the Relaxation Agreement and then states, "*If the above conditions were met the Corps would prepare a revised FONSI to implement Alternative C. This may result in realization of additional benefits closer to those characterized in Alternative C under Section 4.0)*." As written, it is unclear as to whether the USACE is still considering Alternative C as a viable alternative.

Recommendations: The EPA recommends the USACE elaborate on the prospects of Alternative C being revisited as the preferred alternative in the Final EA. The EPA recommends USACE briefly discuss the likelihood of these constraints being removed and any discussions or information provided by the Florida Department of Transportation (FDOT) that led to these operational constraints. Also, the EPA recommends the USACE describe the timing of any supplemental NEPA documentation in relationship to the development of the Combined Operations Plan EIS.

ATTACHMENT A

US EPA Suggested Text for Increment 2 EA Water Quality Text (Section 4.11)

4.11 WATER QUALITY

4.11.1 ALTERNATIVE A: NO ACTION ALTERNATIVE

The No Action Alternative is expected to have no changes to water quality conditions as there are no changes in flows or routing of flows. Water deliveries to ENP and NESRS are subject to the water quality limit for TP contained in Appendix A of the 1991 Everglades Settlement Agreement.

Appendix A compliance is currently assessed by comparing the annual long term limit (LTL) against the 12-month flow weighted mean concentration (FWMC) TP concentration in ppb, calculated using the measured total annual flows from the S-12A, S-12B, S-12C, S-12D, and S-333 (S-333 flows expressed as S-333 minus S-334) structures that distribute flows from WCA 3A into SRS. The LTL equation from the Appendix A has an inverse relationship with flow: as flow into SRS increases, the LTL gradually falls until reaching the 7.6 ppb minimum for flow volumes equal or greater than $1{,}061 \times 10^3$ AF per year. Although the effect of Increment 2 is largely to redistribute existing flows, with respect to the Appendix A LTL, operations are expected to result in higher flow volumes through the S-333 structure, lower flow volumes through the S-334 structure, and moderately lower flow volumes through the S-12D structure. Under specific limited operational conditions, there may be a short-term increase in TP concentrations at S333 with more water being routed through this structure, but that may not result in the annual FWMC exceeding the LTL (for example WY2015).

The Settlement Agreement requires that new sources to the SRS must be considered in the SRS compliance calculation. At present, TP concentrations/flows measured at the S-356 pump station, a new SRS source, are not included in the Appendix A calculation. However, the TOC is continuing to determine how this structure will be incorporated in future Appendix A calculations. Currently it is reported provisionally until the exact method is determined. For the first year of testing as part of the process to incorporate the S-356 flows into the SRS FWMC compliance evaluation, the FWMC and LTL were calculated with and without the S356 flows.

For WY 2016, each calculation method yielded the same FWMC and LTL (7.2ppb/7.6 ppb respectively). S-356 flows/concentrations are in compliance with the FDEP/SFWMD proposed

annual guidelines for the first year of testing and are likely to be in compliance with the multi-year compliance assessment methodology for flows entering ENP, an Outstanding Florida Water

(OFW). The proposed S-356 OFW compliance criteria are FWM TP concentration no greater than 11 parts per billion (ppb) on an annual basis and no greater than 9 ppb on a three-year average annual basis. The February 2017 Increment 1.1 and 1.2 EA and FONSI estimated a 10 to 20 percent increase in the frequency of exceedance of the Appendix A LTL for flows entering ENP at the L-29 Canal compared to the 2012 Water Control Plan (USACE 2015). No adverse impact to water quality conditions in WCA 3A, WCA 3B, the L-30 Canal, L-31N Canal, or C-111 Basins were predicted with Increment 1.1 and 1.2. Significant changes in the potential for mercury methylation or bioaccumulation of mercury by aquatic species in ENP or WCA 3A and WCA 3B were not expected. Water quality monitoring and analyses during Increment 2 testing will be used to help identify potential changes to the operating rules that could increase the probability of water quality compliance for additional flows entering NESRS. A water quality assessment will be evaluated at the S-356 pump station in accordance with the FDEP test authorization to conduct Increment 2 testing. Concurrently, compliance with the LTL will be determined in accordance with the Settlement Agreement Appendix A requirements on an annual basis during Increment 2 testing and S-356 flows will be evaluated for Settlement Agreement compliance. Operating plan changes resulting from the S-356 water quality assessment, if needed because of Increment 1 operations, would be implemented only after the conclusion of the Increment 2 test period. During Increment 2 test operations the Corps does not plan to impose operational constraints for water quality that could restrict or otherwise limit inflows to NESRS. Water quality conditions in the vicinity of the L-29 Canal and L-31N Canal might be affected by implementation of the project.

4.11.2 ALTERNATIVE B: RELAXATION OF G-3273 STAGE CONSTRAINT AND L-29 CANAL UP TO 8.5 FEET NGVD (PREFERRED ALTERNATIVE)

Implementation of Alternative B would allow greater deliveries to SRS due to the higher L-29 stages and will result in somewhat reduced flows through S-12D. This alternative is basically an amplification of Increment 1.1 and 1.2. Dependent on rainfall conditions this alternative could result in the LTL declining to the minimum of 7.6 ppb more frequently than in the No Action Alternative. The impacts to the FWM will be more strongly influenced by the rainfall pattern than from the implementation of this alternative. Higher flows through S-333 may result as L-29 stage is relaxed to 8.5 feet, NGVD. If high flows through the S-333 occur while water levels are low at the headwater to the structure and the annual pattern of concentrating TP is evident, more high concentration water will be routed into SRS. This pattern can result in a higher short-term TP concentration at S333, but that may not result in the annual FWMC exceeding the LTL (for example WY2015).

Everglades Law Center
National Parks Conservation Association
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January 17, 2018

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Re: Environmental Assessment and Proposed Finding of No Significant Impact 2018: L-29 Canal and G-3273 Constraint Relaxation Including the Northern Detention Area (Revised Operational Strategy Increment 2)

Via electronic mail

Dear Ms. Nasuti:

We write in response to the November 2017 Environmental Assessment and Proposed Finding of No Significant Impact 2018: L-29 Canal and G-3272 Constraint Relaxation Including the Northern Detention Area (Revised Operational Strategy Increment 2) ("November 2017 Draft EA/FONSI"). In short, we continue to strongly support the United States Army Corps of Engineers ("Corps") proposal to move ahead with actions, consistent with the original Modified Water Deliveries plan ("ModWaters"), to implement operational changes needed to realize our shared plan for Everglades restoration, the Comprehensive Everglades Restoration Plan ("CERP").

We again oppose operations which would lower S-18C canal stages and/or increase S-197 discharges,[1] which are counter to restoration goals and operating plans for the C-111 Western Spreader Canal Project, are not reflected in the original ModWaters plan, and set a dangerous precedent. As we have in our prior comments, we emphasize that these operations – contrary to CERP – should not be allowed to continue as part of the Combined Operations Plan (to be implemented in 2020) absent clear data and analysis demonstrating that they are needed to address increases in flooding risk as a result of increased flows in Northeast Shark River Slough ("NESRS").

[1] We have long opposed these operations. *See* Attachment A (our comments on Increment 1 Plus of these operational strategy revisions, with attached comments on an earlier increment of ModWaters implementation in 2015, as well as comments in March and May, 2016 regarding the temporary, expedited implementation of additional aspects of ModWaters).

We have long supported implementation of ModWaters, with its operations that move more water south through the historic Everglades flowway – through NESRS, Shark River Slough, Taylor Slough and into Florida Bay. ***We want to reiterate that a central element of this project is to reestablish the historic connection that occurred when water in NESRS would pond high enough during the wet season that a direct flow connection from NESRS to Taylor Slough was established annually across the Rocky Glades and that this flow persisted well into the dry season***. The proposal now under consideration – the third stage in the incremental implementation of operational changes, known as Increment 2 – would allow water levels in the L-29 canal to rise as high as 8.5 feet NGVD and adjusts operations at many structures in the southern portion of the Central and Southern Florida System ("C&SF System"). This ensures protection for the Cape Sable Seaside Sparrow ("Sparrow") populations with habitat both east and west of Shark River Slough as well as to allow flexibility to maintain levels of flood protection in a residential area west of the L-31N canal and in agricultural lands in the southern portion of the system, east of the C-111 canal. *See, generally,* November 2017 Draft EA/FONSI. The November 2017 Draft EA/FONSI suggests that Increment 2 could increase water deliveries into NESRS by almost 400,000 acre-feet. *Id.* at 4-19.

We strongly support moving ahead with operations that allow for Everglades restoration without delay. However, there are some issues of concern that remain within the Preferred Alternative (Alternative B).

Increasing flows through S-197

We have repeatedly raised concerns about plans to increase discharges from the S-197 structure, purportedly to mitigate increased flood risks being taken on by agricultural landowners in South Dade County as a result of increased flows in the historic Everglades flowway. The need for andadverse effects of increased S-197 discharges have not been evaluated in a data-based analysis.[2] To the contrary, as we have stated in past comments, the NEPA documentation for these operations has generally been loaded with conditional terms such as "potential flood risks," "may be affected," and "may result in," although the best available data suggest that any increased flood risks are unrelated to ModWaters/Combined Operations Plan operations. *See*

[2] For example, in the November 2017 Draft EA/FONSI, the Corps dismisses potential adverse effects to nearshore areas:

> Alternative B may result in minor to moderate increases in the frequency and duration of low-volume (less than 500 cfs) S-197 discharges to Manatee Bay and Barnes Sound consistent with the No Action Alternative. Potential minor adverse impacts associated with salinity fluctuations under Alternative B, would be temporary and spatially limited to nearshore areas within the southern estuaries. Manatee Bay and Barnes Sound are relatively large bodies of water with open connections to Card Sound and the Atlantic Ocean. Waters within Manatee Bay and Barnes Sound have been documented to have shorter residence times and experience more tidal flushing relative to northeastern Florida Bay (Marshall 2014).

November 2017 Draft EA at 4-47.

November 2017 Draft EA/FONSI at 4-33 ("To mitigate for ***potential*** increased risk to flood protection in south Miami-Dade County areas, which ***may*** be affected by increased water levels in NESRS and associated water management operations within south Miami-Dade County during the field test, low volume releases from S-197 are included as components of the No Action Alternative.")[3] As we noted in prior comments, data show that the amount of water discharged through S-197 in 2015-16 was much more than necessary to keep agricultural lands dry. To similar effect, data presented in the November 2017 Draft EA/FONSI suggest that daily outflows from the S-197 structure exceeded daily inflows into the lower portion of the C-111 canal (through the S-18C structure) during portions of emergency operations in the Fall of 2017. *See* November 2017 Draft EA/FONSI at 4-27.

The November 2017 Draft EA/FONSI suggests the potential for increased discharges from the S-197 structure under both "normal" operations and emergency high water operations under the Preferred Alternative. First, in "normal" operations, increased stages in the L-29 canal "will result in increased seepage to the L-31N canal as increased flow into NESRS will likely increase stages along the west side of L-31N." *Id.* at 4-47. Although the November 2017 Draft EA/FONSI anticipates that completion of the C-111 South Dade Project will allow that additional water to be effectively used to help create and maintain a hydraulic ridge separating the wetlands of Everglades National Park from the L-31N canal to their east, "this will be the initial opportunity to gain operational experience with the [project], and thus Alternative B continues to allow water managers flexibility to make discharges out of the S-197 structure even when there is not an emergency high water situation.*"*[4] *Id.; see also id.* at 4-35 ("The normal management of water will be to fully maintain the hydraulic ridge and deliver water to eastern ENP using the full available capacity of [various structures]. If the capacity [of those structures] is unable to maintain the operational range then S-194/S-196/S-197 may be additionally used (low flow discharges through S 197 available . . .)."); and at 4-47("Alternative B has expanded the use of low volume S-197 operations to include drier periods).[5]

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[3] Even with almost six years of monitoring, the effects of increased water levels and flows have not been clearly documented. *See* November 2017 Draft EA/FONSI ("The SFWMD efforts to monitor the impacts of the project operation and ensure protection of privately-owned lands in the vicinity of the C-111 Spreader Canal Western Project area remain ongoing and inconclusive based on the limited period of monitoring data collected since June 2012.")

[4] It is worth noting that regulatory releases into the SDCS – what historically provided the justification for discharges from S-197 – are predicted to be greatly reduced as a result of these operational changes. *Id.* at 4-28 (noting 81% reduction in number of days with regulatory discharges from WCA 3A into the SDCS, and accumulated volume of discharges into the SDCS by 85%).

[5] These additional opportunities for low-flow discharges out of the S-197 structure were inserted into earlier increments of Combined Operations Plan implementation for different reasons -- most recently, to allow water managers flexibility to keep dry the areas where construction of critical restoration projects is being expedited. *See* December 2016 Supplemental Environmental Assessment and Proposed Finding of No Significant Impact -- G-3273 Constraint Relaxation/S-356 Field Test and S-357N Revised Operational Strategy: Increment 1 Plus (Increment 1.1/ 1.2) ("December 2016 Draft Supplemental EA") at 4-35 ("The Increment 1.1/1.2 operational strategy proposes to generally lower the target operational ranges for the . . . L-31N Canal . . . in order to facilitate the construction of C-111 South

Second, Alternative B adds an "Extreme High Water Action Line" that enables water managers to reduce water levels in WCA-3A more rapidly than they could under prior operations. *Id.* at 4-28. Although the November 2017 Draft EA/FONSI predicts small effects as a result of the Extreme High Water Action Line – it highlights that the line would have been exceeded only five times in the past 15 years, with an average duration of 51 days – the document fails to model the effects of this change, implicitly recognizing the uncertainty about how this change may undermine the project restoration goals. And it does acknowledge that "operational actions taken as a response to extreme high water conditions resulted in high flow rates through the S-197 structure" and that without the additional criteria, there would be fewer discharges from S-197. *Id.* at 4-26.

The 1994 General Reevaluation Report determined that the use of the S-197 structure was harmful to Barnes Sound and Manatee Bay and its use ***should be eliminated***. Discharges through S-197 directly reduce the amount of water that is able to enter Florida Bay through Taylor Slough. To prevent repeated hyper-salinity in Florida Bay, flows through S-197 must be reduced as part of Increment 2 operations and eliminated as part of the Combined Operations Plan. <u>We continue to oppose operations that run counter to CERP, and which are purportedly designed to protect against unsubstantiated claims of increased flooding risks.</u>

Increasing Stages at S-18C

We reiterate that the Final Project Implementation Report and Environmental Impact Statement ("FPIR/FEIS") for the C-111 Spreader Canal Western Project indicates that the Western Project is intended to implement incremental changes to raise water levels at S-18C. While the project has been operational for five years, no increase at S-18C has occurred. The FPIR/FEIS Executive Summary lists "incremental operational changes at S-18C" as one of the project components, up to four 0.1 foot incremental adjustments. *See* Final C-111 PIR/EIS at es-xi, xii. The detailed discussion of the selected plan (starting on page 6-1) again emphasizes that "incremental changes at existing structure S-18C" are part of this project.

Failure to raise the canal stage at S-18C results in seepage from Taylor Slough into the entire length of the C-111 canal from S-200 south to S-18C. Water budgets of C-111 flow indicate that much of this seepage is the same water that is later discharged at S-197. Therefore, raising the canal stage at S-18C will have the dual benefits of moving more water into Taylor Slough where it is needed and preventing the need to discharge extreme amount of water through S-197. <u>We strongly urge you to push forward on implementing stepwise increases in the allowable stage at the S-18C structure as contemplated in the FPIR/FEIS, as part of the COP.</u>

Flood Control for the 8.5 Square Mile Area

We look forward to the opportunity to assess correlations between increased canal stages in the L-29 canal and water levels in NESRS and the 8.5 Square Mile Area to the east, now that flood control measures have been (or are about to be) fully constructed and implemented. The

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Dade Contract 8 and Contract 8A"). Now that construction of these critical projects is essentially complete, we believe operational strategies should reduce both the number and volume of releases from the S-197 structure.

November 2017 Draft EA/FONSI makes clear that the relationship between increasing flows in NESRS and flooding impacts on the 8.5 Square Mile Area remains unclear. It suggests that data compiled this past fall during and around Hurricane Irma show ***combined*** effects of local rainfall and elevated L-29 canal stages, but does not untangle the two causes of flooding. *Id.* at 4-39. Nonetheless, the November 2017 Draft EA/FONSI acknowledges significant changes have been made to operations to provide flood mitigation purportedly due to increased seepage as a result of the high canal stages. *See id.* at 4-38. Moreover, going forward, the November 2017 Draft EA/FONSI states that if agencies determine that ground water levels in the 8.5 Square Mile Area do not subside enough and quickly enough, they may need to restrict the L-29 operating limited below its authorized level of 8.5 feet NGVD.

Given that altering proposed operations to address the 8.5 Square Mile Area water levels can have significant adverse effects on restoration progress, we emphasize the need to be careful in attributing flooding within this residential community to implementation of Increment 2 operations. We remain confident that once construction is finalized in the 8.5 Square Mile Area we will be able to raise canal stages in the L-29 canal to allow water to flow under Tamiami Trail as it was envisioned without impacting that community. Moving forward, the Corps must ensure it accurately represents conditions in the 8.5 Square Mile Area and the extent to which flooding there is caused by increases in the L-29 canal stage so that it does not unnecessarily undermine restoration progress.

Protecting the Cape Sable seaside sparrow

Subpopulation A

The Preferred Alternative would continue to implement the Reasonable and Prudent Alternative ("RPA") set forth in the July 2016 Biological Opinion for the Everglades Restoration Transition Plan ("July 2016 ERTP BiOp"). However, modeling has still not been done to assess what the Corps refers to as the "high water strategy" – an exception to the extended closure period for the S-12A and S-12B structures, allowing those structures to open in October and November under specified conditions to mitigate the need for later openings to avoid "overtopping" the structures (which can threaten their structural integrity).

<u>We continue to request that monitoring be implemented to assess the need for and effect of violating the extended closure periods for S-12A/B, and support the U.S. Fish and Wildlife Service's ("Service's") request that the Corps evaluate other operational strategies to avoid overtopping the S-12 gates in high water.</u>[6]

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[6] The Service asked:

> . . . that the Corps provide a strategy for pre-emptively operating structures in order to avoid the need for the exit strategy openings of the S-12A/B. The Service requests that discharges prior to October 1 be aggressive enough to allow as much water to be moved towards the east as possible. Pre-emptive operations should strive to avoid S-12A/B openings in October and November, when practicable.

December 2016 Draft Supplemental EA at Appendix E-7/8.

Eastern Subpopulations

Although modeling of the Preferred Alternative shows benefits to Subpopulation A, it shows "variable effects" on the eastern subpopulations. *See* July 2016 ERTP BiOp at 205. Of particular concern are potential effects on Subpopulation E. *Id*. As the Service has emphasized, the effects on eastern Sparrow subpopulations must be closely monitored, and adaptive management is critical to ensure their protection and conservation. *Id*. at 205-06. The July 2016 ERTP BiOp sets targets for all subpopulations, reconsultation triggers, and monitoring of habitat conditions and breeding success. We urge the agencies to work expeditiously to advance Everglades restoration while continuing to ensure an adequate nesting window for all Sparrow subpopulations and hydrologic regimes that support the bird's habitat – short-hydroperiod freshwater marl prairies in the southern Everglades.

S-328 and S-332D Operations and Water Quality

The Preferred Alternative includes increased discharges out of the S-328 and S-332D structures. Data have not yet been compiled showing whether discharges from the S-328 structure cause water quality problems in Taylor Slough. *See* November 2017 Draft EA/FONSI at 4-13. We look forward to reviewing the results of monitoring as operational changes are implemented and evaluated.

In addition, the November 2017 Draft EA/FONSI Preferred Alternative again[7] allows for additional flows out of S-332D (and potentially other neighboring structures). The November 2017 Draft EA/FONSI does not discuss the potential for water quality problems as a result of these operations.[8] We again note that point flows will result in localized disruptions to flora and fauna, as they are entirely inconsistent with natural Everglades flow patterns. <u>We emphasize the need to gather and evaluate data along the eastern boundary of Everglades National Park about the specific operations included in the Preferred Alternative to ensure they are not harmful from a water quality perspective</u>.

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[7] In prior increments, additional discharges into Taylor Slough from S-332D were justified by other operational changes that were designed to move water away from Everglades restoration project construction areas along the South Dade canals. *See* December 2016 Draft Supplemental EA at 4-21; *see also id.* at 4-40.

[8] The December 2016 Draft Supplemental EA explained at page 4-40:

> Experimentation with surface water flow to Taylor Slough and its effect on the vegetation within and adjacent to the slough has been well studied (Armentano et al. 2000, 2006, Nott et al. 1998, Olmstead et al. 1980, Van Lent et al. 1993, 1999). From 1980-1999, as part of the C&SF Project, various amounts of overland flow were discharged through the now decommissioned S-332 pump station which was located in the south western corner of L-31W. Rapid vegetation changes were observed where habitats dominated by short hydroperiod species such as Muhlenbergia were replaced by sawgrass and where sawgrass dominated habitats were replaced by more aquatic species such as Eleocharis. Cattail also became established near the pumping station potentially due to increased phosphorous loading.

We appreciate the efforts of the Corps to expedite Combined Operations Plan and CERP implementation with a view to Everglades restoration and protecting and conserving the endangered species that depend on Everglades habitat. We look forward to continuing to work with you to expedite construction and implementation of CERP features to facilitate true multi-species, ecosystem-based management and allow for more appropriate, sustainable water levels and flows across south Florida ecosystems.

Sincerely,

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Direct of Science and Policy
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Attachment A

Everglades Law Center
National Parks Conservation Association
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January 22, 2017

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Re: Supplemental Environmental Assessment and Proposed Finding of No Significant Impact -- G-3273 Constraint Relaxation/S-356 Field Test and S-357N Revised Operational Strategy: Increment 1 Plus (Increment 1.1/1.2)

Via electronic mail

Dear Ms. Nasuti:

We write in response to the December 2016 Supplemental Environmental Assessment and Proposed Finding of No Significant Impact -- G-3273 Constraint Relaxation/S-356 Field Test and S-357N Revised Operational Strategy: Increment 1 Plus (Increment 1.1/ 1.2) ("December 2016 Draft Supplemental EA"). In short, we strongly support the United States Army Corps of Engineers ("Corps") proposal to move ahead with actions, consistent with the original Modified Water Deliveries plan ("ModWaters"), to implement operational changes needed to realize our shared plan for Everglades restoration, the Comprehensive Everglades Restoration Plan ("CERP"). We also appreciate the coordination between the Corps and the United States Fish and Wildlife Service ("Service") to promote both Everglades restoration and the protection of the endangered species that depend on Everglades habitat.

