FINAL *August 2003*

COMPREHENSIVE EVERGLADES RESTORATION PLAN
CENTRAL AND SOUTHERN FLORIDA PROJECT

B.3 INDEPENDENT BENEFITS OF CANAL IMPROVEMENTS

EVERGLADES AGRICULTURAL AREA STORAGE RESERVOIRS – PHASE 1

US Army Corps of Engineers
Jacksonville District

South Florida Water Management District

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(SFWMD Consultant Task 2.4.4.2)

TABLES

FIGURES

ATTACHMENTS

B.3.1 INTRODUCTION

Implementation of the Everglades Agricultural Area (EAA) Storage Reservoirs - Phase 1 project is scheduled to be conducted over several years in a phased approach. The completed project will include a variety of constructed facilities: storage reservoirs, canals, levees, pump stations, water control structures, and improved conveyance capacity of several existing canals. During preparation of the Project Management Plan (PMP), there was extensive discussion of the potential benefits associated with proceeding with the canal improvements portion of the project in advance of the reservoir construction. The discussion centered on benefits that could be directly attributed to the canal improvements independent of the construction of the storage reservoirs.

Early implementation of canal conveyance improvements would be facilitated since many of the proposed canal improvements would take place within existing right of ways. Early construction of the canal improvements can expedite some of the project and system-wide CERP goals and objectives even without construction of the reservoirs.

The EAA Storage Reservoirs (EAA SR) project goals and objectives from the PMP include:

- Reduction of the Lake Okeechobee regulatory releases to the estuaries and backpumping from the EAA into Lake Okeechobee by sending the water to the south and into the reservoirs;
- Improved environmental releases through the storage of water and release to the Everglades during the dry season demand;
- Flow equalization and optimization of treatment performance of STA-2, STA-3/4, STA-5, and STA-6 by capturing peak storm event discharges within the reservoirs for slow release to the STAs; and
- Improved flood control and regional water supply for the agricultural community currently served by the EAA canals and other areas served by Lake Okeechobee.

A qualitative assessment has been made of the contribution that the canal improvements alone would make to these goals. The exact extent of benefits can not be accurately known or guaranteed. However, engineering judgment coupled with review of existing facilities and some historic daily flow and stage trends has been used to identify potential benefits. A more rigorous analysis will be possible once the sub-regional model has been constructed and calibrated. This analysis will include both historic rainfall distributions in the EAA and theoretical peak design events.

B.3.2 LOCATION AND DESCRIPTION OF CANALS TARGETED FOR IMPROVEMENT

The EAA Storage Reservoir - Phase 1 project area includes those lands within the EAA that are tributary to the Everglades. These lands were originally part of the natural Everglades system, but have been extensively drained and placed under cultivation. The study area also includes the cities of South Bay, Belle Glade, and Pahokee located in western Palm Beach County.

The Central & Southern Florida Project enlarged and expanded the former Everglades Drainage District canals to provide flood protection and a water management infrastructure for the EAA. As originally designed, the drainage system was divided into six primary basins (Figure B.3.1). Figure B.3.1 is taken from Appendix B.1.1 Basin and Sub-Basin Delineation. The figure depicts the SFWMD drainage basin boundaries with modifications to coincide with farm sub-basin boundaries as documented in the Everglades Regulatory Program 40E-63 permits. Table B.3.1 summarizes the approximate drainage area of each of these basins. The four canals that have been identified for improvements as part of this project are the Miami, North New River, Bolles, and Cross Canals.

