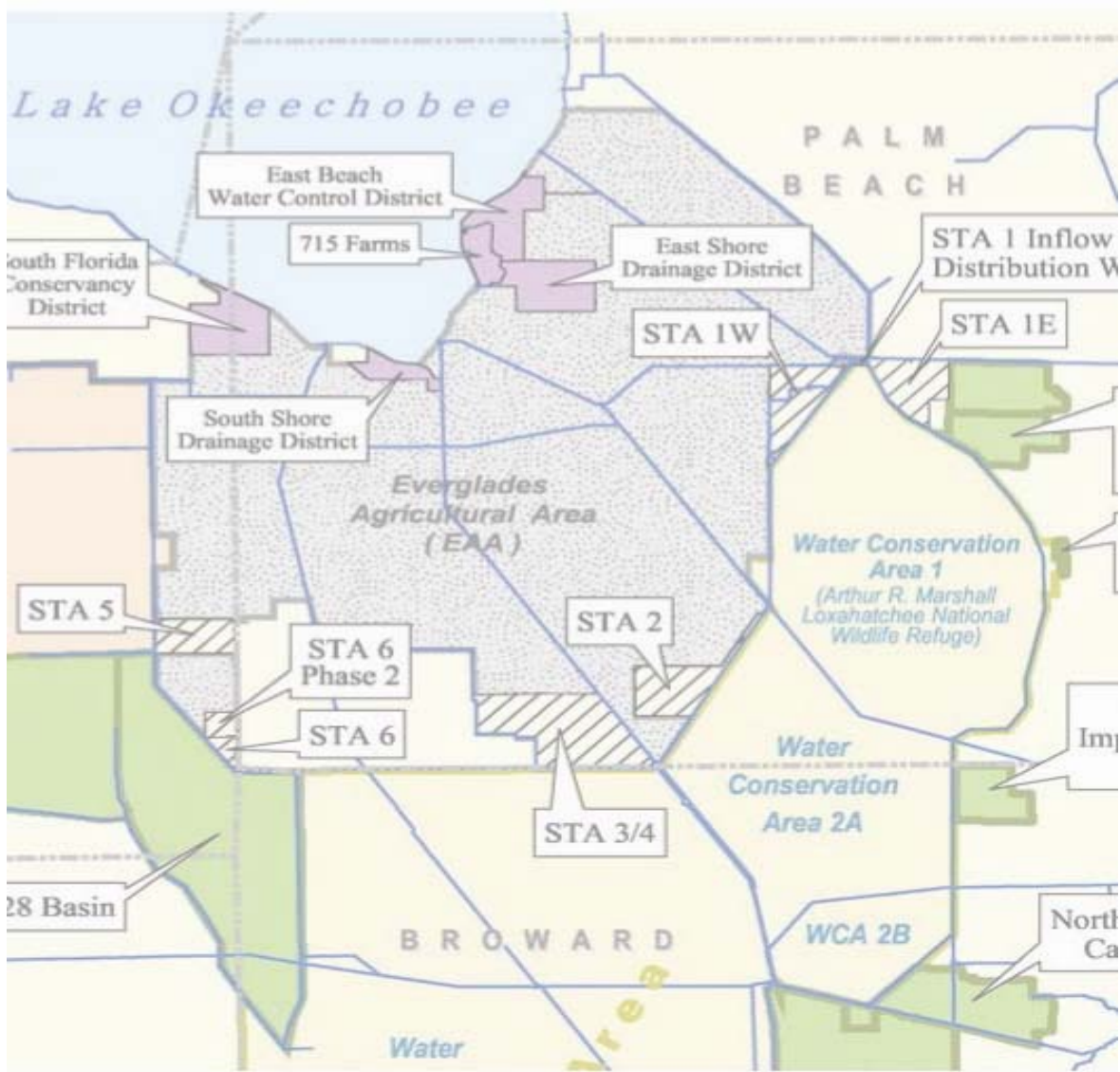


Everglades Agricultural Area Storage Reservoir Phase 1 Existing Flood Control Conditions Documentation

February 2004



Introduction

The purpose of this report is to document the existing flood control conditions within the Everglades Agricultural Area (EAA) Storage Reservoir study area. To obtain local knowledge about the study area with regards to flooding problems, three meetings were held with US Sugar, Florida Crystals, and the Sugarcane Growers Cooperative. These meetings were held on November 12-13, 2003.

Prior to holding these meetings a list of questions, such as where the areas of flooding occurs, crop damages associated with rainfall, etc., were prepared and electronically submitted to the 3 groups mentioned above. This list of questions can be found in Attachment A of this report.

Background Information

This project is located in the EAA in western Palm Beach County and Hendry County on lands purchased with Department of Interior Farm Bill funds, with South Florida Water Management District (SFWMD) funds, and on lands gained through a series of exchanges for lands being purchased with these funds. The area presently consists of land that is mostly under sugar cane cultivation. Implementation of this project will be consistent with the Farm Bill land acquisition agreements.

The EAA Storage Reservoirs was identified as one of the features of the Recommended Plan (Section 9) of the *Central and Southern Florida (C&SF) Project – Comprehensive Review Study (the Restudy)*. The purpose of this the EAA Storage Reservoir included the following:

- Improvement of the timing of environmental deliveries to the Water Conservation Areas.
- Reduction of damaging flood releases from the EAA to the Water Conservation Areas.
- Reduction Lake Okeechobee regulatory releases to the estuaries, EAA irrigation and Everglades water demands.
- Increased flood protection in the EAA.

The EAA was completed in 1962 (<http://www.sfwmd.gov/org/ema/ecu/index2.html>) and covers an area of approximately 755,840 acres (3,059 km²). It is located in western Palm Beach and Hendry counties, below the southeastern border of Lake Okeechobee. It extends from Lake Okeechobee to the northern levee of WCA-3A, from its northeastern boundary at the L-8 canal, southeastern boundary at the L-7 canal, and to the western boundary along the L-1, L-2 and L-3 levees (Exhibit 1). It should be noted that the WCA-1 is just east of the L-7 canal. Sugar cane is the primary crop grown in the EAA, with relatively smaller crops of vegetables (winter vegetables, rice, etc.) and sod.

The EAA was formally designated in the latter part of the 1950s (<http://www.sfwmd.gov/org/ema/ecu/index2.html>). The extremely rich soils of the area made the region very attractive to farmers. During the period from 1906 to 1927, approximately 49,920 acres (202 km²) were farmed. Production soared to 12,160 acres (49 km²) during the agricultural boom of the 1950s. By 1973, there were 120 sugar cane farms, which covered 200,320 acres (809 km²), and produced 800,000 tons (726,000 metric tons) of sugar. In the following two years, sugar cane crops accounted for 300,160 acres (1,214 km²) of the EAA. Today, approximately 574,720 acres (2,327 km²) of the EAA are farmed for sugar cane.

