

Repackaging Is Not As Simple As It Seems: Lessons Learned from the C-44 Project



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Overview

- Background
 - What is C-44 Project?
 - Project Status
- Repackaging Process
- Lessons Learned
- Recommendations



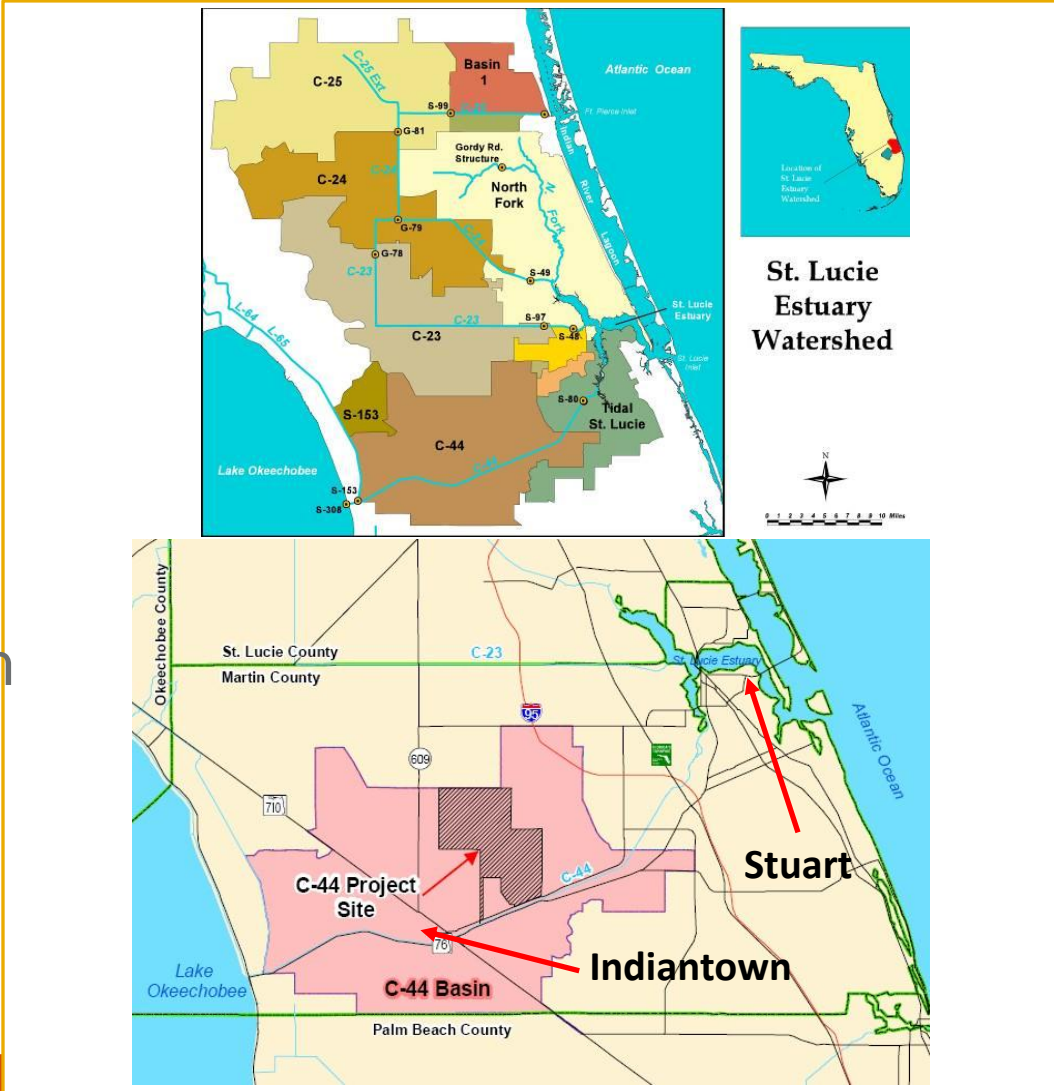
Indian River Lagoon (IRL)

