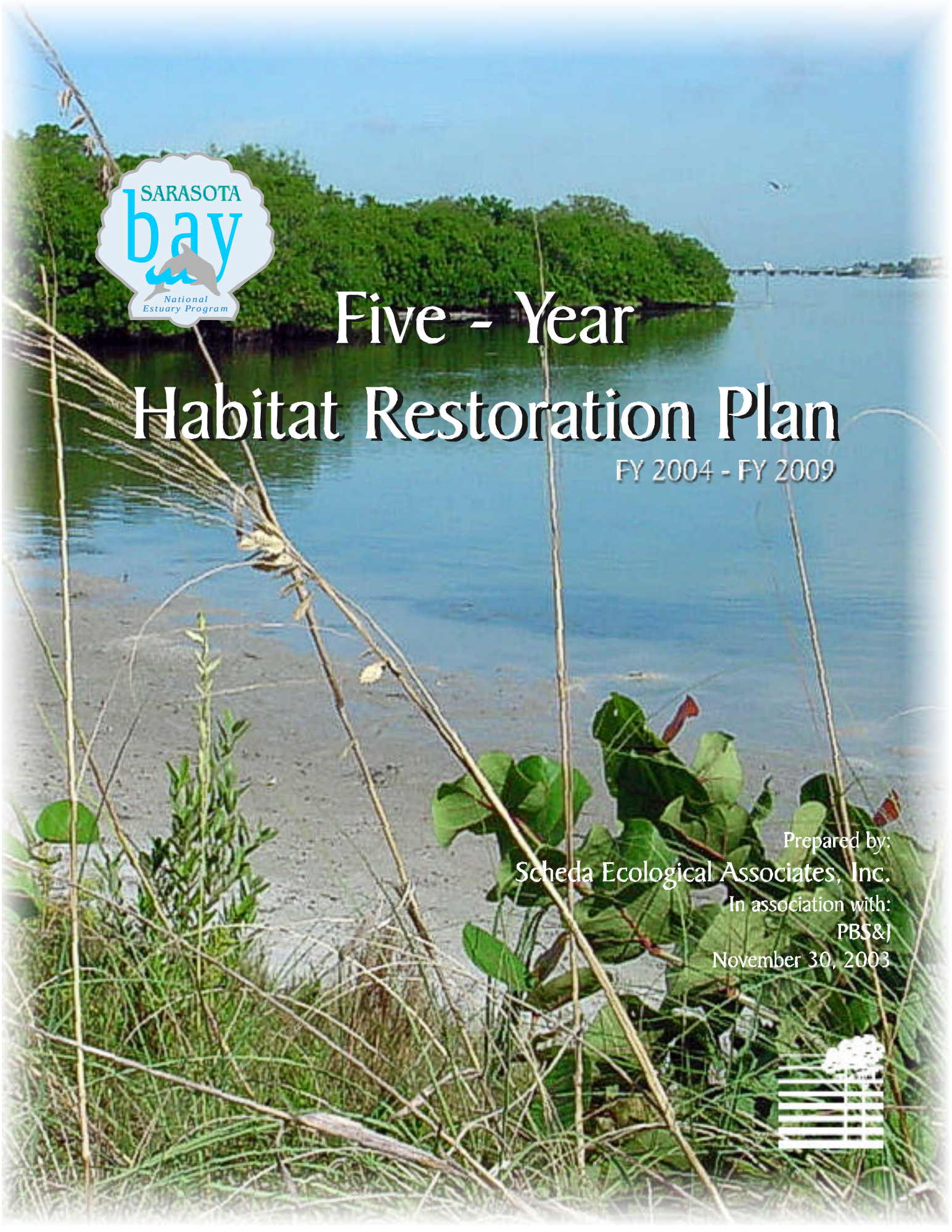


Five - Year Habitat Restoration Plan

FY 2004 - FY 2009

Prepared by:
Scheda Ecological Associates, Inc.
In association with:
PBS&J
November 30, 2003

FIVE-YEAR HABITAT RESTORATION PLAN

FY 2004 - 2009

SARASOTA BAY NATIONAL ESTUARY PROGRAM

Prepared for:
Sarasota Bay National Estuary Program

Prepared by:
Scheda Ecological Associates, Inc.
4013 E. Fowler Avenue
Tampa, Florida 33617

November 30, 2003

ACKNOWLEDGEMENTS

We would like to thank all of the people who assisted with identifying potential restoration projects throughout the Sarasota Bay Estuary and for their input. The review by the several committees of the Sarasota Bay National Estuary Program (SBNEP) helped to make this document an invaluable tool for future habitat restoration projects. Special thanks to Charlie Hunsicker, Ecosystems Administrator for Manatee County and Eric Sutton, General Manager of Environmental Services in Sarasota County. This project would not be nearly as complete without the assistance of many individuals, including David Tomasko (SWFWMD), Rose Poyner (FDEP), Ben Quartermaine (Sarasota County), Chris Becker (FL Parks Department), Danny Smith (Manatee County), Dotty Poindexter (City of Bradenton Beach), George McKay (City of Anna Maria), Jacqueline Hand (US Army Corps of Engineers), Jennifer Ryan (Sarasota County), Joseph Duennes (City of Holmes Beach), Julie Morris (New College), Laird Wreford (Sarasota County), Philip Chiocchio (Ringling School of Art and Design), Ron Van Fleet (Sarasota County), Seth Kohn (City of Bradenton), Sia Molonazar (Manatee County), Allen Garner (Florida Institute of Saltwater Heritage), and Steve Schield (Town of Longboat Key). Funding for the project came from the Southwest Florida Water Management District (SWIM Program – Manasota Basin Board) through the SBNEP.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

1.0 INTRODUCTION

The Sarasota Bay National Estuary Program (SBNEP) is dedicated to improving and protecting the area's greatest and most important natural asset - Sarasota Bay. This program strives to improve water quality, increase habitat, and enhance the natural resources of the area for use and enjoyment by the public.

Sarasota Bay is one of 28 estuaries in the United States that have been named by the U.S. Congress as "estuaries of national significance." The program was initially tasked with characterizing the environmental conditions of Sarasota Bay and formulating a comprehensive restoration and protection plan based upon this analysis. The plan, called the Comprehensive Conservation and Management Plan (CCMP), was formally approved by the Governor of Florida and Administrator of the Environmental Protection Agency (EPA) in 1995. The CCMP recommends specific actions be taken by local governments and State and Federal agencies to improve and protect the bay. Of the six identified goals of the CCMP, two address the restoration and protection of shoreline habitats and living resources of Sarasota Bay.

