

**MANGROVE SHORELINE RESTORATION PLAN
SARASOTA COUNTY, FLORIDA
1270 LINDEN ROAD**

Prepared for:

Mr. Walter McKay
1270 Linden Road
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March 27, 2017

Prepared by:



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A handwritten signature in blue ink, appearing to read "Bill Hentges", is written above a horizontal line.

Thomas "Bill" Hentges
Ecologist

A handwritten signature in blue ink, appearing to read "Lee Walton", is written above a horizontal line.

Lee Walton
Senior Ecologist/Principal

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INTRODUCTION

This restoration plan has been prepared in response to a Notice of Violation (CIP Number CP-17-25 (2017-106819-CP)) issued by Sarasota County’s Environmental Protection Ordinance Division on 13 February 2017. According to the notice, this property (1270 Linden Road, Venice, Florida) is in violation of several Sarasota County Ordinances including Chapter 54, Article XXXV (Mangrove Trimming and Preservation), Chapter 54, Article XX (Water and Navigation Control Authority) and Chapter 54, Article XII (Earthmoving) for portions of a mangrove shoreline that was cleared and filled without authorization. As such, the goal of this restoration plan is to outline methodologies needed to restore the mangrove shoreline to its original state, and satisfy the immediate actions listed in the aforementioned notice.

1.0 WETLAND RESTORATION

All fill material placed within the 0.01-acre Area of Impact (EOI) will be removed to the fullest extent possible and the mangrove shoreline returned to historic grade (Wetland Map). The fill material will be placed onsite at a preapproved location, or disposed of offsite. The log retaining wall will also be removed, and the logs placed outside the jurisdictional wetland limits at a distance great enough to not impede drainage. A minimum of 20 nursery stock, three-gallon red mangrove (*Rhizophora mangle*) specimens, will be planted on three-foot centers throughout the EOI (Planting Plan Map). Additional plants will be added to meet minimum coverage requirements, if needed. Following plant installation, if incidental plant mortality is greater than 5 percent, additional plants will be installed.

2.0 MONITORING AND MAINTENANCE

Monitoring will be conducted in accordance with Sarasota County Land Development Regulations, Section 74-212, Environmental Technical Manual, Section B (5)(a). The site will be evaluated twice per year during the growing season (April through November) for a period no less than three years (Table 1). During each site evaluation, the site will be photographed from pre-determined photo stations depicted in the attached Photo Station Map. The direction of each photo will be consistent with the Photo Station Map to ensure that photos are easily verifiable and comparable among site visits.

Table 1: Monitoring, Maintenance, and Reporting Schedule

	April	May	June	July	August	September	October	November	December
2017	Restoration Planting						Monitoring Event 1		Report 1
2018		Monitoring Event 2					Monitoring Event 3		Report 2
2019		Monitoring Event 4					Monitoring Event 5		Report 3
2020		Monitoring Event 6					Site Released		Final Report

2.1 Monitoring

Flatwoods will utilize the following monitoring, data collection methods for planted mangroves and herbaceous sampling at the restoration site to ensure restoration success compliance standards are being met.

Herbaceous Sampling

The 1 meter-square quadrat sampling method will be used to sample vegetation with the restoration area during each monitoring event. Quadrats will be spaced randomly within EOI and the following data will be collected for each quadrat: percent cover by species, percent bare ground, and percent cover open water. Cover is defined as the percentage of ground surface that is vegetated. All herbaceous and woody species less than 0.5m in height and apparently rooted will be recorded. Submerged aquatics and creeping and/or matted vegetation will be included if visible and the shoots and roots are apparently rooted within the quadrat. Overlapping vegetation may allow absolute coverage to be greater than 100 percent. Percent cover of species will be determined to the nearest five percent, with cover less than five percent designated as such. Data for all quadrats will be combined to determine the overall dominance (i.e., most abundant) and subdominant (i.e., average cover > 5%) species within the restoration area. Water depths, if applicable, will be recorded at each quadrat sampling location.

Category I and II, invasive exotic species pursuant to the Florida Exotic Pest Plant Council (FLEPPC) 2015 List of Invasive Plant Species, will be identified during each scheduled monitoring event with relative cover per species calculated per the aforementioned methods.