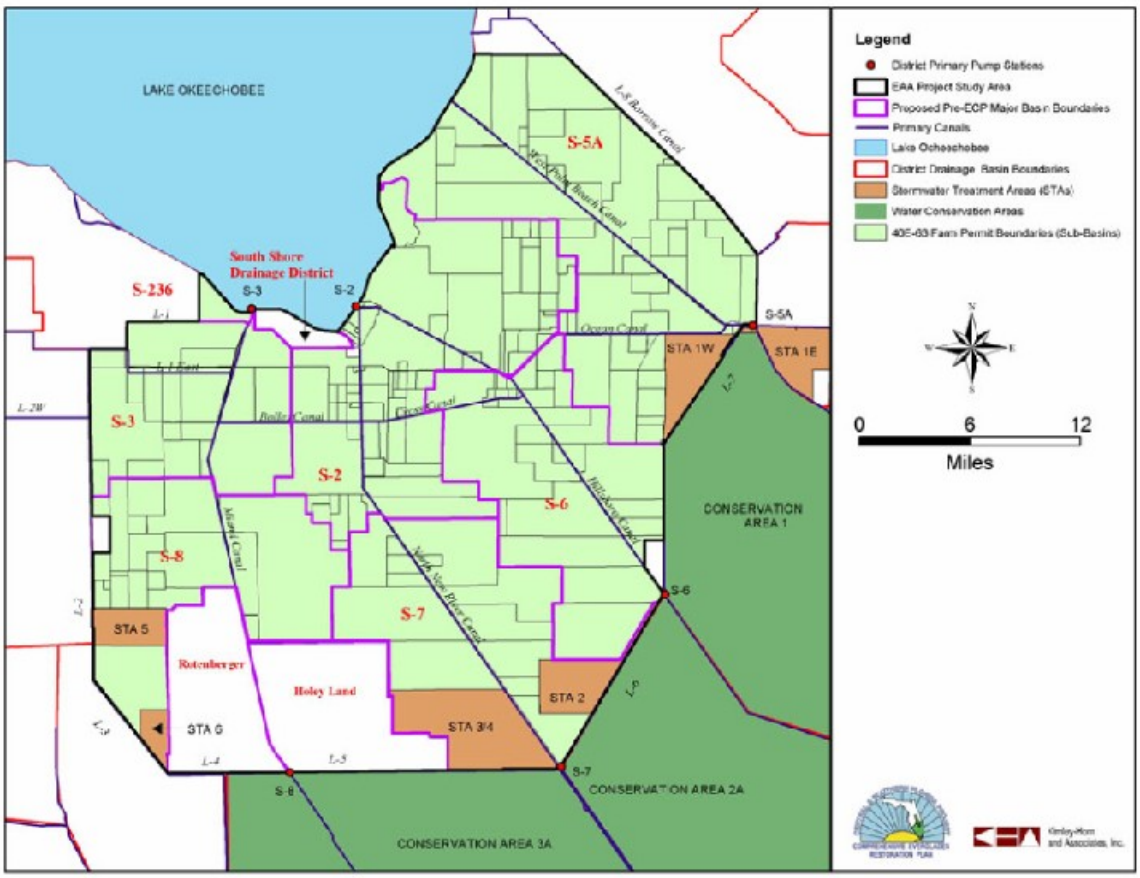

Figure B.3.1 – Primary Drainage Basins within the EAA, Pre-ECP with S-2 and S-3 Pumping

Table B.3.1 – EAA Primary Basin Acreage

BASIN	ACRES
S-2	106,023
S-3	59,307
S-5A	134,182
S-6	80,646
S-7	88,497
S-8	73,878

The Miami Canal generally runs in a north-south alignment from the south shore of Lake Okeechobee to the northern boundary of Water Conservation Area (WCA) 3A. Pump Station S-3 draws from the north end of the Miami Canal and pumps into Lake Okeechobee. The operation of S-3 is regulated by the Lake Okeechobee Interim Action Plan (IAP) implemented by SFWMD in 1978. The IAP allows operation of S-3 when high stages occur at the north end of the Miami Canal. Adjacent to S-3 is a gated spillway, S-354, that provides for gravity releases from Lake Okeechobee. Pump Station S-8 draws from the south end of the Miami Canal and pumps into WCA 3A. During conditions that prohibit the use of S-3 under the IAP, S-8 also serves the S-3 tributary basin. The function of S-8 will change substantially with the completion of the Everglades Construction Project (ECP) and operation of the new Pump Station G-372.

The North New River Canal generally flows in a north-south alignment from Lake Okeechobee to WCA 2A by way of S-7 and to WCA 3A by way of S-150. It is connected at its north end to the Hillsboro Canal and both canals are served by Pump Station S-2 and the gated spillway S-351. Similar to S-3, pump operations at S-2 are regulated by the IAP. The south end of the North New River Canal is currently served by Pump Station S-7. When S-2 is unable to pump due to the IAP, S-7 also serves the western portion of the S-2 tributary basin. Similar to S-8, the function of S-7 will change when the new Pump Station G-370 is completed and placed in operation.

The Bolles Canal has an east-west alignment connecting the Miami and North New River primary canals. Because of its shallow depth, it has historically served local farms by flowing either east or west depending on stages in the primary canals. It currently has little capacity to convey water from one primary canal to the other.

The Cross Canal has an east-west alignment connecting the North New River and Hillsboro primary canals. Similar to the Bolles, the Cross Canal is shallow and currently serves as a local drainage connection.