We again oppose operations which would lower S-18C and/or increase S-197 discharges,[1] which are counter to restoration goals and operating plans for the C-111 Western Spreader Canal Project, are not reflected in the original ModWaters plan, and set a dangerous precedent. Before allowing these operations – contrary to CERP – to continue, data must be compiled and analyzed to discern whether these changes are needed to address increases in flooding risk as a result of increased flows in Northeast Shark River Slough ("NESRS").

[1] We have long opposed these operations. *See* Attachments A-D (two sets of comments on an earlier increment of ModWaters implementation in 2015, as well as comments in March and May, 2016 regarding the temporary, expedited implementation of additional aspects of ModWaters).

We have long supported implementation of ModWaters, with its operations that move more water south through the historic Everglades flowway – through NESRS, Shark River Slough, Taylor Slough and into Florida Bay. We want to reiterate that a central element of this project is to reestablish the historic connection that occurred when water in NESRS would pond high enough during the wet season that a direct flow connection from NESRS to Taylor Slough was established annually across the Rocky Glades and that this flow persisted well into the dry season. The proposal now under consideration – the second stage in the ModWaters incremental operations plan, Increment 1.1/1.2 – would eliminate the stage constraint at the G-3273 structure, change operations at many structures in the southern portion of the Central and Southern Florida System ("C&SF System"), and add protections for the Cape Sable Seaside Sparrow ("Sparrow") populations with habitat both east and west of Shark River Slough. *See* December 2016 Draft Supplemental EA at 2-43, 2-44.

We strongly support moving ahead with operations that allow for Everglades restoration without delay. However, there are some issues of concern that remain within the Preferred Alternative (Alternative D).

The Timeline for Implementation

The Service's July 2016 Biological Opinion for the Everglades Restoration Transition Plan ("July 2016 ERTP BiOp") set forth a Reasonable and Prudent Alternative ("RPA") for southern C&SF System operations that included an expedited timeline for the implementation of remaining portions of the C-111 South Dade Project. *See* July 2016 BiOp at § 7.1.2 (page 189). According to the July 2016 ERTP BiOp, a subset of that project was to be completed in time to allow operations that would allow the stage in the L-29 Canal to rise up to 7.8 feet NGVD to begin in March 2017, and further parts of the projects were to be completed in time to allow "Increment 2" operations to begin in March 2018.

However, the December 2016 Draft Supplemental EA suggests that this timeline has already slipped. In discussing the Preferred Alternative, it states:

> The combined duration of Increment 1 and Increment 1.1/1.2 may extend beyond the two calendar years initially envisioned for Increment 1 to compensate for the temporary suspension of the Increment 1 field test during the 2016 Temporary Emergency Deviation and extended recovery period (February-November 2016). In addition to the 2016 Temporary Emergency Deviation, extension of the Increment 1 and Increment 1.1/1.2 field test duration to up to three years will allow sufficient time to complete the C-111 South Dade construction components needed to operate the [Northern Detention Area] during Increment 2 of the [ModWaters] Project. Increment 1.1/1.2 will extend until implementation of Increment 2.

December 2016 Draft Supplemental EA at 2-44. To similar effect, it notes that work to allow the stage in the L-29 Canal to rise up to 7.8 feet will not be complete until the summer or fall of 2017:

> Real estate acquisition is ongoing and is expected to be complete by October 2017. Based on the current construction schedule for C-111 South Dade Contract 8, the earliest opportunity to consider incremental raising of the L-29 Canal above 7.5 feet, NGVD is expected between July and October 2017, coincident with the 2017 wet season. Following completion of the C-111 South Dade [Northern Detention Area], the Corps anticipates that the L-29 Canal stage maximum operating limit will be further raised up to 8.5 feet, NGVD under Increment 2 of the [ModWaters] Project.

Id. at 1-23. These apparent delays are troubling. We emphasize the need to ensure that project implementation happens expeditiously to meet the Service's RPA designed to stop the continuing downward slide in the Sparrow population.

Protecting the Cape Sable seaside sparrow

Subpopulation A

The Preferred Alternative would implement the RPA set forth in the July 2016 ERTP BiOp. First, it is important to note that the impact of the RPA is to move a greater amount of water from Water Conservation Area 3 into Everglades National Park, while slightly extending the closure periods for the S-12A, S-12B, S-343A/B and S-344 structures to increase the amount of nesting habitat available to Sparrow Subpopulation A and to improve hydroperiods in that habitat overall. Modelling suggests that the extended closure dates will improve Subpopulation A's habitat and nesting success.[2] Areas south of these structures should remain dry during the dry season, not only for the Sparrow, but for all wildlife that rely on this habitat.

However, the modeling did not include what the Service and Corps refer to as the "high water strategy" – an exception to the extended closure period for the S-12A and S-12B structures, allowing those structures to open in October and November under specified conditions to mitigate the need for later openings to avoid "overtopping" the structures (which can threaten their structural integrity). *See* December 2016 Draft Supplemental EA at 4-13.

Both overtopping and opening the S-12A and S-12B structures during Cape Sable Seaside Sparrow nesting season are problematic. As the Service explains in the July 2016 ERTP BiOp, during last year's C&SF Project emergency deviations, imminent overtopping of those gates led the Corps to open them in the middle of Sparrow nesting season to protect their structural integrity ("to allow the equivalent amount of water that would have otherwise been released by overtopping"). *See* July 2016 ERTP BiOp at 26-27. The exceptionally high water levels Water Conservation Area 3A ("WCA-3A") in 2016 led to this event, but the harmful impacts were felt. "While the effect of opening this structure was negligible on water levels in WCA-3A, the impact to [Sparrow Subpopulation A] was noticeable and resulted in a reversal of water levels and elimination of available nesting habitat two weeks into the sparrow nesting season as a result of an additional 4 inches of water across the western marl prairie south of S-12A." July 2016 ERTP BiOp at 26-27.

[2] The July 2016 ERTP BiOp discusses the need for additional improvements in Subpopulation A beyond those modelled for Increments 1.1/1.2 and 2. *See* July 2016 ERTP BiOp at 204-06.

The impact of allowing earlier opening of the gates under specified conditions to reduce the need for this kind of "emergency" opening during nesting season remains uncertain. A limited analysis of recent years with high water stages in WCA-3A showed that four of four of the years analyzed would have had S-12A and S-12B open into October (beyond their extended closure dates) and two of four would have also had S-12B remain open into November (beyond its extended closure date). It is unclear whether and how this "high water strategy" will be evaluated in the proposed monitoring plan, and whether and how other operational options will be considered going forward into future increments of ModWaters implementation. We respectfully request that monitoring be implemented to assess the need for and effect of violating the extended closure periods for S-12A/B, as well as other operational strategies to avoid overtopping the S-12 gates in high water.[3]

Eastern Subpopulations

Although modelling of the Preferred Alternative shows benefits to Subpopulation A, it shows "variable effects" on the eastern subpopulations. *Id.* at 2-24; *see also* July 2016 ERTP BiOp at 205. Of particular concern are potential effects on Subpopulation E. *Id*. As the Service has emphasized, the effects on eastern Sparrow subpopulations must be closely monitored, and adaptive management is critical to ensure their protection and conservation. *Id*. at 205-06. The July 2016 ERTP BiOp sets targets for all subpopulations, reconsultation triggers, and monitoring of habitat conditions and breeding success. We urge the agencies to work expeditiously to advance Everglades restoration while continuing to ensure an adequate nesting window for all Sparrow subpopulations and hydrologic regimes that support the bird's habitat – short-hydroperiod freshwater marl prairies in the southern Everglades.

To that end, we look forward to reviewing the Corps' annual monitoring reports (see July 2016 ERTP BiOp at 191) regarding effects of increased flows to NESRS (as well other operational changes worked in the L-31N and C-111 basins as part of Increment 1.1/1.2) on the habitat and nesting success of eastern Shark River Slough Sparrow populations, and to being part of work to ensure the species' continued survival and recovery.

S-328 and S-332D Operations

The Preferred Alternative incorporates a portion of the South Florida Water Management District ("SFWMD")'s "Florida Bay Plan." *See* December 2016 Draft Supplemental EA at 4-20, 21. Specifically, it would allow increased flows through a gated structure, S-328, with the goal of moving additional water south in L-31W toward the L-31W levee gap, and then out into Taylor Slough. However, experts have identified the potential for water quality problems as a result of

[3] The Service made a similar request, asking:

> . . . that the Corps provide a strategy for pre-emptively operating structures in order to avoid the need for the exit strategy openings of the S-12A/B. The Service requests that discharges prior to October 1 be aggressive enough to allow as much water to be moved towards the east as possible. Pre-emptive operations should strive to avoid S-12A/B openings in October and November, when practicable.

December 2016 Draft Supplemental EA at Appendix E-7/8.

these proposed increased flows: "concerns were expressed that the S-328 operation would potentially limit the opportunity of nutrient uptake by the wetland vegetation within the S-332D Detention Area, resulting in an increased nutrient load into Taylor Slough." *Id.* at 4-21. As a result, the Corps' Preferred Alternative limits the amount of flow through S-328 and requires that additional L-31W plugs identified in the 2016 C-111 South Dade Contract 9 EA between S-328 and the L-31W gap be completed prior to its operation. *Id.* Although the Corps recognizes the need for monitoring both to discern water quality problems,[4] *id.*, no proposed monitoring plan for S-328 operations is available for review. *Id.* at 4-55 (monitoring plan still "being developed"). It is unclear whether and how the public will be able to comment on this plan. <u>We request an opportunity to review the proposed monitoring plan before it is finalized.</u>

In addition, the Preferred Alternative includes operations to move water away from Everglades restoration project construction areas along the South Dade canals. *See* December 2016 Draft Supplemental EA at 4-21; *see also id.* at 4-40. To "make up" flows to Taylor Slough that may be lost as a result of these operations, the Preferred Alternative allows for additional flows out of S-332D (and potentially other neighboring structures). Again, the EA acknowledges the potential for water quality problems as a result of these operations,[5] but cursorily concludes that the proposed operations are unlikely to have the adverse effects that had been observed in the past because of "the limited duration and limited spatial extent of the operational changes." *Id*.

The District's Florida Bay Plan as proposed has point discharges, and these point flows will result in localized disruptions to flora and fauna, as they are entirely inconsistent with natural Everglades flow patterns. <u>We emphasize the need to gather and evaluate data about the specific operations included in the Preferred Alternative to ensure they are effective hydrologically and not harmful from a water quality perspective</u>. *See* Attachment E.

Changing rationales for increasing flows through S-197 and the Need to Increase Stages at S-18C.

We have repeatedly raised concerns about plans to increase discharges from the S-197 structure, purportedly to reduce increased flood risks being taken on by agricultural landowners in South Dade County as a result of increased flows in the historic Everglades flowway. *See, e.g.*, Attachments A-D. Neither the need for, nor the adverse effects of, the increased S-197

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[4] Monitoring is also needed to determine the extent to which flows pushed into Taylor Slough by way of these operations return to the canals to the south in the form of groundwater seepage.

[5] The December 2016 Draft Supplemental EA explains at page 4-40:

> Experimentation with surface water flow to Taylor Slough and its effect on the vegetation within and adjacent to the slough has been well studied (Armentano et al. 2000, 2006, Nott et al. 1998, Olmstead et al. 1980, Van Lent et al. 1993, 1999). From 1980-1999, as part of the C&SF Project, various amounts of overland flow were discharged through the now decommissioned S-332 pump station which was located in the south western corner of L-31W. Rapid vegetation changes were observed where habitats dominated by short hydroperiod species such as Muhlenbergia were replaced by sawgrass and where sawgrass dominated habitats were replaced by more aquatic species such as Eleocharis. Cattail also became established near the pumping station potentially due to increased phosphorous loading.

discharges has been evaluated in a data-driven way.[6] To the contrary, as we stated in past comments, the NEPA documentation for these operations has generally been loaded with conditional terms such as "potential flood risks," "may be affected," and "may result in," although the available data suggest that any increased flood risks are unrelated to ModWaters operations. Data also shows that the amount of water discharged through S-197 in 2015-16 was much more than necessary to keep agricultural lands dry. Discharges through S-197 directly reduce the amount of water that is able to enter Florida Bay through Taylor Slough. To prevent repeated hyper-salinity in Florida Bay, flows through S-197 must be reduced. We continue to oppose operations that run counter to CERP, and which are purportedly designed to protect against unsubstantiated claims of increased flooding risks.

The December 2016 Draft Supplemental EA also suggests that additional flows through S-197 may be necessitated by the need to hold water levels lower in the L-31N Canal both to minimize flooding of Sparrow habitat east of Shark River Slough, and to allow water managers flexibility to keep dry the areas where construction of critical restoration projects is being expedited. *See* December 2016 Draft Supplemental EA at 4-35.[7] In turn:

> the frequency of opening S-197 will be highly dependent on . . . (1) conditions necessary upstream to facilitate completion of the C-111 South Dade construction needed prior to [ModWaters] Increment 2; and (2) operational modifications required to provide the necessary suitable hydrologic conditions for the eastern [Sparrow] sub-populations.

December 2016 Draft Supplemental EA at 4-19.

We are concerned by the apparent merging of rationales for additional flows through S-197. We emphasize that it is critical to separately analyze increased discharges from S-197 and related southern structures, both in terms of their need and effect. Understanding what discharges are

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[6] For example, in the December 2016 Draft Supplemental EA, the Corps dismisses potential adverse effects to nearshore areas:

> Potential effects to mangrove habitats and seagrass beds within the coastal estuaries under Alternative D would be similar to that as discussed under Alternative E as a result of the minor to moderate increases in the frequency and duration of low-volume (less than 500 cfs) S-197 discharges to Manatee Bay/Barnes Sound. Due to the short duration of the Proposed Action, significant vegetation changes are not anticipated.

December 2016 Draft Supplemental EA at 4-37. And to similar effect, it concludes that adverse effects from the "salinity fluctuations" that may accompany the additional freshwater flows into Manatee Bay and Barnes Sound are "not anticipated" simply because "these areas are relatively large bodies of water." *Id.* at 4-41.

[7] It states:

> The Increment 1.1/1.2 operational strategy proposes to generally lower the target operational ranges for the . . . L-31N Canal . . . in order to facilitate the construction of C-111 South Dade Contract 8 and Contract 8A and provide increased operational flexibility to achieve the hydroperiod and nesting condition targets specified by the [July] 2016 [BiOp] RPA for the Eastern [Cape Sable Seaside Sparrow] subpopulations.

needed to accomplish different purposes is critical to determining whether and when they are necessary.

The Final Project Implementation Report and Environmental Impact Statement ("FPIR/FEIS") for the C-111 Spreader Canal Western Project indicates that the Western Project is intended to implement incremental changes to raise water levels at S-18C. While the project has been operational for four years, no increase at S-18C has occurred. The FPIR/FEIS Executive Summary lists "incremental operational changes at S-18C" as one of the project components, up to four 0.1 foot incremental adjustments. *See* Final C-111 PIR/EIS at es-xi, xii. The detailed discussion of the selected plan (starting on page 6-1) again emphasizes that "incremental changes at existing structure S-18C" are part of this project.

Failure to raise the canal stage at S-18C results in seepage from Taylor Slough into the entire length of the C-111 canal from S-200 south to S-18C. Much of this seepage is the same water that was discharged at S-197. Therefore, raising the canal stage at S-18C will have the dual benefits of moving more water into Taylor Slough where it is needed and preventing the need to discharge extreme amount of water through S-197.

* * * * *

We appreciate the efforts of both the Corps and the Service to expedite ModWaters and CERP implementation with a view to Everglades restoration and protecting and conserving the endangered species that depend on Everglades habitat. We look forward to continuing to work with you to expedite construction and implementation of CERP features to facilitate true multi-species, ecosystem-based management and allow for more appropriate, sustainable water levels and flows across south Florida ecosystems.

Sincerely,

Ansley Samson
Of Counsel
Everglades Law Center

Dr. Thomas Van Lent
Direct of Science and Policy
Everglades Foundation

Cara Capp
Everglades Restoration
Program Manager
National Parks Conservation Association

Julie Hill-Gabriel
Director of Everglades Policy
Audubon Florida

Attachment A

Everglades Law Center
National Parks Conservation Association
Everglades Foundation
Audubon Florida
Sierra Club

May 24, 2016

Melissa Nasuti
U.S. Army Corps of Engineers Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019
Email: melissa.a.nasuti@usace.army.mil

Re: Continuance of L-29 Canal and South Dade Conveyance System emergency deviation operations to alleviate high water levels in Water Conservation Area ("WCA") 3A

Via electronic mail

Dear Ms. Nasuti:

We write to urge expeditious action to allow the continuation of operations included in the "emergency deviation" approved in the United States Army Corps of Engineers' ("Corps") February 2016 Environmental Assessment and Finding of No Significant Impact ("February 2016 EA"). Whether these operations are included in a so-called "planned deviation" (because emergency conditions no longer exist) or in the next iteration of the Everglades Restoration Transition Plan ("ERTP"), **we emphasize the need to move forward as quickly as possible to allow these operations to continue at least through the end of the 2016 wet season**. With strong monitoring in place to assess the effects of, and need for, different aspects of the operations, their continuation could help not only address current environmental crises but also plan for additional operational changes.

In our March 18, 2016 letter (attached as Exhibit A) responding to the Corps' request for public comment on the emergency deviation, we strongly supported actions, consistent with the Modified Water Deliveries plan, that effectively expedited critical operational changes needed to realize our shared plan for Everglades restoration, the Comprehensive Everglades Restoration Plan ("CERP"). Effectively expediting CERP implementation facilitates true multi-species, ecosystem-based management and allows for more appropriate, sustainable water levels and flows across south Florida ecosystems. We again oppose (as we did in March) operations which would lower S-18C and/or increase S-197 discharges, which are unrelated to the purpose of providing high water relief in WCA 3A, are counter to restoration goals, are not reflected in the Modified Water Deliveries plan, and set a dangerous precedent. Before allowing these operations – contrary to CERP – to continue, data must be compiled and analyzed to discern

whether these changes are needed to address increases in flooding risk as a result of increased flows in Northeast Shark River Slough ("NESRS").

As described in the February 2016 EA, the emergency deviation operations release water from WCA 3A via the S-333 pump station into the L-29 Canal and raise water levels in that canal up to no more than 8.5 feet 1929 NGVD, allowing for flows to NESRS to increase. *See* February 2016 EA at page 1, A-3. In addition, structures along the levees dividing WCA 3A and WCA 3B, S-151 and S-152, provide an additional exit for water from WCA 3A by passing flows to WCA 3B. *See* February 2016 EA at pages 1-2; A5. According to the February 2016 EA (at page 4):

> Potential reductions in high water levels and decreased periods of prolonged flooding is expected to provide temporary benefits to vegetation and fish and wildlife resources, including Federally threatened and endangered species such as the Cape Sable Seaside Sparrow (Ammodramus maritimus mirabilis), Wood Stork (Mycteria americana) and Everglades snail kite (Rostrhamus sociabilis plumbeus). Prolonged periods of flooding eliminates foraging and nesting opportunities for wading birds. Moving water south, through ENP will also have the added ecological benefit of improving salinity conditions of Florida Bay.

The February 2016 EA also acknowledges that moving excess water out of WCA 3A will help avoid "losses in tree islands as a result of high water levels [that] are expected to occur if the proposed action is not taken." February 2016 EA at page 5 ("Loss of tree islands has the potential to impact cultural resources and culturally important ceremonies practiced by Native American Tribes within the project area.")

As we emphasized in our March 18, 2016 comments, these operational changes represent important parts of what has long been proposed to accomplish restoration in the decades-old plans for Modified Waters Deliveries ("ModWaters") and CERP. And all indications are that these operations effectively expediting restoration are working both to reduce high water levels in WCA 3A and to move more water east and south through NESRS – how water historically flowed and should flow in the Everglades – without adverse effects. We have exceeded the flow capacity of the S-333 structure (1,350 cfs) without going above 8.2 feet in the L-29 Canal. This shows the feasibility of moving more water east and south (as restoration would direct most water flows). Especially given the repeated water-related crises we have faced over the past few years across south Florida, this success both suggests the value in continuing these operations and lends support to the urgency of working to find additional ways to expedite Everglades restoration, a multi-species management approach that recognizes the need to protect and restore all parts of the South Florida ecosystem.

The successes of these new operations reinforce the importance of Everglades restoration, as envisioned in ModWaters and CERP, in solving the problems of water extremes in south Florida. We should accelerate our efforts to implement restoration by moving forward to continue these operations; allowing increased flows east and then south under the Tamiami Trail – as envisioned in CERP – is feasible and in all of our best interests.

Sincerely,

Ansley Samson
Of Counsel
Everglades Law Center

Dawn Shirreffs
Senior Everglades Policy Advisor
Everglades Foundation

John Adornato III
Senior Regional Director
Sun Coast Regional Office
National Parks Conservation Association

Julie Hill-Gabriel
Director of Everglades Policy
Audubon Florida

Frank Jackalone
Senior Organizing Manager
Sierra Club

cc: Colonel Jason Kirk, Army Corps of Engineers

Exhibit A

Everglades Law Center
National Parks Conservation Association
Everglades Foundation
Audubon Florida
Sierra Club

March 18, 2016

Melissa Nasuti
U.S. Army Corps of Engineers Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019
Email: melissa.a.nasuti@usace.army.mil

Re: Environmental documents for temporary emergency deviation to alleviate high water levels in Water Conservation Area 3A available for 30-day public and agency review

Via electronic mail

Dear Ms. Nasuti:

We write in response to the request for public comment related to the temporary emergency deviation to alleviate high water levels in Water Conservation Area ("WCA") 3A. We strongly support the temporary emergency deviation. We further advocate for the continued implementation of measures that are consistent with the Modified Water Deliveries plan to expedite critical operational changes needed to realize our shared plan for Everglades restoration, and to move toward true multi-species, ecosystem-based management that allows for more appropriate, sustainable water levels and flows across south Florida ecosystems. We remain opposed to operations which lower S-18C and/or increase S-197 discharges, which are unrelated to the purpose of providing high water relief in WCA 3A, counter to restoration goals, are not reflected in the Modified Water Deliveries plan and which set a dangerous precedent.