Tree, Shrub, and Planted Mangrove Sampling

Trees and shrubs within the restoration area will be monitored by recording the total of wood species. A shrub is wood species that is greater than 0.5m in height and less than one inch diameter at breast height (dbh). A tree is a wood species greater than or equal to one inch dbh and categorized as a tree type species. The density of shrubs and trees within the restoration area will be determined by dividing the total number of trees and shrubs in the planting area by the restoration area acreage. In addition, the percent survivorship of planted red mangroves will be determined by counting each living mangrove and dividing the total number of living mangroves by the total number of plants installed. If the mortality of planted red mangroves exceeds 5 percent, supplemental planting will be conducted as part of general maintenance.

2.2 Maintenance

All invasive exotic plants identified by FLEPPC as Category (CAT) I and II species will be targeted for eradication if densities within the restoration areas exceeds 15 percent. Management and maintenance goals for FLEPPC CAT I and II species are also outlined by Sarasota County in Section 74-212, Environmental Technical Manual, Section F(4), Table 1, 2 and 3 and are the goals of this restoration plan. Maintenance will include a combination of hand removal and chemical treatment. Any necessary chemical treatments will be performed by State of Florida

Certified Pesticide Applicator with an Aquatic Pest Control endorsement. Only herbicides approved for use in water bodies will be used in wetland areas and any upland areas that have standing water or saturated soils at the time of application. The type of treatment method and EPA-approved herbicide used to control the nuisance exotic species will be at the discretion of the licensed applicator. If CAT II invasive exotic species are affecting the recovery of the wetland, they will also be treated accordingly.

3.0 SUCCESS CRITERIA



The restoration area will be deemed successful when criteria listed in Section 74-212, Environmental Technical Manual, Section B (7) has been met. This includes the following:

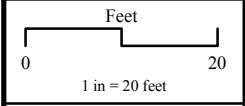
- The diversity of plant species in the restoration area is approximate to or exceeds the diversity of the plants within the adjacent, undisturbed portion of the wetland.
- The coverage of plants within each Planting Zone is equal to or exceeds the coverage prior to the wetland being impact. Generally, 60 percent or greater coverage.
- Category I nuisance exotic species is less than 5 percent in all Planting Zones.

4.0 REPORTING

Consistent with Sarasota County's monitoring report guidelines (Section 74-212, Environmental Technical Manual, Appendix I- Monitoring Report Guidelines), an annual report will be prepared by a qualified person (e.g., an environmental scientist, ecologist, biologist or person with similar training) and submitted to Sarasota County's Environmental Protection Ordinance Division. The report will be submitted no later than December 31st each year. At the conclusion of the required three-year monitoring period, and the site has been showed to meet the minimum requirements, a request to cease monitoring will be submitted to Sarasota County's Environmental Protection Ordinance Division along with the final monitoring report (Table 1).