Wetland loss is a major issue in Sarasota Bay. Approximately 39 percent of the mangrove forests and saltmarsh communities, 30 percent of the seagrass meadows, and 16 percent of the freshwater wetlands have been lost (Estevez and Beaman, 1994). These habitats have been heavily impacted by dredging and filling activities associated with both navigation projects and waterfront developments. This loss of wetland, especially low salinity marshes, has greatly reduced the available habitat for juvenile fisheries. The remaining intertidal wetland communities are now fragmented and infested with exotic vegetation. These areas are in critical need of restoration and management to promote revitalization of Sarasota Bay's ecological health. To date, the SBNEP has been instrumental in the completion of 14 habitat restoration projects within the watershed. All projects are currently providing vital habitat values and are functioning as designed. Three have won awards of environmental excellence.

Prior to the selection, design, and implementation of additional habitat restoration projects, the SBNEP recognized the need for a planning document that would prioritize habitat restoration projects. This concept was discussed during several SBNEP Technical Advisory Committee meetings. Thus, the intent of this **Five-Year Habitat Restoration Plan** is to provide a planning and prioritization document for wetland habitat restoration projects. This plan will serve several functions and be used as a guide and planning tool by the SBNEP and its partners to identify, prioritize, and

implement restoration projects throughout the bay and watershed for fiscal years 2004-2009. The plan includes concepts similar to those used in the development of the Tampa Bay Estuary Program's (TBEP) Restoring the Balance document; however, it also includes more recent data (Serviss and Sauers, 2003; Estevez and Beaman, 1994). In general, all of the restoration projects will be cooperatively implemented with other governmental entities. Many of the proposed restoration sites were specifically identified by Manatee and Sarasota County personnel. However, the SBNEP reserves the right to adjust implementation of these proposed projects as necessary to accommodate site availability, funding, cooperation, potential educational components, and other variables.

2.0 SITE SELECTION OBJECTIVES

In order to achieve SBNEP's restoration goals, it is imperative to review overall restoration objectives and alternatives. This will expedite site prioritization and the development of restoration strategies. Restoration objectives in this document can be catalogued into to three primary categories:

1. Critical habitat restoration;
2. Stormwater retrofit; and
3. Identification of privately owned sites for preservation and restoration within the watershed.

Each of these objectives is discussed in additional detail below.

Critical habitat, as defined by fisheries biologists, equates to low salinity (oligohaline and mesohaline) environments. These areas have been identified as critical and limiting habitats for commercially important fish species such as snook (*Centropomus* spp.), spotted sea trout (*Cynoscion nebulosus),* and redfish (*Sciaenops ocellatus*). Therefore, the SBNEP restoration projects put more emphasis on low salinity portions of the bay and tidal reaches of existing creeks that empty into Sarasota Bay. Research has shown that these low salinity environments are extremely effective in providing productive habitat values not only for fisheries, but also for avifaunal species (Browder and Moore, 1981). By identifying these areas in conjunction with GIS-based resources, publicly-owned parcels were mapped as potential restoration sites. The five-year plan also incorporated data related to historic habitat loss when proposing the most appropriate habitat restoration projects (i.e., high marsh, mangrove forest, saltern). Thus, specific habitat targets were developed for the bay. Another consideration for the proposed restoration projects was the sites' potential to provide ecological benefits to adjacent seagrass beds.

The second restoration objective was stormwater retrofit opportunities. Habitat restoration will always provide needed structural habitat. However, if the water quality is substandard, only a limited diversity of fauna can utilize the restored/created habitat structure. Understanding this, the SBNEP (including its partners) has been very active in improving water quality by targeting point source pollution and promoting the upgrade of regional wastewater treatment plants. However, additional improvements to water quality will require aggressive treatment of non-point source runoff. A number of outfalls

occur at the coastal fringe and within tidal creeks, and integration of these outfalls with stormwater treatment best management practices (e.g., baffle boxes, CDS units, leaf litter traps, filter marshes, sediment sumps, etc.) will provide multiple benefits to the bay. Therefore, the potential for stormwater improvements and retrofitting opportunities was incorporated into the site prioritization process.

The final objective was to identify privately owned parcels for potential preservation or restoration activities. Although privately owned properties are generally more difficult to obtain for restoration projects, they often offer the ideal ecological conditions for restoration. The entire list of potential future projects can be found in Appendix A, all of which will be analyzed as future restoration sites after the most promising publicly owned projects are considered.

3.0 SITE RANKING METHODOLOGY

As was stated previously, the SBNEP Five-Year Habitat Restoration Plan is a dynamic planning tool that will guide some of the restoration activities throughout the watershed. In order to effectively prioritize the numerous potential restoration projects suggested by various public and private entities to the SBNEP, site ranking methodology for all parcels was developed. The methodology provided a quantitative assessment that allows the proposed projects to be ranked and then categorized by the fiscal year for which implementation is planned. In addition, a geographical information systems (GIS)- based analysis was performed to identify additional public and private parcels for potential preservation and restoration projects.

The process was initiated by generating a list of potential restoration sites recommended by regional experts with extensive knowledge of the Sarasota Bay watershed. Once this list was provided, a review of the 1999 GIS-based aerial maps was used to develop target areas for restoration. This information was compared with the existing shoreline maps in the Serviss and Sauers (2003) and Estevez and Beaman (1994) reports to evaluate the percentage of various habitat types lost to shoreline development and hardening (seawalls). Using this information in concert with the United States Geological Survey's (USGS) salinity data for the tidal creeks and upper reaches of the bay, each site could be evaluated in relation to the site's location within the bay. This procedure is similar to that utilized in the TBEP and Charlotte Harbor National Estuary Program (CHNEP) prioritization documents (TBEP CCMP and CHNEP CCMP, 1996 and 1995, respectively).

There were 30 publicly owned and 6 privately owned sites that the SBNEP and other regional experts recommended based on existing project knowledge. Parcel size for each potential project was generated through a GIS analysis of the existing County property appraiser parcel boundaries. Project boundaries were digitized based on aerial photointerpretation of existing exotic vegetation and disturbed conditions. Approximate property acreage and an estimate of the area within the property boundaries that could be restored (project boundaries) were calculated from these GIS-based maps and utilized to generate site-specific information for ranking purposes.