B.3.3 BASIS OF COMPARISON

B.3.3.1 Baseline Conditions

This assessment considers the canal configurations and cross-sections as they existed on December 11, 2000, except as modified by the completion of the ECP. It is assumed that

all portions of the ECP have been completed and that the major basin boundaries have been revised to coincide with those identified in the Task 2.2.1. Basin and Sub-Basin Delineation report (see Figure B.3.2).

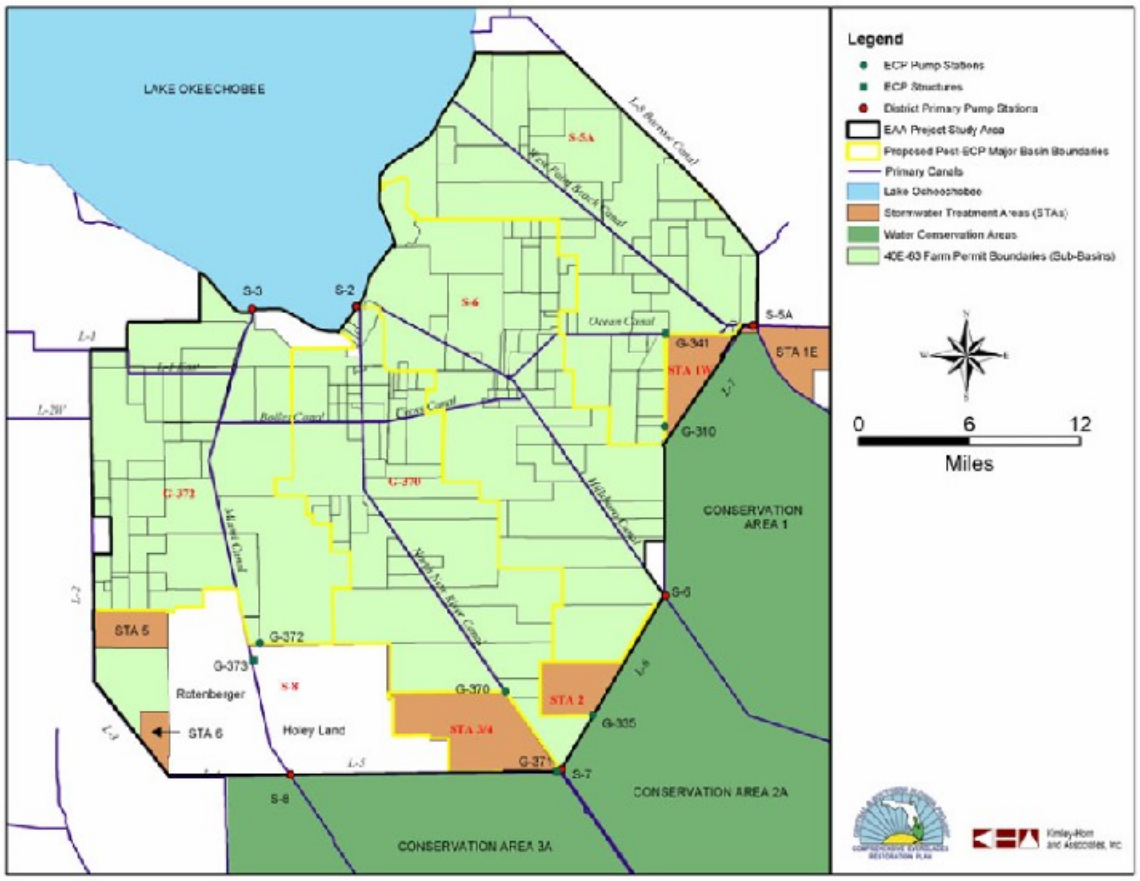

Figure B.3.2 Post-ECP Primary Basins, shown without S-2 and S-3 Pumping

The base condition considers:

- STA-1 West is complete and does not contribute runoff to Pump Station S-5A
- STA-2 is complete and does not contribute runoff to Pump Station G-370
- STA-3/4 is complete and does not contribute runoff to Pump Station G-370
- STA-5 is complete and does not contribute runoff to Pump Station G-372
- STA-6 is complete and does not contribute runoff to Pump Station G-372
- C-139 Annex does not contribute runoff to Pump Station G-372
- Pump Station G-370 is complete and serving the former S-7 basin and the western portion of the S-2 basin when necessary under the IAP
- Pump Station G-372 is complete and serving the former S-8 basin and the S-3 basin when necessary under the IAP
- The capacity of all pump stations and spillways will remain at Post-ECP levels
- Pump Stations S-2 and S-3 continue to operate in accordance with the Lake Okeechobee IAP as modified by the Diversion Projects
- The 298 District and Lease Parcel 3420 Diversion Projects continue operation

- No additional bypass of Stormwater Treatment Areas (bypass is allowed under ECP Standards if the flow exceeds the base period (10/01/78 to 9/30/88).
- No increase in canal stages

B.3.3.2 Proposed Conditions

The only changes to the above conditions considered in this assessment are increases to the capacity of the Miami, North New River, Hillsboro, Bolles, and Cross canals. The effects of storage reservoirs and aquifer storage and recovery (ASR) wells) are not considered.