Exhibit 1

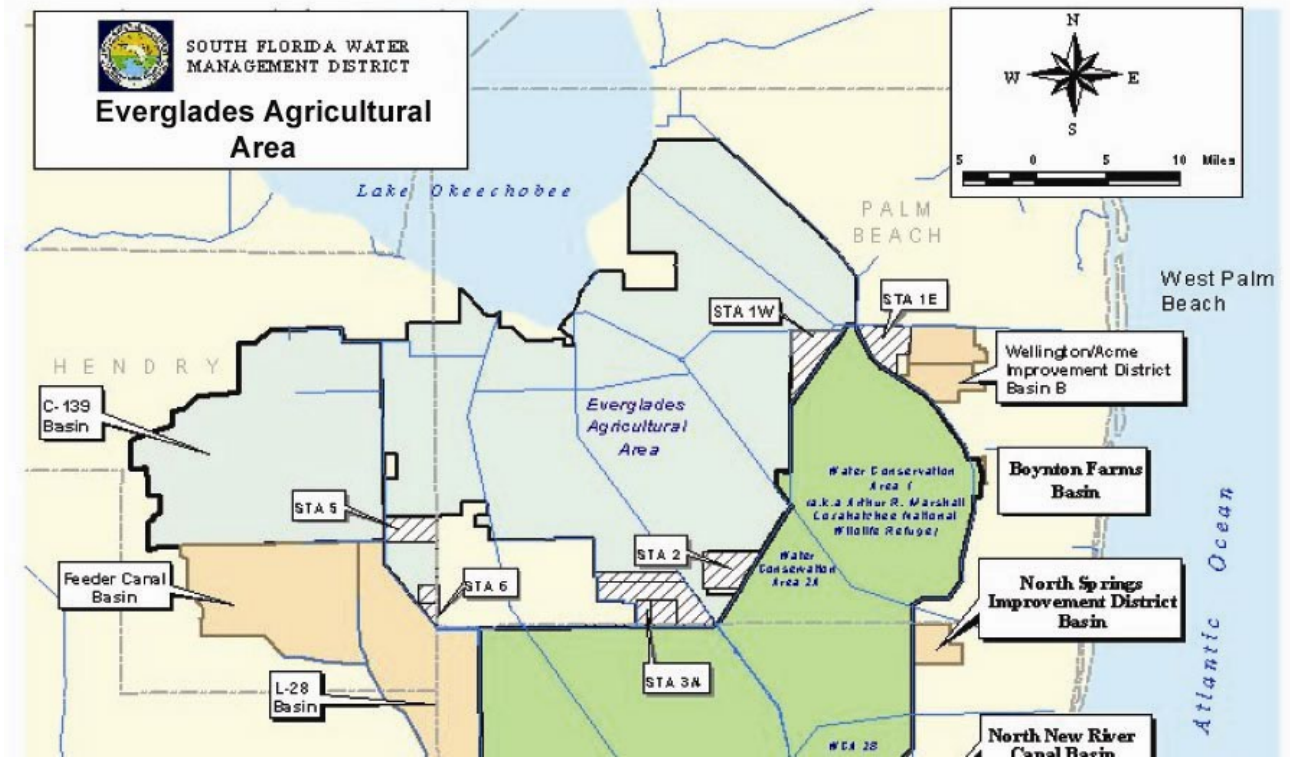


Exhibit 1 Everglades Agricultural Area (EAA)

Project Information

This project is the first part of the of the EAA Storage Reservoir component on lands that are currently available. These lands are depicted in Exhibit 2 parcels A, B and C. In the Restudy, the conceptual design included two above ground reservoirs with a total storage capacity of approximately 240,000 acre-feet located on land associated with the Talisman Land acquisition in the Everglades Agricultural Area. Conveyance capacity increases up to 200% for the Miami, North New River, Bolles and Cross Canals are also included in the design of this project. The conceptual design for the reservoir(s) assumed 40,000 acres, divided into two, equally sized compartments with water levels fluctuating up to 6 feet above grade in each compartment. However, actual design and construction of this first phase is currently being evaluated by maximizing the use of the land acquired through the Farm Bill land acquisition agreements which encompasses up to 50,000 acres.

Hydrology

The EAA has altered the natural sheet flow and hydrology of the historic Everglades and impacted water quality. Crops in the EAA grow best when the water table is kept at a constant level. Historically, the water table has never been consistent in the Everglades. During the wet season, the EAA is kept drier than normal, and during the dry season, it is kept wetter than normal. The EAA's impact on water quality occurs through: (1) increased nutrients in runoff resulting from subsidence of soil and application of fertilizers; and (2) the use of herbicides and pesticides. The primary conveyance canals within the EAA, the Miami, North New River, and Hillsboro canals, are from north to south. From East to West are the Bolles and Cross Canals, and West Palm Beach Canal (Exhibit 3). These canals are used both for water supply and flood control purposes.

