



Marine Engineers and Environmental Consultants

July 11, 2017

To: Birgie Miller, John McCabe

From: Hans Wilson, P.E. *HW*

Copy: David Houghton, James Evans

Subject: Wulfert Bayous Project – Opinion of Cost

The following is an Opinion of Probable Cost to construct the bird nesting pond habitat. This estimate is based on the set of drawings pages 1 through 8, dated July 10, 2017.

<u>Description</u>	<u>Quantity</u>	<u>Cost/Unit</u>	<u>Cost</u>
A. Mobilization	1	Lump Sum	\$ 50,000
B. Plant Relocation	1	Lump Sum	\$ 30,000
C. Clearing and Grubbing	11.1 Acres	\$10,500/ac.	\$ 116,550
D. Pond Excavation	83,000 cy.	\$30/cy.	\$2,490,000
E. Hauling (Off Site)	83,000 cy.	\$10/cy	\$ 830,000
F. Wetland Shelf	12,400 plants	\$6/4" pot	\$ 74,400
G. Island Perimeter	12,600 plants	\$12/1 gallon	<u>\$ 151,200</u>

Construction Subtotal @ \$3,742,150

H. Contingency @ 10% \$ 374,215

I. Final Design and Permitting \$ 35,000

J. Construction Administration @ 5% \$ 150,000

Administration Subtotal @ \$ 559,215

PROJECT TOTAL COST @ \$4,301,365

Say \$4.3 million

A. Mobilization – This includes mobilizing to the site, setting up turbidity controls, and demobilization, including local building permits.

B. Plant Relocation – This is predicated on locating threatened plant species within the Clearing and Grubbing area and relocating as necessary. This may involve transplanting species that will survive, or mitigation for species not conducive to transplanting (Joewood)

C. Clearing and Grubbing – This work includes clearing the site of all vegetation within the excavation footprint and removal of non-native vegetation from the islands. Exceptions will be made for the vegetation around the Australian Pine supporting the eagle's nest and consideration of adjacent pines, pursuant to management criteria for the eagle. All vegetation, including root balls to be sheared, will be removed and ground using a tub grinder. All mulch created will remain on site for landscaping.

D. Pond Excavation – This is a conservative number and is based on similar excavation works under the direction of HWA. Work is expected to be done with a large excavator and four wheeled haulers to a transfer site adjacent to the road where the material will be then loaded into conventional dump trucks. This will also include dewatering as necessary.

E. Hauling – The excavated material will be hauled to another location on Sanibel managed by Wildlife Refuge staff. It is anticipated that the material will be of a high sand and shell content and desirable for use elsewhere on the island. As a result, any excess material not usable by the Refuge can likely be sold to defray some of the construction costs.

F. Wetland Shelf – There are four main locations shown on the plans defined by compass quadrants. The total area for the submerged plant shelves is 111,550 sf. We anticipate planting wetland vegetation on 3' centers using nursery grown plants in 4" pots. Planting will have to be done prior to the beginning of the wet season to fully populate the shelves.

G. Island Perimeter – This is the area around the three islands, and the north shore between Island A and B. There is approximately 113,700 sf. of planting area. These plants are going to be more mature 1 gallon plants, also planted on 3' centers.

H. Contingency @ 10% - This is a standard consideration in preparing an opinion of probable cost to account for any anomalies discovered on site. This could be Indian artifacts, rock within the excavation areas, or other unknowns. As the project is further refined, this value will decrease.

I. Final Design and Permitting – This task will result in preparation of construction level plans and technical specifications necessary to bid the project. Permitting will include securing state authorization and will likely not require federal authorization. A Conditional Use Permit and Development Permit from the City are likely to be required.

J. Construction Administration – Without having a final plan to construct estimating the administrative costs of construction is usually based on a percentage. Normally we price between 7% and 10% depending on the complexity of the project. This is essentially a pond digging project that will require mostly coordination with the contractor regarding truck traffic, staking of the limits of excavation, confirmation of the design elevation, permit compliance, and pay request review.

Note – I did not include any long term monitoring of the site. This is likely to be managed by Refuge staff within a Monitoring and Management Plan that will be part of the permitting for the project.

Project Timelines

Description	Days to Complete	Cumulative Days
Notice to Proceed	0	0
Site Mapping, Plant I.D.	30	30
Permit Plans (60%)	30	60
Plan Review, Approval.	7	67
Permit Applications	60	127
Permits Issued	180	307
Construction Plans and Specs (100%)	30	337
Notice to Bidders	21	358
Contract Signatures, Notice to Proceed.	60	418
Construction	150	568
Project Close out, Final Payment, Compliance Notices	60	628

Permitting is likely to be confined to state and local permits. No work is proposed in jurisdictional wetlands and the pond will be reviewed by the South Florida Water Management District for the state permitting. The Florida Fish and Wildlife Conservation Commission and the U.S. Fish and Wildlife Service will be heavily involved in managing issues related to the eagles nesting on the site. The City of Sanibel will likely require a Conditional Use Permit and a Development Permit.