

UPDATE ON C-51 / STORMWATER TREATMENT AREA 1 EAST

BACKGROUND: The Modified Consent Decree contains a July 2002 completion date for Stormwater Treatment Area 1 East (STA-1E). In developing the completion dates for the project, it was assumed that additional required Federal legislation, providing authorization for the U.S. Army Corps of Engineers (Corps) to construct STA-1E, would be included in the Water Resources Development Act (WRDA) of 1994. Unfortunately, there was no WRDA in 1994 and the necessary authorization was not provided to the Corps until WRDA 1996, two years later than anticipated.

CURRENT ACTIVITIES: All lands necessary for the project have been acquired by the local sponsor, the South Florida Water Management District (SFWMD), or the Corps. Currently, there are eight (8) construction contracts underway in various phases of completion: 1) Machinery Contract for Pump Stations S-319 and S-362, 2) Inflow Pump Station S-319 Structure, 3) Outflow Pump Station S-362 Structure, 4) Drainage and Seepage Pump Station S-361, 5) STA-1E Clearing and Grading Contract, 6) STA-1E Eastern Half Construction Contract, 7) STA-1E Western Half Construction Contract, and 8) Spillway Structure S-155A. A very brief description of these contracts is shown on enclosure 1. One additional contract, for the channel improvements to the existing C-51 canal, is scheduled for award in October 2002. In addition to the construction contracts, design work continues for the channel improvement contract as well as engineering support activities for the contracts mentioned above. Also, efforts continue at the PSTA Test Facility located adjacent to the northeast corner of the STA. Preliminary results are expected shortly.

COMPLETION SCHEDULE: The last construction contract (eastern half of the STA) for the STA is scheduled for completion in January 2004. The C-51 canal improvements are scheduled for completion in June 2004. Current completion dates for all the contracts are shown on the Gantt Chart and enclosure 2. The work in the contract for the eastern half of the STA has been sequenced to provide for completion of the easternmost flow path to be completed sooner than the rest of the work on the contract in order to provide water for the outflow pump station testing. It should be noted that the C-51 canal improvements are necessary for the flood control aspects of the project and not necessary for the start-up of the STA for water quality purposes.

Previous schedules developed for the construction of STA-1E reflected an attempt to shorten the construction period to make up for the two years lost time, but efforts have not been fully successful. While some measures taken have helped to shorten the process, other difficulties have added any saved time back into the process. Once the project progressed from the conceptual stage to the detailed design stage, it became more evident that additional time would be necessary to complete the design and construction. Work was started immediately on the design of the pump stations due to the long lead-

time needed for such large and complex equipment. The work on the pump stations, with a few exceptions, has gone extremely well. On the other hand, efforts for the clearing and grading of the STA are taking much longer than anticipated. The plans and specifications for contract 5 took longer than anticipated. Additional time was required to obtain adequate survey data and to calculate and balance the material to be removed and fill to be placed. Given the 10-square-mile area of the STA, the varied elevations resulting from different agricultural uses, and the slope of the land, arriving at a balance to minimize fill material to be purchased and material to be disposed of in an effort to achieve an almost flat topography was more time-consuming than originally scheduled. The volume of material to be moved greatly exceeded amounts anticipated prior to the plans and specifications stage.

Upon completion of plans and specifications and preparation of a draft source selection package for Contract 5, the contracting officer decided to revise the source selection package to reduce the risk of protests from hopeful bidders. This, along with the assignment of a new contract specialist, added three to four months to the solicitation process.

Normally, a contract is advertised for 45 days, but in this case, due to the number of questions raised by contractors concerning the solicitation, and because the Corps decided additional information should be provided to the contractors, the solicitation period for Contract 5 was 144 days. During that time, the Corps provided information on how it calculated quantities of material to be moved, provided additional survey data, provided the survey data in various requested formats, and responded to questions concerning the survey data. Seven amendments to the solicitation were issued to provide more detailed information to contractors, resulting in a three-month extension to the solicitation period. The solicitation period closed on September 10, 2001. The Corps had planned to award the contract prior to the end of the fiscal year, September 30, 2001, but the source selection panel was unable to convene within that one-month window. The process of awarding a contract normally takes about a month, but because of the time-consuming selection panel coordination, the changes in staff assigned to the selection panel, absences of staff required to participate in the selection, and revisions to the documents reflecting the decision process, the award took almost three months as opposed to the normal 30 days. Contract 5 was awarded December 21, 2001.

Given the quantity of material to be moved to level the project area (2.9 million cubic yards to cut and 2.3 million cubic yards of fill for a total of 5.2 million cubic yards to be moved), which greatly exceeded the initial estimates, the construction costs are greater and the construction period is longer than initially estimated for the grading work. What was anticipated during the conceptual phase to be a \$4 million contract has turned into a \$14 million contract, and the 1999 twelve-month schedule for construction has become a nineteen-month schedule. The Corps considers this amount of time appropriate to accomplish the work and does not consider contract incentives to be cost effective in this instance. For safety and logistical reasons, adding more manpower to the job is not a reasonable means of speeding up the work.

The original schedule (Modified Consent Decree) for STA-1E, with an assumed start in October 1994 and scheduled completion in July 2002, allowed 94 months from start to completion. The current schedule, with an actual start date of October 1996 (after receiving authorization in WRDA 96) and a construction completion date of June 2004, covers a period of 93 months. The actual time required to complete the project is essentially the same as envisioned in the beginning, however we were not able to meet the expected completion date due to the 2 year delay in receiving necessary authorization.