Exhibit 2

Lands Available for the EAASR Phase 1

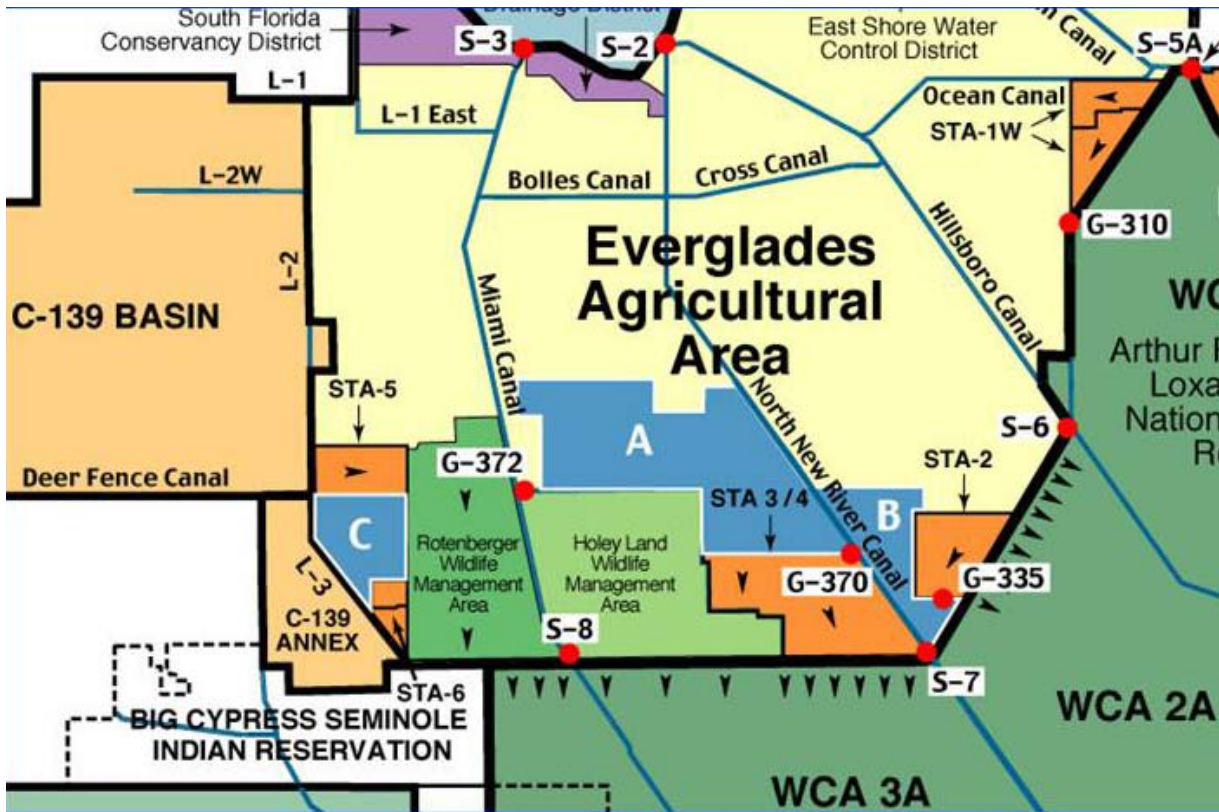


Exhibit 2 EAA Vicinity

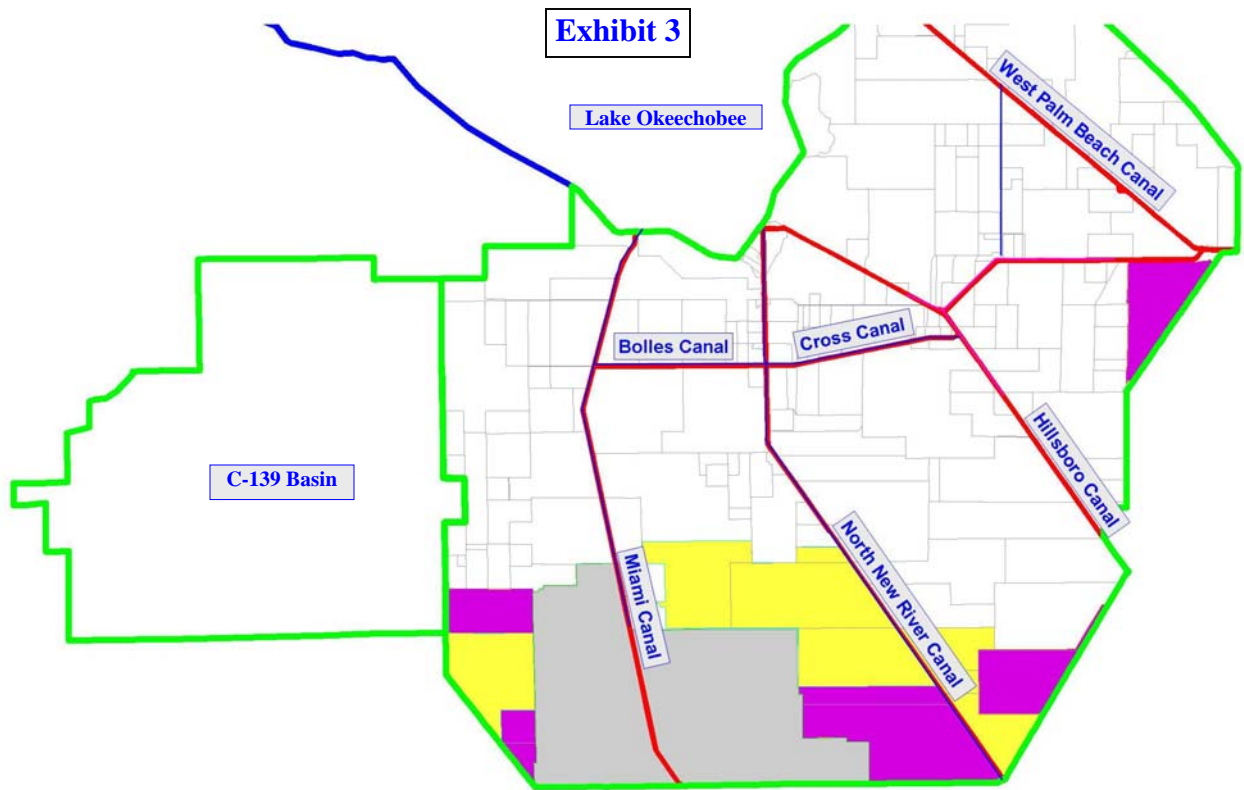


Exhibit 3 Major canals in the EAA

Farming along the Bolles and Cross canals depicted in Exhibit 4 does not necessarily represent ownership of the properties. Farming along the Bolles and Cross includes sugarcane, vegetables and sod.