Various additional evaluation criteria were used to prioritize potential restoration projects. These criteria included:

- cost per acre;
- proximity to natural habitat;
- potential fisheries habitat;
- salinity classification;
- potential stormwater quality improvement;
- potential restoration magnitude;
- construction feasibility;
- priority bay segments; and
- existing funding/public interest.

Each criterion is described and scored as discussed in the following sections.

3.1 COST PER ACRE

Restoration cost per acre was calculated differently for publicly and privately owned parcels. For privately owned parcels, cost per acre was calculated as the total project area divided by total cost, including land acquisition. However, since use of public lands will not require any expenditure for acquisition, the cost per acre was based solely on the approximate design and construction cost per acre, which depends on the acreages and the potential design constraints. The cost per acre for design and construction values was based on the Surface Water Improvement and Management (SWIM) program's current cost experience of $50,000 per acre (Dr. Brandt Henningsen, personal communication) and adjusted according to site-specific information such as existing overburden and access. The resulting weighted values assigned to the public parcels cost per acre were: > $50,000 = 1, $40,000 = 2, or $\leq$ $35,000 = 3. The private cost per acre was calculated as the total cost (appraised land value and approximate design and construction costs)/project acre. The weighted values assigned to the private cost per acre were: >$500,000 = 1, $100,001 - $500,000 = 2, or $0 - $100,000 = 3.

3.2 PROXIMITY TO NATURAL HABITAT

The proximity to natural land category was designed to give higher values to those parcels close to or within natural habitats versus isolated parcels surrounded by development. An aerial photointerpretation of each parcel was performed to determine its proximity to natural areas and weighted values were assigned accordingly: Not

Connected (isolated from natural land) = 1, Adjacent = 2, or Within (surrounded by natural land) = 3.

3.3 POTENTIAL FISHERIES HABITAT

The potential fisheries habitat value reflected the potential fishery enhancement potentials of a project area, with low salinity areas adjacent to mature mangrove forests or seagrass beds having the highest value, coastlines with minimal existing native vegetation having medium value, and hardened shoreline along the bay having the lowest value (unless there are seagrass beds within close proximity to the proposed restoration project that could offer possible natural recruitment opportunities). The potential fisheries habitat weighted value assigned to each parcel ranged from: Low = 1, Medium = 2, High = 3.

3.4 SALINITY CLASSIFICATION

The salinity classification was the current salinity regime of each proposed project based on an analysis of the project relative to the salinity values reported for each bay segment and the applicable creek systems (Serviss and Sauers, 2003) or site specific knowledge for those sites where no data were available. The salinity classifications of each potential project were weighted as: Polyhaline = 1, Mesohaline (6 – 19 ppt.) = 2, Oligohaline (0 – 5 ppt.) = 3, and Freshwater (0 ppt) = 1.

3.5 POTENTIAL STORMWATER QUALITY IMPROVEMENT

The potential to provide water quality treatment was an estimation of the proposed restoration project's ability to provide water quality improvement to the existing ecosystem. The weighted values for this category were determined through aerial interpretation and site-specific knowledge. The resulting weighted values assigned to each project were: Shoreline areas with no stormwater contributions = 1, Sites with only limited stormwater treatment = 2, or Presence of outfall pipes without treatment = 3.

3.6 POTENTIAL RESTORATION MAGNITUDE

Inherently, larger restoration projects typically have more "bang for the buck" than smaller, isolated projects. This is primarily due to the fact that design and permitting costs of a project area are relative to the complexity - not the size - of a specific project. Therefore, potential restoration magnitude accounted for this discrepancy between large and small projects with weighted values according to the proposed project area (acreage): < 5 acres = 1, 5 - 49 acres = 2, or > 50 acres = 3.

3.7 CONSTRUCTION FEASIBILITY

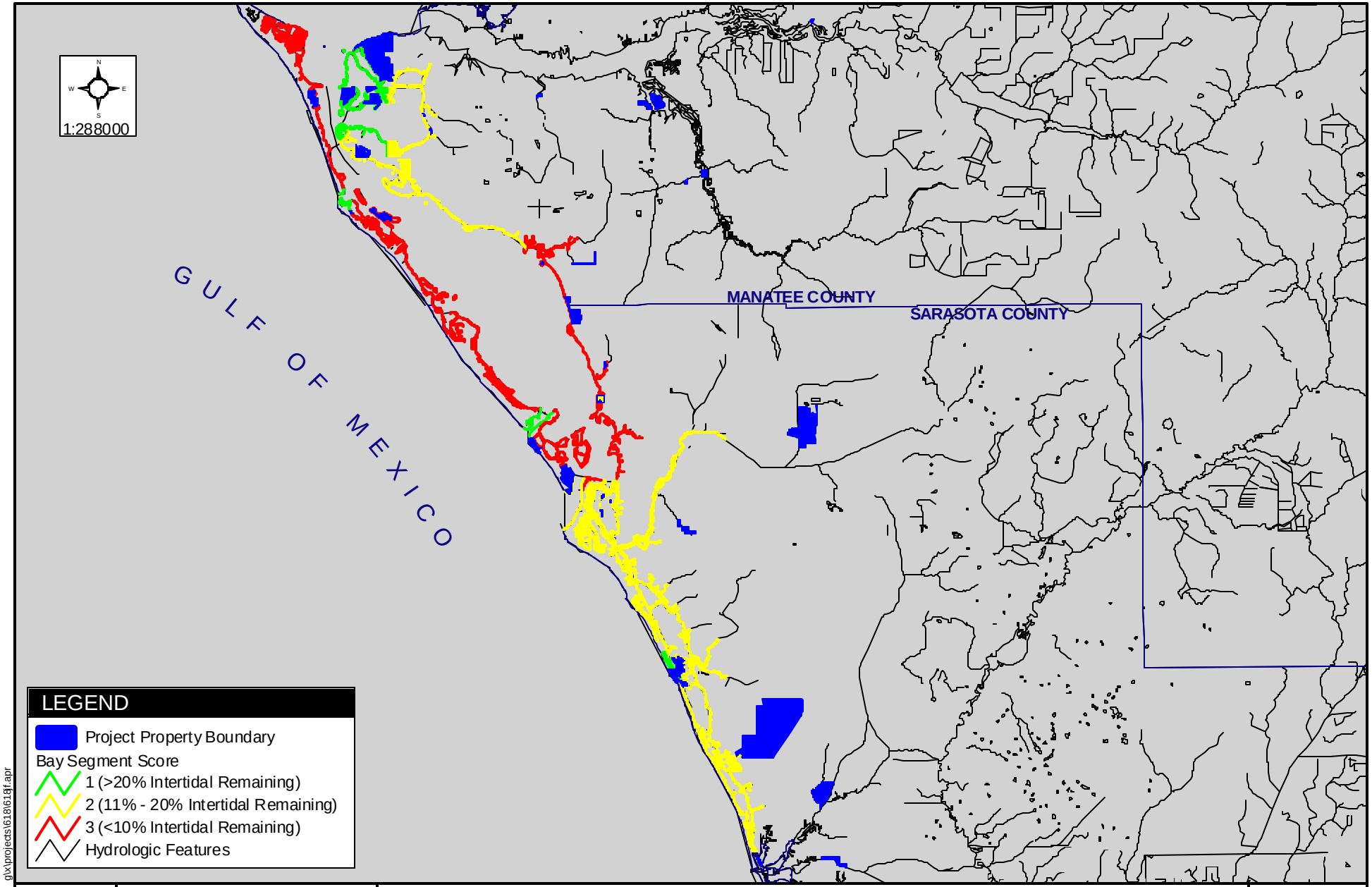
The construction feasibility was a determination of the ease or difficulty of accessing a site based on site knowledge and previous experience with similar projects. The weighted values were assigned as Difficult = 1 or Easy = 2. Islands or sites with access issues were categorized as difficult. Sites with direct access were considered easier to construct and, thus, were scored higher (2). For this scoring process, sites that were already sponsored by the United States Army Corps of Engineers (USACE) under the 1135 Spoil Island Restoration Program were scored as easy, since these sites have already been nominated and selected by the USACE as restorable lands and the construction feasibility was therefore not an issue for ranking purposes.