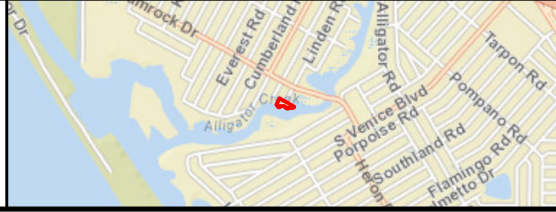


	EOI
	Parcel



**WALTER MCKAY
1270 LINDEN ROAD**




SARASOTA COUNTY, FLORIDA

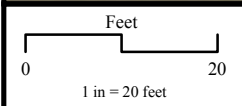


**WETLAND
MAP**



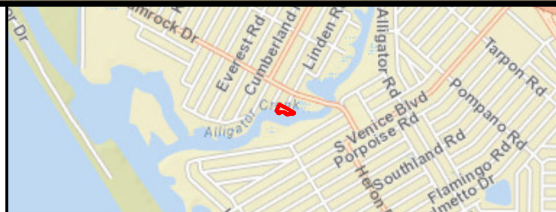


	Red Mangrove (20)
	Zone A
	Parcel



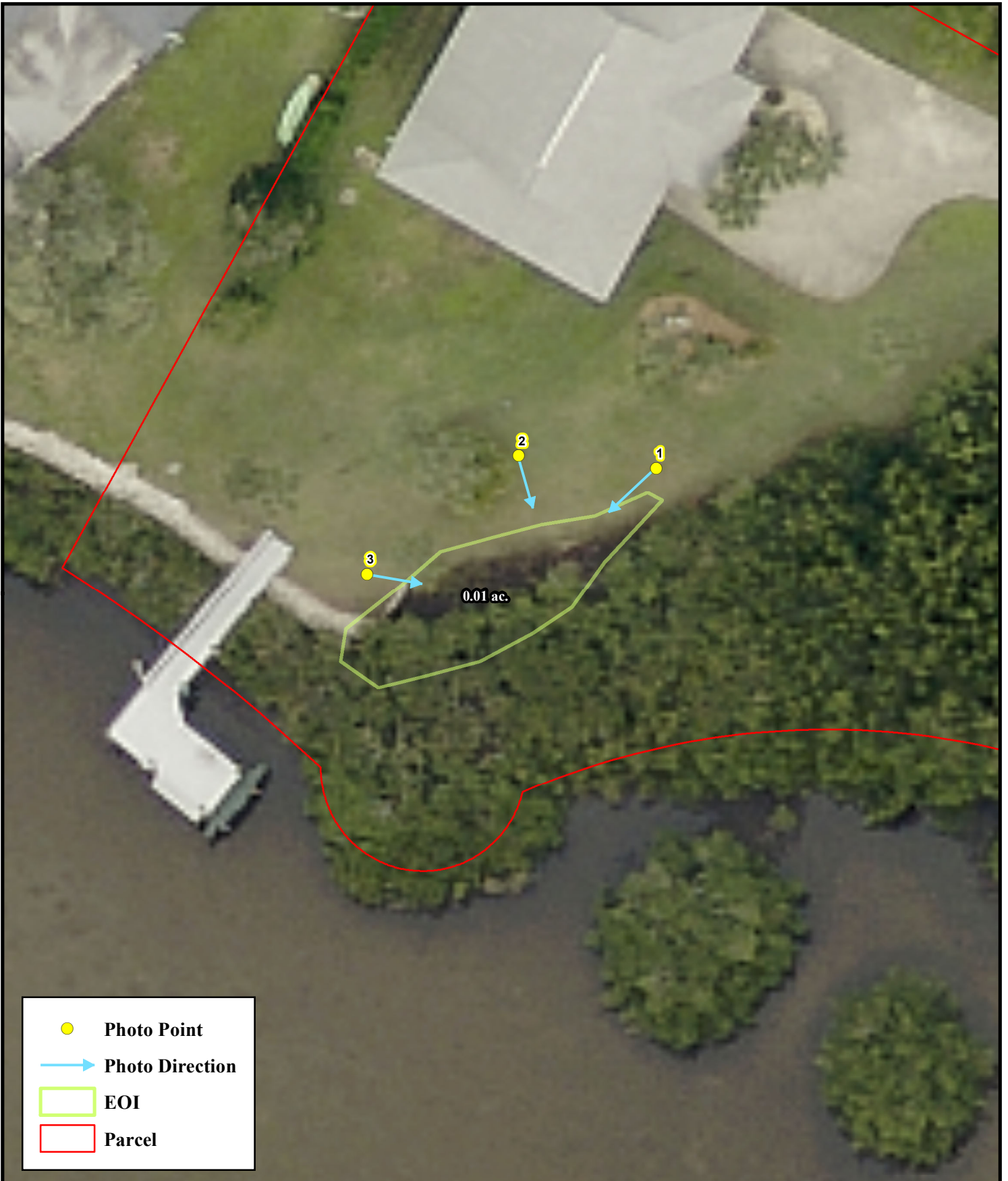
**WALTER MCKAY
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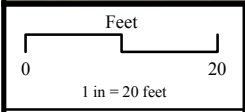


**PLANTING
PLAN**





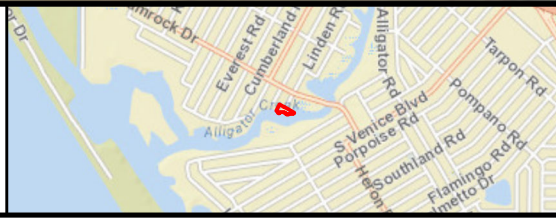
- **Photo Point**
- **Photo Direction**
- EOI**
- Parcel**



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**PHOTO
STATION
MAP**