As described in the Environmental Assessment ("EA") for the temporary emergency deviation, the emergency operational changes release water from WCA 3A via the S-333 pump station into the L-29 Canal and raise water levels in that canal up to no more than 8.5 feet 1929 NGVD, allowing for flows to Northeast Shark River Slough ("NESRS") to increase. *See* EA at page 1, A-3. In addition, structures along the levees dividing WCA 3A and WCA 3B, S-151 and S-152, provide an additional exit for water from WCA 3A by passing flows to WCA 3B. *See* EA at pages 1-2; A5. According to the EA (at page 4):

> Potential reductions in high water levels and decreased periods of prolonged flooding is expected to provide temporary benefits to vegetation and fish and wildlife resources, including Federally threatened and endangered species such as the Cape Sable Seaside Sparrow (Ammodramus maritimus mirabilis), Wood Stork (Mycteria americana) and Everglades snail kite (Rostrhamus sociabilis plumbeus). Prolonged periods of flooding eliminates foraging and nesting opportunities for wading birds. Moving water south, through ENP will also have the added ecological benefit of improving salinity conditions of Florida Bay.

The EA also acknowledges that moving excess water out of WCA 3A will help avoid "losses in tree islands as a result of high water levels [that] are expected to occur if the proposed action is not taken." EA at page 5 ("Loss of tree islands has the potential to impact cultural resources and culturally important ceremonies practiced by Native American Tribes within the project area.")

These operational changes represent important parts of what has long been proposed to accomplish restoration in the decades-old plans for Modified Waters Deliveries ("ModWaters") and the Comprehensive Everglades Restoration Plan ("CERP"). *See e.g.,* Modified Water Deliveries to Everglades National Park: G-3273 & S-256 Pump Station Field Test Fact Sheet (attached as Exhibit A); March 17, 2005 CRS Report for Congress: Everglades Restoration: Modified Water Deliveries Project at pages 3-4 ("Increased water flow to the Northeast Shark River Slough will increase water supplies in the park and is expected to improve the natural habitat and hydrology of a portion of the Everglades ecosystem.")(attached as Exhibit B); May 2015 Water Conservation Area 3A Decompartmentalization Physical Model Fact Sheet (attached as Exhibit C). By expediting – in this temporary emergency deviation – these long-needed and delayed actions to restore America's Everglades, Florida and the U.S. Army Corps of Engineers are also able to "mitigate for severe economic losses currently being experienced as a result of high water levels" in the central Everglades and Water Conservation Areas.

All indications are, at this point, that these operational changes are working both to reduce high water levels in WCA 3A and to move more water east and south through Northeast Shark River Slough – how water historically flowed and should flow in the Everglades – without adverse effects. With this emergency deviation, we have exceeded the flow capacity of the S-333 structure (1,350 cfs) without going above 8.2 feet in the L-29 canal. This shows the feasibility of moving more water east and south (as restoration would direct most water flows). Especially given the repeated short term water-related crises we have faced over the past few years in south Florida, this success also lends support to the urgency of working to expedite Everglades restoration, a multi-species management approach that recognizes the need to protect and restore all parts of the South Florida ecosystem.

We hope that the successes of this "emergency deviation" show that Everglades restoration, as envisioned in ModWaters and CERP, is the solution to the problems of water extremes in south Florida. We should accelerate our efforts to implement restoration; the temporary emergency deviation shows that increasing flows south and east south of Tamiami Trail – as envisioned in CERP – is feasible and in all of our best interests.

Sincerely,

Ansley Samson
Of Counsel
Everglades Law Center

Dawn Shirreffs
Senior Everglades Policy Advisor
Everglades Foundation

John Adornato III
Senior Regional Director
Sun Coast Regional Office
National Parks Conservation Association

Julie Hill-Gabriel
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Frank Jackalone
Senior Organizing Manager
Sierra Club

Exhibit A

MODIFIED WATER DELIVERIES TO ENP | G-3273 & S-356 Pump Station Field Test

FACTS & INFORMATION

MAY 2015

The G-3273 Constraint Relaxation and S-356 Pump Station Field Test is the critical first step to improve hydrologic conditions for Northeast Shark River Slough in Everglades National Park, while maintaining the multiple congressionally-authorized purposes of the Central and Southern Florida (C&SF) project. The C&SF project purposes include providing flood control; water supply for municipal, industrial and agricultural purposes; prevention of saltwater intrusion; water supply for Everglades National Park; and preservation of fish and wildlife.

The data collected during the incremental field test will be used to develop a comprehensive integrated water control plan for the operation of water management infrastructure associated with the Modified Water Deliveries to Everglades National Park (Mod Waters) and C-111 South Dade projects, while balancing the ecological restoration objectives for these projects.

BACKGROUND

Restoring historic water flows and ecological viability to Everglades National Park is a complex endeavor that requires many projects to work in concert.

The Mod Waters and C-111 South Dade projects provide critical infrastructure that will enable larger quantities of water to flow into the Park. The majority of construction for both these projects has been completed and construction of the remaining components are scheduled to be completed within the next few years.

Currently operational constraints exist to mitigate for potential flooding risks to adjacent residential, commercial and agricultural lands, and impacts to endangered species. The relaxation of the G-3273 constraint and use of S-356 (Increment 1), along with future acquisition of real estate interests south of the Tamiami Trail (necessary for Increment 2) will allow additional operational flexibility within the existing infrastructure.

Since 1985, the G-3273 constraint has served as a trigger to cease S-333 discharges from flowing south into Northeast Shark River Slough when water levels reach 6.8 feet at G-3273 in eastern Everglades National Park. This has been used as a protective measure for residential areas to the east, particulary the 8.5 Square Mile Area.

Since the majority of features for the Mod Waters project have been built, opportunities exist to begin relaxation of the G-3273 constraint and increase water deliveries to Northeast Shark River Slough.

FIELD TEST PURPOSE

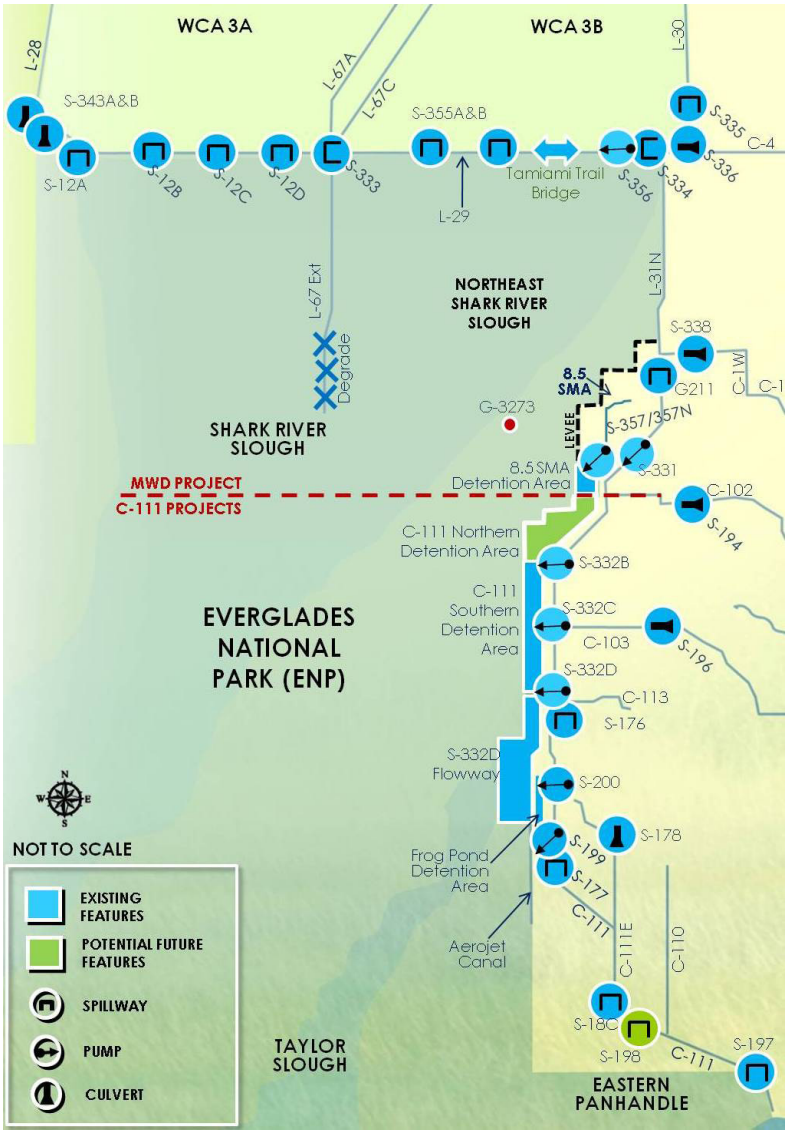
Water management is a key element in restoring historic flows to Everglades National Park and an integrated water control plan is needed to operate infrastructure connected to both the Mod Waters and C-111 South Dade projects.

In order to develop this integrated water control plan, known as the Combined Operating Plan, additional information is needed on how newly-operational project infrastructure integrates with the current water management system, and how to maximize ecological restoration objectives.

Information collected through the Field Test will evaluate the effects of incremental increases in flows to Northeast Shark River Slough in Everglades National Park. This information includes:

- Ecological responses due to increased inflows and changes in distribution of water entering Everglades National Park
- Potential effects on water quality entering Everglades National Park
- Potential effects on changing water levels in Water Conservation Areas (WCA) 3A and 3B
- Potential effects on levels of service for water supply and flood protection in Miami-Dade County
- Potential effects on flood mitigation performance for the 8.5 Square Mile Area Flood Mitigation Project, a component of the Mod Waters project
- Potential effects on water management operations
- Potential effects on cultural resources for future increments.

MODIFIED WATER DELIVERIES TO ENP | G-3273 & S-356 Pump Station Field Test



FIELD TEST STRUCTURES

The following structures and operational constraints will be incorporated into the test:

- The S-333 spillway, which releases water from WCA-3A to the L-29 Canal
- The L-29 Canal that runs parallel to the Tamiami Trail, adjacent to Everglades National Park
- The S-356 Pump Station located alongside the L-29 Canal
- The G-3273 gage in eastern Everglades National Park
- The components of the Mod Waters project, which includes the Tamiami Trail Modifications and 8.5 Square Mile Area Flood Mitigation projects
- The components of the C-111 South Dade project, which includes the Northern and Southern Detention Areas.
- S-197 will be operated as needed to mitigate potential risks to flood protection for areas in south Miami Dade County. S-197 operations will be reassessed once the C-111 South Dade Northern Detention Area is constructed and operable and/or upon completion of Increment 1.

FIELD TEST APPROACH

The field test will be conducted in three increments. During the duration of the first two increments, data will be collected and analyzed; natural, agricultural and urban system responses to project operations will be assessed; and ecological monitoring will be maintained.

INCREMENT 1

The first increment of the field test is scheduled to begin in summer 2015 and is planned for approximately two years, with a minimum duration of one year. It involves:

- Maintaining the maximum operating limit for the L-29 Canal water level at 7.5 feet
- Relaxing the maximum stage constraint (currently 6.8 ft) at the downstream G-3273 gage in Everglades National Park
- Operating the S-356 pump station for control of seepage into the L-31N Canal
- These operations will produce a small but important increase in the net flow of water into Northeast Shark River Slough

INCREMENT 2

The second increment of the field test will be implemented for two years and is scheduled to begin in 2017. It involves:

- Raising the maximum operating limit of the L-29 Canal, up to a maximum of 8.5 feet
- Raising the L-29 Canal above 8 feet will be dependent on the acquisition of additional real estate within the Park and completion of the Northern Detention Area for the C-111 South Dade project

INCREMENT 3

The information obtained from the first two increments will be used in the development of the Combined Operating Plan. This will serve as the water management plan for the southern portion of the Everglades ecosystem and includes:

- Water Conservations Areas 3A and 3B
- Everglades National Park
- South Dade Conveyance System, which includes the Mod Waters and C-111 South Dade projects.

FOR MORE INFORMATION

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http://bit.ly/MWD_FieldTest

Exhibit B

Order Code RS21331
Updated March 17, 2005

CRS Report for Congress

Received through the CRS Web

Everglades Restoration: Modified Water Deliveries Project

Pervaze A. Sheikh
Analyst in Environmental and Natural Resources Policy
Resources, Science, and Industry Division

Summary

The Modified Water Deliveries Project (Mod Waters) is a controversial ecological restoration project in south Florida designed to improve water delivery to Everglades National Park. The implementation schedule of Mod Waters is of interest to Congress partly because its completion is required before the implementation of portions of the Comprehensive Everglades Restoration Plan. Concerns have been raised in hearings on the Administration's FY2006 budget request regarding the cost of implementing the project and the U.S. Army Corps of Engineers' authority to fund the project. Further, due to concerns regarding phosphorus pollution in the Everglades, Congress enacted a provision in the FY2004 and FY2005 Interior Appropriations Acts that conditions funding for Mod Waters on meeting state water quality standards. In addition, the use of eminent domain to acquire land for a flood control plan adjacent to the park has been controversial. Several landowners who were unwilling to sell their land obtained a ruling in federal court that prevented further land acquisitions in the area. The Corps appealed this decision, and Congress authorized a plan, which included land acquisition, in the Consolidated Appropriations Resolution for FY2003. This report provides background on Mod Waters and discusses issues relating to its current status, funding, and land acquisition needs. This report will be updated as warranted.

Most Recent Developments

The Modified Waters Deliveries Project (Mod Waters) is being implemented by the Department of the Interior and the U.S. Army Corps of Engineers in southern Florida. (See **Figure 1**.) For FY2006, the Administration has requested a total of $60 million for the project: $35 million through the Corps and $25 million through the Department of the Interior. The President's request for the Everglades has drawn attention because of a proposed change in the funding of Mod Waters. The request called for the Corps to broaden its role by jointly funding the project with the Department of Interior, which previously had solely funded the project. This proposal has raised a question: Is the Corps authorized to receive appropriations to work on the project? The Administration's

position appears to be for the Corps to pay for roughly two-thirds of the remaining $191 million required to complete the project during next four fiscal years (FY2006-FY2009).[1]

A provision in the Consolidated Appropriations Act for FY2005 (P.L. 108-447) conditions funding for Mod Waters on meeting state water quality standards. This provision cites provisions in the FY2004 Interior Appropriations Act, which states that funds appropriated for Mod Waters will be provided *unless* the Secretary of the Interior, Secretary of the Army, Administrator of the EPA, and Attorney General indicate in a joint report (to be filed annually until December 31, 2006) that water entering the A.R.M. Loxahatchee National Wildlife Refuge and Everglades National Park does not meet state water quality standards, and the House and Senate Committees on Appropriations respond in writing disapproving the further expenditure of funds.[2]

To help implement Mod Waters, Congress included a provision in the Consolidated Appropriations Resolution for FY2003 (Division F, Title I, §157 of P.L. 108-7) that authorizes the Corps to implement a flood protection plan (Alternative 6D) for the "8.5 Square Mile Area"(8.5 SMA) as *part* of Mod Waters. Three conditions are specified in the section authorizing implementation of Alternative 6D: (1) the Corps may acquire residential property needed to carry out Alternative 6D if the owners are first offered comparable property in the 8.5 SMA that will be provided with flood protection; (2) the Corps is authorized to acquire land from willing sellers in the flood-protected portion of the 8.5 SMA to carry out the first condition; and (3) the Corps and the nonfederal sponsor may carry out these provisions with funds provided under the Everglades National Park Protection and Expansion Act of 1989 (P.L. 101-229; 16 U.S.C. §410r-8) and funds provided by the DOI for land acquisition for restoring the Everglades.

Background

The Modified Water Deliveries Project was authorized by the Everglades National Park Protection and Expansion Act of 1989 (P.L. 101-229) to improve water deliveries to Everglades National Park and, to the extent possible, restore the natural hydrological conditions within the park. The completion of Mod Waters is expected to be a central part of the Comprehensive Everglades Restoration Plan (CERP; Title VI, P.L. 106-541, the Water Resources Development Act of 2000 [WRDA 2000]).[3]

Mod Waters is expected to consist of structural modifications and additions to the Central and Southern Florida Project (C&SF Project) to improve the timing, distribution, and quantity of water flow to the Northeast Shark River Slough.[4] Increased water flow

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[1] U.S. Dept. of the Interior, News Release, "FY2006 Interior Budget Emphasizes Commitments, Cooperative Efforts, Performance and Fiscal Restraint," Feb. 7, 2005. Accessed March 14, 2005 at [http://www.doi.gov/news/05_News_Releases/050207a].

[2] For more information, see CRS Report RL32131, *Phosphorus Mitigation in the Everglades*, by Pervaze Sheikh and Barbara Johnson.

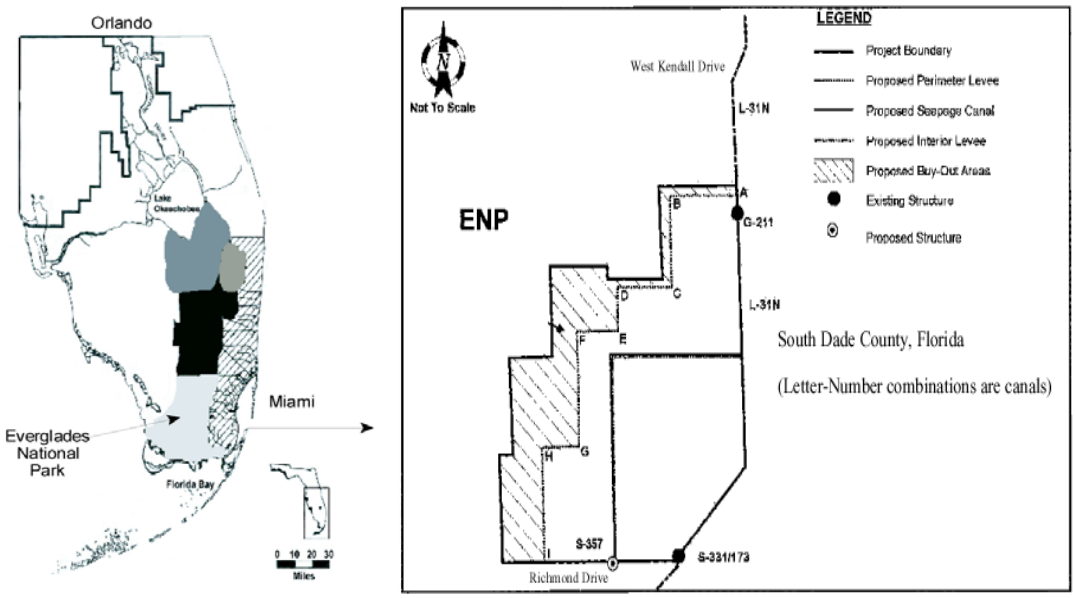
[3] For more information Florida Everglades restoration, see CRS Report RS20702, *South Florida Ecosystem Restoration and the Comprehensive Ecosystem Restoration Plan*, by Nicole Carter.

[4] Originally, the Corps was asked to alter water flow in the Everglades to control flooding, open

(continued...)

to the Northeast Shark River Slough will increase water supplies in the park and is expected to improve the natural habitat and hydrology of a portion of the Everglades ecosystem.[5]

Figure 1. The 8.5 Square Mile Area in Southern Florida



Source: Adapted from the U.S. Army Corps of Engineers.

Mod Waters is expected to flood some residential and agricultural areas adjacent to the park. Legislation authorizing this project instructs the Secretary of the Army to determine if residential and agricultural areas within or adjacent to the 8.5 SMA will be flooded from the hydrological changes of Mod Waters (§104(a)). If these areas are under threat of flooding, the law mandates that a flood protection system must be developed for the area (§104(b)). To prevent flooding, several mitigation features have been developed. One of these features is called Alternative 6D, which is a plan for protecting residents in the 8.5 SMA from flood waters resulting from the project (discussed further below).

The importance of Mod Waters goes beyond its expected direct results. Legislation authorizing CERP provides that the Mod Waters must be completed before several CERP projects involving water flows on the east side of the park can receive appropriations (§601(b)(2)(D)(iv) of WRDA 2000).

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[4] (...continued)
land for agriculture, and provide water supplies to urban areas. The cornerstone of this effort was the Central and Southern Florida Project, which was authorized by the Flood Control Project Act of 1948 (ch. 771, 62 Stat. 1171). This project resulted in nearly 1,000 miles of canals, 720 miles of levees, and more than 200 water control structures (e.g., dikes, dams and pumping stations).

[5] For more details, see U.S. Army Corps of Engineers, *Modified Water Deliveries to Everglades National Park and South Dade Canals (C-111) Projects* accessed on March 14, 2005, at [http://www.saj.usace.army.mil/dp/MWDC111.htm].

Issues Surrounding the Modified Water Deliveries Project

Three issues are being debated about the implementation of Mod Waters, including its estimated funding level, the relevance of its completion to overall restoration efforts in the Everglades, and the controversy surrounding land acquisition in the 8.5 SMA.

Funding. Rising project costs for Mod Waters led some critics to question its viability. The original cost of completing Mod Waters was estimated at $81.3 million in 1990.[6] The current estimated cost for completing the project is $398 million.[7] To date, approximately $192 million has been appropriated for constructing and implementing Mod Waters, and $206 million more is estimated to be needed to finish the project (i.e., FY2005-FY2009).[8] Some supporters of Mod Waters argue that changes in the implementation plan, the rising cost of land acquisition, and flood mitigation requirements have led to higher costs. This was reflected, according to some, in the changes in the 1992 General Design Memorandum, which were derived from improved modeling data and the project's need to be compatible with CERP.

Project Delays. Mod Waters was originally estimated to be completed by 1997, yet now some argue it is unclear as to when or even whether the project will be completed. The FY2006 Administration request indicates that funding will be requested through FY2009. Some argue that the delay in implementing Mod Waters jeopardizes implementation of CERP projects, causes further degradation within Everglades National Park, and will set a precedent for delays and deliberation regarding land acquisition activities when CERP projects are being implemented. Section 601(b)(2)(D)(iv) of WRDA 2000 provides that Mod Waters must be completed before appropriations can be made to construct other restoration projects in the east Everglades.

Land Acquisition in the 8.5 Square Mile Area. Implementation of Mod Waters was dependent on acquiring land in the 8.5 SMA. Land acquisition in this area was controversial because there were several unwilling sellers and the Corps had to exercise eminent domain to acquire the necessary lands.

The 8.5 SMA is a region adjacent to Everglades National Park of approximately 5,600 acres with a residential community of approximately 1,500 people. Due to its low topography (ranging from 5.0 to 8.5 feet NGVD[9]) and lack of drainage, parts of the 8.5 SMA frequently flood for several months during the rainy season (typically from May to October). With the implementation of Mod Waters, the Corps expected that most of the 8.5 SMA would flood. The Corps developed a flood mitigation plan in 1992 (the 1992

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[6] U.S. Army Corps of Engineers, *Modified Water Deliveries to Everglades National Park*, General Design Memorandum, Jacksonville District, June 1992.