3.8 PRIORITY BAY SEGMENTS

The scoring of priority bay segments reflected a GIS analysis of each proposed project relative to its proximity to various bay segments to determine its importance in accounting for historical loss by providing critical intertidal habitat. The Estevez and Palmer (1990) report classified Sarasota Bay into sixteen distinct bay segments according to the amount of remaining intertidal habitat. Each potential project site was assigned a weighted value relative to its proximity to the categorized bay segments: Sites intersecting segments 2, 4, 9, and 15 (> 20% intertidal remaining) = 1, Sites intersecting segments 3, 6, 12, 13, 14, and 16 (11% - 20% intertidal remaining) = 2, or Sites intersecting segments 1, 5, 7, 8, 10, 11 (< 10% intertidal remaining) = 3 (Figure 3-1). Sites that straddled more than one bay segment were assigned as follows: Sites not intersecting designated bay segments were given a value of zero (0), Palmer Point and Jim Neville = 1.5 (intersecting segments 1 and 2), Broadway = 2 (intersecting segments 1 and 3). These 16 segments were grouped into three general categories relative to the ranges of values reported.

3.9 EXISTING FUNDING/PUBLIC INTEREST

The final ranking category pertained to the fact that some sites already had existing funding or strong public interest and support for implementation. Although this category may be subjective, it was included to reflect current facts regarding existing (sometimes time-limited) funding opportunities or projects that should be completed sooner than later to capitalize on strong public support. The weighted values assigned were Low = 0 or High = 2.



Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

PROPOSED PROJECTS RELATIVE TO SCORED BAY SEGMENTS

Figure 3-1

An overall ranking of the proposed projects was developed from the total score of the cumulative weighted values for each category, with projects ranked in ascending order relative to the descending order of total score. The same rank was assigned to projects with equivalent scores. The ranked public projects were then categorized into a proposed fiscal year (2004 – 2009) based on rank, present funding status, and size (one large project/fiscal year).

4.0 GIS ANALYSIS

Additional potential publicly and privately owned project locations were identified through photointerpretation of USGS 1999 digital ortho quarter-quads and a GIS analysis of land use and hydrologic features. The parcel selection criteria (as recommended by the SBNEP) for the GIS model were: publicly owned lands 100 feet or less from an existing waterway; oligohaline parcels, freshwater wetlands less than one mile from Sarasota Bay, and parcels greater than 5 acres in size. All were considered potential restoration sites.

The photointerpretation process was used to create a point map based on the visual inspection of the entire shoreline and then all creeks, streams, and ditches along the Sarasota Bay and Braden River shorelines.

The GIS analysis was initiated by using the Southwest Florida Water Management District (SWFWMD) 1999 Florida Land Use Cover and Forms Classification System (FLUCFCS) GIS layer to identify the following potential restoration land use types:

- 1600 – extractive
- 1900 – open land
- 2100 – crop and pasture land
- 2600 – other open lands (rural)
- 5300 – reservoirs
- 7400 – disturbed land

These “restorable” land use data were intersected with the current property appraiser parcel maps to determine total project property boundaries. These parcels were then selected for greater than 5 acres in size, clipped to a one-mile buffer of Sarasota Bay, and then selected for location within 100 feet of the SWFWMD hydrology features layer (bay shoreline, streams, ditches).

The resultant map of polygons was reviewed and assessed by photointerpretation to visually inspect each parcel and eliminate parcels that were not feasible (open land associated with a school or park land, etc.) for restorative activities. This process generated a map of potential restoration sites, some of which should be investigated (especially publicly owned sites) for potential inclusion within the ranking matrix. Further investigation of these parcels would need to be completed before they can be included.

5.0 RESULTANT SITE RANKING

The final five-year plan incorporated the initial historical and current habitat assessment evaluation, development of restoration targets by bay segment, identification of future potential restoration sites, prioritization matrices based on several evaluation criteria, and a series of maps. The values, scores, and rank of the proposed public and private projects can be viewed in the matrices (Table 5-1 and Table 5-2). The results of the matrices were organized in Appendix B by publicly owned parcels proposed for each fiscal year (one large project per each fiscal year), approved USACE public projects, and privately owned parcels. The project summary sheet for each project includes:

- approximate size of the project;
- parcel information;
- site description;
- restoration potential (including potential problems that may be encountered during restoration of the site);
- preliminary restoration opportunities; and
- primary contact information.