- Estuary of National Significance
 - 156 miles in Length
 - Within 6 Florida Counties and Two Water Management Districts
 - 5 Ocean Inlets
 - Water Quantity, Quality, Timing, and Distribution Issues
- Indian River Lagoon – South (IRL-S)
 - 41 miles in length
 - St. Lucie – Indian River Counties to Martin-Palm Beach Counties



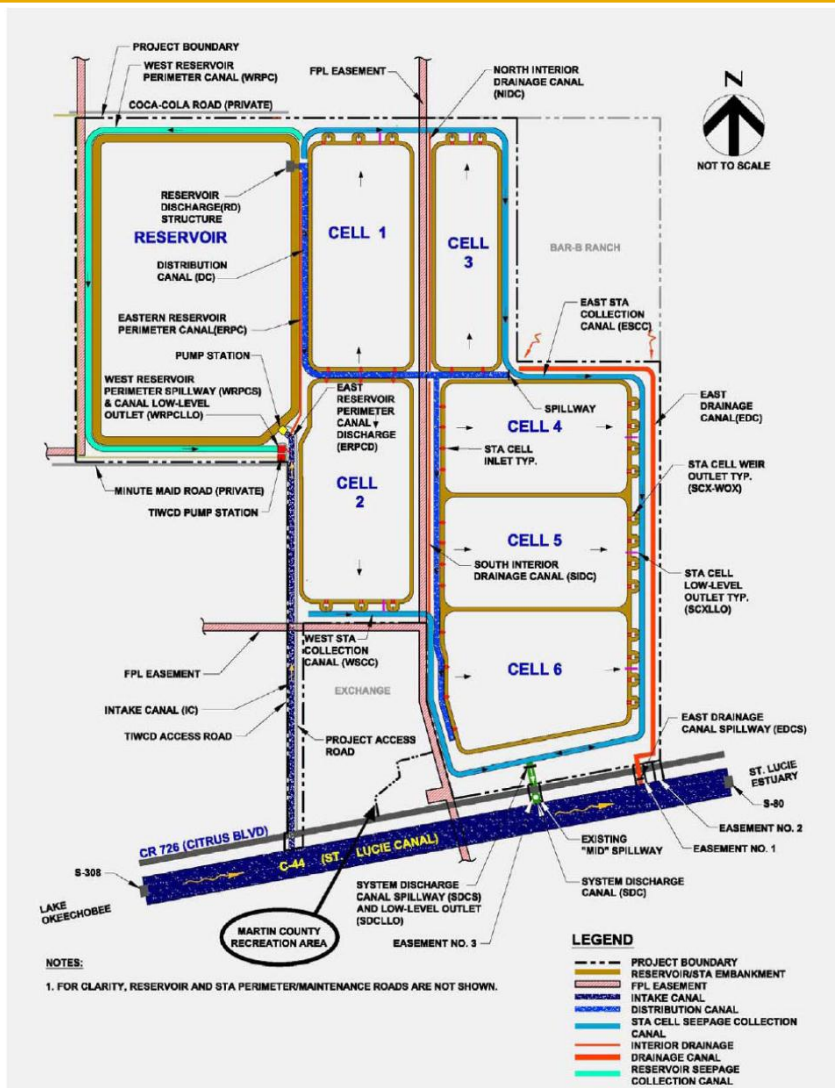
Project Implementation Report (PIR) Goals

- C-44 Reservoir/Stormwater Treatment Area (STA) Project is just one component of IRL-S
- Reduce C-44 Basin Runoff Peaks to the St. Lucie Estuary
- Reduce Nutrient Loads From C-44 Basin Runoff to the St. Lucie Estuary