[7] U.S. Dept. of the Interior, *FY2006 Budget Justification, National Park Servic*e (Washington, DC, 2005).

[8] Of the total amount of funds already spent and estimated to complete Mod Waters, approximately $200 million is for land acquisitions and approximately $198 million is for construction, design, and monitoring, among other things.

[9] NGVD is the National Geodetic Vertical Datum, which is used to assess elevation relative to sea level.

General Design Report and EIS for Modified Water Deliveries to Everglades National Park [1992 Plan]). The 1992 Plan was expected to provide flood control for residents in the 8.5 SMA and allow for the implementation of Mod Waters. However, the 1992 Plan was later deemed "unworkable" by the superintendent of Everglades National Park, who claimed that it would not provide full flood protection for current and future residents in the 8.5 SMA.[10]

The Corps began to devise a new plan for Mod Waters and the 8.5 SMA in 1999, which considered several alternative plans, including the complete buyout of the 8.5 SMA. A new plan, referred to as Alternative 6D, was proposed by the Corps in 2000. This plan includes a perimeter levee, seepage canal, pump station, and storm water drainage for flood protection in the 8.5 SMA. Instead of a complete buyout of the 8.5 SMA, this plan proposed the acquisition of approximately 2,100 acres in the 8.5 SMA (39% of the total area) and the removal of 77 residential tracts (24 tenant-occupied tracts and 53 owner-occupied tracts) in the 8.5 SMA (13% of the total number of "residential areas" in the 8.5 SMA).[11] Properties of the remaining families would receive flood control.[12]

On February 23, 2001, some residents who are unwilling to sell their land in the 8.5 SMA filed a case against the Corps with two complaints. They asserted that the Corps does not have the authority to implement a plan that does not protect the entire 8.5 SMA from flooding, and that the Corps does not have the authority to exercise eminent domain or spend money to acquire their land through condemnation.[13] On July 5, 2002, a district judge adopted an earlier ruling by a federal magistrate that restricted the Corps from veering from its original mandate to protect the entire community from flooding, and prevented the Corps from acquiring land in the 8.5 SMA. The Corps appealed this decision to the U.S. Court of Appeals for the Eleventh Circuit on September 4, 2002, and Congress authorized implementation of the Alternative 6D plan in the Consolidated Appropriations Resolution for FY2003.

Some critics of land acquisition in the 8.5 SMA base their arguments on the same principles used to criticize the acquisition of the entire 8.5 SMA — that the federal government should not exercise eminent domain to remove unwilling sellers and that the federal government is obligated to protect all residential areas from floods under P.L. 101-229. Some critics also argue that there are several unwilling sellers in the area and that if condemnations proceed, delays due to litigation will be inevitable and will eventually

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[10] U.S. House Resources Subcommittee on National Parks and Lands, *Issues Regarding Everglades National Park and Surrounding Areas Impacted by Management of the Everglades*, oversight hearing, April 27, 1999, 106th Cong., 1st sess. (Washington, DC: GPO), Serial No. 106-24.

[11] A residential area contains either a fixed home, mobile home, or travel trailer.

[12] Details of the plan were taken from U.S. Army Corps of Engineers, *Modified Water Deliveries to Everglades National Park* and *Impact of Implementation of Recommended Plan Alternative 6D for the Comprehensive Everglades Restoration Plan*, accessed March 15, 2005 at [http://www.saj.usace.army.mil/dp/MWDC111.htm].

[13] Garcia vs. United States, No. 01-801-CIV-Moore, slip op. (D.S.D. FL. July 5, 2002).

harm the ecosystem.[14] Some supporters of acquiring land in the 8.5 SMA and implementing Alternative 6D argue that if this plan is not implemented, delays may be even longer in implementing Mod Waters and restoring the regional ecosystem, to the detriment of Everglades National Park.

The use of condemnation by the Corps to acquire lands is controversial. Some critics assert that the Corps should not use eminent domain to acquire lands in the 8.5 SMA from unwilling sellers, and that the Corps may not have the authority to use condemnation.[15] The Corps asserts that it has the authority to condemn lands if necessary, and furthermore that there are several willing sellers in the 8.5 SMA.[16]

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[14] Michael Grunwald, "Dispute Stalls Everglades Project," *Washington Post* (July 17, 2002): A21.

[15] A provision in the FY2005 Consolidated Appropriations Law (P.L. 108-447; §329), requires that no funds appropriated for acquiring lands may be expended for the filing of declarations of taking or complaints in condemnation without the approval of the House and Senate Committees on Appropriations. An exception to this provision is funds appropriated to implement the Everglades National Park Protection and Expansion Act of 1989, or to funds appropriated for federal assistance to the State of Florida to acquire lands for Everglades restoration purposes.

[16] The Corps asserts its power for condemnation is authorized under 40 U.S.C. §257 and 33 U.S.C. §591. This authority is extended to practices of flood control under 33 U.S.C. §701 according to the Corps. Personal communication with Barry Vorse, U.S. Army Corps of Engineers, on Sept. 7, 2002.

Exhibit C

WATER CONSERVATION AREA 3 DECOMPARTMENTALIZATION | Physical Model

FACTS & INFORMATION

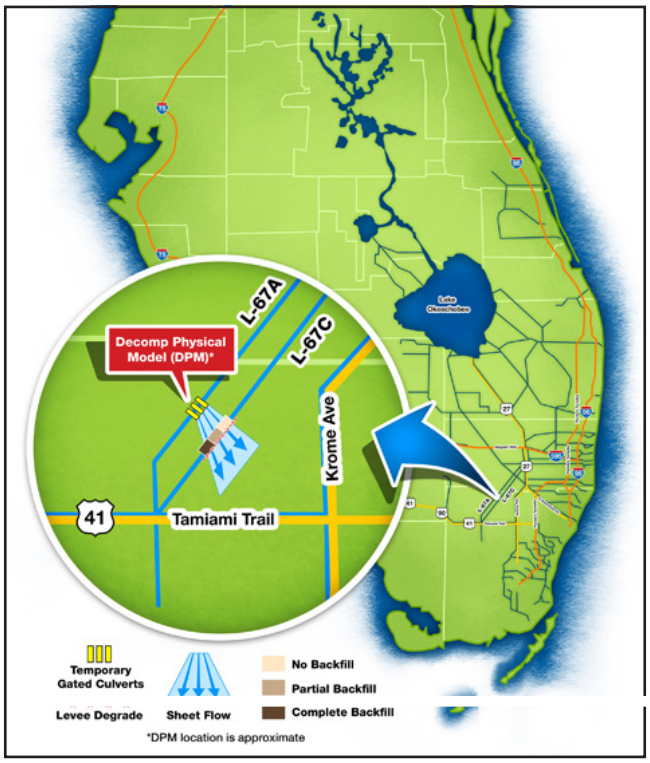
MAY 2015

The Water Conservation Area 3 (WCA-3) Decompartmentalization (Decomp) and Sheetflow Enhancement Physical Model (DPM) is a field test that will be conducted along a 3,000- foot stretch of the L-67A and L-67C levees and canals in WCA-3A and 3B to determine how best to design and formulate plans for future decompartmentalization of WCA-3, as visualized in the Comprehensive Everglades Restoration Plan (CERP).

The DPM is designed to address scientific, water flow and water management uncertainties that require clarification prior to future planning and construction of Everglades restoration projects, authorized in the Water Resources Development Act of 2000.

PROJECT LOCATION

The DPM is located in Miami-Dade County along the southern end of the L-67A and L-67C canals within Water Conservation Area 3 (WCA-3).



PROJECT COMPONENTS

This project provides for the temporary installation and testing of the following DPM features:

- Installation of 10 60-inch culverts in L-67A Levee (S-152).
- A 3,000 -foot gap in the L-67C Levee with three 1,000-foot backfill treatments; no backfill, partial backfill and complete backfill using adjacent levee material.
- The S-152 structure will have a maximum combined flow of 750 cubic feet per second (cfs), with velocities up to 3 centimeters per second to allow for pulse releases between the L-67A and L-67C levees toward the various backfill treatments in the L-67C gap.
- De-construction will occur at the end of DPM testing period and the project area will be restored to pre-DPM conditions.

PROJECT STATUS

Installation of the DPM was completed in October 2013. The first operational testing period was conducted from November - December 2013, and the second operational testing period was conducted from November 2014 - January 2015.

Access through the L-67A canal will remain open during and after installation. Access through the northern portion of L-67C will be blocked until the model is decommissioned.

FOR MORE INFORMATION

NATALIE GARRETT
USACE project manager
(904) 232-1048
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Attachment B

Everglades Law Center
National Parks Conservation Association
Everglades Foundation
Audubon Florida
Sierra Club

March 18, 2016

Melissa Nasuti
U.S. Army Corps of Engineers Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019
Email: melissa.a.nasuti@usace.army.mil

Re: Environmental documents for temporary emergency deviation to alleviate high water levels in Water Conservation Area 3A available for 30-day public and agency review

Via electronic mail

Dear Ms. Nasuti:

We write in response to the request for public comment related to the temporary emergency deviation to alleviate high water levels in Water Conservation Area ("WCA") 3A. We strongly support the temporary emergency deviation. We further advocate for the continued implementation of measures that are consistent with the Modified Water Deliveries plan to expedite critical operational changes needed to realize our shared plan for Everglades restoration, and to move toward true multi-species, ecosystem-based management that allows for more appropriate, sustainable water levels and flows across south Florida ecosystems. We remain opposed to operations which lower S-18C and/or increase S-197 discharges, which are unrelated to the purpose of providing high water relief in WCA 3A, counter to restoration goals, are not reflected in the Modified Water Deliveries plan and which set a dangerous precedent.

As described in the Environmental Assessment ("EA") for the temporary emergency deviation, the emergency operational changes release water from WCA 3A via the S-333 pump station into the L-29 Canal and raise water levels in that canal up to no more than 8.5 feet 1929 NGVD, allowing for flows to Northeast Shark River Slough ("NESRS") to increase. *See* EA at page 1, A-3. In addition, structures along the levees dividing WCA 3A and WCA 3B, S-151 and S-152, provide an additional exit for water from WCA 3A by passing flows to WCA 3B. *See* EA at pages 1-2; A5. According to the EA (at page 4):

> Potential reductions in high water levels and decreased periods of prolonged flooding is expected to provide temporary benefits to vegetation and fish and wildlife resources, including Federally threatened and endangered species such as the Cape Sable Seaside Sparrow (Ammodramus maritimus mirabilis), Wood Stork (Mycteria americana) and Everglades snail kite (Rostrhamus sociabilis plumbeus). Prolonged periods of flooding eliminates foraging and nesting opportunities for wading birds. Moving water south, through ENP will also have the added ecological benefit of improving salinity conditions of Florida Bay.

The EA also acknowledges that moving excess water out of WCA 3A will help avoid "losses in tree islands as a result of high water levels [that] are expected to occur if the proposed action is not taken." EA at page 5 ("Loss of tree islands has the potential to impact cultural resources and culturally important ceremonies practiced by Native American Tribes within the project area.")

These operational changes represent important parts of what has long been proposed to accomplish restoration in the decades-old plans for Modified Waters Deliveries ("ModWaters") and the Comprehensive Everglades Restoration Plan ("CERP"). *See e.g.,* Modified Water Deliveries to Everglades National Park: G-3273 & S-256 Pump Station Field Test Fact Sheet (attached as Exhibit A); March 17, 2005 CRS Report for Congress: Everglades Restoration: Modified Water Deliveries Project at pages 3-4 ("Increased water flow to the Northeast Shark River Slough will increase water supplies in the park and is expected to improve the natural habitat and hydrology of a portion of the Everglades ecosystem.")(attached as Exhibit B); May 2015 Water Conservation Area 3A Decompartmentalization Physical Model Fact Sheet (attached as Exhibit C). By expediting – in this temporary emergency deviation – these long-needed and delayed actions to restore America's Everglades, Florida and the U.S. Army Corps of Engineers are also able to "mitigate for severe economic losses currently being experienced as a result of high water levels" in the central Everglades and Water Conservation Areas.

All indications are, at this point, that these operational changes are working both to reduce high water levels in WCA 3A and to move more water east and south through Northeast Shark River Slough – how water historically flowed and should flow in the Everglades – without adverse effects. With this emergency deviation, we have exceeded the flow capacity of the S-333 structure (1,350 cfs) without going above 8.2 feet in the L-29 canal. This shows the feasibility of moving more water east and south (as restoration would direct most water flows). Especially given the repeated short term water-related crises we have faced over the past few years in south Florida, this success also lends support to the urgency of working to expedite Everglades restoration, a multi-species management approach that recognizes the need to protect and restore all parts of the South Florida ecosystem.

We hope that the successes of this "emergency deviation" show that Everglades restoration, as envisioned in ModWaters and CERP, is the solution to the problems of water extremes in south Florida. We should accelerate our efforts to implement restoration; the temporary emergency deviation shows that increasing flows south and east south of Tamiami Trail – as envisioned in CERP – is feasible and in all of our best interests.

Sincerely,

Ansley Samson
Of Counsel
Everglades Law Center

Dawn Shirreffs
Senior Everglades Policy Advisor
Everglades Foundation

John Adornato III
Senior Regional Director
Sun Coast Regional Office
National Parks Conservation Association

Julie Hill-Gabriel
Director of Everglades Policy
Audubon Florida

Frank Jackalone
Senior Organizing Manager
Sierra Club

Exhibit A

MODIFIED WATER DELIVERIES TO ENP | G-3273 & S-356 Pump Station Field Test

FACTS & INFORMATION

MAY 2015

The G-3273 Constraint Relaxation and S-356 Pump Station Field Test is the critical first step to improve hydrologic conditions for Northeast Shark River Slough in Everglades National Park, while maintaining the multiple congressionally-authorized purposes of the Central and Southern Florida (C&SF) project. The C&SF project purposes include providing flood control; water supply for municipal, industrial and agricultural purposes; prevention of saltwater intrusion; water supply for Everglades National Park; and preservation of fish and wildlife.

The data collected during the incremental field test will be used to develop a comprehensive integrated water control plan for the operation of water management infrastructure associated with the Modified Water Deliveries to Everglades National Park (Mod Waters) and C-111 South Dade projects, while balancing the ecological restoration objectives for these projects.

BACKGROUND

Restoring historic water flows and ecological viability to Everglades National Park is a complex endeavor that requires many projects to work in concert.

The Mod Waters and C-111 South Dade projects provide critical infrastructure that will enable larger quantities of water to flow into the Park. The majority of construction for both these projects has been completed and construction of the remaining components are scheduled to be completed within the next few years.

Currently operational constraints exist to mitigate for potential flooding risks to adjacent residential, commercial and agricultural lands, and impacts to endangered species. The relaxation of the G-3273 constraint and use of S-356 (Increment 1), along with future acquisition of real estate interests south of the Tamiami Trail (necessary for Increment 2) will allow additional operational flexibility within the existing infrastructure.

Since 1985, the G-3273 constraint has served as a trigger to cease S-333 discharges from flowing south into Northeast Shark River Slough when water levels reach 6.8 feet at G-3273 in eastern Everglades National Park. This has been used as a protective measure for residential areas to the east, particulary the 8.5 Square Mile Area.

Since the majority of features for the Mod Waters project have been built, opportunities exist to begin relaxation of the G-3273 constraint and increase water deliveries to Northeast Shark River Slough.

FIELD TEST PURPOSE

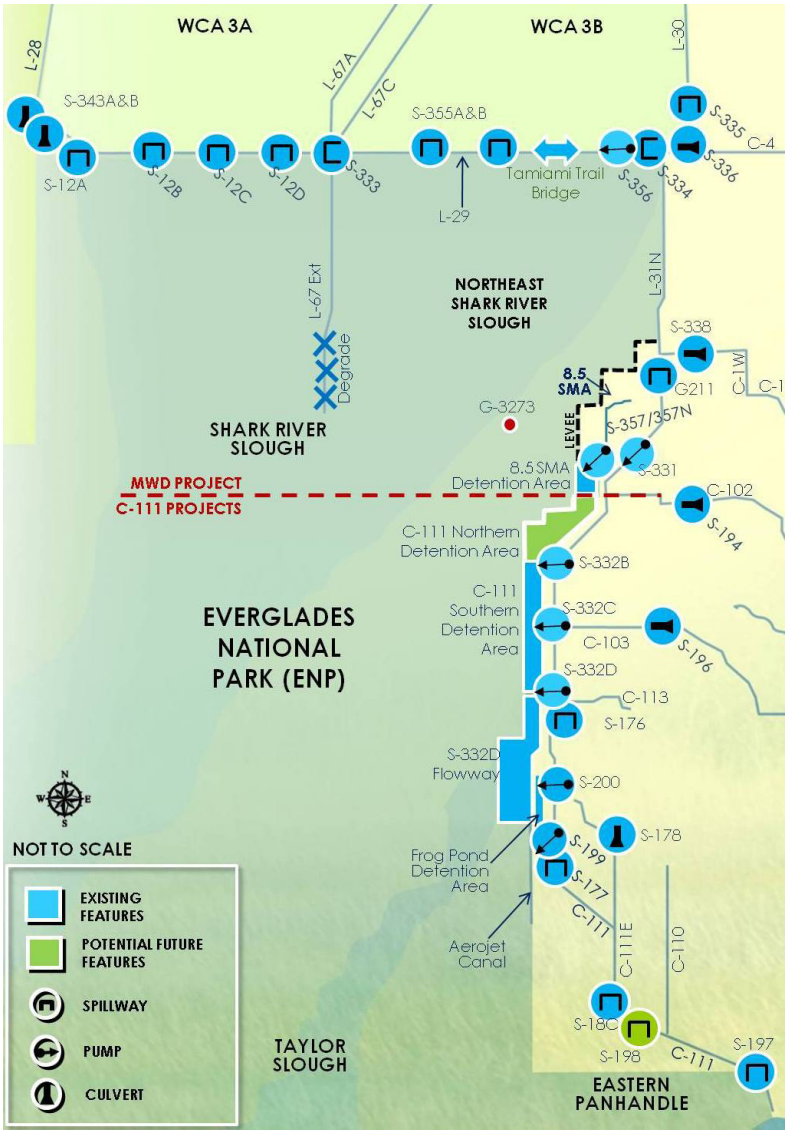
Water management is a key element in restoring historic flows to Everglades National Park and an integrated water control plan is needed to operate infrastructure connected to both the Mod Waters and C-111 South Dade projects.

In order to develop this integrated water control plan, known as the Combined Operating Plan, additional information is needed on how newly-operational project infrastructure integrates with the current water management system, and how to maximize ecological restoration objectives.

Information collected through the Field Test will evaluate the effects of incremental increases in flows to Northeast Shark River Slough in Everglades National Park. This information includes:

- Ecological responses due to increased inflows and changes in distribution of water entering Everglades National Park
- Potential effects on water quality entering Everglades National Park
- Potential effects on changing water levels in Water Conservation Areas (WCA) 3A and 3B
- Potential effects on levels of service for water supply and flood protection in Miami-Dade County
- Potential effects on flood mitigation performance for the 8.5 Square Mile Area Flood Mitigation Project, a component of the Mod Waters project
- Potential effects on water management operations
- Potential effects on cultural resources for future increments.

MODIFIED WATER DELIVERIES TO ENP | G-3273 & S-356 Pump Station Field Test



FIELD TEST STRUCTURES

The following structures and operational constraints will be incorporated into the test:

- The S-333 spillway, which releases water from WCA-3A to the L-29 Canal
- The L-29 Canal that runs parallel to the Tamiami Trail, adjacent to Everglades National Park
- The S-356 Pump Station located alongside the L-29 Canal
- The G-3273 gage in eastern Everglades National Park
- The components of the Mod Waters project, which includes the Tamiami Trail Modifications and 8.5 Square Mile Area Flood Mitigation projects
- The components of the C-111 South Dade project, which includes the Northern and Southern Detention Areas.
- S-197 will be operated as needed to mitigate potential risks to flood protection for areas in south Miami Dade County. S-197 operations will be reassessed once the C-111 South Dade Northern Detention Area is constructed and operable and/or upon completion of Increment 1.

FIELD TEST APPROACH

The field test will be conducted in three increments. During the duration of the first two increments, data will be collected and analyzed; natural, agricultural and urban system responses to project operations will be assessed; and ecological monitoring will be maintained.

INCREMENT 1

The first increment of the field test is scheduled to begin in summer 2015 and is planned for approximately two years, with a minimum duration of one year. It involves:

- Maintaining the maximum operating limit for the L-29 Canal water level at 7.5 feet
- Relaxing the maximum stage constraint (currently 6.8 ft) at the downstream G-3273 gage in Everglades National Park
- Operating the S-356 pump station for control of seepage into the L-31N Canal
- These operations will produce a small but important increase in the net flow of water into Northeast Shark River Slough

INCREMENT 2

The second increment of the field test will be implemented for two years and is scheduled to begin in 2017. It involves:

- Raising the maximum operating limit of the L-29 Canal, up to a maximum of 8.5 feet
- Raising the L-29 Canal above 8 feet will be dependent on the acquisition of additional real estate within the Park and completion of the Northern Detention Area for the C-111 South Dade project

INCREMENT 3

The information obtained from the first two increments will be used in the development of the Combined Operating Plan. This will serve as the water management plan for the southern portion of the Everglades ecosystem and includes:

- Water Conservations Areas 3A and 3B
- Everglades National Park
- South Dade Conveyance System, which includes the Mod Waters and C-111 South Dade projects.

FOR MORE INFORMATION

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http://bit.ly/MWD_FieldTest

Exhibit B

Order Code RS21331
Updated March 17, 2005

CRS Report for Congress

Received through the CRS Web

Everglades Restoration: Modified Water Deliveries Project

Pervaze A. Sheikh
Analyst in Environmental and Natural Resources Policy
Resources, Science, and Industry Division

Summary

The Modified Water Deliveries Project (Mod Waters) is a controversial ecological restoration project in south Florida designed to improve water delivery to Everglades National Park. The implementation schedule of Mod Waters is of interest to Congress partly because its completion is required before the implementation of portions of the Comprehensive Everglades Restoration Plan. Concerns have been raised in hearings on the Administration's FY2006 budget request regarding the cost of implementing the project and the U.S. Army Corps of Engineers' authority to fund the project. Further, due to concerns regarding phosphorus pollution in the Everglades, Congress enacted a provision in the FY2004 and FY2005 Interior Appropriations Acts that conditions funding for Mod Waters on meeting state water quality standards. In addition, the use of eminent domain to acquire land for a flood control plan adjacent to the park has been controversial. Several landowners who were unwilling to sell their land obtained a ruling in federal court that prevented further land acquisitions in the area. The Corps appealed this decision, and Congress authorized a plan, which included land acquisition, in the Consolidated Appropriations Resolution for FY2003. This report provides background on Mod Waters and discusses issues relating to its current status, funding, and land acquisition needs. This report will be updated as warranted.