The alternative list of publicly and privately owned parcels developed primarily from GIS analysis and photo interpretation (Appendix A) will be extremely useful for identifying future preservation targets and parcels suited for restoration. However, it was too extensive to be a realistic goal for a five-year planning document. There were nine parcels (five publicly owned) identified within Sarasota County and 179 parcels (four publicly owned) identified within Manatee County. Of the 112 photointerpreted sites, 27 overlap with the GIS model. This list will be retained and reconsidered as appropriate because some of the sites may be feasible restoration projects in the future. Potential sites will require additional extensive field reconnaissance to determine feasibility and could be included in the next update of the five-year plan and ranked using the same methodology.

Conceptual designs can now be pursued for the highest-ranked sites as determined by the SBNEP Technical Advisory Committee's habitat restoration subcommittee. Once priority sites have been selected, the final design and permitting phase can proceed.

Figure 5-1 Sarasota Bay NEP Five-Year Habitat Restoration Plan
Public Owned Site Ranking

Site Name	Cost per Acre	Proximity to Natural Habitat	Potential Fisheries Habitat	Salinity Classification	Potential to Provide Water Quality Improvement	Potentail Restoration Magnitude	Construction Feasibility	Bay Segment (Intertidal Loss)	Existing Funding / Public Interest	Total Score	Rank	Fiscal Year
Robinson Preserve[2]	2	3	3	1	3	3	2	1	2	20	**1**	**2004-2005**
Fox Creek[2]	2	2	3	3	3	3	2	0	2	20	**1**	**2006-2007**
South Creek	2	3	3	2	3	3	2	2	0	20	**1**	**2007-2008**
FISH Property	3	3	2	1	2	2	2	1	2	18	**2**	**2005-2006**
Sixth Street Canal	3	1	2	1	3	1	2	3	2	18	**2**	**2004-2005**
Lido Beach	2	3	2	1	1	2	2	2	2	17	**3**	**2004-2005**
Pine Island[2]	1	3	3	3	3	3	1	0	0	17	**3**	**2004-2005**
River Run City Golf Course	3	2	3	3	2	2	2	0	0	17	**3**	**2005-2006**
Jim Neville Preserve[1]	1	3	2	1	2	2	2	1.5	2	16.5	**4**	**USACE**
Ballard Elementary on Wares Creek	3	1	3	3	1	1	2	0	2	16	**5**	**2004-2005**
Ringling School (Whitaker Bayou)	3	1	2	3	1	1	2	3	0	16	**5**	**2005-2006**
Fort Hamer	3	3	3	3	1	1	2	0	0	16	**5**	**2006-2007**
Celery Fields	2	1	1	1	3	3	2	0	2	15	**6**	**2005-2006**
Gap Creek Public	2	3	3	3	1	1	2	0	0	15	**6**	**2006-2007**
Sister Keys	1	3	2	1	2	2	1	3	0	15	**6**	**2006-2007**
Red Bug Slough	1	2	2	3	2	2	1	2	0	15	**6**	**2006-2007**
Skier's Spoil Island[1]	1	3	2	1	2	2	2	2	0	15	**6**	**USACE**
Big Edwards Spoil Island[1]	1	3	2	1	2	2	2	2	0	15	**6**	**USACE**
North Lido Shores	2	3	1	1	1	2	2	3	0	15	**6**	**2007-2008**
Curry Creek[2]	1	2	3	3	2	2	2	0	0	15	**6**	**2008-2009**
Palmer Point[1]	1	3	2	1	1	1	2	1.5	2	14.5	**7**	**USACE**
Grassy Point - City of Holmes Beach	3	2	1	1	1	1	2	3	0	14	**8**	**2007-2008**
New College Shoreline	2	1	1	1	2	2	2	3	0	14	**8**	**2007-2008**
Robert's Bay/Bird Colony Spoil Island[1]	1	3	1	1	1	1	2	2	2	14	**8**	**USACE**
Rattle Snake Key	1	3	1	1	2	2	1	2	0	13	**9**	**2007-2008**
Perico Bay South	1	3	2	1	2	2	1	1	0	13	**9**	**2008-2009**
Bowlees Creek Spoil Island	1	3	2	1	1	1	1	3	0	13	**9**	**2008-2009**
Airport/Crosley Connection II	1	2	2	1	1	1	2	3	0	13	**9**	**2008-2009**
Bowlees Creek Water Quality Treatment	1	1	1	1	2	2	1	0	2	11	**10**	**2005-2006**
Broadway Public	1	1	1	2	1	1	2	1	0	10	**11**	**2008-2009**

1 = USACE Sponsored Sites
2 = Projects located on adjacent Estuary Program boundaries

(Cost per Acre = Total Cost/Project Acreage: $35,000 = 3, $40,000 = 2, >=$50,000 = 1)
(Proximity to Natural Land: Within = 3, Adjacent = 2, Not Connected = 1)
(Potential Fisheries Habitat: High = 3, Medium = 2, Low = 1)
(Salinity Classification: Oligohaline = 3, Mesohaline = 2, Polyhaline, Fresh = 1)
(Potential to Provide Water Quality Improvement: Pipe or no treatment = 3, Some treatment = 2, Shoreline = 1)
(Potential Restoration Magnitude (Project Area): > 50 acres = 3, 5 - 49 acres = 2, < 5 acres = 1)
(Construction Feasibility: Easy or approved project = 2, Difficult = 1)
(Bay Segment (Intertidal Loss): Segments 1,5,7,8,10,11 = 3, Segments 3,6,12,13,14,16 = 2, Segments 2,4,9,15 = 1) Note: Broadway = 2 (1,3,), Palmer Pt. & Jim Neville = 1.5 (1,2), Sites not intersecting bay segments = 0
(Existing Funding/Public Interest: High = 2, Low = 0)

Figure 5-2 Sarasota Bay NEP Five-Year Habitat Restoration Plan
Private Owned Site Ranking

Site Name	Cost per Acre	Proximity to Natural Land	Potential Fisheries Habitat	Salinity Classification	Potential to Provide Water Quality Improvement	Potentail Restoration Magnitude	Construction Feasibility	Bay Segment (Intertidal Loss)	Existing Funding / Public Interest	Total Score	Rank
Indian Mounds - Potential Restoration	**3**	3	4	1	2	2	2	2	0	19	**1**
Gap Creek - Potential Restoration	**3**	2	6	1	1	2	1	1	0	17	**2**
Perico Bay North - Potential Restoration	**1**	2	6	3	2	1	2	0	0	17	**2**
Palma Sola Boulevard - Potential Restoration	**2**	2	4	1	2	2	2	1	0	16	**3**
City of Holmes Beach - Potential Restoration	**2**	2	2	1	1	1	2	3	0	14	**4**
Broadway - Potential Restoration	**2**	1	2	1	2	1	2	2	0	13	**5**