B.3.4 ANTICIPATED EFFECTS OF CANAL IMPROVEMENTS

The independent canal improvements were evaluated with regard to potential sub-regional and regional benefits in the following areas:

- **Sub-Regional Benefits**
  - Support of the Interim Action Plan
  - Operational flexibility
  - Flood damage reduction during extreme events
  - Control of canal sediments
  - Construction scheduling
- **Regional Benefits**
  - Reduced backpumping to Lake Okeechobee
  - Stormwater Treatment Area optimization
  - Releases to estuaries
  - Water supply to the Lower East Coast

B.3.4.1 Sub-Regional Benefits

Support of the Interim Action Plan

The original design of the primary canal system recognized the extremely flat topography of the EAA. Drainage pump stations were provided around the perimeter of the basin with a system of interconnected canals. The basic canal design concept considered that drainage flows were pumped radially outward from the center of the EAA. When water quality concerns for Lake Okeechobee led to the operational changes of the Interim Action Plan the preferred direction for drainage flows was south. This flow reversal in the northern reaches of the North New River, Hillsboro, and Miami canals was not entirely supported by the canal capacity.

Prior conveyance studies of these canals (Burns & McDonnell) concluded that the existing cross-sections were inadequate to convey Lake Okeechobee releases equal to the full capacity of the S-6, S-7, and S-8 pump stations. Although farm drainage flows are

distributed along the primary canal, and are not released at a single point, the cumulative permitted drainage pumping capacities exceed the Lake release rate and each canal design capacity by a factor of 2 to 4 times.

Attachment B.3.1. and Attachment B.3.2 demonstrate the number and duration of events in which improved conveyance capacity would be beneficial for both east-west and north-south flows, respectively. These events indicate periods where the canal capacities are exceeded and Lake Okeechobee back pumping is required to provide drainage to the northern portion of the EAA at the same time that conditions are relatively dry in the southern portion of the EAA. The Attachment B.3.1. and Attachment B.3.2 assessments are independent of the Burns and McDonnell report and findings. As part of the ECP, improvements to the Hillsboro Canal have been made. Significant improvements to the North New River and Miami canals have not yet been implemented. Increasing the cross-section of the North New River and Miami canals will have an immediate benefit to the overall EAA drainage system, matching the canal conveyance capacities with the pumping capacities to the south and facilitate operations in accordance with the Lake Okeechobee IAP.

Operational Flexibility

Water management within the EAA is a daily necessity due to the flat terrain, minimal surface storage, and need for water table control. Individual farm operations require drainage or irrigation in response to rainfall, seepage, crop needs, land preparation operations, harvesting operations, and maintenance activities. The size of the EAA and local patterns of rainfall mean that frequently the distribution of rainfall is non-uniform across the EAA. Frequently farms that are too wet from rainfall and seepage are pumped for drainage on the same day that other farms are irrigating. Improvements to the conveyance capacity of the Bolles, Cross, North New River, and Miami canals will improve the interconnection between the primary basins of the EAA. This will facilitate the distribution of excess surface water between basins. The benefits will include a reduction in drainage pumping from EAA basins that have received localized rainfall and a reduction in irrigation pumping to EAA basins that lack sufficient rainfall. This benefit has been demonstrated at the subbasin level as part of the success of the pumping Best Management Practices (BMP) implemented by EAA farmers.

Recorded daily flows and canal stages, from October, 1992, to October, 2002, were reviewed to estimate an order of magnitude for anticipated benefits that canal improvements will have on operational flexibility. Attachment B.3.1. and Attachment B.3.2 demonstrate the number and duration of events in which improved conveyance would be beneficial for both east-west and north-south conveyance, respectively.

Flood Damage Reduction during Extreme Events

The original drainage design for the EAA was nominally based on a rainfall event with a return frequency of 10 years. The capacity of the primary pump stations serving the Miami, North New River, Hillboro and West Palm Beach canals is 20,645 cfs as shown

in Table B.3.2 For a service area of approximately 591,755 acres this will provide an average drainage rate of 0.83 inches/day. The original service area included the Rotenberger and Holey Land areas which do not have a developed secondary drainage system. During extreme rain events, these areas will have a significantly longer time of concentration and will not contribute to the peak flows in the Miami Canal. Removing them from the service area and making other adjustments based on the permitted farm drainage systems will reduce the service area to approximately 525,362 acres. This is shown in Table B.3.2 as the "Pre-ECP" condition.