Most Recent Developments

The Modified Waters Deliveries Project (Mod Waters) is being implemented by the Department of the Interior and the U.S. Army Corps of Engineers in southern Florida. (See **Figure 1**.) For FY2006, the Administration has requested a total of $60 million for the project: $35 million through the Corps and $25 million through the Department of the Interior. The President's request for the Everglades has drawn attention because of a proposed change in the funding of Mod Waters. The request called for the Corps to broaden its role by jointly funding the project with the Department of Interior, which previously had solely funded the project. This proposal has raised a question: Is the Corps authorized to receive appropriations to work on the project? The Administration's

position appears to be for the Corps to pay for roughly two-thirds of the remaining $191 million required to complete the project during next four fiscal years (FY2006-FY2009).[1]

A provision in the Consolidated Appropriations Act for FY2005 (P.L. 108-447) conditions funding for Mod Waters on meeting state water quality standards. This provision cites provisions in the FY2004 Interior Appropriations Act, which states that funds appropriated for Mod Waters will be provided *unless* the Secretary of the Interior, Secretary of the Army, Administrator of the EPA, and Attorney General indicate in a joint report (to be filed annually until December 31, 2006) that water entering the A.R.M. Loxahatchee National Wildlife Refuge and Everglades National Park does not meet state water quality standards, and the House and Senate Committees on Appropriations respond in writing disapproving the further expenditure of funds.[2]

To help implement Mod Waters, Congress included a provision in the Consolidated Appropriations Resolution for FY2003 (Division F, Title I, §157 of P.L. 108-7) that authorizes the Corps to implement a flood protection plan (Alternative 6D) for the "8.5 Square Mile Area"(8.5 SMA) as *part* of Mod Waters. Three conditions are specified in the section authorizing implementation of Alternative 6D: (1) the Corps may acquire residential property needed to carry out Alternative 6D if the owners are first offered comparable property in the 8.5 SMA that will be provided with flood protection; (2) the Corps is authorized to acquire land from willing sellers in the flood-protected portion of the 8.5 SMA to carry out the first condition; and (3) the Corps and the nonfederal sponsor may carry out these provisions with funds provided under the Everglades National Park Protection and Expansion Act of 1989 (P.L. 101-229; 16 U.S.C. §410r-8) and funds provided by the DOI for land acquisition for restoring the Everglades.

Background

The Modified Water Deliveries Project was authorized by the Everglades National Park Protection and Expansion Act of 1989 (P.L. 101-229) to improve water deliveries to Everglades National Park and, to the extent possible, restore the natural hydrological conditions within the park. The completion of Mod Waters is expected to be a central part of the Comprehensive Everglades Restoration Plan (CERP; Title VI, P.L. 106-541, the Water Resources Development Act of 2000 [WRDA 2000]).[3]

Mod Waters is expected to consist of structural modifications and additions to the Central and Southern Florida Project (C&SF Project) to improve the timing, distribution, and quantity of water flow to the Northeast Shark River Slough.[4] Increased water flow

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[1] U.S. Dept. of the Interior, News Release, "FY2006 Interior Budget Emphasizes Commitments, Cooperative Efforts, Performance and Fiscal Restraint," Feb. 7, 2005. Accessed March 14, 2005 at [http://www.doi.gov/news/05_News_Releases/050207a].

[2] For more information, see CRS Report RL32131, *Phosphorus Mitigation in the Everglades*, by Pervaze Sheikh and Barbara Johnson.

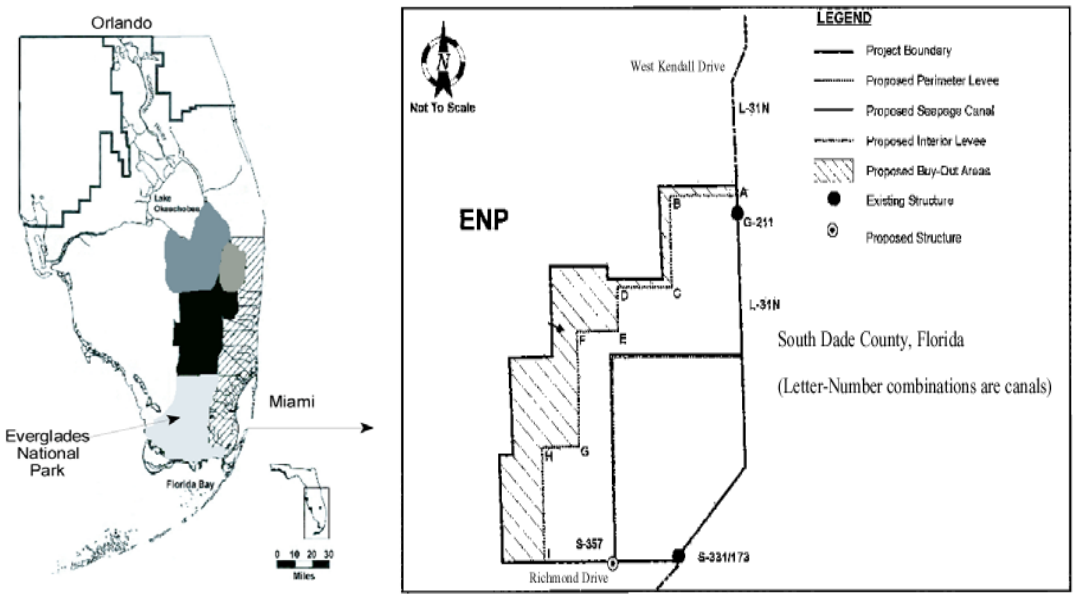
[3] For more information Florida Everglades restoration, see CRS Report RS20702, *South Florida Ecosystem Restoration and the Comprehensive Ecosystem Restoration Plan*, by Nicole Carter.

[4] Originally, the Corps was asked to alter water flow in the Everglades to control flooding, open

(continued...)

to the Northeast Shark River Slough will increase water supplies in the park and is expected to improve the natural habitat and hydrology of a portion of the Everglades ecosystem.[5]

Figure 1. The 8.5 Square Mile Area in Southern Florida



Source: Adapted from the U.S. Army Corps of Engineers.

Mod Waters is expected to flood some residential and agricultural areas adjacent to the park. Legislation authorizing this project instructs the Secretary of the Army to determine if residential and agricultural areas within or adjacent to the 8.5 SMA will be flooded from the hydrological changes of Mod Waters (§104(a)). If these areas are under threat of flooding, the law mandates that a flood protection system must be developed for the area (§104(b)). To prevent flooding, several mitigation features have been developed. One of these features is called Alternative 6D, which is a plan for protecting residents in the 8.5 SMA from flood waters resulting from the project (discussed further below).

The importance of Mod Waters goes beyond its expected direct results. Legislation authorizing CERP provides that the Mod Waters must be completed before several CERP projects involving water flows on the east side of the park can receive appropriations (§601(b)(2)(D)(iv) of WRDA 2000).

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[4] (...continued)
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The 8.5 SMA is a region adjacent to Everglades National Park of approximately 5,600 acres with a residential community of approximately 1,500 people. Due to its low topography (ranging from 5.0 to 8.5 feet NGVD[9]) and lack of drainage, parts of the 8.5 SMA frequently flood for several months during the rainy season (typically from May to October). With the implementation of Mod Waters, the Corps expected that most of the 8.5 SMA would flood. The Corps developed a flood mitigation plan in 1992 (the 1992

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[6] U.S. Army Corps of Engineers, *Modified Water Deliveries to Everglades National Park*, General Design Memorandum, Jacksonville District, June 1992.

[7] U.S. Dept. of the Interior, *FY2006 Budget Justification, National Park Servic*e (Washington, DC, 2005).

[8] Of the total amount of funds already spent and estimated to complete Mod Waters, approximately $200 million is for land acquisitions and approximately $198 million is for construction, design, and monitoring, among other things.

[9] NGVD is the National Geodetic Vertical Datum, which is used to assess elevation relative to sea level.

General Design Report and EIS for Modified Water Deliveries to Everglades National Park [1992 Plan]). The 1992 Plan was expected to provide flood control for residents in the 8.5 SMA and allow for the implementation of Mod Waters. However, the 1992 Plan was later deemed "unworkable" by the superintendent of Everglades National Park, who claimed that it would not provide full flood protection for current and future residents in the 8.5 SMA.[10]

The Corps began to devise a new plan for Mod Waters and the 8.5 SMA in 1999, which considered several alternative plans, including the complete buyout of the 8.5 SMA. A new plan, referred to as Alternative 6D, was proposed by the Corps in 2000. This plan includes a perimeter levee, seepage canal, pump station, and storm water drainage for flood protection in the 8.5 SMA. Instead of a complete buyout of the 8.5 SMA, this plan proposed the acquisition of approximately 2,100 acres in the 8.5 SMA (39% of the total area) and the removal of 77 residential tracts (24 tenant-occupied tracts and 53 owner-occupied tracts) in the 8.5 SMA (13% of the total number of "residential areas" in the 8.5 SMA).[11] Properties of the remaining families would receive flood control.[12]

On February 23, 2001, some residents who are unwilling to sell their land in the 8.5 SMA filed a case against the Corps with two complaints. They asserted that the Corps does not have the authority to implement a plan that does not protect the entire 8.5 SMA from flooding, and that the Corps does not have the authority to exercise eminent domain or spend money to acquire their land through condemnation.[13] On July 5, 2002, a district judge adopted an earlier ruling by a federal magistrate that restricted the Corps from veering from its original mandate to protect the entire community from flooding, and prevented the Corps from acquiring land in the 8.5 SMA. The Corps appealed this decision to the U.S. Court of Appeals for the Eleventh Circuit on September 4, 2002, and Congress authorized implementation of the Alternative 6D plan in the Consolidated Appropriations Resolution for FY2003.

Some critics of land acquisition in the 8.5 SMA base their arguments on the same principles used to criticize the acquisition of the entire 8.5 SMA — that the federal government should not exercise eminent domain to remove unwilling sellers and that the federal government is obligated to protect all residential areas from floods under P.L. 101-229. Some critics also argue that there are several unwilling sellers in the area and that if condemnations proceed, delays due to litigation will be inevitable and will eventually

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[10] U.S. House Resources Subcommittee on National Parks and Lands, *Issues Regarding Everglades National Park and Surrounding Areas Impacted by Management of the Everglades*, oversight hearing, April 27, 1999, 106th Cong., 1st sess. (Washington, DC: GPO), Serial No. 106-24.

[11] A residential area contains either a fixed home, mobile home, or travel trailer.

[12] Details of the plan were taken from U.S. Army Corps of Engineers, *Modified Water Deliveries to Everglades National Park* and *Impact of Implementation of Recommended Plan Alternative 6D for the Comprehensive Everglades Restoration Plan*, accessed March 15, 2005 at [http://www.saj.usace.army.mil/dp/MWDC111.htm].

[13] Garcia vs. United States, No. 01-801-CIV-Moore, slip op. (D.S.D. FL. July 5, 2002).

harm the ecosystem.[14] Some supporters of acquiring land in the 8.5 SMA and implementing Alternative 6D argue that if this plan is not implemented, delays may be even longer in implementing Mod Waters and restoring the regional ecosystem, to the detriment of Everglades National Park.

The use of condemnation by the Corps to acquire lands is controversial. Some critics assert that the Corps should not use eminent domain to acquire lands in the 8.5 SMA from unwilling sellers, and that the Corps may not have the authority to use condemnation.[15] The Corps asserts that it has the authority to condemn lands if necessary, and furthermore that there are several willing sellers in the 8.5 SMA.[16]

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[14] Michael Grunwald, "Dispute Stalls Everglades Project," *Washington Post* (July 17, 2002): A21.

[15] A provision in the FY2005 Consolidated Appropriations Law (P.L. 108-447; §329), requires that no funds appropriated for acquiring lands may be expended for the filing of declarations of taking or complaints in condemnation without the approval of the House and Senate Committees on Appropriations. An exception to this provision is funds appropriated to implement the Everglades National Park Protection and Expansion Act of 1989, or to funds appropriated for federal assistance to the State of Florida to acquire lands for Everglades restoration purposes.

[16] The Corps asserts its power for condemnation is authorized under 40 U.S.C. §257 and 33 U.S.C. §591. This authority is extended to practices of flood control under 33 U.S.C. §701 according to the Corps. Personal communication with Barry Vorse, U.S. Army Corps of Engineers, on Sept. 7, 2002.

Exhibit C

WATER CONSERVATION AREA 3 DECOMPARTMENTALIZATION | Physical Model

FACTS & INFORMATION

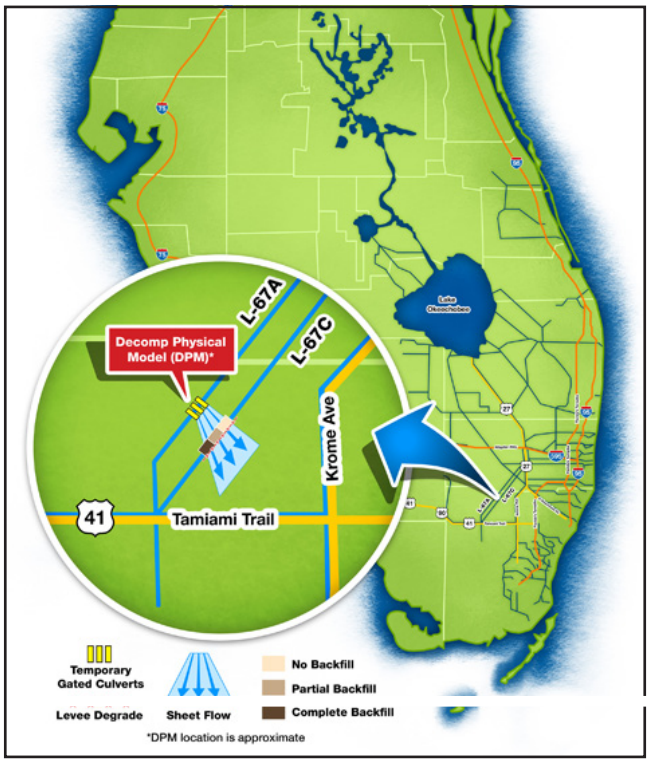
MAY 2015

The Water Conservation Area 3 (WCA-3) Decompartmentalization (Decomp) and Sheetflow Enhancement Physical Model (DPM) is a field test that will be conducted along a 3,000- foot stretch of the L-67A and L-67C levees and canals in WCA-3A and 3B to determine how best to design and formulate plans for future decompartmentalization of WCA-3, as visualized in the Comprehensive Everglades Restoration Plan (CERP).

The DPM is designed to address scientific, water flow and water management uncertainties that require clarification prior to future planning and construction of Everglades restoration projects, authorized in the Water Resources Development Act of 2000.

PROJECT LOCATION

The DPM is located in Miami-Dade County along the southern end of the L-67A and L-67C canals within Water Conservation Area 3 (WCA-3).



PROJECT COMPONENTS

This project provides for the temporary installation and testing of the following DPM features:

- Installation of 10 60-inch culverts in L-67A Levee (S-152).
- A 3,000 -foot gap in the L-67C Levee with three 1,000-foot backfill treatments; no backfill, partial backfill and complete backfill using adjacent levee material.
- The S-152 structure will have a maximum combined flow of 750 cubic feet per second (cfs), with velocities up to 3 centimeters per second to allow for pulse releases between the L-67A and L-67C levees toward the various backfill treatments in the L-67C gap.
- De-construction will occur at the end of DPM testing period and the project area will be restored to pre-DPM conditions.

PROJECT STATUS

Installation of the DPM was completed in October 2013. The first operational testing period was conducted from November - December 2013, and the second operational testing period was conducted from November 2014 - January 2015.

Access through the L-67A canal will remain open during and after installation. Access through the northern portion of L-67C will be blocked until the model is decommissioned.

FOR MORE INFORMATION

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Attachment C

Audubon Florida
Everglades Foundation
National Parks Conservation Association

April 3, 2015

Melissa Nasuti
U.S. Army Corps of Engineers Jacksonville District
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Dear Ms. Nasuti,

We appreciate the opportunity to comment on the Corps' *Environmental Assessment and Draft Finding of No Significant Impact: Proposed G-3273 Constrain Relaxation/S-356 Field Test and S-357N Operational Strategy* ("EA and Draft FONSI"). After reviewing the *EA and Draft FONSI*, we have serious concerns about the preferred alternative ("Alternative G") and all the proposed alternatives impacts on Everglades National Park, lower Biscayne Bay, Florida Bay, and the future of Everglades restoration.

Modified Water Deliveries Project of 1989 and C-111 South Dade Project of 1996 pre-dated the Comprehensive Everglades Restoration Plan (CERP) and were conceived as a means to improve the delivery of freshwater to Everglades National Park. In combination with the C-111 Spreader Canal Western Project, a CERP Project that was authorized just last year in the Water Resources Reform Development Act of 2014 legislation, these projects were designed explicitly to benefit the east Everglades and Florida Bay, while minimizing seepage losses to adjacent areas of south Miami-Dade County.

Proposed alternatives represent a step backward in restoration.
With the completion of the 1-mile Tamiami Trail Bridge, the C-111 Spreader, and the progress made in projects such as the Picayune Strand, and C-44/Indian River Lagoon-South, Everglades restoration has made great strides over the past five years. We are also seeing that restoration works. Sadly, the preferred alternative in the *EA and Draft FONSI* takes a step backward from the restoration progress we have made thus far and put us on a trajectory that favors local interests of a few individuals over the regional benefits that Everglades restoration was intended to provide to millions of stakeholders.

The C-111 Spreader project has been operational for nearly three years and is showing signs of hydrologic improvement and ecological benefits in Taylor Slough and northeastern Florida Bay. The C-111 Spreader was advertised to the restoration community and most recently to Congress as a project that would undergo a five-year phased implementation as a means to ramp up project performance through annual

0.1-foot stage increases at the S-18C[1] structure, resulting in even greater ecological benefits to Taylor Slough and Florida Bay. The alternatives proposed provide a false choice between undermining ramp-up of operations at S-18C or draining areas of Taylor Slough that are the focus of hydrological restoration. Neither of these actions is consistent with restoration objectives and should not be included in proposed operational plans.

Alternative G is damaging and misguided.
The preferred alternative (Alternative G) not only precludes us from this phased implementation of the C-111 Spreader, it also reduces overall restoration benefits by diverting more freshwater away from the Everglades through the S-197 into lower Biscayne Bay, causing harm to that already stressed ecosystem.

Alternative G was preferred by FDACS and the SFWMD because it provides farmers in low-lying, flood-prone areas with enhanced flood control. In fact, the preferred alternative favors flood control over restoration. In a letter to the Corps dated July 14, 2014, FDACS claimed that "all agricultural land east of the Everglades National Park (ENP) and the Frog Pond/C-111 project and in the vicinity of the C-111 West Spreader Canal Project" have been impacted by elevated water levels. However, no details on flooding dates, locations, or levels were provided.

In the *Central And Southern Florida Project Comprehensive Everglades Restoration Plan C-111 Spreader Canal Western Project Final Integrated Project Implementation Report And Environmental Impact Statement*, there were safeguards for landowners built into this phased implementation plan to test and monitor the impacts of incremental increases in water stage at S-18C. In fact, as part of regular operations of the spreader project and in response to specific flood control concerns, the report explains that "factors such as antecedent water levels, local storm activity and predicted major storm events would be considered along with the above prescribed monitoring data to identify if the current incremental water level changes would exacerbate flooding."

In the current *EA and Draft FONSI* and in response to flooding claims made by FDACS on behalf of south Dade farmers, no such systematic or quantitative approach was taken to substantiate elevated water claims that were made and yet these claims were used to justify Alternative G as the preferred alternative. Our review of the monitoring data from the area shows no obvious connection between operation of the C-111 Spreader project and increased groundwater levels to the east that may have contributed to flooding in 2013. In fact, high groundwater levels coincide with large rainfall events more than local structure operations. However, because we value farming in the region and its contribution to our economy, we support further investigation and modeling to

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[1] Figure D-10 from Annex D of the *Central And Southern Florida Project Comprehensive Everglades Restoration Plan C-111 Spreader Canal Western Project Final Integrated Project Implementation Report And Environmental Impact Statement*

identify the causal factors behind these claims. Such an analysis will be essential as we proceed with Everglades restoration and as sea level continues to rise.

The Corps and SFWMD need to quantitatively assess flood risk.
A primary objective of Increment 1 testing is to relax the G-3273 constraint from 6.8 feet NGVD up to 7.5 feet. By relaxing this constraint, SFWMD officials have argued that farmers will be taking on additional flood risk, mainly because the C-111 South Dade North Detention Area has not yet been constructed. The lack of this detention area, according to water managers, will result in more leakage of water out of the system that may impact South Dade farmers. However, there has been no analysis of data to quantify what the risk to farmers, if any, might actually be.

Assessing the potential for additional risk is reasonable and warranted. First, water levels at G-3273 have exceeded 6.8 feet nearly every year throughout the period of record (> 20 years). Second, the proposed operation of S-356 is very limited during wet periods. Therefore, it possibility that the S-356 would significantly increase flood risk seems remote and some evidence is necessary to support the hypothesis of additional flood risk. An analysis of long-term structure, well, and meterological data in South Dade would elucidate the myriad factors contributing to high groundwater levels in the region and help managers to quantify the farmers' risk of flooding by relaxing G-3273 stages. Moreover, without this analysis, it is not possible to determine if the proposed S-197 operations are commensurate with the presumed increased risk.

In the *Draft EA and FONSI*, we see no technically defensible justification for the amount of S-197 releases needed to compensate for the presumed increased flood risk that farmers would endure with Increment 1 of testing. The language in the *EA and Draft FONSI* is loaded with conditional terms such as "potential flood risks," "may be affected," and "may result in," yet somehow it is concluded that Alternative G "best alleviates this concern." Over the two-year projection period considered (July 2012 to June 2014), the report estimates that Alternative G will increase S-197 discharges by 2,000 to 12,000 acre-ft. These discharges occur almost exclusively in the wet season and wet years when the proposed S-356 operation in Increment 1 is not operational. Clearly, then, the sole reason for including the S-197 operations was to address the unsubstantiated claims of flooding and not to compensate for S-356 operations. The proposed S-197 operations are unrelated to Modified Water Deliveries elements or operations, and unsupported with objective analysis and impede implementation of the promised benefits from the C-111 N Spreader Project.