(Approximate construction cost based on $cost/acre * project area)
(Cost per Acre = Total Cost/Project Acreage: $0-$100,000 = 3, $100,000-$500,000 = 2, >$500,000 = 1)
(Proximity to Natural Land: Within = 3, Adjacent = 2, Not Connected = 1)
(Potential Fisheries Habitat: High = 3, Medium = 2, Low = 1)
(Salinity Classification: Oligohaline = 3, Mesohaline = 2, Polyhaline, Fresh = 1)
(Potential to Provide Water Quality Improvement: Pipe or no treatment = 3, Some treatment = 2, Shoreline = 1)
(Potential Restoration Magnitude (Project Area): > 50 acres = 3, 5 - 49 acres = 2, < 5 acres = 1)
(Construction Feasibility: Easy = 2, Difficult = 1)
(Bay Segment (Intertidal Loss): Segments 1,5,7,8,10,11 = 3, Segments 3,6,12,13,14,16 = 2, Segments 2,4,9,15 = 1) Note: Broadway = 2 (1,3,), Palmer Pt. & Jim Neville = 1.5 (1,2), Sites not intersecting bay segments = 0
(Existing Funding/Public Interest: High = 2, Low = 0)

Based on local experience with restoration projects, project implementation takes two or more years for large-scale projects. Typically, project design and permitting is the most time consuming, requiring one to two years, depending upon the project size, complexity, and cost. In most cases, the SBNEP will be cooperating with public entities such as local governments, and state and federal agencies. However, private cooperators are feasible and will also be considered. In addition, coordination with the TBEP or CHNEP will be necessary for the Curry Creek, Fox Creek, and Pine Island restoration projects which fall within or border their boundaries.

The dates listed below (Table 5-3) represent the initiation of the project during a given fiscal year (budgeting of funds, execution of cooperative agreements, beginning design and permitting process), which is followed by the actual construction within 1 to 3 years of the project initiation.

Table 5-3 Public Owned Sites Classified by Fiscal Year

Fiscal Year	Projects
2004-2005	Robinson Preserve, Sixth Street Canal, Lido Beach, Pine Island, Ballard Elementary
2005-2006	FISH Property, River Run City Golf Course, Ringling School (Whitaker Bayou), Celery Fields, Bowlees Creek Water Treatment
2006-2007	Fox Creek, Fort Hamer, Gap Creek (Public), Red Bug Slough, Sister Keys
2007-2008	South Creek, North Lido Shores, Grassy Point - City of Holmes Beach, New College Shoreline, Rattle Snake Key
2008-2009	Curry Creek, Airport/Crosley Connection II, Bowlees Creek Spoil Island, Perico Bay South, Broadway Public

6.0 REFERENCES

Browder, J.A. and D. Moore. 1981. A New Approach to Determining the Quantitative Relationship Between Fishery Production and the Flow of Freshwater to Estuaries. *In:* R.D. Cross and D.L. Williams (eds.), Proceedings of the National Symposium on Freshwater Inflow to Estuaries, Vol. I. U.S. Fish and Wildlife Service, Office of Biological Services. FWS/OBS-81/04. pp. 403-430.

Charlotte Harbour National Estuary Program. 1999. Committing to Our Future: The Comprehensive Conservation and Management Plan for Charlotte Harbour (CCMP).

Estevez, Ernest D. and C.L.P. Palmer, 1990. A Segmentation System for the Sarasota Bay National Estuary Program, Sarasota, Florida. Mote Marine Laboratory Technical Report No. 161. 34 pp and appendices.

Estevez, Ernest D. and Reed Beaman, 1994. Status, Trends, and Condition of Wetlands in a Subtropical, Lagoonal Estuary and its Watershed. Sarasota Bay National Estuary Program, Sarasota, Florida. pp. 6.5–6.20.

Sarasota Bay National Estuary Program. 1995. The Voyage to Paradise Reclaimed: The Comprehensive Conservation and Management Plan for Sarasota Bay (CCMP).