Changes in the EAA as a result of the ECP have further modified the tributary basin served by the primary pump stations. The construction of STAs reduced the service areas of S-5A, S-6, S-7, and S-8. The Diversion Projects of the ECP will effectively increase the service areas for S-2, S-3 and S-5A. Pump stations G-370 and G-372 will take over the role of S-7 and S-8 in draining the EAA. These changes have resulted in a decrease in the service area and an increase in total drainage pump capacity. The Post-ECP average drainage rate (based on pump capacity) has increased to 1.06 inches/day.

Table B.3.2 – Drainage Rates for S-2, S-3, S-5A, S-6, S-7 and S-8 Basins

	Drainage Area	Pump Capacity (incl. S-2, S-3)	Unit Rate	Pump Capacity (excl. S-2, S-3)	Unit Rate
	Acres	CFS	Inches/Day	CFS	Inches/Day
Original Design*	591755	20645	0.83	20645	0.83
Pre-ECP	525362	20645	0.93	14375	0.65
Post-ECP	499800	22325	1.06	16055	0.76

*Based on Cooper 1989

Flood protection in the EAA could be improved by ensuring the major canals are adequate to take advantage of this increased drainage rate. Increasing the capacity of the Bolles and Cross canals will improve flood protection during localized rain events by allowing more efficient movement of water between the Miami, North New River, Hillsboro and West Palm Beach canal basins. The rate of inflow into the STAs will continue to be limited by the capacity of the inflow pump stations and internal control structures.

As an additional benefit canal improvements will increase the storage capacity within the canals themselves. Increasing the width of the Miami, North New River, Bolles, and Cross canals by 100 ft will create approximately 1,700 acre-feet of storage. This will help attenuate flows at the beginning of storm events.

Control of Canal Sediments

Enlarging the cross-section of the primary canals is likely to have an immediate benefit to water quality. Excavation will remove the existing bottom sediments that have

accumulated over the last 25 years. The increased cross-section will allow flow at a lower velocity, thus future sediments, deposited during times of low flow, will be less likely to become suspended again and carried downstream. This will improve the water quality of inflows to the STAs and backflows to Lake Okeechobee, and may also improve the water quality of irrigation flows to the farms. Precautions will be taken to prevent turbid waters or sediments from traveling down stream of the canal widening excavation. Excavated sediments are typically disposed of adjacent to the canal. Future monitoring and canal maintenance may be needed as new sediments are deposited. Precautions will be taken to prevent mobilization of contaminants and nutrients. Consideration should be given to the affect on dissolved oxygen of deepening the canal.

Construction Scheduling

The independent canal improvements project could also provide some benefits during construction of the EAA Storage Reservoirs. Because of the spatial separation between the canal improvements and the proposed reservoirs, the two elements can easily be separated from a construction standpoint. Allowing the canal improvements to proceed independent of the reservoirs would show early progress on a critical CERP project. It would also support the goals of the ECP to optimize the performance of the STAs and reduce nutrient loading to the EPA. Improving the interconnection of the primary basins would support the construction of the initial reservoir components.

B.3.4.2 Regional Benefits

Reduced Backpumping to Lake Okeechobee

There are two components to Lake Okeechobee backpumping: 1) pump stations S-2 and S-3 and, 2) the 298 Districts and Lease Parcel 3420. The IAP limits back pumping at pump stations S-2 and S-3 if canal stages in the Miami, North New River, and Hillsboro canals are within acceptable limits. Over the past 10 years significant flows have still occurred at these two stations even though recorded flows from October, 1992, through September, 2002, show that there were no instances when the combined flow of water being pumped out of the EAA exceeded the capacity of the southern pump stations. Therefore, from a pump capacity standpoint, it is possible to discontinue almost all backpumping from pump stations S-2 and S-3. However, given the current constraints on canal conveyance capacity, a discontinuation of backpumping would cause unacceptable increases in canal stages during moderate to heavy regional rain events

In the future, the ECP Diversion Projects will provide an opportunity to further reduce backpumping by diverting approximately 80 percent of the annual volume from the 298 Districts and Lease Parcel 3420 lands. This opportunity will be constrained by the ability of the primary canal system to convey these diversion flows to the south. Improvement of the North New River and Miami canals will lower canal stages at pump stations S-2 and S-3 during events that would otherwise trigger backpumping at these smaller stations.