Exhibit 4

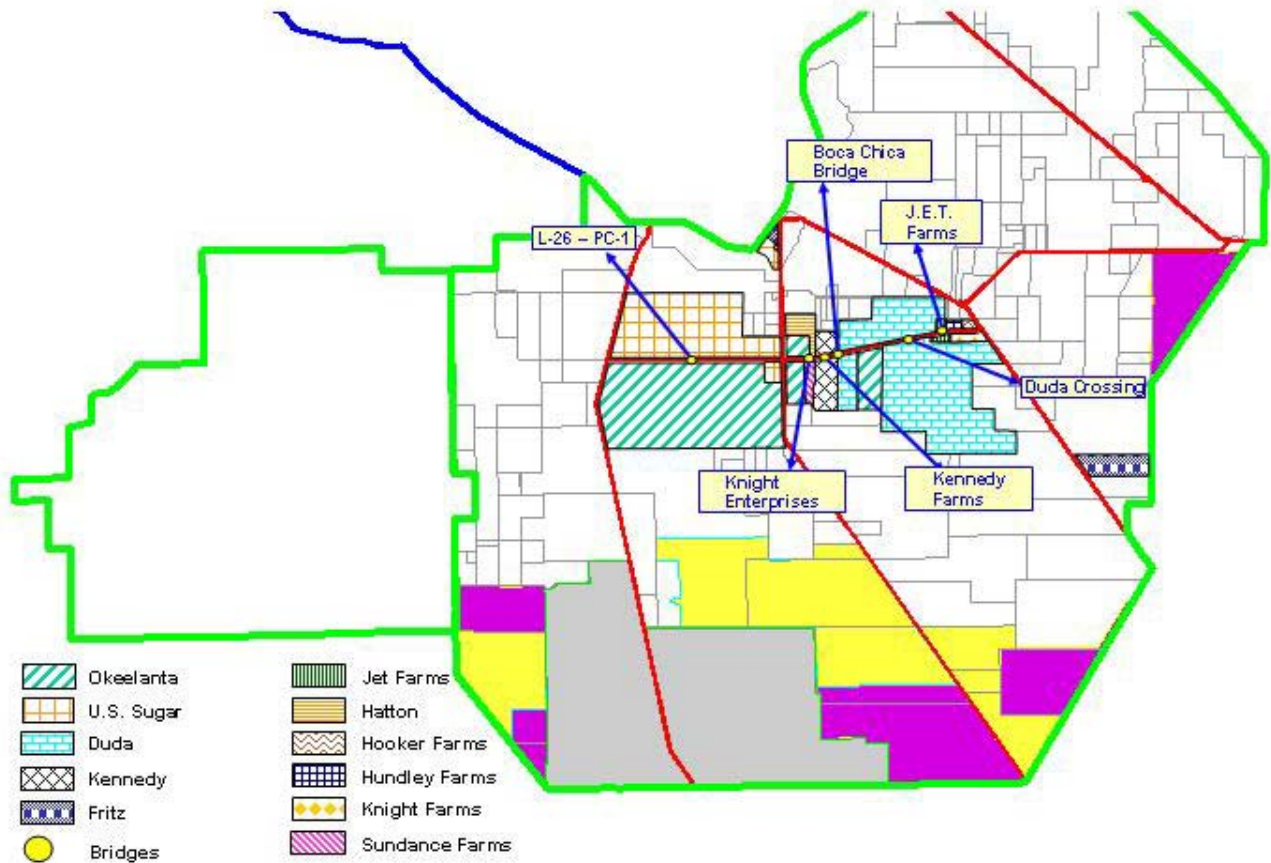


Exhibit 4 Farming along the Bolles and Cross Canals

Problematic Flood Control Areas in the EAA and Associated Issues

As stated in the beginning of this report, three meetings were conducted on November 12, 2003 and November 13, 2003 with the farmers within the project boundaries of the EAA. A list of questions of interest were prepared and sent to the farmers prior to the meetings. The initial reaction to the questions was that they did not have records of economic damages with as a result of flooding, however they would meet with the SFWMD (District) to discuss general areas of flooding and provide their input on their concerns and issues within the project area. The meetings were informal with the farmers providing general information on existing conditions within the EAA. A discussion of the meetings is provided below.

US Sugar and 298 District Meeting
November 12, 2003
9:00 am to 11:30 am
US Sugar South Bay Office

The two groups of farmers invited to this meeting included US Sugar and the 298 District. Ron Gradon, with the 298 District contacted the District prior to the meeting and stated that they would not attend the meeting. They would not have an input for the meeting since they did not have flooding concerns within their properties that will be affected by the proposed reservoirs or canal capacity/conveyance improvements.

Representatives from US Sugar and the District that attended this meeting included the following:

Attendees List

<u>Name</u>	<u>Affiliation</u>	<u>Email</u>
Mark Howell	US Sugar	ussch20@ussugar.com
Steve Stiles	US Sugar	sstiles@ussugar.com
Reuben Moulton	US Sugar	rmoulton@ussugar.com
Pepe Lopez	US Sugar	plopez@ussugar.com
Charles Wilson	US Sugar	cwilson@ussugar.com
Angela Prymas	SFWMD	aprymas@sfwmd.gov
Joel Arrieta	SFWMD	jarrieta@sfwmd.gov
Richard Champlin	SFWMD	rhampli@sfwmd.gov
Millie Radzikhovsky	JMJV	mradzik@sfwmd.gov

Below are key discussion points of the meeting.

Flooding Areas

Charles identified Duda as having a lot of problems with flooding. US Sugar provided maps with location of levee beaches and indicated several areas with flooding/seepage problems (Exhibit 5).

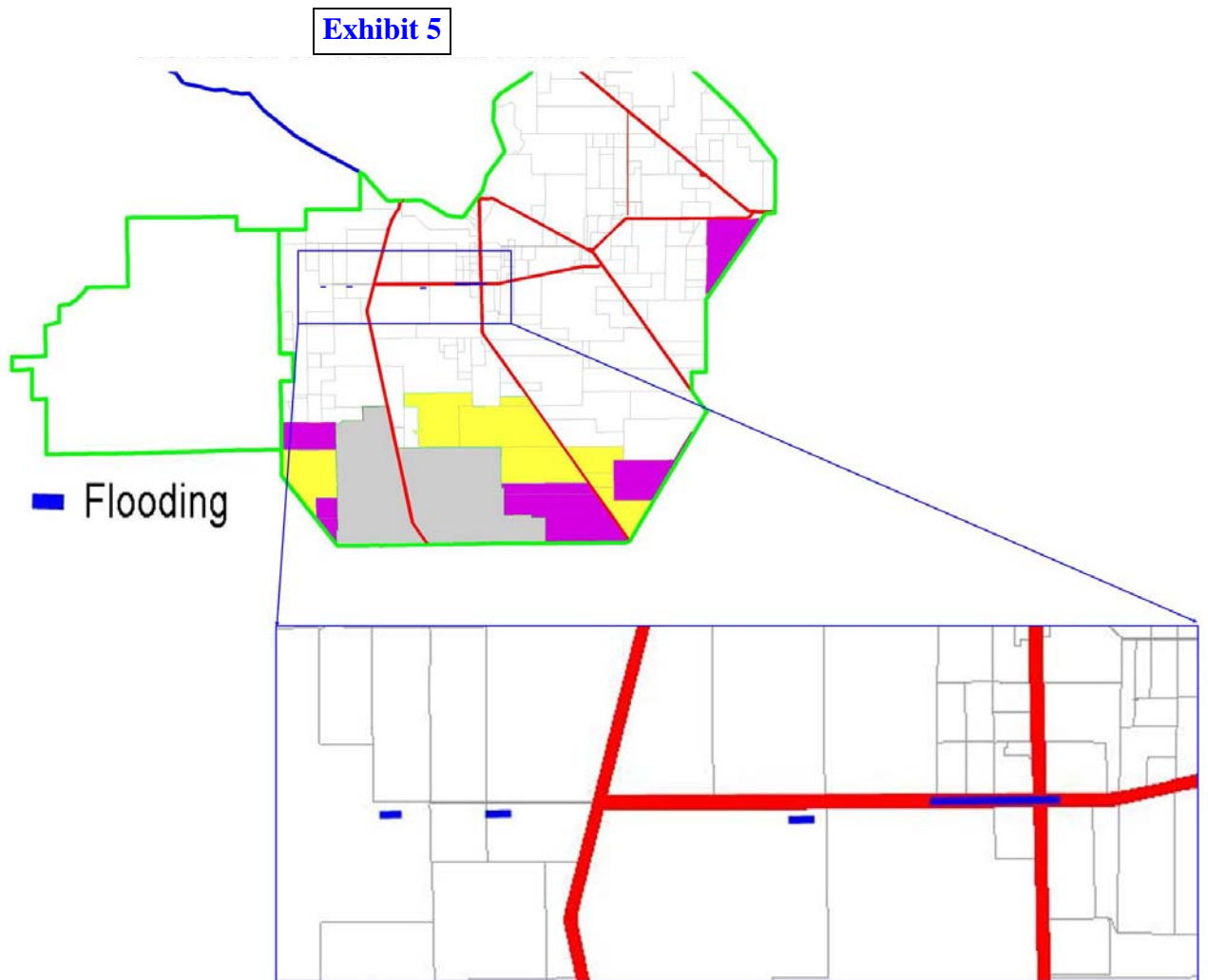


Exhibit 5 Areas with flooding/seepage

Bolles/Cross Canals

Charles Wilson stated that the Bolles / Cross Canals have no carrying capacity / conveyance at times of heavy rainfall. Breaching of the canals occurred in 1993 when the entire EAA was flooded.

Rainfall and Crop Damages

The amount of rainfall within the EAA affects sugarcane and crops in varying ways. Rainfall greater than 6 inches within 24 hours generally results in significant flooding impacts and puts a strain on the levee system. Rainfall greater than 4 inches within 24

hours is problematic and could be a major flooding issue. Charles mentioned a time when areas along the Miami Canal received 6 inches of rainfall, which resulted in only a few acres of partial crop damage.

