Challenges of Large Scale Ecosystem Restoration Construction in the Current Economic Climate

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2 Phases
Phase 1 – $1.2 Billion*
Phase 2 – $0.8 Billion*

*Planning level estimates
Background

- Case study: IRL-S C-44 Reservoir and STA
- SFWMD Design and Construction
- SFWMD funding constraints moved the construction to USACE and split project into three phases
  - Contract 1 – Intake Canal, C-133
  - Contract 2 – Reservoir and Discharge Canal
  - Contract 3 – Stormwater Treatment Areas
- USACE continuing to convert the design to USACE standards for all phases
- Construction Contract 1 – Intake Canal, C-133
  - Awarded on 14 Jul 11 for ~ $32,000,000
Intake Canal

- Intake Canal
- C-133 and C-133A improvement
- Access Roads
- Bridge on Citrus Blvd - Relocation
- Culverts on Citrus Blvd – Relocation
- Relocation of FP&L Lines
- SFWMD construction of wetlands after completion of USACE work
Reservoir and Outflow

- 52,000 acres feet reservoir
- Intake pump station
- Outflow channel and discharge structures
- Buried conduit for power
- Construction of FP&L sub-station
STA

- 6,300 Acres of STA
- All gravity fed from outflow of Reservoir
- Returning treated flow to C-44
Challenges

- Design
- Relocations
- NFS Adjacent Projects
- Funding
- Operations
Common Design Challenges

- IT: Instrumentation and Controls
- Changes in Agency Policy
- Changes in Agency & Industry Design Standards
- Changes in Technology
- Changes in Personnel
- Incorporation of Lessons Learned
Specific Design Challenges

SFWMD

- One Project with several components
  - Fully Funded
- Allows Construction Contractor freedom without directing means and measures

USACE

- Phasing of Project
  - Limited Annual Funding
  - Impacts to schedule
- More Prescriptive Design Specifications
  - Package/SOW/Design Detail
  - Contracting & FAR
- Required Reviews
  - IEPR, PARC
- Relocations
  - Additional Pre-Construction
Relocations

- Relocations are considered the responsibility of non-federal sponsor.
- USACE needed to break out relocations for SFWMD to perform prior to USACE construction, where practicable.
- USACE will carry out some relocations paid for by SFWMD as they cannot be phased.
  - Citrus Blvd
- SFWMD will phase their relocations for TIWCD to maintain operation for TIWCD.
NFS Adjacent Projects

- SFWMD intended to carry out work on C-133 and C-132 Northern Sections as part of the project.
- Since this work is not part of the Federally Authorized project, USACE cannot carry out this work, but design does need to tie into final work.
- SFWMD and USACE maintained same Designer of Record to allow synchronization.
NFS Works

C-132 and C-133 North Improvements
Funding Challenges

- Increasing economic climate pressures
- Contract Earnings vs. Expected Funding Streams
- Incremental Funding
- Identify Usable Increments
- EC-11-2-191, 19 Apr 07
  - Appendix I – Conditions and Approval Levels for Use of Continuing Contracts
- EC-11-2-198, 7 Jan 10
  - Appendix N - Conditions and Approval Levels for Use of Contract Clauses
  - Appendix O - Format for Approval to Award a Continuing Contract
Operational Challenges

- A balance between time and funding had to be struck against operating individual components of the project
- Each component must be fully functional for transfer
- Each component must be able to function for its intended useful purpose should the next not receive funding
Interim Operations of Reservoir Required for:
1. Testing and Commissioning (minimum 9 months but realistically 1-1.5 years)
2. Operation of Reservoir for Attenuation and/or Water Supply
3. Not Required for Discharges to STA
Discharge Canal

Required to allow the reservoir to be a functional element and operate
Management Decision

- Go back to INTERMEDIATE plans and specifications
- Project team re-develops schedule and budget which accounts for design and technology changes, required reviews and multiple year funding requirements
- Cost reviews at key design milestones
- Develop P&ID up front for Electrical/IT work
Questions