The 298 Districts and Lease Parcel 3420 make up approximately three percent of the combined tributary area for pump stations S-6, S-7, and S-8. The recorded flows indicate that there were only five days in 10 years during which the flow of water out of the EAA (pump stations S-2, S-3, S-6, S-7, and S-8) exceeded 90 percent of the capacity of the post-ECP outfall pumps. Therefore, the post-ECP outfall pump stations will in most cases have the capacity to handle the additional flows generated by the 298 Districts and Lease Parcel 3420. Therefore, from a pump capacity standpoint, it should be possible to discontinue almost all backpumping from the 298 Districts and Lease Parcel 3420. For substantial rain events, the need for some backpumping would remain, but at lower flow rates and for shorter durations than experienced in the past.

Stormwater Treatment Area Optimization

Operation of the STAs under extreme events would benefit from an increased capacity of the Bolles and Cross canals. During heavy rain events it would be beneficial to balance flows between the STAs to maximize the available flow capacity. Improvements to the Bolles and Cross canals will support these inter-basin flows.

In order to prevent the STAs from drying out, they will need to receive certain minimum flows during periods of low rainfall. Improving the interconnection of the primary basins will allow the STAs to take advantage of non-uniform rainfall similar to the farms. This will reduce the reliance on Lake Okeechobee as a water supply to prevent the water quality issues associated with STA dryout.

Independent canal improvements can provide significant ability to optimize STA performance through overall increased operational flexibility within the system. The canal improvements will improve the District's ability to balance flows through the STAs to achieve more uniform operating conditions, as well as providing a major benefit to the area's biological systems.

Releases to Estuaries

In order to prepare Lake Okeechobee for the hurricane season, regulatory releases are made at the end of summer. Historically much of this water has gone to the St. Lucie and Caloosahatchee rivers but with a detrimental effect on the estuaries. Lake releases to the south must pass through the EAA using the same canal system used for drainage of the secondary basins. During storm events, these flows are competing for the available canal capacity. Improvements of the conveyance capacity of the North New River and Miami canals will benefit the estuaries by reducing this conflict.

Water Supply to the Lower East Coast

Other CERP projects include improving the North New River Canal in Broward County and degrading of the Miami Canal. Improvements to the North New River Canal will support these projects and improve the ability to deliver water to Broward and Dade counties.

B.3.4.3 Potential Adverse Impacts

While examining the regional and sub-regional impacts of the proposed canal improvements, no significant adverse impacts were identified associated with the timing of the canal improvements. Economic impacts, total projects costs and land acquisition issues are relatively unaffected by implementing the canal improvements independent of reservoir construction. The proposed canal improvements, regardless of when they are constructed, may potentially impact 1) rate of inflow to the STAs, 2) canal seepage losses, 3) canal evaporative losses, and 4) irrigation supply to the farms.

The rate of inflow to the STA's will continue to limited by the capacity of the inflow pump stations. Improvements could prevent the canals from being the rate determinate and it could increase the areal extent of the EAA tributary to a particular STA. The actual rate of flow into the STAs is not likely to change significantly without making physical changes to the pump stations.

Canal seepage losses are a function of the canal depth, soil properties, proximity to secondary canals and the difference in water levels. Increasing the canal depth could increase the seepage depending on the porosity of the underlying soil layers. This could be evaluated during the design phase by analysis of representative soil borings along the canal alignment. These looses can be partially mitigated by increasing the canal width rather than increasing the depth. Seepage losses from the primary canal to an adjacent farm during the wet season would be returned to the canal by increased secondary pumping. Seepage losses during the dry season may not be returned by secondary pumping. These dry season losses may in some cases reduce the farm irrigation demands on the primary canal system.

Canal evaporative losses may be estimated as the product of measured pan evaporation and the surface area of the exposed open water. Increasing the canal width will increase the evaporative losses. This will be partially offset by a reduction in the evapotranspiration losses of the adjacent uplands. Doubling the canal top width would increase by approximately 8% the net evaporative losses from the canal and vicinity.

At many locations gated culverts or flash board structures can be operated by the farmers to irrigate the agricultural lands by gravity. This is dependent on the stage in the primary canal being at a suitable level. Improvements to the canal cross-section could lower the canal water surface significantly. This would vary with location and antecedent conditions. While lowering the canal stages would generally be beneficial during drainage events, because of non-uniform rainfall patterns it could be detrimental to farms trying to irrigate by gravity under certain conditions. Any proposed changes to the control and operating water levels in the primary canals would need to be carefully evaluated.