Proposed alternatives are unacceptable.
In conclusion, we find all of the proposed alternatives, and in particular Alternative G, unacceptable. By ignoring the phased implementation schedule of the C-111 Spreader, these operations would take a step backward from our current path of restoration and would be based on politics rather than science. Although agency staff have verbally

suggested that these proposed changes in S-197 operations will sunset when Contract 8 is in place, the language in the *EA and Draft FONSI* is much less clear. In fact, the document states that managers will revert to the current S-197 operations "if supported by the analysis of data collected during the field test" and "will be reassessed" when the North Detention Area is operable and/or the test is completed. In other words, it is not a definitive sunsetting of these proposed operational changes at S-197 and will likely represent a permanent withdrawal of expected C-111 Spreader benefits.

Our position is that restoration should proceed as planned in the recently authorized C-111 PIR and EIS and that any operational changes at S-197 should be based on rigorous modeling and analysis of data and that operations only be modified as needed through knowledge gained from modeling, monitoring, and assessment of new information following project implementation.

Sincerely,

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Attachment D

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April 4, 2015

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RE: Comments on Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for the Proposed G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy.

Dear Ms. Nasuti,

On behalf of **Tropical Audubon Society** we submit theses comments on the Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for the Proposed G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy in Miami-Dade County, Florida.

For the reasons explained below, the draft EA does not comply with the requirements of the National Environmental Policy Act (NEPA). The Corps' selection of Alternative G as its preferred alternative is arbitrary and capricious as it is based on unsupported assertions that doing so is necessary to avoid flooding in local agricultural areas. The Corps further fails to adequately examine the potentially significant environmental impacts associated with sending flows through the S-197 structure. These impacts include diverting significant amounts of freshwater away from Florida Bay and Taylor Slough where it is ecologically needed and impeding the ability of other Comprehensive Everglades Restoration Plan ("CERP") projects to deliver water to Everglades National Park. We urge the Corps to abandon its plans to utilize the S-197 structure and select an alternative that is truly aimed at helping restore the natural system.

I. The National Environmental Policy Act

An Overview

The National Environmental Policy Act ("NEPA") is America's "basic national charter for protection of the environment." 40 C.F.R. § 1500.1(a). NEPA ensures that federal agencies "will have available, and will carefully consider, detailed information concerning significant environmental impacts" and that such information "will be made available to the larger [public] audience." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

To this end, NEPA requires federal agencies to prepare a detailed Environmental Impact Statement (EIS) for any "major federal action significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). To determine whether the environmental impact of a proposed project is significant enough to warrant the preparation of an EIS, the agency will often prepare an Environmental Assessment (EA). An EA is "a concise public document that briefly provides evidence and analysis for determining whether to prepare an EIS or a finding of no significant impact." 40 C.F.R. § 1508.9. *See also* 33 C.F.R. § 230.10. The Eleventh Circuit has held that when an EA is performed on a project, the Corps must take a "hard look" and "must make a convincing case" for a Finding of No Significant Impact and decision not to perform an EIS. *Hill v. Boy,* 144 F.3d 1446 (11th Cir. 1990). If "substantial questions as to whether a project…may cause significant degradation of some human environmental factor," an EIS must be prepared. *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1149 (9th Cir. 1998).

When NEPA Requires the Preparation of an EIS

The Council on Environmental Quality ("CEQ") has promulgated regulations to guide agencies in determining whether a proposed project will have "significant" impacts to the environment. *See* 40 C.F.R. § 1508.27. Whether an action will have a "significant" impact on the environment, thus warranting the preparation of an EIS, requires considerations of both "context" and "intensity." "Context" means that the significance of an action must be analyzed in several different contexts (i.e. national, regional, and local significance of the action). "Intensity" refers to the severity of the impact.

Courts have held that a plaintiff need not show that significant effects will in fact occur, but if a plaintiff raises substantial questions whether a project *may* have a significant effect, an EIS must be prepared. *Idaho Sporting Congress*, 137 F.3d at 1150 (emphasis in original). As the court in *Klamath Siskiyou Ctr. V. Boody*, 468 F.3d 549, 562 (9th Cir. 2006) observed, "this is a low standard." *Id.*

The following sections raise substantial questions that the Proposed Action may have a significant impact on the environment and impede the restoration of America's Everglades.

II. THE EA VIOLATES NEPA

The draft EA runs afoul of NEPA because it fails to provide sufficient support for the Corps' decision to select Alternative G as its preferred alternative, and fails to adequately consider and analyze the environmental effects and alternatives to the proposed action.

A. The Corps' Selection of Alternative G as the Preferred Alternative is Arbitrary and Capricious.

The fundamental flaw in the Corps' selection of Alternative G is that it is based on conjecture and false assumptions. The Corps seems to assume that (1) there are increased groundwater levels in nearby agricultural areas, (2) these groundwater levels are the result of restoration activities and other water management operations, (3) that mitigating for increased groundwater levels is the responsibility of the Corps under the CS&F Project, and (4) the Corps must use S-197 to mitigate for these potential flood control risks. As we discuss below, the Corps fails to provide adequate support for any of these assumptions and therefore its selection of alternative G as the preferred alternative is arbitrary and capricious.

1. There is no evidence of increased groundwater levels in nearby agricultural areas and that the alleged increases in groundwater levels are the result of water management operations.

The Corps appears to rely largely on letters from SFWMD and FDACS to support its decision of selecting Alternative G as the preferred alternative.

Letters from the Florida Department of Agriculture and Consumer Services ("FDACS") contain sweeping assertions that the "agricultural economy in Miami-Dade has been repeatedly harmed by elevated water levels that adversely impact growers due to the lack of operational integration between the WCAs, ENP, and the SDCS, including the C-111 structures. The areas of negative impact include all agricultural land east of ENP and the Frog Pond/C-111 project and in the vicinity of the C-111 West Spreader Canal Project."[1] However, FDACS fails to provide any data or proof of causation that these operations have any role in adverse impacts to agricultural lands. In fact, FDACS fails to establish that any adverse impacts have actually occurred in agricultural land, whether or not those impacts were caused by these projects. There is no data or modeling in the EA or the appendices establishing that there are in fact elevated water levels, much less that operations are "repeatedly harming" farmers in Miami-County. There is also no discussion or quantification of the alleged level of harm that has occurred.

2. The Corps fails to point to any specific data demonstrating that flows from the S-197 are necessary for flood control.

The EA states that alternatives G and E include "increased flood control releases from the S-18C and S-197" to "mitigate for potential risks to flood protection area… "[2] The EA

[1] EA Appx. D FDAC Letters, July 14, 2014 Letter to Melissa Nasuti from Rebecca Elliot.
[2] EA at p. 2-2

does not contain any data, however, to support the notion that flows from the S-197 are necessary for flood control. No analysis is included or referenced in the EA to show increased flood impacts by not utilizing the S-197 structure.

To the extent that the Corps believes that the S-197 flows are necessary to avoid increased groundwater levels in agricultural lands, there is no data supporting the Corps' position. Moreover, the CS&F project has five authorized purposes: flood control, water supply, prevention of saltwater intrusion, water supply for ENP and protection of fish and wildlife. There is no explanation as to why minimizing groundwater levels even falls within the authorized purpose of "flood control" under the Central and Southern Florida Project, particularly if these flows are being used in a similar manner as the South Miami-Dade agricultural drawdowns to enable agricultural interests to plant their crops earlier in the season. In fact, by diverting water away from Taylor Slough and Florida Bay, the Corps is acting in contravention of the C&SF purposes of supplying water to Everglades National Park and protecting fish and wildlife.

NEPA demands more than just conclusory, self-serving statements that use of the S-197 structure is necessary to avoid flooding in local agricultural areas. The Corps must provide a reasoned explanation for why flooding would occur without this operational component. *Seattle Audubon Soc'y v. Mosely*, 798 F.Supp. 1473, 1482 (W.D. Wash. 1992) ("[t]he agency may not rely on conclusory statements unsupported by data, authorities, or explanatory information."); *Earth Island Inst. v. U.S. Forest Service*, 442 F.3d 1147, 1160 (9th Cir. 2006) (An agency has acted arbitrarily and capriciously when it fails to make a reasoned decision based on an evaluation of evidence).

3. If there is a lack of data the Corps must do its homework in the face of scientific uncertainty.

"[T]he very purpose of NEPA's requirement that an EIS be prepared for all actions that may significantly affect the environment is to obviate the need for []speculation by insuring that available data is gathered and analyzed prior to the implementation of the proposed action." *Foundation for N. Am. Wild Sheep v. U.S. Dep't of Agric.*, 681 F.2d 1172, 1179 (9th Cir. 1982).

The CEQ regulations require three mandatory obligations on the Corps in the face of uncertainty: (1) a duty to disclose the scientific uncertainty; (2) a duty to complete independent research and gather information if no adequate information exists (unless the costs are exorbitant or the means of obtaining the information are not known); and (3) a duty to evaluate the potential, reasonable foreseeable impacts in the absence of relevant information, using a four-step process. 40 C.F.R. § 1502.22. As one federal appeals court explained, the regulations require the "disclosure and analysis of the costs of uncertainty [and] the costs of proceeding without more and better information." *Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark*, 720 F.2d 1475, 1478 (9th Cir. 1983). "Section 1502.22 clearly contemplates original research if necessary" and "NEPA law requires research whenever the information is significant. As long as the information is...essential or significant, it must be provided when the costs are not

exorbitant in light of the size of the project and the possible harm to the environment." *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1244 n.5 (9th Cir. 1984). Therefore, the Corps has a high burden of obtaining and analyzing this information in assessing which alternatives to pursue.

The Corps' failure to complete independent research and gather information if no adequate information exists and evaluate the potential, reasonable foreseeable impacts in the absence of relevant information violates NEPA. *See Cabinet Res. Group v. U.S. Fish and Wildlife Serv.*, 465 F.Supp.2d 1067, 1100 (D. Mt. 2006) (finding that agency's failure "to attempt any assessment of the importance of the missing information calls into question the validity of the [agency's] conclusions about the impacts of the proposed action" and setting aside the EIS).

There is a complete lack of data or analysis to support any claims of flooding caused by C-111 operations. The FDAC letters urging the proposed operations do not provide reference to any data or analysis to support the request. Moving forward with Alternative G fails on this basis.

4. The Corps must examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made.

This is a central tenant of federal administrative law under the Administrative Procedure Act.[3] At this point the decision is based on mere speculation. This is similar to what the Corps did in 2007-2008 when it reversed its initial plans to eliminate the south Miami-Dade agricultural drawdowns as part of BBCW Phase 1 without any data and analysis linking the elimination of the drawdowns to flooding in agricultural areas. In 2011, the Everglades Law Center submitted requests under the Freedom of Information Act to the Corps and U.S. Fish & Wildlife Service, requesting information relating the annual agricultural drawdowns, including possible adverse effects from their elimination. As we explained in our May 27, 2014 letter to the Corps regarding the drawdowns, the documents received in response to that request provided no information indicating that the Corps or any other government agency has to date modeled or otherwise systematically evaluated the effects of eliminating the drawdowns.[4]

The Corps has not presented any information regarding review of data that would demonstrate its operations have caused increased flooding to agricultural interests in the region. There is no data with respect to flooding that can establish a rational connection between such flood claims from agriculture and the selection of alternative G.

With respect to listed species, such as the endangered smalltooth sawfish, recovery depends in part on action to "[m]inimize the disruption of natural/historic freshwater

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[3] *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).
[4] *See* Letter from Jason Totoiu, Everglades Law Center, to Colonel Alan M. Dodd, U.S. Army Corps of Engineers, May 27, 2014.

flow regimes including timing, quality, and quantity and maintain or restore water quality."[5] The proposed project could disrupt natural/historic freshwater flows diverting freshwater from where it is need in Taylor Slough and Northeast Florida Bay. Other species including the American Crocodile, the Roseate Spoonbill designated as threatened in the State of Florida and the Reddish Egret listed as a Species of Special Concern in Florida are impacted by salinity water quality in Florida Bay, as are economically valuable game fish like red drum, spotted sea trout, common snook and gray snapper. Data that evidences connection between the health of these species and the quality, quantity, timing and delivery of freshwater to Florida Bay should be reviewed. The preferred alternative should have a rational connection between the freshwater needs of these species and their habitat and the amount of water being delivered to Taylor Slough and Northeast Florida Bay.

B. The Draft EA Fails to "Rigorously Explore and Objectively Evaluate" All Reasonable Alternatives.

NEPA requires a "detailed statement" of "alternatives to the proposed action." 42 U.S.C. § 4332(2)(c). The alternatives analysis should address "the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for the choice among options by the decisionmaker and the public." 40 C.F.R. § 1502.14. This analysis must "rigorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14(a) (emphasis added).

The purpose of this section is "to insist that no major federal project should be undertaken without intense consideration of other more ecologically sound courses of action, including shelving the entire project, or of accomplishing the same result by entirely different means." *Environmental Defense Fund v. Corps of Engineers*, 492 F.2d 1123, 1135 (5th Cir. 1974). The Council on Environmental Quality describes the alternatives requirement as the "heart" of the environmental impact statement. 40 C.F.R. § 1502.14. While an agency is not obliged to consider every alternative to every aspect of a proposed action, reviewing courts have insisted that the agency "consider such alternatives to the proposed action as may partially or completely meet the proposals goal." *Natural Resources Defense Council, Inc. v. Callaway*, 524 F 2d. 79, 93 (2d Cir. 1975).

The "touchstone" of a court's inquiry in reviewing the sufficiency of an EIS is whether the "selection and discussion of alternatives fosters informed decision-making and informed public participation." *California v. Block*, 690 F.2d 753, 767 (9th Cir. 1982). The Corps must engage in a much more rigorous analysis which provides a clear basis for choice among options by the decision-maker and the public. 40 C.F.R. § 1502.14. In addition, once a broad range of alternatives are identified with varying degrees of environmental impacts, the Corps must devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits. 40 C.F.R. § 1502.14(b).

[5] http://www.nmfs.noaa.gov/pr/pdfs/recovery/draft_smalltoothsawfish.pdf at p. viii.

The Corps has failed to "rigorously explore" and "objectively evaluate" all reasonable alternatives to the project. The EA does not include sufficient review of an alternative that would proceed with testing of the MWD and C-111 structures without modifying the C-111 Spreader Canal Western Project operations. The EA does not rigorously explore or objectively evaluate an alternative that would proceed with the phased implementation of the C-111 Spreader Canal Western Project while undertaking needed investigations to determine its effects. We encourage the Corps to go back to the drawing table and develop and rigorously review an alternative that would do just this.

Alternative F does not require changes in the S-197 operation and relaxes 3273. Unlike Preferred Alternative G, Alternative F does not siphon water off the South Dade Conveyance System. These aspects of Alternative F are scientifically sound. However, Alternative F would not increase the stages of 18C and therefore the system would not realize the benefits of increased freshwater into the spreader, as the Modified Water Deliveries Project was sold to Congress. The Corps failed to consider a more ecologically sound course of action, which would have involved analyzing an alternative similar to Alternative F that would also raise the stages of 18C as planned.

The Corps' analysis of Preferred Alternative G relies on anecdotal references to increased flooding on agricultural land without any data to demonstrate any increased flood risk. There must be a formal analysis of data to demonstrate whether any increased flooding occurred in the first place and if so, to analyze the cause of the flooding. There is no evidence in the discussion of Alternative G looking at whether the proposed changes are commensurate with increased risk. The Corps did not and cannot show a "clear basis" for its choice in selecting Alternative G as the preferred alternative because it does not have the data or analysis to justify its decision to provide additional flood control to agricultural land.

C. The Draft EA Fails to Analyze the Proposed Project's Direct, Indirect, and Cumulative Impacts.

"NEPA imposes procedural requirements designed to force agencies to take a 'hard look' at [the] environmental consequences" of their actions. *Earth Island Inst. v. United States Forest Serv.*, 351 F.3d 1291, 1300 (9th Cir. 2003). "This includes considering all foreseeable direct and indirect impacts. *Id. See also* 40 C.F.R. § 1508.25 (c).

This draft EA fails to consider a wide range of foreseeable direct and indirect impacts on the area's resources. In addition, many of the Corps' discussions on direct and indirect impacts are based on false assumptions. The Corps must correct these and other deficiencies and provide a thorough and well-reasoned discussion of all direct, indirect and reasonably foreseeable environmental impacts.

1. Direct Impacts

The EA fails to account for direct impacts of the Proposed Action on an ecosystem that is the focus of a multi-billion dollar restoration project. As the court in *National Parks Conservation Ass'n v. Babbitt*, 241 F.3d 722 (9th Cir. 2001) explains:

> The purpose of an EIS is to obviate the need for speculation by insuring that available data are gathered and analyzed *prior* to the implementation of the proposed action...The [agency] proposes to increase the risk of harm to the environment and then perform its studies...This approach has the process exactly backwards. Before one brings about a potentially significant and irreversible change to the environment, an EIS must be prepared that sufficiently explores the intensity of the environmental effects it acknowledges...The point is...that the 'hard look' must be taken before, no after, the environmentally-threatening actions are put into effect.[6]

Thus, the Corps must perform these studies now and "cannot avoid NEPA responsibilities by cloaking itself in ignorance." *Fritiofson v. Alexander*, 722 F.2d 1225, 1244 (5th Cir. 1985).

Alternatives in the EA would lower levels at the S-18C even though the CERP, C-111 Spreader Canal project calls for incrementally raising water levels at the S-18C by one-tenth of a foot per year. The first two years of operation of the C-111 Spreader Canal Western Project have provided restoration benefits to Taylor Slough and Northeast Florida Bay. The Corps ignores the value of these benefits by selecting a preferred alternative that would backtrack and divert water away from where it is ecologically needed in Florida Bay and Taylor Slough. The EA notes the incompatibility of alternative G with the plan in the C-111 project to incrementally raise water levels in the S-18C. The Corps moved forward in selecting Alternative G as the preferred alternative without fully accounting for these impacts and discounting the adverse affects on the ecosystem because the "discharges would be temporary and spatially limited to nearshore areas within the southern estuaries."[7] The Corps uses its classification of the discharges as temporary to justify the adverse impacts to the ecosystem from alternative G. However, the "[f]ield test duration is planned for approximately two years," which is not that temporary. The loss of restoration benefits for an ecosystem already on life-support could occur within the planned two-year time period of the Proposed Action. Additionally, the EA does not require that the adverse impacts from utilizing the S-197 to siphon water from Taylor Slough and Florida Bay will end within two year. "[O]perating criteria for S-197 will be reassessed once construction of the C-111 South Dade NDA is constructed and operable, and/or upon completion of the Increment 1 field test."[8] The EA leaves the possibility open that the potential adverse impacts will be ongoing and permanent.

2. Indirect Impacts

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[6] *Id.* at 733 (emphasis added) (internal citations omitted). *See also,* 40 C.F.R. §§ 1500.1(b), 1502.5, 1506.1.
[7] EA at p. 2-15
[8] EA at p. 15.

The draft EA fails to adequately address the indirect impacts of this project. Under the CEQ regulations, an agency must consider the direct, indirect, and cumulative impacts on the environment when determining whether a federal action is "significant." 40 C.F.R. §§ 1508.8, 1508.27(b).

> An EA must analyze "indirect effects," which:
>
> are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. 40 C.F.R. § 1508.8(b).

The ecosystems in the Florida Bay and Taylor Slough may be significantly affected by the diversion of significant amounts of freshwater away from these areas where it is ecologically needed. The changes in salinity levels in these areas may impact multiple species. The EA fails to account for potential impacts to the Reddish Egret and Roseate Spoonbill, two species protected in Florida. Both species depend on top minnows, which may not be sufficiently abundant to provide the food supply these birds need without necessary freshwater flows from Taylor Slough. Additionally, game fish there are vital to the economy surrounding the Florida Bay including: red drum, spotted sea trout, common snook and gray snapper. These species need estuarine conditions with low to moderate salinity for their juveniles to be able to forage. The diversion of water from Taylor Slough and Florida Bay under alternative G could impact these species that depend on a lower saline estuarine environment. Further analysis of the impacts of the Proposed Action to these species is warranted.

The EA fails to adequately explain the potential impacts of the proposed project on recreational users, including boaters, fishermen, snorkelers, kayakers, divers, birders and others. These potential impacts include reduced use and enjoyment in addition to economic impacts to the businesses that depend on recreational users. A study funded by the Monroe County Tourist Development Council, The Nature Conservancy, Florida Keys Initiative, and NOAA found that natural resource based activities in Florida Bay and the Florida Keys accounts for total annual user value of $910 million.[9] The potential impacts of the Proposed Action to game fish that are such a significant part of recreational and economic activity in Florida Bay were not considered in the EA, except to give a finding of no effect. Game fish species that could be impacted by the diversion of freshwater from Florida Bay include the red drum, spotted sea trout, common snook and gray snapper. Additionally, food sources for the Roseate Spoonbill and Reddish Egret could be impacted by diversion of freshwater from Florida Bay under Preferred Alternative G. This could impact the experience of recreational users viewing bird populations in the area.

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[9] "Linking the Economy and Environment of Florida Keys/Florida Bay" http://sanctuaries.noaa.gov/science/socioeconomic/floridakeys/pdfs/visnonmarkexecsum9596.pdf at p. 4.

In addition to not identifying and discussing Preferred Alternative G's potential impact to recreational users, the EA does not address Alternative G's potential impacts to businesses that depend on recreational users of these resources. These businesses include charter boats, bait and tackle shops, marinas, guide services, dive shops, as well as local businesses that provide gas, food and services to recreational users.

3. Cumulative Effects

NEPA requires federal agencies to take a "hard look" at the cumulative effects of the proposed action. *See Florida Wildlife Federation v. United States Army Corps of Eng'rs*, 401 F.Supp.2d 1298 (holding that the agency failed to take a "hard look" at the cumulative effects of the proposed action in its EA). To accomplish this, the Corps must not only catalogue past, present and future projects but also *assess* the cumulative environmental impacts of those projects with the proposed project and *analyze* the additive cumulative impact of all these actions. *See City of Carmel-By-The-Sea*, 123 F.3d at 1160 (rejecting cumulative impacts analysis that referred generally to other past projects and did not discuss the additive impacts of foreseeable future projects). Further, NEPA requires that a cumulative impacts analysis provide "some quantified or detailed information" because without such information, neither the courts nor the public can be assured that the agency took the necessary hard look at the project. *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1998) (stating that "very general" cumulative impacts information violates NEPA).