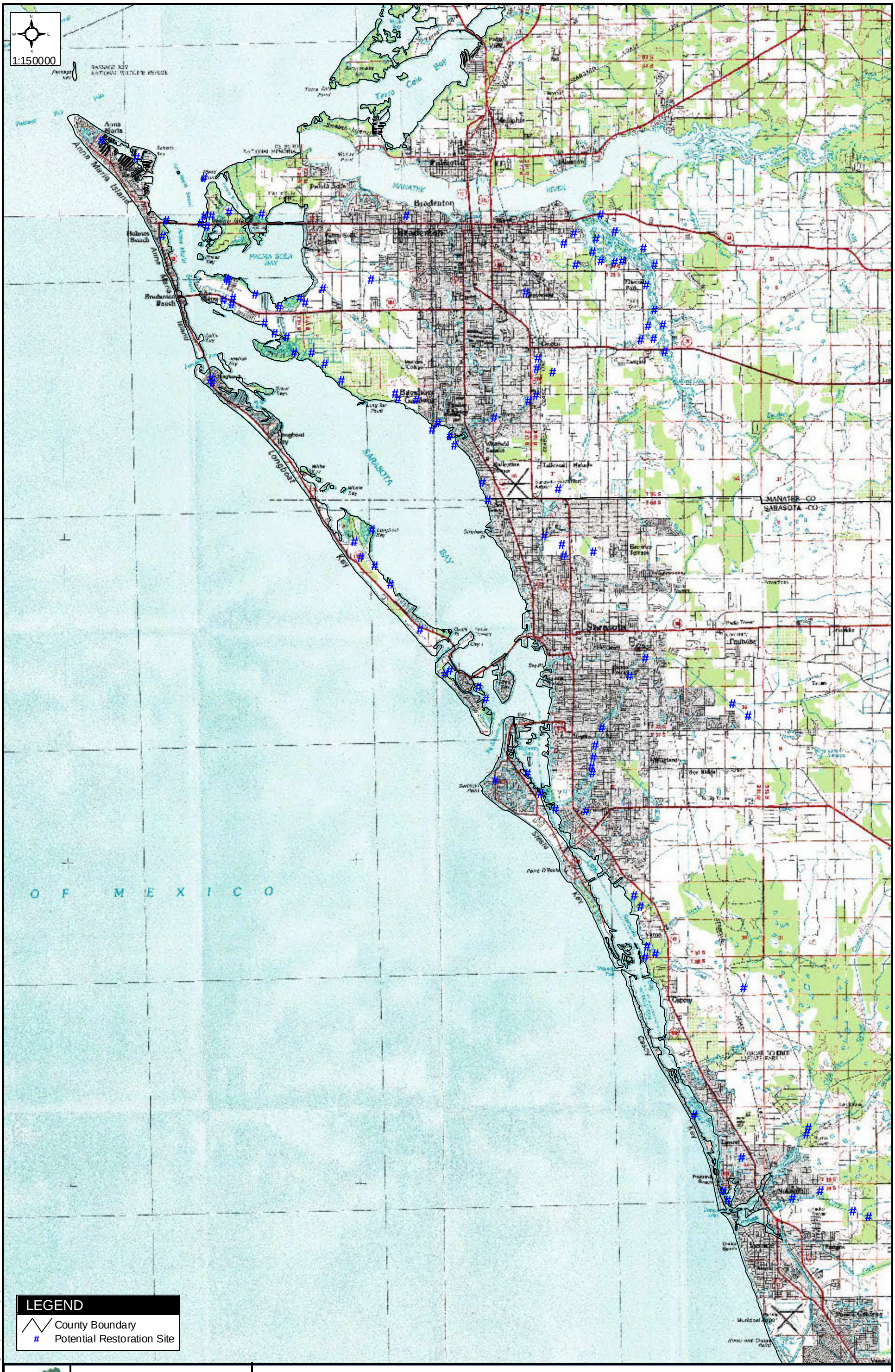
Serviss, Gary M. and Steven Sauers, 2003. Sarasota Bay Juvenile Fisheries Habitat Assessment. Sarasota Bay National Estuary Program, Sarasota, Florida. 148 pp.

Tampa Bay National Estuary Program. 1996. Charting the Course: The Comprehensive Conservation and Management Plan for Tampa Bay (CCMP).

Tampa Bay National Estuary Program. 1996. Setting Priorities for Tampa Bay Habitat Protection and Restoration: Restoring the Balance. TBNEP Technical Publication No. 09-95.

APPENDIX A

LIST OF POTENTIAL RESTORATION SITES (TWO MAPS)



g:\x\projects\618\618f1.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

FUTURE POTENTIAL RESTORATION SITES (PHOTOINTERPRETATION)

1:150000

LEGEND

- County Boundary
- Public Parcels
- Private Parcels

g:\x\projects\618\618fpf.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

FUTURE POTENTIAL RESTORATION SITES (GIS ANALYSIS)

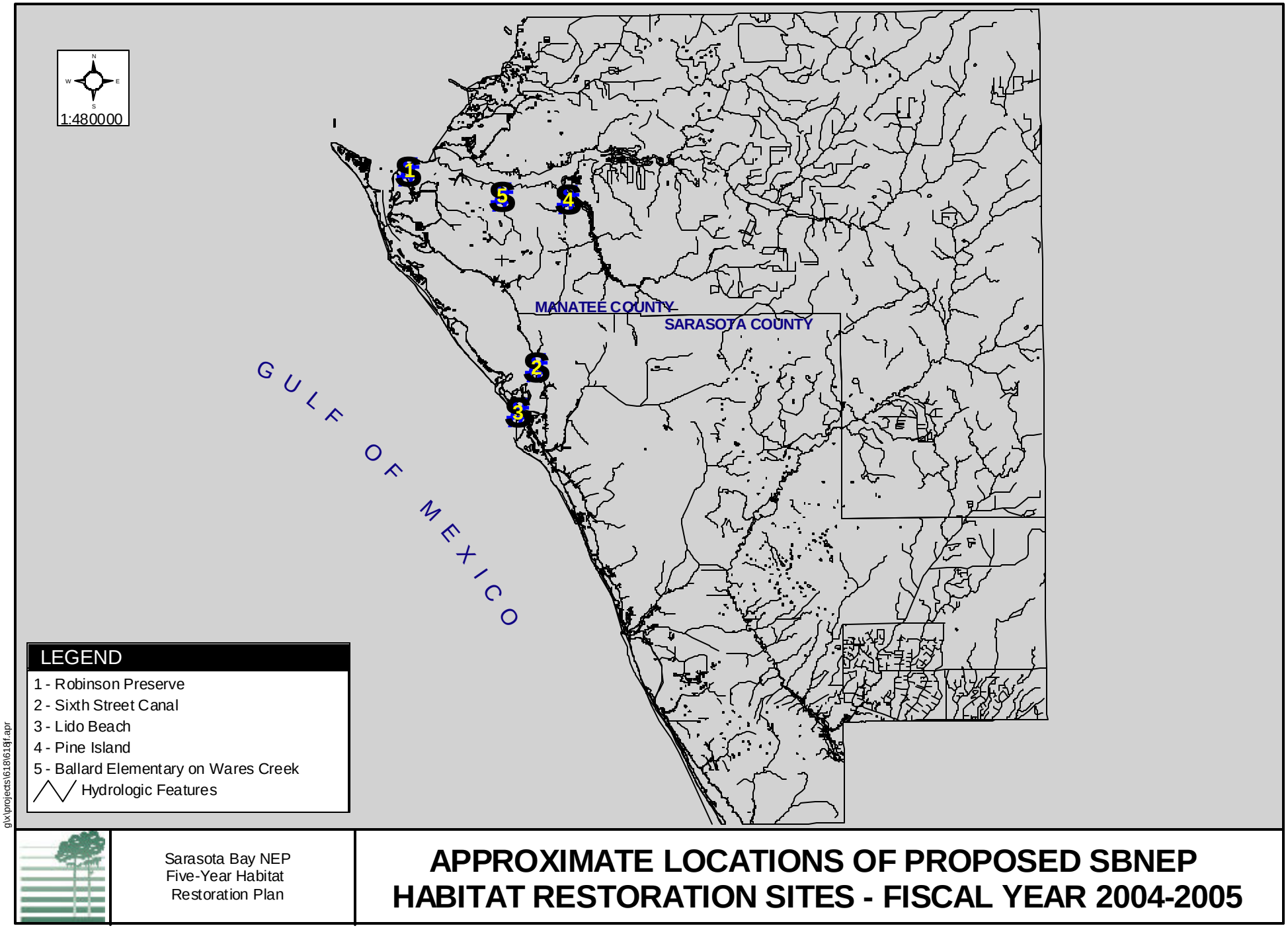
APPENDIX B

FIVE-YEAR PLAN MAP APPENDIX

SARASOTA BAY NATIONAL ESTUARY PROGRAM
FIVE-YEAR HABITAT RESTORATION PLAN
FY 2004-2005

PROJECTS PROPOSED FOR FY 2004-2005

Robinson Preserve
Sixth Street Canal
Lido Beach
Pine Island
Ballard Elementary on Wares Creek