An additional consideration would be the opportunity to use a portion of the soil excavated from the canals in the construction of the proposed reservoir levees. Due to the cost of handling and hauling, the borrowed material closest to the levees would be the

most cost effective. If the canal and reservoir levee construction where implemented at the same time, some needs for land acquisition may be reduced.

B.3.5 CONCLUSIONS

The canal improvements proposed in the EAA Storage Reservoirs – Phase 1 project, independent of the reservoirs, will directly benefit the EAA by:

- Reducing hydraulic losses within the primary canal system and supporting the objectives of the Lake Okeechobee Interim Action Plan;
- Improving operational flexibility within the EAA to distribute excess surface water and reduce the necessity for minor drainage discharges from the EAA and minor irrigation releases from Lake Okeechobee;
- Reducing the risk of flood damage to agricultural and urban lands by improving the levee freeboard; and
- Improving water quality by removing existing canal organic sediments and reduce the transport of future canal sediments by lowering velocities in the primary canals

Additional regional benefits include:

- Improving water quality in Lake Okeechobee by reducing backpumping at S-2, S-3, and the ECP Diversion Projects;
- Improving STA performance by distributing flows between STAs and reducing the reliance on Lake Okeechobee for water to prevent dry-out;
- Reducing Lake Okeechobee releases to the estuaries by improving the conveyance capacity to the south during EAA drainage events;
- Improving the infrastructure used for water supply to the Lower East Coast in support of other CERP projects; and
- Increasing use of existing infrastructure capacity available at new ECP pump stations.

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Attachment B.3.1 – Improved East-West Conveyance

Substantial increases in the cross-section of the Bolles and Cross canals would have the effect of improving the east-west conveyance between primary basins. A similar project included in the ECP provided for an increased cross-section in the Ocean Canal and a portion of the Hillsboro Canal. Benefits would be recognized in those circumstances where excess surface water could be moved laterally within the EAA.

Recorded daily flows and stages were obtained from the SFWMD DBHYDRO database for Pump Stations S-5A, S-6, S-7, and S-8, and Spillway S-354. The period of record used was October, 1992, to October, 2002. A simple, spreadsheet screening model was used to look for the following conditions:

1. Significant daily flows from S-5A that would be available for diversion – Net EAA flows were approximated by subtracting Lake Okeechobee release through S-354 from the recorded S-5A flows. The definition of "significant" was left as a variable in the model and test values between 125 CFS and 4500 CFS were evaluated;

2. Relatively dry conditions in the S-7 and S-8 basins for the past seven days – This was determined by summing all S-7 and S-8 daily flows for the current and prior six days. A weekly sum less than the equivalent of one day's evapotranspiration losses from the tributary basin was considered to indicate relatively dry conditions. This was not intended to indicate that the basin was in need of irrigation, but rather that substantial flow had not recently been pumped from the EAA into WCA 3A; and

3. The current daily flows through S-7 and S-8 allowed sufficient excess pumping capacity to handle the "significant" flow available from the S-5A basin.

The results of the ten-year period of record reviewed are summarized in Table B.3.3 and figure B.3.3. It appears that numerous opportunities would exist to divert flows from east to west between the primary basins of the EAA.

Table B.3.3 – Available Flows for East-West Diversion, 1992-2002

Test	Number of Days	Number of Events	Avg. days/ event
125	353	143	2.5
250	303	136	2.2
500	186	110	1.7
1500	48	34	1.4
2500	20	13	1.5
3500	9	8	1.1
4500	2	2	1.0