Preferred Alternative G may have significant cumulative impacts by impeding the function of other CERP projects in the area. The Proposed Action could reverse benefits from the C-111 spreader canal by diverting needed freshwater from Taylor Slough and Northeast Florida Bay. The cumulative impact of this action when considered in the light of decades of unfavorable saline conditions in Florida Bay demonstrate the possibility that restoration efforts could be significantly compromised by the proposed action. The Corps did not analyze these potential impacts. Instead, the Corps' cumulative impact references were based only on the overall beneficial impact of CERP projects.[10]

D. The Draft EA Does Not Adequately Discuss Climate Change and Sea Level Rise.

The EA fails to consider the project in the context of climate change and sea level rise.

Global average sea level rose by roughly eight inches over the past century, and sea-level rise is accelerating in pace.[11] Global average sea level rose at an average rate of 3.3 ± 0.4 mm per year between 1993 and 2006,[12] compared with 1.6 ± 0.2 mm per year between

[10] EA at p. 4-63.
[11] Karl, T. R., J. M. Melillo, and T. C. Peterson. 2009. Global Climate Change Impacts in the United States, Cambridge University Press.
[12] Rahmstorf, S. 2007. A semi-empirical approach to projecting future sea-level rise. Science 315:368-370.

1961 and 2003.[13] Although the Intergovernmental Panel on Climate Change's ("IPCC") Fourth Assessment Report projected a global mean sea-level rise in the 21st century of 18–59 cm (7 to 23 inches), the IPCC acknowledged that this estimate did not represent a "best estimate" or "upper bound" for sea-level rise because it assumed a negligible contribution from the melting of the Greenland and west Antarctic ice sheets.[14] Recent studies documenting the accelerating ice discharge from these ice sheets indicate that the IPCC projections are a substantial underestimate.[15] Studies that have improved upon the IPCC estimates have found that a mean global sea-level rise of at least 1 to 2 meters is highly likely within this century.[16] Rahmstorf (2007) used the tight, observed relationship between global average temperature rise and sea-level rise over the recent observational record (~120 years) to project a global mean sea-level rise of 0.5 to 1.4 m by 2100. Other studies estimate a global mean sea-level rise by 2100 at 0.75 to 1.90 m,[17] 0.8 to 2.0 m,[18] 0.8 to 1.3,[19] and 0.6 to 1.6 m.[20] Moreover, studies that have reconstructed sea level rise based on the geological record, including oxygen isotope and coral records, have found that larger rates of 2.4 to 4 m per century are possible.[21]

NEPA guidance from the Council on Environmental Quality states that climate change effects should be considered in the EIS for projects that are designed for long-term utility and located in areas that are considered vulnerable to specific effects of climate change within the project's timeframe.[22]

One of the tremendous benefits provided by Everglades restoration is combatting salt water intrusion resulting from sea level rise. By pulling water from the marshes of the

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[13] Domingues, C. M., J. A. Church, N. J. White, P. J. Gleckler, S. E. Wijffels, P. M. Barker, and J. R. Dunn. 2008. Improved estimates of upper-ocean warming and multi-decadal sea-level rise. Nature 453:1090-1094.

[14] IPCC. 2007. Climate Change 2007: Synthesis Report. An Assessment of the Intergovernmental Panel on Climate Change. Available at www.ipcc.ch.

[15] Hansen, J., M. Sato, R. Ruedy, K. Lo, D. W. Lea, and M. Medina-Elizade. 2006. Global temperature change. Proceedings of the National Academy of Sciences of the United States of America 103:14288-14293; Pritchard, H. D., R. J. Arthem, D. G. Vaughan, and L. A. Edwards. 2009. Extensive dynamic thinning on the margins of the Greenland and Antarctic ice sheets. Nature 461:971-975; Rignot, E., I. Velicogna, M. R. van den Broeke, A. Monaghan, and J. T. M. Lenaerts. 2011. Acceleration of the contribution of the Greenland and Antarctic ice sheets to sea level rise. Geophysical Research Letters 38, L05503.

[16] Rahmstorf 2007; Pfeffer, W. T., J. T. Harper, and S. O'Neel. 2008. Kinematic constraints on glacier contributions to 21st-century sea-level rise. Science 321:1340-1343; Vermeer, M., and S. Rahmstorf. 2009. Global sea level linked to global temperature. Proceedings of the National Academy of Sciences of the United States of America 106:21527-21532; Grinsted, A., J. C. Moore, and S. Jevrejeva. 2010. Reconstructing sea level from paleo and projected temperatures 200 to 2100 AD. Climate Dynamics 34:461-472; Jevrejeva, S., J. C. Moore, and A. Grinsted. 2010. How will sea level respond to changes in natural and anthropogenic forcing by 2100. Geophysical Research Letters 37:L07703.

[17] Vermeer and Rahmstorf. 2009.

[18] Pfeffer et al. 2008.

[19] Grinsted et al. 2010.

[20] Jevrejeva et al. 2010.

[21] Milne, G. A., W. R. Gehrels, C. W. Hughes, and M. E. Tamisiea. 2009. Identifying the causes of sea-level change. Nature Geoscience 2:471-478.

[22] Nancy Sutley, Chair, Council of Environmental Quality, Memorandum for Heads of Federal Departments and Agencies, Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions, (February 18, 2010).

Southern Everglades and draining Taylor Slough in Everglades National Park into lower Biscayne Bay, Alternative G may eliminate these sea level rise mitigation benefits.

One of the glaring gaps in information in the Corps' analysis of Alternative G, is that the Corps assumes any flooding or increased flooding in the region results from "lack of operational integration between the WCAs, ENP and SDCS."[23] However, the Corps has not evaluated whether any the allegedly increased flooding on farmland in the area is connected to sea level rise, a factor wholly distinct from any potential impacts from water management operations. CERP restoration projects are not a mechanism to provide flood control relief for the impacts of sea level rise. In fact restoring freshwater flows as planned for Everglades restoration, is one of the best defenses that exists for South Florida to reduce and delay the impacts of sea level rise.[24]

III. THE CORPS MUST PREPARE AN EIS DUE TO THE PRESENCE OF A NUMBER OF SIGNIFICANCE FACTORS

CEQ has promulgated regulations to guide agencies in determining whether a proposed project will have "significant" impacts to the environment, thus warranting the preparation of an EIS. *See* 40 C.F.R. § 1508.27. The CEQ regulations set forth several factors for the Corps to consider when evaluating intensity, including, but not limited to:

> • Unique Characteristics of the geographic area such as proximity to park lands, wetlands, or ecologically critical areas;
>
> • Whether the action is related to other actions with individually insignificant but cumulatively significant impacts;
>
> • The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
>
> • The degree to which the action may adversely affect an endangered or threatened species or its habitat that bas been determined to be critical under the Endangered Species Act of 1973.
>
> 40 C.F.R. § 1508.27 (emphasis added).

All of these "significance factors" are present here and as explained below, the Corps must prepare an EIS.

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[23] EA at p. 1-11.

[24] Everglades National Park, South Florida Natural Resources Center, Dan Kimball, Superintendent Everglades National Park and Erik Stabenau, Ph.D., Oceanographer, Everglades National Park, "Climate Change: Discussion on South Florida Resources at Risk" http://www.miamidade.gov/planning/library/presentations/2014-03-07-climate-change-south-florida-resources-at-risk.pdf at slide. 11.

A. The Geographic Region is Unique As the Project Occurs Within Everglades National Park.

On December 6, 1947, Congress declared the Everglades a national park. In 1976, the Everglades was accepted as a biosphere reserve. In 1979, Everglades National Park was listed as a World Heritage Site by the United Nations Educational, Scientific, and Cultural Organization (UNESCO). Finally, in 1987, the Everglades was designated as a Ramsar site (Wetland of International Significance).[25]

Everglades National Park contains a unique mixture of vast subtropical wetlands, coastal marine ecosystems, and temperate wildlife species found nowhere else in the United States. Everglades National Park provides a refuge for over 20 rare, endangered, and threated species including the Florida panther, snail kite, American crocodile, and manatee. Furthermore, it provides an important foraging and breeding habitat for over 400 species of birds. This makes Everglades National Park the most significant breeding ground for wading birds in North American and a major corridor for migration.[26]

UNESCO has placed Everglades National Park on its endangered list due to water flow issues.[27] The stated purpose of this project is to increase water deliveries to Everglades National Park for the benefit of natural resources. Consequently, any actions that change the hydrology of the Everglades should prioritize the unique environmental concerns of this delicate ecosystem and closely evaluate any possible significant impacts.[28]

B. The Proposed Action May Have Cumulatively Significant Impacts.

The Congressionally authorized goals of this project include the preservation of and supply of water to Everglades National Park.[29] However, the proposed alternatives may impede the ability of ongoing CERP projects to deliver necessary benefits to the Everglades National Park. These include the C-111 Spreader Canal Western Project, which was fast-tracked by the South Florida Water Management District and authorized by Congress[30] in order to restore important functions in the Everglades, including pre-drainage water quantity, hydroperiods and hydropatterns, and salinity levels.[31]

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[25] *Everglades National Park*, UNESCO, (March 6, 2015), http://whc.unesco.org/en/list/76
[26] *Id.*
[27] United States. Army Corps of Engineers. Jacksonville District. *Environmental Assessment and Draft Finding of No Significant Impact. Proposed G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy*. Miami Dade County, Fla. U.S. Army Corps of Engineers, 2015. Web. 6 Mar. 2015 www.saj.usace.army.mil/Portals/44/docs/Planning/EnvironmentalBranch/EnvironmentalDocs/G-3273relaxS356testS357N_op_EA_AppD_feb2015.pdf at 3-29.
[28] *Everglades National Park*, UNESCO, (March 6, 2015), http://whc.unesco.org/en/list/76
[29] United States. Army Corps of Engineers. Jacksonville District. *Environmental Assessment and Draft Finding of No Significant Impact. Proposed G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy*. Miami Dade County, Fla. U.S. Army Corps of Engineers, 2015. Web. 6 Mar. 2015 www.saj.usace.army.mil/Portals/44/docs/Planning/EnvironmentalBranch/EnvironmentalDocs/G-3273relaxS356testS357N_op_EA_AppD_feb2015.pdf at 1-4.
[30] *Id.* at 1-12.
[31] *C-111 Spreader Canal*, Comprehensive Everglades Restoration Plan (CERP), March 3, 2015, http://www.evergladesplan.org/pm/projects/proj_29_c111.aspx

In its first two years, the C-111 Spreader Canal Western Project has shown promising increases in the amount of water being delivered to the Taylor Slough and Northeast Florida Bay. This has resulted in improved salinity levels and increased growth of submerged aquatic vegetation. The C-111 Spreader Canal Western Project's goal is to raise water levels in the S-18C by one-tenth foot per year.

The EA notes that two of the proposed alternatives, E and G, are not necessarily compatible with the C-111 South Dade Project and the C-111 Spreader Canal Final Western Project. Notably, flood control measures proposed in alternatives E and G are predicted to reverse the phased implementation of the C-111 Spreader Canal Western Project by lowering water levels in the C-111 canal and diverting water to Biscayne Bay.[32] These flood control measures propose the release of 500 cfs from the S-197 canal in order to mitigate potential flooding in agricultural areas.[33]

The EA identifies alternative G as the Preferred Alternative, identifying Alternative G as including "increased flood control releases from S-18C and S-197… to mitigate for potential risks to flood protection areas within South Dade which may be affected by [water management factors].[34] However, the EA does not provide support for the assertion that water management factors have any causational relationship to allegedly increased flooding in flood protection areas.

The aforementioned detrimental effects to the environment and ongoing restoration efforts are swept aside because the 1) the adverse effects to Manatee Bay and Barnes Sound's salinity levels will be temporary and spatially limited; 2) assessment of the impacts on C-111 South Dade Project and C-111 Spreader Canal Eastern Project has been deferred to the planned CERP C-111 Spreader Canal Easter Project PIR; 3) incremental increases at S-18C are not expected to be implemented by SFWMD during the duration of the Increment 1 field test; and 4) the operating criteria for S-197 will be reassessed once construction of the C-111 South Dade NDA is constructed and operable, or upon completion of the Increment 1 Field Test.[35]

The EA fails to establish that above rationale is sufficient to proceed with alternative G. First, the EA does not provide any support for its assertion that detrimental effects to the salinity in Manatee Bay and Barnes Sound will be temporally and spatially limited. It notes that "significant impacts are not expected," but does not support this assertion

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[32] United States. Army Corps of Engineers. Jacksonville District. *Environmental Assessment and Draft Finding of No Significant Impact. Proposed G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy*. Miami Dade County, Fla. U.S. Army Corps of Engineers, 2015. Web. 6 Mar. 2015 www.saj.usace.army.mil/Portals/44/docs/Planning/EnvironmentalBranch/EnvironmentalDocs/G-3273relaxS356testS357N_op_EA_AppD_feb2015.pdf at 2-15.
[33] *Id*. at 2-16.
[34] EA at p. 2-15.
[35] United States. Army Corps of Engineers. Jacksonville District. *Environmental Assessment and Draft Finding of No Significant Impact. Proposed G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy*. Miami Dade County, Fla. U.S. Army Corps of Engineers, 2015. Web. 6 Mar. 2015 www.saj.usace.army.mil/Portals/44/docs/Planning/EnvironmentalBranch/EnvironmentalDocs/G-3273relaxS356testS357N_op_EA_AppD_feb2015.pdf at 2-15.

with any data or scientific study.[36] Second, the fact that the impacts of the flood control measures on these restoration projects has not yet been assessed cannot prove that their selection is justified; in fact, it proves the opposite. Finally, the fact that these measures are temporary and could be changed does not negate their potential immediate impact on the environment and restoration efforts. We dispute whether calling these measures temporary is appropriate in relation to the Proposed Action under Alternative G, as "the field test duration is planned for approximately two years".[37] Significant ecological damage can occur in a two-year period. The EA does not give a definite end time to the operations of S-197 defined in preferred Alternative G. The EA states that "operating criteria for S-197 will be reassessed once construction of the C-111 South Dade NDA is constructed and operable, and/or upon completion of the Increment 1 field test."[38] There is no certain end date for operations diverting water from Taylor Slough and Florida Bay and therefore nothing guarantees that the impacts will be temporary, even if two years could qualify as temporary.

Ultimately, the EA's selection of alternative G favors agricultural concerns over environmental concerns, expressly against the mandate of the SFWMD. The ostensible "flood control" measures included in the proposed action may reverse the ongoing restoration efforts of various CERP projects.

C. The Proposed Action May Establish A Precedent for Future Actions.

The proposed action may establish a precedent for future actions by establishing a policy that restoration activities must be compromised due to the specter of an increase in ground water levels and unsupported claims of impacts to local agricultural areas.

D. The Proposed Action May Adversely Affect Endangered Species and Designated Critical Habitat.

1. The Project May Adversely Affect Endangered Species including the Smalltooth Sawfish and American Crocodile.

The Corps issued a no effect determination for many species including the smalltooth sawfish and American crocodile. However, we do not agree that the Proposed Action would have no affect on these species. Young crocodiles need to grow to a certain weight in order to survive their first winter in order to regulate their temperature when in colder weather. Young crocodiles require freshwater to metabolize food and grow. Freshwater that is so vital to young crocodiles in the early stages of their lives could be diverted from their habitat under preferred Alternative G. We urge the Corps to reconsider its determination of no impact to American crocodiles.

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[36] *Id.* at 2-16.
[37] Draft FONSI at p. 1.
[38] EA at p. 2-15.

Additionally, the federally listed endangered smalltooth sawfish claims Florida Bay as critical habitat. The main food source for smalltooth sawfish is mullet, which require freshwater. The Proposed Action could divert significant amounts of freshwater from Northeast Florida Bay and impact the abundance of mullet in the area. This in turn could reduce the food source for smalltooth sawfish and damage their habitat. We urge the Corps to reconsider its determination of no impact to the smalltooth sawfish.

2. The Corps Must Engage in Consultation with the U.S. Fish & Wildlife Service and National Marine Fisheries Service Regarding the Project's Impacts to the American Crocodile and Smalltooth Sawfish.

If a federal project may affect a listed species, the action agency must engage in "consultation" with the Services under Section 7 of the ESA. Section 7 is the central enforcement provision that operates to prohibit federal agencies from authorizing, funding, or otherwise carrying out any action that is likely to "jeopardize" the continued existence of an endangered species or result in the destruction or adverse modification of the species' critical habitat. 16 U.S.C. § 1536(a)(2).

The Corps initiated informal consultation with USFWS to determine the proposed action's impacts on Federally listed threated and endangered species in the project area. On August 22, 2014, the Corps requested from USFWS a list of federally threatened and endangered species in the project area.[39] The USFWS provided the list on September 11, 2014 and updated the list on December 17, 2014.[40] Then, the Corps underwent effects determinations for all of the listed species.

Despite the fact that Everglades is a known habitat for numerous rare, threatened, and endangered species, the Corps posited that there is no anticipated adverse effect on any threated and endangered species by the proposed action.[41] The EA does note that proposed action may affect, but is not likely to adversely effect, the following species and their associated critical habitat: Cape Sable seaside sparrow, Everglade snail kit, Florida bonneted bat, the Deltoid spurge, Small's milkpea, and Tiny polygala.[42]

On January 6, 2015, the Corps initiated informal consultation with the USFWS to request their concurrence with the "may affect, but not adversely effect" determination.[43] The Complete Initiation Package included explanations of effects determinations for each of the listed species in the project area. However, the analysis focuses on lack of crocodiles found near the S-197 structure skirting the issue that the

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[39] United States. Army Corps of Engineers. Jacksonville District. *Environmental Assessment and Draft Finding of No Significant Impact. Proposed G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy*. Miami Dade County, Fla. U.S. Army Corps of Engineers, 2015. Web. 6 Mar. 2015 www.saj.usace.army.mil/Portals/44/docs/Planning/EnvironmentalBranch/EnvironmentalDocs/G-3273relaxS356testS357N_op_EA_AppD_feb2015.pdf at 4-66.
[40] *Id.*
[41] *Id.* at 4-41
[42] *Id.*
[43] *Id.*

freshwater diverted away from Florida Bay is the threat to young crocodile populations.[44] Likewise, the analysis of smalltooth sawfish fails to account for impacts to its food supply and how the lack of freshwater flow into sawfish habitat may impede the species' recovery.[45]

According to the EA, these effects determinations were determined based 1) on the short duration of the field test and 2) on the generally beneficial nature of this action.[46] The analysis undertaken by the Corps is insufficient to make any effects determinations. The short duration of the field test does not speak to any effects on species that will occur during the test.

The threshold for triggering formal consultation under the ESA is "very low" and "any possible effect…triggers formal consultation requirements."[47] The Service has explained, "[t]he threshold for formal consultation must be set sufficiently low to allow Federal agencies to satisfy their duty to 'insure' under Section 7(a)(2) [that their actions do not jeopardize the species or adversely modify critical habitat]. The Corps must undergo formal consultation with the USFWS.

Conclusion

"NEPA emphasizes the importance of coherent and comprehensive up-front environmental analysis to ensure informed decision making to the end that the agency will not act on incomplete information, only to regret its decision after it is too late to correct." *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 371 (1989). An EIS is required of an agency in order that it explores, more thoroughly than an EA, the environmental consequences of a proposed action whenever "substantial questions are raised as to whether a project *may* cause significant [environmental] degradation." *Blue Mts. Biodiversity Project*, 161 F.3d at 1216 (quoting *Idaho Sporting*, 137 F.3d at 1149).

As evidenced by these comments, the draft EA and FONSI fail to meaningfully evaluate alternatives to the proposed action and the action's direct, indirect, and cumulative impacts. Moreover, substantial questions have been raised as to whether this project may cause a significant impact on the environment and negate the benefits of ongoing ecosystem restoration efforts. Therefore, the Corps must prepare an EIS for this project before a decision is made and it is otherwise too late.

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[44] *Id.* at 40.
[45] *Id.* at 11.
[46] United States. Army Corps of Engineers. Jacksonville District. *Environmental Assessment and Draft Finding of No Significant Impact. Proposed G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy*. Miami Dade County, Fla. U.S. Army Corps of Engineers, 2015. Web. 6 Mar. 2015 www.saj.usace.army.mil/Portals/44/docs/Planning/EnvironmentalBranch/EnvironmentalDocs/G-3273relaxS356testS357N_op_EA_AppD_feb2015.pdf at 4-41.
[47] 51 Fed. Reg. 19, 949-19,950 (June 3, 1986).

Thank you for the opportunity to comment on this proposal. Please make these comments part of the official record for this project. Also, please send me all future notices, announcements, EAs, EISs, and decision notices for this project.

Sincerely,

Jason Totoiu
Executive Director

Julie Dick
Staff Attorney

Counsel for Tropical Audubon Society

Attachment E

Evaluation of the South Florida Water Management District's Plan to Increase Freshwater Flows to Florida Bay

OCTOBER 7, 2016 BY THE EVERGLADES FOUNDATION

By Dr. Rajendra Paudel, Hydrologist, The Everglades Foundation and

Dr. Stephen Davis, Wetland Ecologist, The Everglades Foundation

Why does Florida Bay need more fresh water?

Florida Bay is the ultimate recipient of freshwater flow from the Everglades, which was historically fed by rainfall and spillover from Lake Okeechobee. After the construction of the Central and South Florida Project, instead of freshwater flowing south from the Lake into the Everglades, most Lake water considered "excess" is dumped to the Caloosahatchee River (to the west) and St. Lucie River (to the east) where it is damaging the ecology and economy of the communities surrounding these estuaries. Because lake water has been diverted and the remnant Everglades dammed, not enough water reaches the Everglades. As a result, Florida Bay is starved for freshwater needed to maintain a healthy salinity balance for seagrass and the numerous species of fish, shellfish, birds, marine mammals, and sea turtles that depend on this critical habitat. Today, the fate of Florida Bay is entirely dependent on local rainfall and therefore very susceptible to droughts.

During the summer of 2015, a drought in South Florida led to several months with no freshwater flow to Florida Bay through Shark River Slough and Taylor Slough of Everglades National Park. This produced high salt ("hyper-salinity") conditions in the upper central region of Florida Bay where these two drainage basins converge and triggered the beginning of a massive seagrass die-off that continued to expand through the first half of 2016 (see Figure 1).

What solutions does the South Florida Water Management District propose to increase the flow of freshwater into Florida Bay?