Impacts of flooding to crops depend on the growth stage of the crop. The acreage of impact from flooding is also dependent on the type of rain event and the time of year.

Damages to sugar cane in the in early stages are more costly than damage in more mature stages. Inundation of sugar for more than 4-5 days in mature sugarcane results in crop damage while this results in eradication of early stage (immature) sugarcane crop.

In general vegetable crops are more susceptible to damage than sugarcane. Corn, which cannot tolerate water, is the first crop to get eradicated due to standing water / flooding, followed by vegetables. Sod farmers loose some of their crop when inundated for 4-5 days.

In addition, there are also problems when repetitive rainfall events happen and the soil is saturated affecting the crops.

Other Impacts of Flooding

Other than crop impacts, Charles stated that road washout, field ditches being filled with debris and dirt, erosion around culverts and water control structures, and dike breeches are other effects of flooding within the EAA.

Operations

The attendees informed that when the S-6 pump, located the end of the Hillsboro canal, is turned off, water elevations within the Cross canal increases by 2 ft within few (2-3) hours. The turning off of the S-6 pump a few years ago caused significant flooding in the surrounding Duda area.

U.S. Sugar representatives also informed the District that they are required to shut down pumps frequently so as to avoid flooding the neighboring Okeelanta in the south area. Charles stated that the north levee in the Bolles Canal is better in preventing flooding to adjacent properties than the south Okeelanta levee.

Design and Construction

The group felt strongly that the design and construction of Bolles / Cross Canals should go hand-in-hand with the design and construction of Miami Canal and New North River Canals. If phasing of construction is implemented, the group stated that the phasing of the canals should be as follows: Phase 1 – Miami and Bolles Canals then Phase 2 – New North River.

The group also suggested that if the District were to only to implement the Bolles / Cross some type of control structures should be installed on either side of Bolles/Cross Canals at the intersection with Miami and Hillsboro canals. Currently there are two 72" culverts at the confluence of the Bolles and Miami Canals and these culverts are showing signs of silting and could use maintenance to make them more hydraulically effective.

Other Projects Within the EAA Study Area to be Considered

The attendees discussed the 298 Districts' diversion projects, South Shore Drainage District - Miami Canal Pump Station and South Florida Conservancy District – Pump Station P5E. The Miami Canal Pump station and Pump Station P5E are 50 feet apart from each other and are located on either side of the Miami Canal and approximately 0.7 miles south of the S-3 Pump Station (Exhibit 6). These projects are currently under construction and will discharge into the Miami Canal by mid to late 2004. The Miami Canal Pump Station will discharge an additional flow of 178 cfs into the Miami Canal, while Pump Station P5E will discharge an additional flow of 504 cfs. In addition, STA 5 diversion of flows from the C-139 Basin is causing significant conveyance problems for the Miami canal.

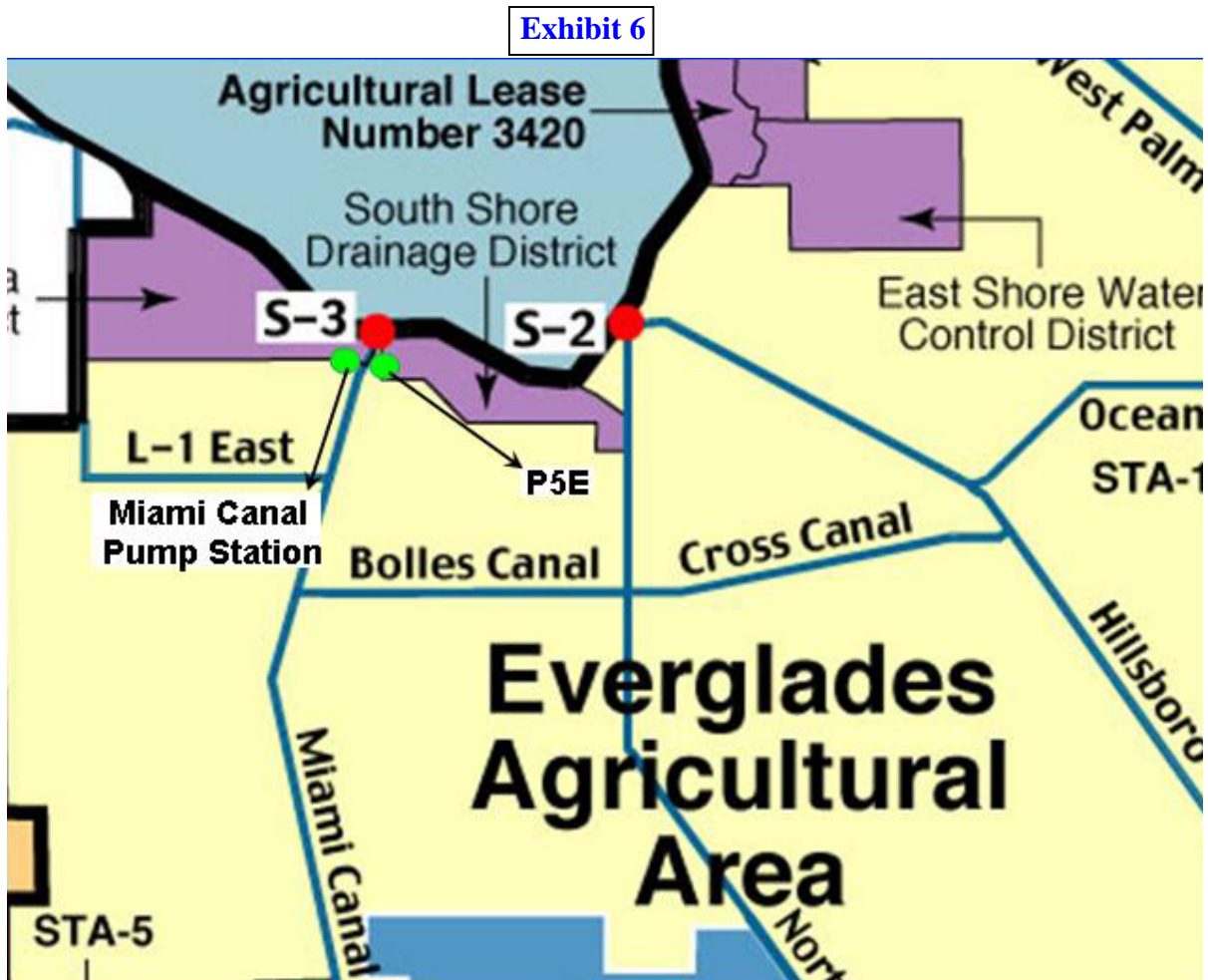


Exhibit 6 Pump Stations along the Miami Canal

The attendees also discussed the agreement between the District (at that time was the Central and Southern Florida Control District) and US Sugar which was signed in December 1976. This agreement covered the enlargement of the Bolles canal from the Miami Canal easterly 3 miles to the 35-36 rangeline and raising the existing levee elevation along the north side of the Bolles Canal between the Miami Canal and the 35-36 rangeline by use of material excavated from Bolles Canal. This project was agreed to be fully funded by US Sugar but was never constructed.