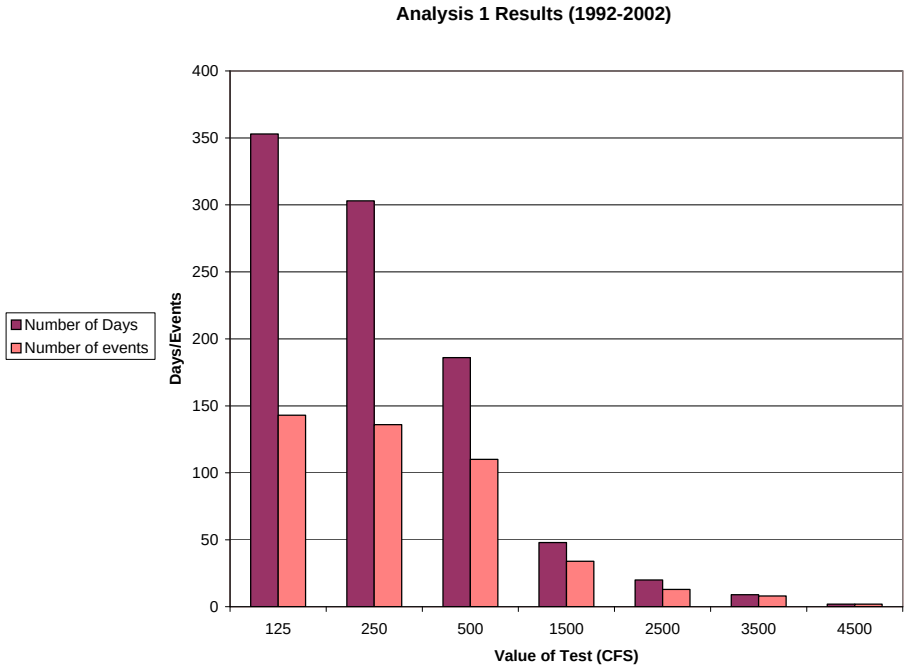

Figure B.3.3 – Frequency of Flows Available for East-West Diversion

Attachment B.3.2 – Improved North-South Conveyance

Recorded daily flows and stages were obtained from the SFWMD DBHYDRO database for Pump Stations S-2, S-3, S-6, S-7, and S-8. The period of record used was October, 1992, to October, 2002. A simple, spreadsheet screening model was used to look for the following conditions:

1. Daily pumping at both S-2 and S-3 are greater than a selected test value indicating that excess water is available to be diverted – The test value was left as a variable in the spreadsheet and values between 100 CFS and 1100 CFS were evaluated;

2. Relatively dry conditions in the S-6, S-7 and S-8 basins for the past seven days – This was determined by summing all S-7 and S-8 daily flows for the current and prior six days. A weekly sum less than the equivalent of one day's evapotranspiration losses from the tributary basin was considered to indicate relatively dry conditions. This was not intended to indicate that the basin was in need of irrigation, but rather that substantial flow had not recently been pumped from the EAA into WCA's 2 and 3A; and

3. The currently daily flows through S-6, S-7 and S-8 allowed sufficient excess pumping capacity to handle the "significant" flow available from the S-2 and S-3 basins.

The results of the 10-year period of record reviewed are summarized in Table B.3.4 and Figure B.3.4. It appears that numerous opportunities exist to divert flows from north to south between the primary basins of the EAA.

Table B.3.4 – Available Flows for North-South Diversion, 1992-2002

Test	Number of Days	Number of Events	Avg. days/ event
100	583	127	5
200	464	97	5
400	246	56	4
600	117	23	5
800	56	20	3
1100	2	2	1

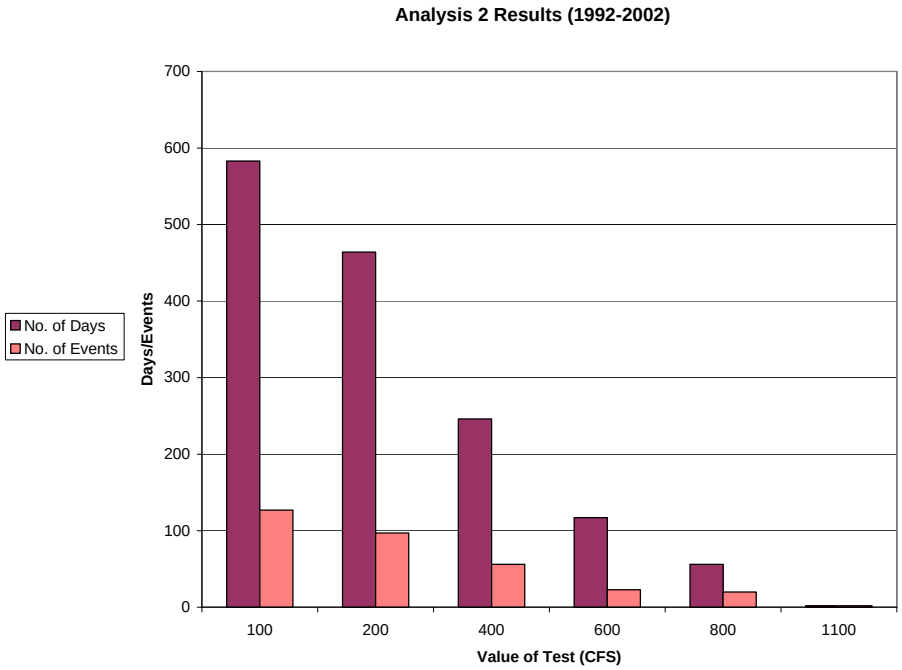

Figure B.3.4 – Frequency of Flows Available for North-South Diversion