In response to public outcry over the seagrass die-off and recognizing the fact that more freshwater flow into the bay is needed to resolve the problem, the South Florida Water Management District (SFWMD) recently presented a plan "that will become a major part of saving the bay[1]." The proposal has some complex elements, but the principal features are:

1. Completion of planned and under-construction components of the South Dade Project and the Modified Water Deliveries Project;
2. Lowering of canal stages near Everglades National Park;
3. Adding new pumps in the Frog Pond and use them to pump water directly from canals into Everglades National Park;
4. Modifying infrastructure along the boundary of Everglades National Park to allow introduction of water from canals directly into the Park's marshes.

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Negron's smart next step for the Everglades (http://www.evergladesfoundation.org/breaking-news/negrons-smart-next-step-for-the-everglades/)

The plan was announced in July 2016 by the SFWMD, though the development of the main elements came out of the South Dade Investigations[2], which focused primarily on improving flood protection in the L-31N basin along the eastern boundary of Everglades National Park. The July 2016 proposal was put forth as a means of doubling flow into the headwaters of Taylor Slough, which is one of the important contributors but not the sole contributor of freshwater inflow to Florida Bay. The claim is that increasing flow to Taylor Slough will increase flows to Florida Bay, thereby promoting recovery of seagrass beds badly damaged in 2015[3].

The SFWMD provided Everglades Foundation with the Regional Simulation Model (RSM) inputs of their plan, thus allowing us to run the model and conduct an independent analysis of the results. We considered all details of the plan to understand where the additional water is coming from, where the water is going, when the water is delivered, and how much of that water is making it into Florida Bay. This provides a technical basis for the conclusions.

How much flow increased and where?

The modeled results of the SFWMD plan indicate that flows near Taylor Slough Bridge, just downstream of where the plan pumps water into the marshes, nearly doubles, with an average increase of more than 20,000 acre-ft per year (or 6.5 billion gallons; see Figure 2)

We analyzed the water budget, which accounts for all of the flows of water that cross a defined boundary. That way, internal flows like recirculation of water at the S-332 structures are fully accounted for. Roughly speaking, on average, about 17,000 acre-ft per year comes from intercepting the seepage leaving from Everglades National Park to the developed areas, and about 4,000 acre-ft comes from increasing the seepage out of Everglades National Park; that is, about 80% of the water in this plan is coming from seepage that is moving eastward that has already left Everglades National Park. About 20% of the water is from increasing the seepage out of Everglades National Park. SFWMD's plan would decrease the drainage of water from the canals to the South Dade Agricultural Area with increased pumping at the S-332s (Figure 3). However, lowering canal stages in L-31N also extracts water out of Everglades National Park above the headwaters of Taylor Slough.

One contention posited at public meetings by the SFWMD is that the increased flows in Taylor Slough come from diverting damaging flows at S-197, the southernmost structure in C-111 that releases water into Biscayne Bay. Structure flows indicate that S-197 discharges decrease by about 4,000 acre-ft per year on average in their plan, far less than the quantities of water that are pumped into Taylor Slough. Therefore, the source of the additional flow in Taylor Slough is likely decreased beneficial seepage towards Biscayne Bay, not a decrease in harmful canal discharges to Barnes Sound.

How much water gets to Florida Bay?

The proposed plan increases the pumping at S-200 and S-199; however, a substantial fraction of water returns back towards the C-111 canal (13,000 acre-ft between S-177 and S-18C, and 12,000 acre-ft between S-18C and S-197 canal sections). If one looks at the flows approaching Florida Bay (the total of transects T23B and T23C in Figure 3), flows increase from 238,000 acre-ft per year to 256,000 acre-ft per year, about an 8% increase in total flows. These new operations will send approximately 2,000 acre-ft less water to Florida Bay across transect T23C in the Panhandle region. Overall, there is a shift of about 6,000 acre-ft of water from the Panhandle region and S-197 to the Taylor Slough (T23B) transect. In the SFWMD proposal, 42% of the flow is in the western section, while the base is about 37%. While the net increase is very modest, the distribution of flow is shifted westward, which is a definite benefit.

In summary, SFWMD's proposal increases a net annual average flow by about 18,000 acre-ft (an 8% increase) of water across Taylor Slough and Eastern Panhandle (see Figure 3 for T23B and T23C transects). However, it doesn't increase net flows into Shark River Slough which are essential to freshening the western margin of Florida Bay in dry years.

Does Florida Bay improve during droughts?

As for the SFWMD contention that this will improve seagrass habitat, one important consideration is when does the water get to Florida Bay? Specifically, the question is does the freshwater come under dry conditions, or on top of already wetter conditions? Figure 4 is a flow duration curve of the total flows across Transects 23B and C. The interpretation of these results is that nearly all of the increase in flows come during wetter conditions. That is, flows will be higher in typical or above-average wet seasons and above-average dry seasons, but there is little change during below-average wet seasons and typical or below-average dry seasons.

Protect the Everglades, not sugar farmers | Editorial (http://www.evergladesfoundation.org/breaking-news/protect-the-everglades-not-sugar-farmers-editorial/)

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Moreover, if one looks at a drought situation, this conclusion is confirmed. While no two droughts are exactly alike, the 1989 dry season is an important comparison to 2015, as the 1989 drought contributed to a seagrass die-off in Florida Bay. In Figure 5, we see that the changes in flows are extremely small. Therefore, there is no basis to conclude that this plan will improve drought conditions, like the 2015 drought.

In summary, while the plan has some modest flow benefits during wet conditions, it will not likely change flows during dry years. That's because the source of the water is, ultimately, the marshes of Everglades National Park. During droughts, those marshes are dry and do not supply additional water. The plan does not create "new water" by carrying water from a wet period to a dry period. Rather, the plan redistributes the water during wet periods, the only time that water is available in the presently managed state of the Everglades.

What about water quality?

Since the L-31N/C-111 canal stages are lowered in the proposed plan, it will alter the exchange of flows between canal and the agricultural fields and therefore the phosphorus loadings. There is a proposed connection of the S-200 high-head canal to L-31W to push water towards the headwaters of Taylor Slough which could ultimately change the phosphorus loading rates into Taylor Slough. Figure 6 shows that flows from the agricultural areas to the canals increase at low flow rates, but decrease at high flow rates, though generally, the changes represent small quantities of water. To determine the water quality impacts, we would need further information about the water quality characteristics as a function of flow. The SFWMD has contended that there is no water quality problem; we do not have sufficient information to make a determination.

A second water quality issue is related to direct surface water discharges from canals into marshes along the L-31W canal. The plan as proposed has point discharges, and these point flows will result in localized disruptions to flora and fauna, as they are entirely inconsistent with natural Everglades flow patterns. Therefore, the plan does contain water quality issues that need to be addressed.

Does the proposed plan restore Florida Bay?

In our opinion, no. The freshwater needs of Florida Bay are much greater than what is made possible through these proposed actions. Although SFWMD's plan may produce a modest increase in additional water to the bay, some of this benefit comes from a re-distribution of water that is already in the Everglades. Much of the "new" water seems to originate from less water reaching the South Dade agricultural fields and flowing toward Biscayne Bay. Further, by focusing solely on Taylor Slough, this effort neglects the significance of Shark River Slough in benefitting Florida Bay. There are several published studies[4] that have demonstrated the significance of flows from Shark River Slough in freshening western Florida Bay both historically, at present, and in a restored Everglades. The SFWMD and U.S. Army Corps of Engineers recognized these conclusions in their 2002 *Florida Bay and Florida Keys Feasibility Study*[5], stating that "[Florida] Bay salinities and nutrient loadings are impacted by the quantity and quality of coastal transport and the distribution of flows from Shark River Slough, Taylor Slough and lower C-111".

How can we deliver more freshwater to Florida Bay?

Following a similar Florida Bay seagrass die-off in 1987 and a series of bay-wide algae blooms that persisted into the mid-1990s, the Comprehensive Everglades Restoration Plan (CERP) was authorized in 2000 to restore the flow of freshwater in South Florida. CERP represents the Master Plan for re-building lost storage capacity into the remaining Everglades ecosystem so that harmful discharges to the Caloosahatchee and St. Lucie estuaries can be reduced while simultaneously sending that freshwater south to meet the needs of the Everglades and Florida Bay. Implementation of CERP will greatly increase the flow of freshwater into Shark River Slough and Taylor Slough/Panhandle region, which are both essential in delivering inflows to Florida Bay (see Figure 1).

Several restoration projects are planned or awaiting implementation to increase flows into Florida Bay. Operating the C-111 Spreader Canal Western Project (C-111SC), a CERP project that has been constructed but still awaiting implementation, will "improve the quantity, timing and distribution of water delivered to Central Florida Bay via Taylor Slough"[6]. Fully implemented, the C-111SC will increase total flow volumes by 52% during average year across transects those were slightly north of the T23B and C transects[7]. Although it is not easy to make direct comparison between the models used for C-111SC and this plan, it highlights the benefits of the C-111SC in delivering more water to Florida Bay. The Central Everglades Plan, which is pending congressional authorization, will deliver an annual average of 210,000 acre-ft of new water south from Lake Okeechobee. Another major

CERP project to restore the flow of freshwater to Florida Bay is the EAA Reservoir Project, deemed a high priority when the CERP plan was completed and will also dramatically increase the flow of "new" freshwater from Lake Okeechobee to the south—benefitting the Everglades and salinity conditions across Florida Bay.

These solutions for restoring Florida Bay as well as other near-term operational strategies should have been investigated and prioritized based on cost benefits through an open process involving all stakeholders. It is quite possible that other more efficient and beneficial operational strategies could have been developed for Florida Bay while providing a consistent level of flood protection for the South Dade Agricultural Area. In sum, SFWMD's proposal is not a stand-alone restoration plan, and to make a meaningful difference in the state of the bay, much more water is needed—especially during dry years.

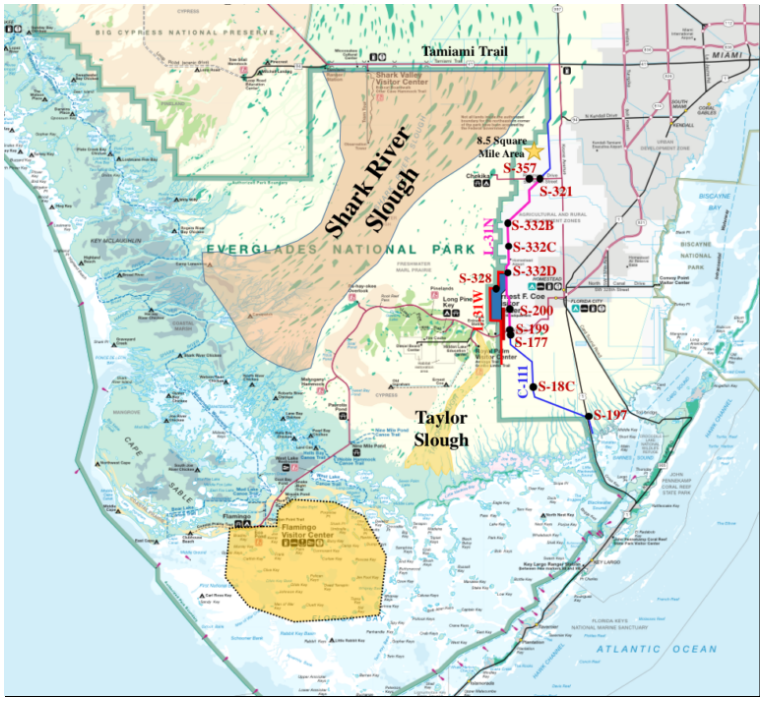

Figure 1: Everglades National Park map, highlighting major structures, canals, Shark River Slough, Taylor Slough, and approximate area of seagrass die-off in 2015. Shark River Slough represents the largest volume of freshwater flow through the park.

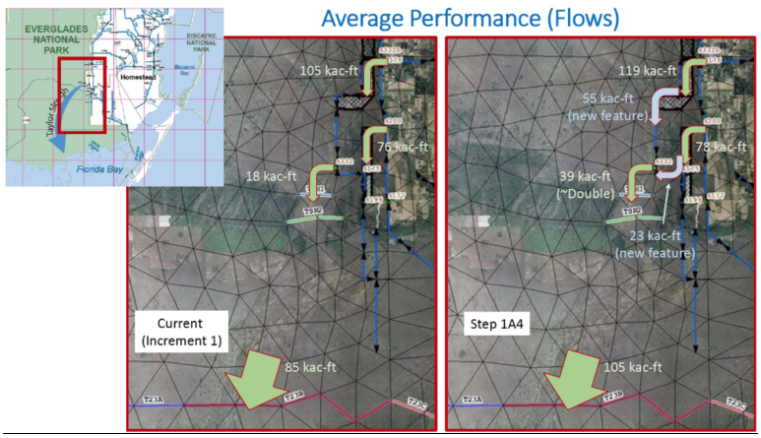

Figure 2: Model simulated average annual overland flows through structures and across transects for current conditions (left) and proposed plan (right) for a period from 1965 to 2005. Reference: July 7, 2016, SFWMD presentation, "Modeling Florida Bay Options."

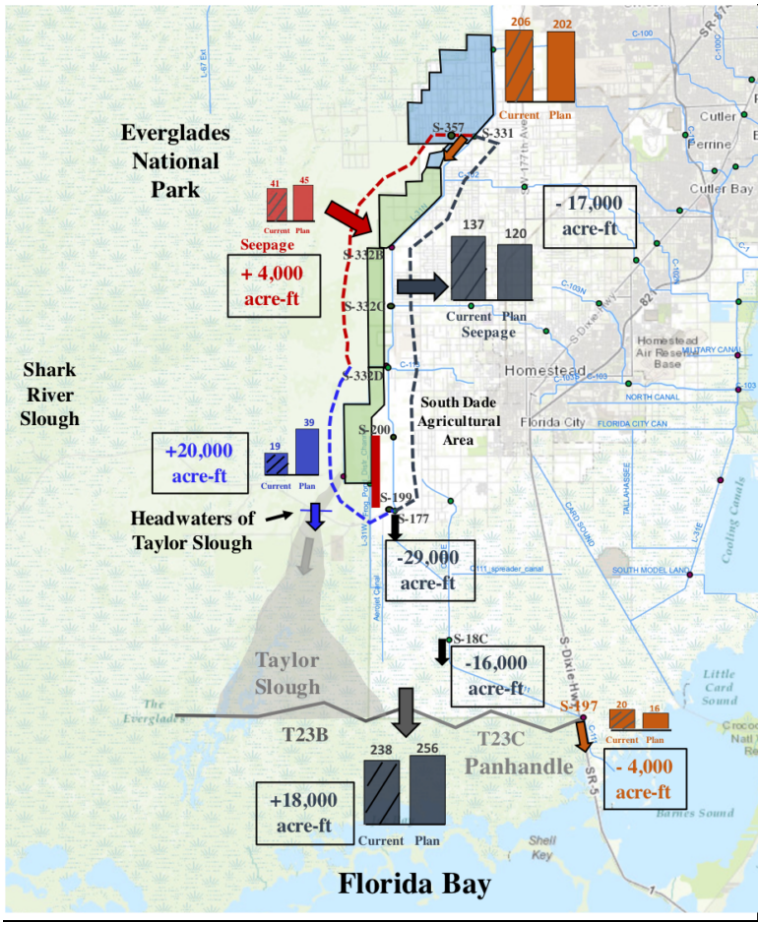

Figure 3: Map showing key structures, canals, and the area of Taylor Slough affected by SFWMD's proposed fixes. The bar charts represent net annual average flows (1000 acre-ft) across transects including flows through S-331+S-357 and S-197 structure.

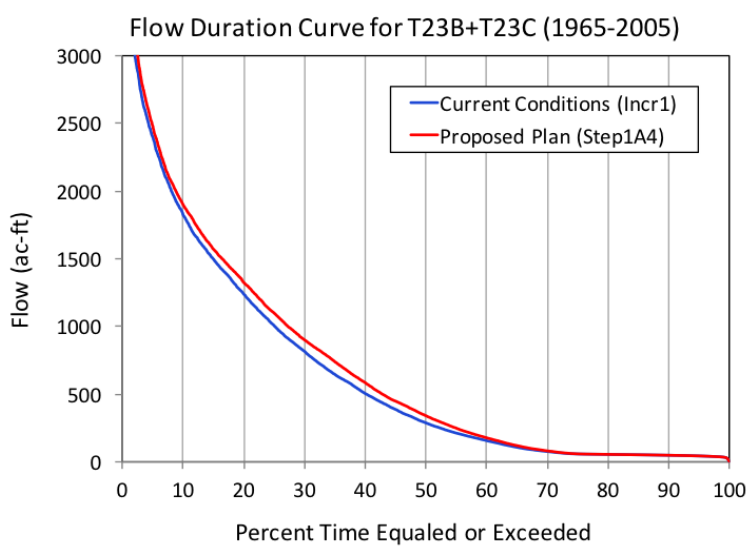

Figure 4: Flow duration curves for daily flows across T23B + T23C transects in the Current condition (blue) and the SFWMD's Proposed plan (red).

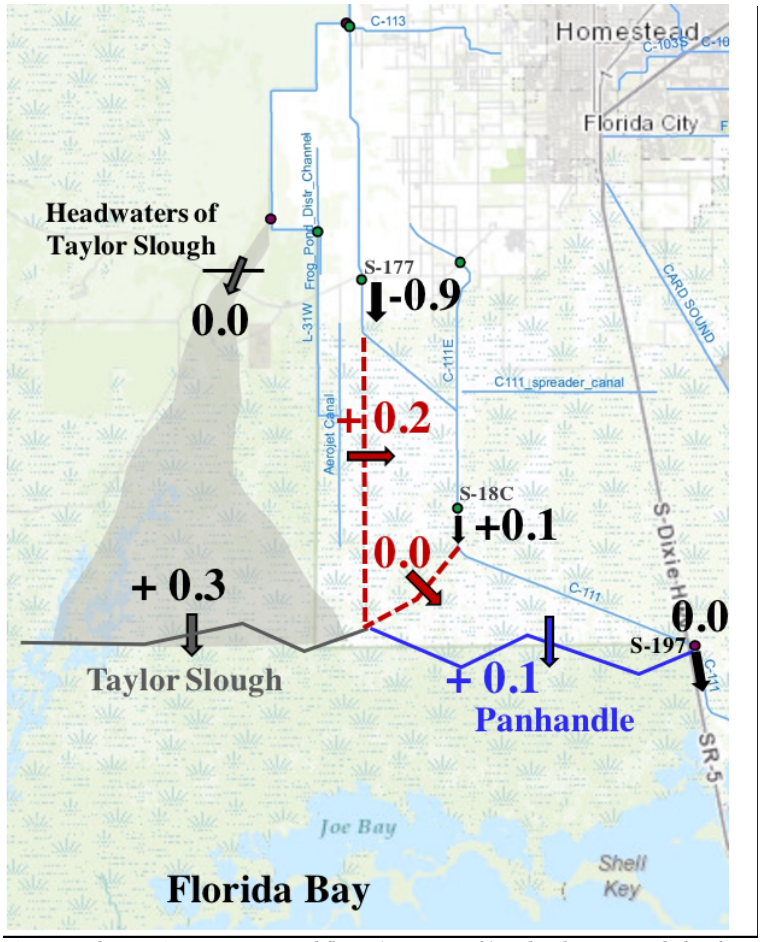

Figure 5: Changes in average annual flows (1000 acre-ft) under the proposed plan from a dry season of a dry year (Nov. 1, 1989 to May 31, 1990).

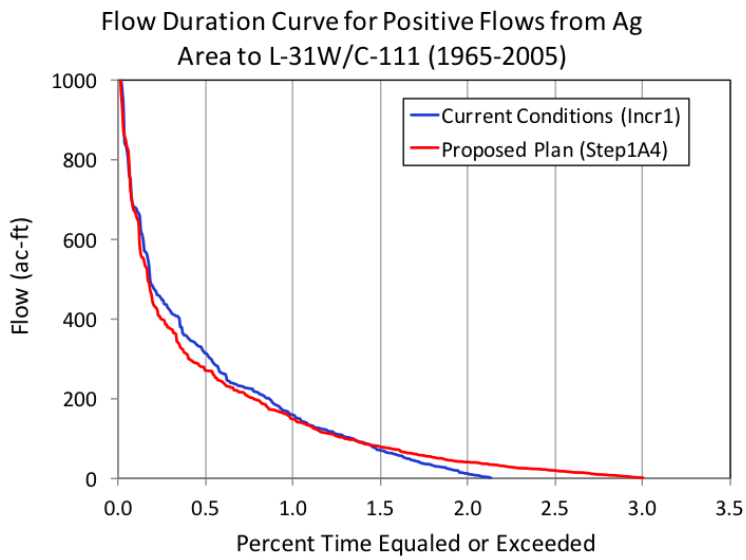

Figure 6: Flow duration curves for daily flows from agricultural areas to L-31N/C-111 canal in the Current condition (blue) and the SFWMD's Proposed plan (red). Note that the flows represent only positive flows towards canal across transect shown in Figure 3.

[1] SFWMD July 14, 2016 "Moving Water Into Florida Bay" Press Release

[2]http://my.sfwmd.gov/portal/page/portal/xweb%20about%20us/miami%20dade%20service%20center#s_dade_investigation (http://my.sfwmd.gov/portal/page/portal/xweb%20about%20us/miami%20dade%20service%20center#s_dade_investigation) Accessed October 4, 2016.

[3] www.sfwmd.gov/floridabay (http://www.sfwmd.gov/floridabay) Accessed October 4, 2016. "This is an immediate first step to help reduce salinity levels in the bay and promote the recovery of seagrasses killed during a severe drought in 2015, providing critical relief now while larger Everglades restoration projects are built and completed."

[4] T.J. Smith et al. 1989. *Bulletin of Marine Science*. Vol. 44, pp 274-282; J.D. Wang 1998. *Estuarine Coastal and Shelf Science*. Vol. 46, pp 901-915; J.N. Boyer et al. 1999. *Estuaries*. Vol. 22, pp 417-430; F.E. Marshall et al. 2009. *Estuaries and Coasts*. Vol. 32, pp 37-53.

[5] South Florida Water Management District and U.S. Army Corps of Engineers. 2002. Florida Bay & Florida Keys Feasibility Study. 69 pages.

[6]Page 19 of the U.S. Fish & Wildlife Service Coordination Act Report, Annex A of the CEPP Project Implementation Report.

[7] Table 14 of Volume 2 –Annexes A-B, Central and South Florida Project CERP C-111 Spreader Canal Western Project, Final Integrated PIR and EIS.

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