San Elijo Lagoon Restoration Project

Can it be designed and constructed to satisfy everyone?
Background

Construction Manager/General Contractor (CM/GC) process – Different From Low Bids

Caltrans Contract With Flatiron/Skanska/Stacy & Witbeck (FSSW)

State Coastal Conservancy/SANDAG Contract With the SELC Team
Project Construction Status

1. Construction Initiated in December 2017
2. Pit and Beaches Done by July 2018
3. Central and East Basins Underway in 2018-19
4. West Basin Work in 2019
Designers:
• Moffatt & Nichol – Grading, Dredging, Beach Fill, Utilities, Phasing
• AECOM – Planting and Irrigation
• Nordby – Input on Overall Habitat Design
• Caltrans – CMGC Input for Optimizations

Project Funding and Ownership:
• San Elijo Lagoon Conservancy
• SANDAG
• California State Coastal Conservancy
Design Objectives

1. Improve Circulation
2. Remove Relic High Nutrient-Content Soils
3. Improve Site Resilience to Sea Level Rise
Design Considerations

1. Dig an Over-Dredge Pit for fine-grained lagoon material
2. Opportunistic Sediment Placement
3. Dig Channels and Back-Fill the O-D Pit
4. Fill to Create Transitional Habitat
Construction Limitations

1. Protect Existing Habitat and Provide Bird Refugia
2. Wet, Soft Construction Conditions
3. Coordination with Three Other Projects
Four Projects at Once

Railroad Bridge and Line

Sewer Outfall Line

Lagoon

I-5
Design Optimizations During Construction

1. Channel Modifications for Private Property, Habitat and Utility Lines

2. O-D Pit Depth Tradeoffs – Backfill Volume Versus Materials Consolidation
"The final elevation of the pit surface will be designed to promote recruitment of low marsh considering future surface settlement. However, settlement rates are uncertain and difficult to predict with accuracy so the ultimate habitat type to establish on the pit surface may range from subtidal through high marsh."
Changes to Construction Means and Methods

- Dredging Was Original Approach
- Changed to be Combination of Wet and Dry Work
- More Environmentally Sensitive and Cost-Effective
Project Optimizations and Improvements

• Beach Sand Placement – Higher on Beach and Less “Lost” to Sea
• No Offshore Sand Placement – Smaller O-D Pit, Less Cost, Shorter Duration
• Only One Planting Period – Less Time, Cost
Conclusions

1. CMGC process helped with the efficiency and environmental sensitivity of the design.

2. Contractor optimized the operation and agencies allowed unusual construction conditions due to tangible benefits.

3. Construction of concurrent projects (4) with multiple goals and is possible, but negotiations are needed and hard edges must be respected.

4. Open and frequent communication between the designer, owner, CM, contractor, agencies, and monitors is absolutely key.
Conclusions (Con’t.)

Can it be designed and constructed to satisfy everyone?

The answer is no, but with compromise it can mostly satisfy the majority and accomplish the goals.