Miscellaneous Information

Mark Howell informed the attendees that USACE had conducted a similar economic study a few years ago and provided Stephen T. Sutterfield with USACE as a point of contact. As a follow-up Brad Clark, the USACE Project Manager for the EAA Storage Reservoir study provided documentation which was dated February, 1995. This document is included in this report as Attachment B.

Angela Prymas, SFWMD Project Manager, asked the attendees how long they have been associated with the properties within the EAA study area. Their response was: Charles Wilson - 39 years, Reuben Moulton - 41 years, Mark Howell – 33 years and Pepe Lopez – 29 years.

Okeelanta, Sugar Farms Co-op & Florida Crystals Meeting
November 12, 2003
12:00 pm – 2:30 pm
Florida Crystals Location Office

Representatives from Okeelanta, Sugar Farms Co-op and Florida Crystals attended this meeting. The list of attendees is listed below.

Attendees List

Name	Affiliation	Email
Modesto Ulloa	Sugar Farms Co-op	modesto_ulloa@floridacrystals.com
Luis Girado	Sugar Farms Co-op	luis_girado@floridacrystals.com
John Menhennett	Okeelanta Corporation	john_menhennett@worldnet.att.net
Mathew Capone	Florida Crystals - Okeelanta	Mathew.capone@att.net
Angela Prymas	SFWMD	aprymas@sfwmd.gov
Joel Arrieta	SFWMD	jarrieta@sfwmd.gov
Richard Champlin	SFWMD	rhampli@sfwmd.gov
Millie Radzikhovsky	JMJV	mradzik@sfwmd.gov

The key discussion points of the meeting are discussed below.

Bolles / Cross Canals

Modesto Ulloa, from Sugar Farms Co-op described the Bolles / Cross Canal Project as a “*problem of regional importance*”. This project allows the District to manage water flows east and west.

Flooding and Seepage Issues

The group discussed and identified flooding by seepage within the EAA. Seepage occurs along the southern portions of Lake Okeechobee and the southeastern portion (by the Water Conservation Areas).

The farmers also indicated that they had problem with getting water supply at the Boca Chica Bridge, the highest point in the system. This in turn creates irrigation problems for them in that area.

Crop Damages

Modesto Ulloa, from Sugar Farms Co-op stated that impacts on young germinating cane are manifested by loss in stand and vigor. Loss in stand have long and short term effects on the farmer, as sugarcane is a 3-4 year crop cycle, and poor stands tend to die out before their time. Tropical Storm Irene created a similar problem, and so do most above average rain events (>5.00"). Not all the SFWMD levees have the same elevations, therefore cresting of District canals impact weaker regions more severely. For example Ocean Canal on the east side of the 6-Mile Bend was more susceptible to flooding than that on the west side. This is the case with Gladeview, L-7, Laterals A&B that flow into the West Palm Beach Canal, and numerous other locations.

The month of October and November is the most vulnerable time of the year as sugarcane is at its critical stage. Harvesting of the sugarcane starts during these months and when the fields are flooded the farmers cannot get in to harvest the sugarcane. During the Hurricane Gordon in November, 1994, forty to fifty percent of the sugarcane planted before the storm event, in areas of breaching were lost or heavily impacted. During the summer months, sugarcane is more tolerant and is not at a critical stage.

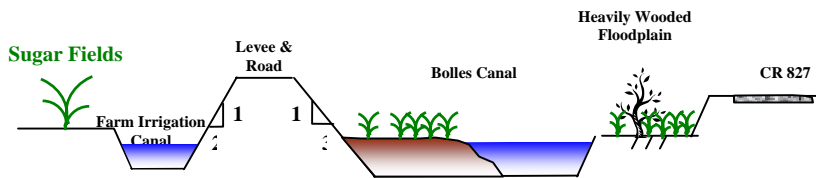
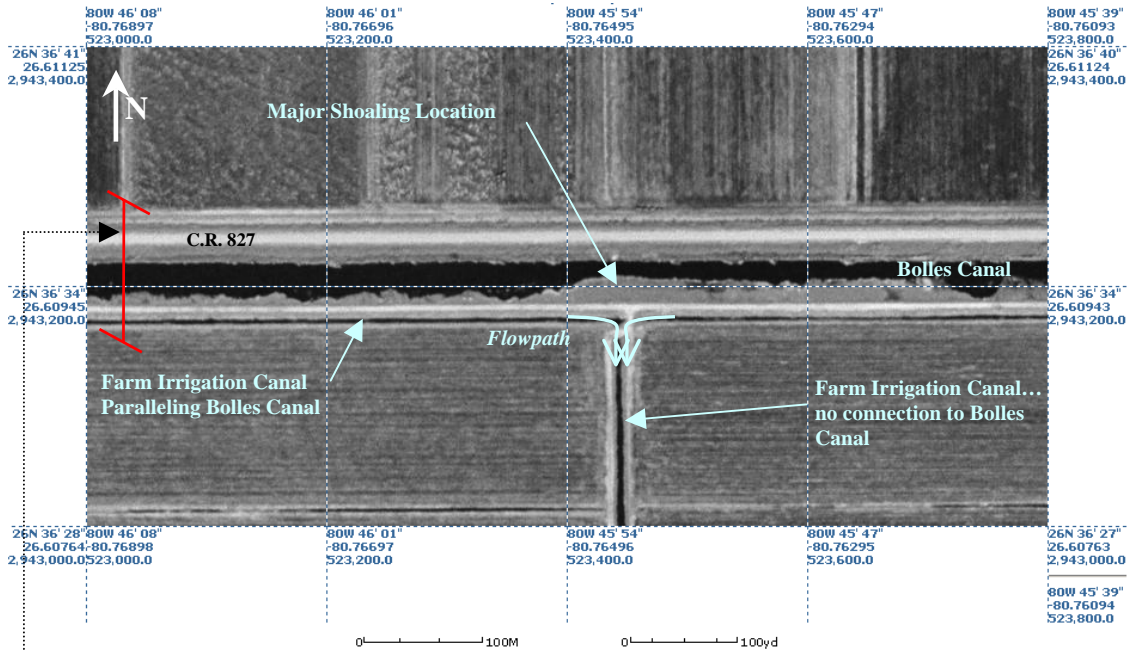
Flooding impacts to crops due to seepage is also another problem that the group identified. The group did not have any flood damage data to provide the District. Most farmers have not kept accurate records on flood damage, since no one is liable for losses, therefore economic loss studies become just one more routine exercise. John Menhennett with Okeelanta Corporation asked the District if they could quantify crop damages with regards to seepage.

Operations

Modesto Ulloa informed the District that the “stop / start” triggers, for pumps in the major canals within the EAA, have not changed since the 1950s. This issue needs to be reevaluated. The triggers need to change to best represent the field conditions as new soil elevation due to 3 – 4 feet of soil subsidence and silting in the canals affecting the conveyance capacity. He also informed the District that the system is being operated according to the triggers set for the year 1959. Joel Arrieta, from the District informed the group that since 1959, the L-14 Canal has shoaled 6 to 8 feet and recently (1 year ago) the District undertook a major dredging project on that system/canal to remove the shoaling.