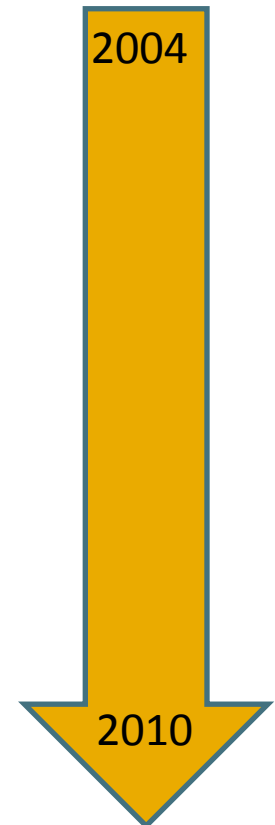
C-44 Reservoir/Stormwater Treatment Area (STA) Project

- Designed for flow attenuation to the St. Lucie Estuary, water quality benefits from reduced nutrient loading and pollutants contained in runoff to the estuary, and water supply benefits
- Capture and treat runoff from the C-44 Watershed via:
 - Above-Ground Reservoir
 - Pump Station
 - Canals
 - STA cells and Related Structures

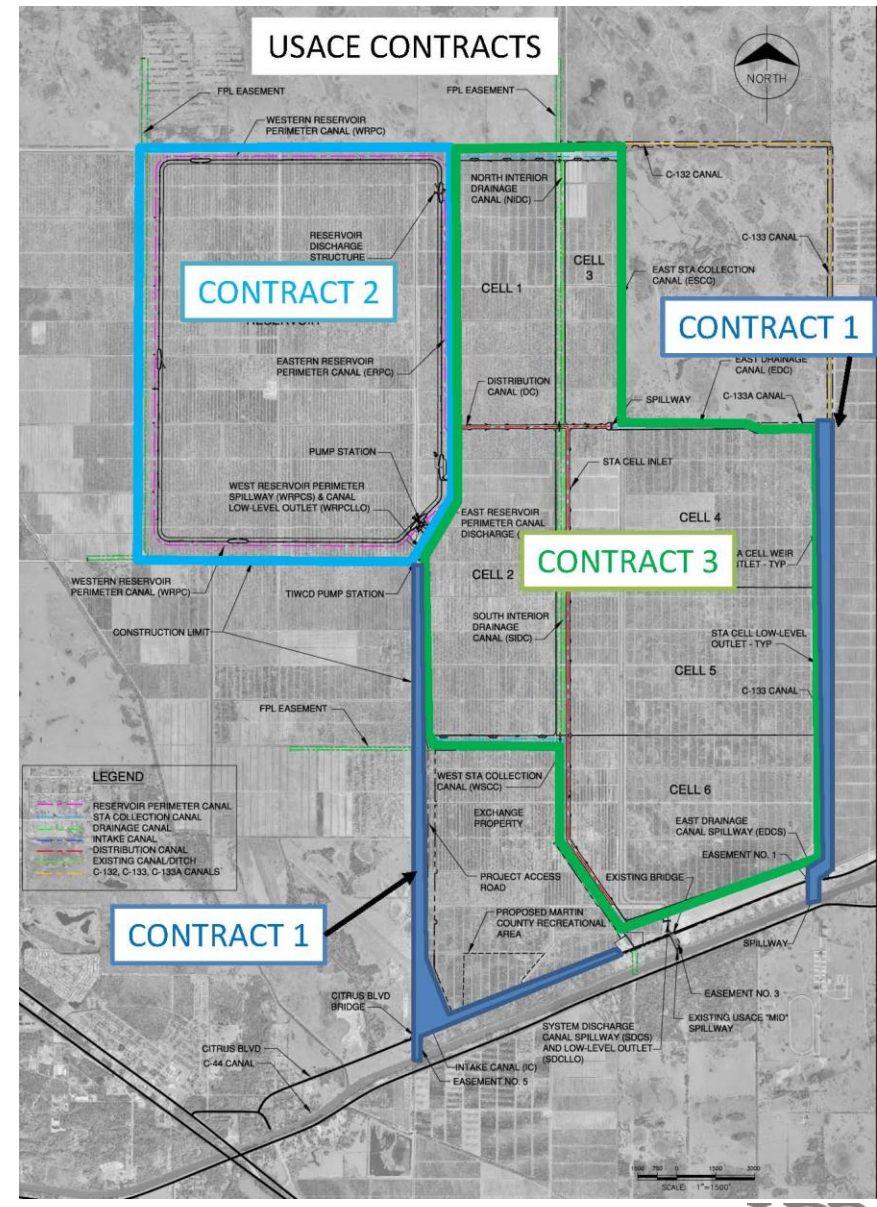
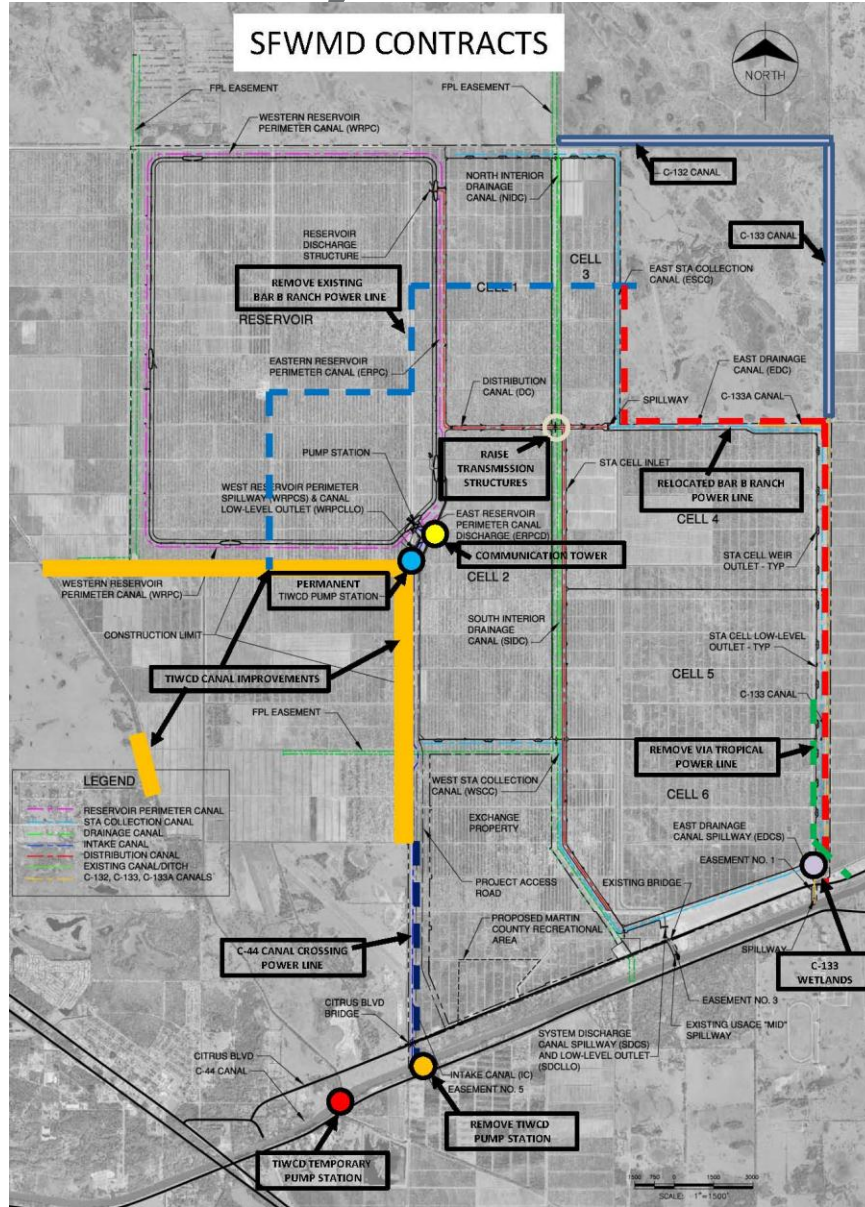