OTHER ITEMS: A team from the Corps, SFWMD, and others is working on an STA start-up and vegetation plan in order to get the STA operational as quickly as possible after completion of construction. These plans will be based upon experience obtained from the SFWMD in the start-up and operation of their STAs.

CONTRACT DESCRIPTIONS

- 1) Machinery Contract for Pump Stations S-319 and S-362: This contract provided for the final design and model testing of the pump station's large pumps. The contract provides for the manufacture and delivery of the inflow and outflow pump stations' engines, gears, pumps, and other major equipment.
- 2) Inflow Pump Station S-319 Structure: Major inflow pump station for the STA. Contract provides for construction of the pump station structure and installation of the equipment provided for under the machinery contract. Station pumps from C-51 canal into the STA. Pump station capacity is 3,980 cubic feet per second = 1.8 million gallons per minute = 2.57 billion gallons per day.
- 3) Outflow Pump Station S-362 Structure: Major outflow pump station for the STA. Contract provides for construction of the pump station structure and installation of the equipment provided for under the machinery contract. Station pumps from the STA into the Arthur R. Marshall Loxahatchee National Wildlife Refuge. Pump station capacity is 4,200 cfs = 1.9 million gpm = 2.7 billion gpd.
- 4) Drainage and Seepage Pump Station S-361: Minor pump station on east side of STA that provides for return of seepage and drainage from lands severed by construction of the STA. Pump station capacity is 75 cfs.
- 5) STA-1E Clearing and Grading: Provides for the clearing of vegetation, structures, and debris located within the STA footprint and for grading/leveling to provide relatively flat cells within the STA.
- 6) STA-1E Eastern Half: Provides for the construction of the external and internal levees on the eastern half of the STA and associated water control structures between the STA cells.
- 7) STA-1E Western Half: Provides for the construction of the external and internal levees on the western half of the STA and associated water control structures between the STA cells.
- 8) Spillway Structure S-155A: Provides for construction of a two-bay gated spillway structure that acts as the basin divide structure for the C-51 East and West drainage basins. Capacity of the structure is 1,460 cfs.
- 9) C-51 Canal Improvements: Provides for improvements (widening and deepening) of the existing C-51 canal for a distance of about 4 miles beginning at the S-319 pump station and proceeding east.

COMPLETION DATES

Machinery Contract for Pump Stations S-319 and S-362:	Mar 2003
Inflow Pump Station S-319 Structure	Mar 2003
Outflow Pump Station S-362 Structure	Feb 2003
Drainage and Seepage Pump Station S-361 ¹	May 2002
STA-1E Clearing and Grading	Aug 2003
STA-1E Eastern Half	Jan 2004
STA-1E Western Half	Nov 2003
Spillway Structure S-155A	Dec 2002
C-51 Canal Improvements ²	Jun 2004

¹ Punch list and minor change orders remain to be completed

² Contract scheduled for award in August 2003

ID	Task Name	Start	Finish	1997				1998				1999				2000				2001				2002				2003				2004			
				7	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	C-51/STA-1E	Tue 4/29/97	Wed 10/20/04	[Summary bar]																															
2																																			
3	PCA Executed	Tue 4/29/97	Tue 4/29/97	[Task bar]																															
4																																			
5	Detailed Design	Wed 10/1/97	Wed 10/20/04	[Summary bar]																															
6	Design Documentation Report	Wed 10/1/97	Wed 7/30/03	[Task bar]																															
7	Start-Up	Fri 11/21/03	Wed 10/20/04	[Task bar]																															
8																																			
9	Construction Contracts	Fri 5/14/99	Tue 6/1/04	[Summary bar]																															
10	S-319 & S-362 Machinery	Fri 5/14/99	Fri 3/14/03	[Task bar]																															
11	S-319 Structure	Tue 4/4/00	Fri 3/14/03	[Task bar]																															
12	S-362 Structure	Sat 9/30/00	Sat 2/22/03	[Task bar]																															
13	S-155a Spillway	Fri 5/18/01	Fri 12/13/02	[Task bar]																															
14	S-361 Pump Station	Thu 4/19/01	Thu 5/30/02	[Task bar]																															
15	Sta-1E Grading	Fri 12/21/01	Tue 8/12/03	[Task bar]																															
16	STA-1 E (East portion)	Fri 9/6/02	Fri 1/23/04	[Task bar]																															
17	STA-1E (West portion)	Wed 7/31/02	Sun 11/9/03	[Task bar]																															
18	C-51 Improvements	Wed 10/15/03	Tue 6/1/04	[Task bar]																															
19																																			
20	PSTA	Fri 8/6/99	Mon 12/1/03	[Summary bar]																															
21	PSTA Test Facility Construction	Fri 8/6/99	Tue 2/29/00	[Task bar]																															
22	PSTA Testing	Sat 12/1/01	Mon 12/1/03	[Task bar]																															

Project: C-51/STA-1E
Date: Nov 2002

Task		Summary		Rolled Up Progress	
Split		Rolled Up Task		External Tasks	
Progress		Rolled Up Split		Project Summary	
Milestone		Rolled Up Milestone			

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