In a reconnaissance field visit by Angela Prymas, SFWMD Project Manager and Rich Sands with the JM JV to the Bolles / Cross Canals, in October, 2003 a major shoaling build up on the south side of Bolles Canal at Structure 7 was identified. At this point in the canal the width is choked down to a little over 15-20 feet in width. The shoaling is heavily vegetated with a mix of tall grasses and sugar cane growth (See Exhibit 7). There is an irrigation canal that runs south of this location, but it has no direct connection to the Bolles Canal. All the flow that is conveyed by this irrigation canal enters from the irrigation canal that parallels the Bolles Canal.

Exhibit 7



Typical Cross Section of Bolles Canal, Farm Irrigation Canal and Shoaling

Exhibit 7 Typical Shoaling along Bolles Canal

According to Modesto Ulloa, the original design of the canal water levels was 2 ft below existing land elevation but now it is 2 ft above due to 4 ft of soil subsidence. Because of this, the triggers need to be reevaluated to match the soil subsidence.

Modesto Ulloa informed the group that when S6 is turned off they have a difficult time moving the water off their properties. Backup water causes high levels in the Hillsboro canal and sometimes affect the Cross canal.

Design / Construction

The attendees suggested that the canal capacity/conveyance should be improved prior to building the reservoir. The District should know that they have the capacity and conveyance capabilities to send water to the reservoir, and not the other way around, i.e. building a reservoir first and later not having the capacity and conveyance to get the water to the reservoirs.

As per the attendees there will not be enough room along Okeelanta to place the fill that will be removed from the canals during construction.

Project Issues and Concerns

John Menhennett voiced his concerns with regards to seepage within the EAA. His concerns were that the blasting of the cap rock in the Bolles and Cross canals to increase the capacity of the canals will increase seepage to the adjacent farms and that seepage control would be a problem.

The farmers felt that improving the capacity / conveyance of the Cross Canal is a higher priority than the Bolles Canal. Angela Prymas informed the farmers that there are a lot more issues to work out for the Cross Canal, i.e. determining right-of-way along the canal, construction easements, placement of the spoil, access roads, constructability, etc.

Other EAA Needs and Issues

In addition to improving canal capacity / conveyance along the Bolles / Cross Canals, the group expressed their desire to see the whole EAA canal system improved. The following improvements were discussed:

1. The group informed the District should also address the overflow occurring north of the FPL access road, which is approximately 1.5 miles south of G-310 in the L-7 seepage ditch. This overflow was causing flooding on adjacent farms and uneven water levels. SFWMD's Canal / Maintenance Program; has recently addressed this problem (January 2004) by replacing the existing culverts with two new 42" culverts.

Since this installation, there has been free flow with no restrictions. The SFWMD is currently monitoring water elevations on both sides of the FPL access and anticipates no problems with maintaining a balance water level on each side of the FPL access road. Pictures of the new culverts are shown below.

2. The group informed that there are two canals, Manley and Blumberg, which no one is claiming that needs to be maintained. These canals are east of the Miami Canal. Joel Arrieta, with the SFWMD, informed the group that issues like this should be addressed with to Operations & Maintenance's Capital Improvement Programs and suggested talking to George Horne with the District.
3. The farmers informed the District that there are more problems of levee breaches in the eastern of the portion of the EAA, i.e. east of U.S. 27 in the Cross canal, but did not identify any specific area and the time of occurrences.
4. John Menhennett brought up the points system used at Lake Okeechobee. This point system was set up to determine when backpumping could occur. There is currently an Interim Action Plan to minimize backpumping to the lake without reducing flood protection to the EAA. The EAA Storage Reservoir Project is not going to reduce flood damages by modifying the point system. The project may be able to change the point system as a result of infrastructure changes that give more flexibility. Further evaluation will need to be done to determine this feasibility.
5. The group also discussed that improvement within the 298 District will move additional water to the south; therefore, requiring the need to increase the canal conveyance south.

Miscellaneous Information

Modesto Ulloa is in charge of Sugar Farms Co-op farms located east of US 1 and Mike Lorenz is in charge of all farming operations at the Okeelanta Corporation, whose farms are located west of US1. Modesto has a total of 25 years of experience working in the EAA.

Florida Sugarcane Co-operative Meeting
Different day November 13, 2003
10:00am-11:30 pm
Co-op Mill Office

This meeting was attended by representatives for Florida Sugarcane Cooperative. The list of attendees included the following:

Attendees List

Name	Affiliation	Email
Phyllis Pursell	Co-op	pjpursell@scgc.org
Jeff Ward	Co-op	jjward@scgc.org
Tom MacVicar	Co-op	tom@mfl.org
Barbara Miedema	Co-op	bjmiedea@scgc.org
George Wedgworth	Co-op	ghwedgworth@scgc.org
Alberto Arrieta	SFWMD	jarrieta@sfwmd.gov
Richard Champlin	SFWMD	rchampli@sfwmd.gov
Angela Prymas	SFWMD	aprymas@sfwmd.gov
Raj Kamthe	JMJV	pkamthe@sfwmd.gov

Below are the key discussion points of this meeting.

Canal and Reservoir Conveyance

The co-op farmers informed the District representatives that the farmers hold back water discharges into the Bolles/ Cross canals, as these SFWMD canals cannot handle the flows. Consideration should be given to the existing water supply within the EAA before pumping more water from Lake Okeechobee. The farmers indicated that canal conveyance should be properly considered prior to the reservoir capacity needs. They suggested that Both Bolles/Cross and Miami River canals should be constructed simultaneously and far in advance to the construction of the reservoirs.

Project Phases

The Co-op disagrees with the preparation of the PIR and the construction design processes to being done simultaneously. Alternatively, the Co-Op suggested that the District divide the project into two construction phases:

- Phase 1 - Implementation of conveyance increase of the canals.
- Phase 2 - Design and construction of the reservoirs.

Both of these phases should begin only after the PIR is completed and approved.

STA pumps

The co-op informed the District that the triggers for the major canals pumps, i.e. S6, S7, and S-8, were set in the 1950s. Over the time, the soil has subsided nearly 3.5 feet, thus these triggers need to be adjusted to accommodate this soil subsidence. Since the triggers were set, canal flow has been increased in order to move more water from the lake and the 298 District, and also for the distribution of water in the system. The diversion of the 298 District will add more water and it will have greater capacity to move water than what SFWMD can move.

Flooding and Seepage Issues

Mr. Wedgeworth (Co-op) stated that the Co-op farmers cannot provide the District with data regarding crop damage due to flooding; as such data has not been collected on a regular basis.

The co-op farmers indicated that the WCA1 area being only 3-4 feet higher than the farms in the eastern EAA causes substantial seepage problems; therefore more Geotechnical explorations need to be conducted before having the proposed reservoirs store 6-8 feet of water.