C-44 Reservoir/Stormwater Treatment Area (STA) Project Status

- 2004 – 2007 – Project Planning and Design under Acceler8 Program
- June 2007 - Project design was completed as one 3-year construction contract
- Mid 2007 - Project put on hold (changes in CERP execution and available funds)
- 2008 – Updated Design for Structure Naming
- Late 2009 – Funding received to construct the Project in Phases
 - USACE – 3 Main Contracts for Main Project Elements
 - SFWMD – Relocations in Various Site Locations
- 2010 – Start of New Project Execution



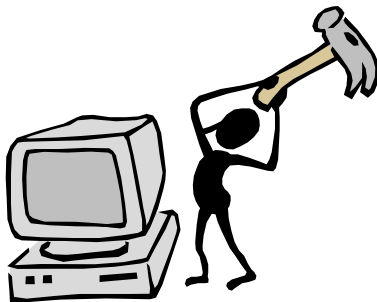
C-44 Project Execution Overview



What is “Repackaging”?



- Using the existing April 2008 Design as basis for conversion to multiple contract document sets for phased execution
- What does it mean to split up a design?
 - New Title Pages/Cover Page?
 - Conversion of Format Only?
 - Separate out plans, specifications, calculations, and opinion of probable costs into different packages?
 - No design changes
- Quickly realized that there was more to conversion/design split than original envisioned



Initial Lessons Learned from Dr Checks Review

- During the design repackaging process, there have been many lessons learned, especially related to the “shelf life” of a design
 - Format Changes
 - Different delivery/contracting approaches of two agencies
 - Effort to create biddable contract packages from a once comprehensive package; e.g. transitions
 - Different roles from involved agencies

Category	USACE/SFWMD	Other
A – USACE Format	94	2
B – Project Delivery / Contracting Approach	3	0
C – Hydrologic Barrier / Cut-off Wall	12	0
D – Agrochemical Impacted Soils	4	1
E - Transition	383	14
F – New Design – Not Incorporated	12	0
G – New Design – Incorporated	3	0
Total Comments = 528	511	17

Format Changes

- Design Documentation Report (DDR) format differences between SFWMD and USACE
- Compiled DDR for entire project – not by phases as before
- Incorporate USACE AutoCAD requirements
- Naming conventions by USACE name/Structure Name
- Spec format using SpecsIntact Program vs. Word
- More drawing notes moved to specifications
- Addition of FDOT requirements into design instead of referenced

Delivery Approach

- SFWMD construction delivery approach is lump sum and typically a single bid item.
 - Example: Performance specifications can be utilized in order to receive best pricing based on latest technology at time of construction
- USACE project delivery approach is several bid items with a mixture of unit prices based on estimated design quantities and lump sum.
 - Example: Determining the quantities required by USACE particularly for earthwork required the Designer to perform additional efforts relative to volume calculation assuming a certain construction sequencing and means & methods

Transitions/Biddability

- The nature of splitting a single cohesive package into eleven separate packages to be constructed at various times over several years requires adjustments for transitions and other issues that would not have otherwise existed; including design changes related to the relocation of staging areas, dewatering, and access points.
- Transitions include updated access locations, grading, and drainage considerations between contracts
- Example: Dewatering updates were needed based on less project lands being available per construction contract



Agency Role & Responsibilities

- Additionally, complexities arise from repackaging related to the distribution of agency responsibilities for each construction contract
 - Environmental/Agency Coordination
 - Determination of Relocations
 - Land Certification
 - Engineering During Construction
 - Submittal/RFI Reviews
 - Progress Meetings
 - Construction Management



Recommendations

- For every design that is performed by one agency and then converted by another or for any design that sits on the shelf for longer than 6 months, the first step in the new design process is for that designer to determine all of the Transition issues and presents those along with potential approaches, cost impacts, and schedule impacts for clear direction from USACE and SFWMD before proceeding
- All observations described were noted during the first phase of USACE construction as well as within SFWMD construction relocation contracts.
- Keeping in mind that – Due to the size of these projects to achieve restoration, challenges will always exist in funding mechanisms to support construction in one contract.
- Conscientious planning that permits parties to construct and project flexibility that accommodates for several construction phases that match available funding will always be necessary.

Final Thoughts and Questions

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