Statements/Concerns

During the course of the meeting, the co-op representatives voiced the following statements and concerns:

1. The Co-op stated their concern that the conveyance issue is being overlooked.

2. The Co-op farmers have an impression that the Governor wants construction to start prior to the end of his term.
3. The project is not a political science issue and the engineering and planning needs to be completed to ensure that the project will actually work and will just not be a water user.
4. The goals and objectives of this project are being changed frequently by the SFWMD and USACE. They also had concern with the high number of evaluation criteria (EC) developed by the PDT, now over 50 EC.
5. The project won't be a CERP project and the farmers will lose the savings clause
6. The co-op is concerned about the access to lands neighboring the reservoirs for farming purposes. The seepage will make farming very difficult and expensive to control seepage form adjacent reservoir.
7. The farmers inquired about the status of model deliverables from the PIR contract with Kimley Horn and Associates.
8. Mr. Wedgworth informed the attendees that U.S. Sugar recommendation to implement first Miami and Bolles canals conveyance capacity increase may be according to their land ownership. He recommended the implementation of improving the conveyance capacity as it was advertised 2-3 years ago by Randy Bushey, who was in charge of CERP. Mr. Wedgworth was referring to two proposed PIRs, one for canal conveyance increases and the second one for the reservoirs.

SFWMD Statements

The District representatives (Angela Prymas and Alberto Arrieta) stated the following points to the group:

1. According to the yellow book, construction on this project should commence by the end of 2005.
2. Bolles and Cross Canals are critical for addressing flooding issues within the EAA and inter basing exchange also for water supply.

3. Bolles and Cross canals may have fewer right-of-way issues than the than the North New River canal.
4. The District will be assessing the current conveyance capacity of Bolles and Cross canals.
5. The District is currently in the process of evaluating several alternatives using the 2x2 regional model, for identification of the tentative selected plan, before proceeding with 30% reservoir design.
6. The District is currently engaged in assembling the preliminary geotechnical report and has and SOW for detailed design level geotechnical and survey.

Miscellaneous Information

According to observations made by SFWMD STA 3/4 field personnel, when the major canals have prolonged high water levels due to backup water from S-6, S-7 and S-8, the fields in the vicinity of the canal get saturated causing the farmers to postpone harvesting operations until fields are dry enough to get their equipment in to harvest. This is not a problem in the growing season because the fields need higher water tables.

Attachment A
Existing Flood Control Conditions Questions

EAA Storage Reservoirs – Rain-Driven Flooding Questionnaire

Question	Yes	No	N/A	Comments	
1. Do you know of any flooding problems associated with rain events within your property?					
- if yes please answer the following:					
			Event	Event	
a. Where? Township, range, section. Indicate on attached map.					
b. What time of year?					
c. When?					
d. What were the impacts of the flooding to your property?					
e. Were you able to pump water off the property?					
f. Is there lack of drainage capacity in the District canals?					
g. What kinds of crops were impacted by the flooding?					
h. What stage of growth were the crops? i.e. newly planted, ready to harvest, etc.					
i. How many acres (by crop) were impacted by the flooding?					
j. Estimate of damage? In monetary terms (by crop).					
k. How were damages estimated?					

Existing Flood Control Conditions Documentation

Question	Yes	No	N/A	Comments
I.e. X acres of crop at a loss of \$ per acre?				
l. Was there damage to other property, other than crops due to the flooding?				
m. What was the duration of the flooding?				
n. How much standing water did you observe on the property?				
o. Do you have actual data?				
2. Do you know why you are being flooded?				
3. What do you think needs to be done to prevent flooding within your property?				
4. Would flooding be less damaging if you had prior knowledge of operations so that you could somehow prepare for a flooding event?				
5. Does operations schedule for flooding remove the water before damage becomes critical?				
6. How long have you been associated with these properties?				
7. Is there available information within the Institution or group that can provide answers to the questions above?				

Attachment B
Bolles / Cross Information Meeting
February 25, 1995

CESAJ-PD-PF (1110-2-1150a)

21 February 1995

MEMORANDUM FOR RECORD

SUBJECT: Bolles and Cross Information Meeting

1. An information meeting was held on 9 February 1995 with local farmers and interested citizens as well as local and Federal agencies in Belle Glade, Florida. A bus tour of the project site was held in the morning and the information meeting was held at the Sugar Cane Growers Cooperative of Florida office in Belle Glade in the afternoon. A list of attendees is attached.

2. Dr. David Anderson, University of Florida, arranged the bus tour of the project site. The Bolles and Cross canals were constructed by the Everglades Drainage District, a predecessor of the SFWMD. The canals have not been cleaned since that time. Sediment and other particulate have flowed from the farm fields into the canal, reducing the capacity of the canals. Restricting culverts along farm roads have added to reduced flow capacity of the canals. The muck dikes usually fail when rainfall exceeds 4 inches. Piping through the limestone cap under the muck is also a problem.

3. The afternoon session was a chance for the farmers to present some historical flooding data, mainly because of Tropical Storm Gordon. Of major impact has been the following:

- a. 1979 Interim Action Plan by SFWMD
- b. Best Management Practices - farmers must wait until 1" of rain has fallen before the pumps can be turned on.
- c. In 1998, the 298 Drainage Districts will no longer be able to back pump into Lake Okeechobee and will put the water down the major canals. This will reduce the capacity of the Miami, North New River and Hillsboro Canals.
- d. Land subsidence - Records show a loss of 3.5' due to subsidence.
- e. Porous limestone caprock
- f. Low storage capacity of canals
- g. Restricting culverts in canal

4. There was some confusion of ownership of the canal. The SFWMD permits the discharge, but does not provide routine maintenance. The farmers contend that the canals are listed as "Works of the District" in their permits for discharge into the canal. Mrs. Hooker, Paleaz Farms, said she could produce a copy of a letter which said the Corps of Engineers dug the canal.

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SUBJECT: Bolles and Cross Information Meeting

5. There was also confusion on what the name of the canals are. Apparently, Project Management has the reach between Miami and North New River as Bolles Canal, the reach between North New River and Hillsboro Canal as Cross Canal, and the reach between Hillsboro and West Palm Beach as Ocean Canal. The farmers have the reach between Miami and Hillsboro Canal as Bolles Canal and the reach between Hillsboro and West Palm Beach as Ocean Canal. Some farmers refer to this reach as Cross Canal up to S-5AX. The SFWMD has the reach between Miami and Hillsboro Canal as Bolles Canal and the reach between Hillsboro and West Palm Beach as Cross Canal. A Corps map, dated 16 November 1953, partial DPR, Part I Supplement 18, shows the reach between Miami and Hillsboro as Bolles Canal and the reach from Hillsboro Canal to West Palm Beach as Cross Canal. A 23 July 1986 memo from SAJEN-HH to SAD designates L-16 (North New River to Hillsboro) and L-21 (Miami to North New River) as Bolles Canal and L-13 (Hillsboro to West Palm Beach Canal) as Cross Canal.
6. There is also confusion on the scope for the study. Project Management contends that the authority lies in the uncompleted structures, S-171 and S-172, proposed for the reach between Miami and Hillsboro Canals. The farmers would like us to also consider the canal west of the Miami Canal and the reach east of Hillsboro canal to S-5AX.
7. The SFWMD will look into the possibility of dredging muck which has deposited in the canal in the interim, while the Corps continues with the study.
8. Mr. Bill Kramer, Sugar Cane Growers Cooperative of Florida will be the coordinator for the farmers.
9. The Corps will prepare a short letter discussing the Corps process and what items we are looking for to complete the study and forward this to Bill Kramer.

STEPHEN T. SUTTERFIELD
Study Manager

Encl