1:480000
MANATEE COUNTY
SARASOTA COUNTY
GULF OF MEXICO
1
2
3
4
5
LEGEND
1 - Robinson Preserve
2 - Sixth Street Canal
3 - Lido Beach
4 - Pine Island
5 - Ballard Elementary on Wares Creek
Hydrologic Features
gis\projects\618\618f.apr
Sarasota Bay NEP
Five-Year Habitat
Restoration Plan
APPROXIMATE LOCATIONS OF PROPOSED SBNEP
HABITAT RESTORATION SITES - FISCAL YEAR 2004-2005

Robinson Preserve

Fiscal Year: 2004	**Rank: 1**
Parcel Size (appx. ac): 704.4	**County/Municipality: Manatee**
Project Size (appx. ac): 491.4	**Landowner: Manatee County**

Location: Manatee County, FL
Cooperator Contact/Phone #: Charlie Hunsicker, Manatee County/941.745.3727

Site Description

Natural:

	Description	% Coverage	Approximate Acreage
Upland -	Hardwood Forest	4	28.2
Wetland -	Estuary, Mangrove Swamp,	41.9	294.3

Disturbed:

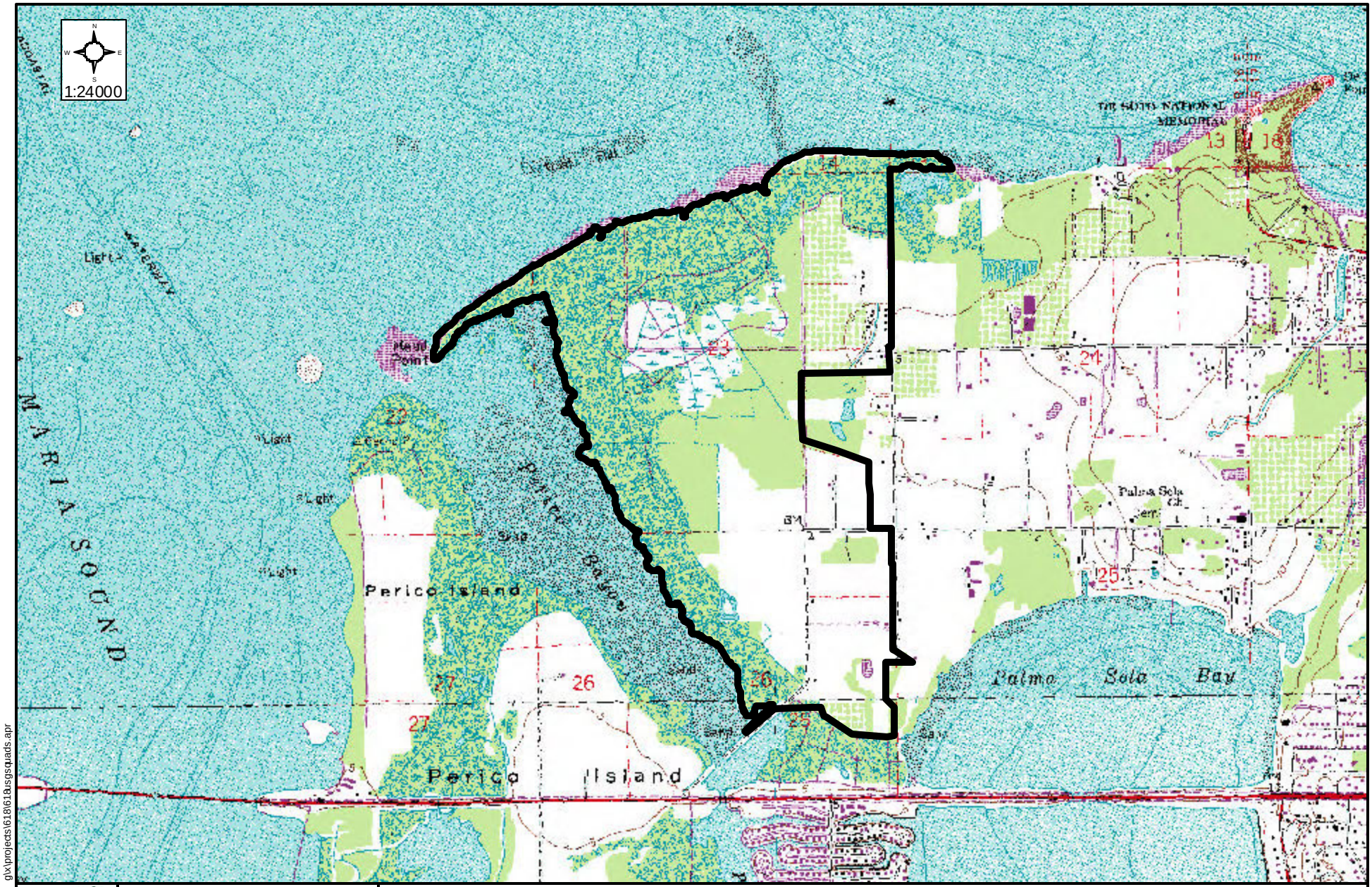
	Description	% Coverage	Approximate Acreage
Upland -	Open Land, Cropland	53.7	378.9
Wetland -	Reservoir	0.4	2.7

Restoration Potential

- **Proximity to Natural Habitat: 3**
- **Potential Fisheries Habitat: 3**
- **Construction Feasibility: 2**
- **Potential Difficulties:**
- **Estimated Cost: $5,200,000**

Summary

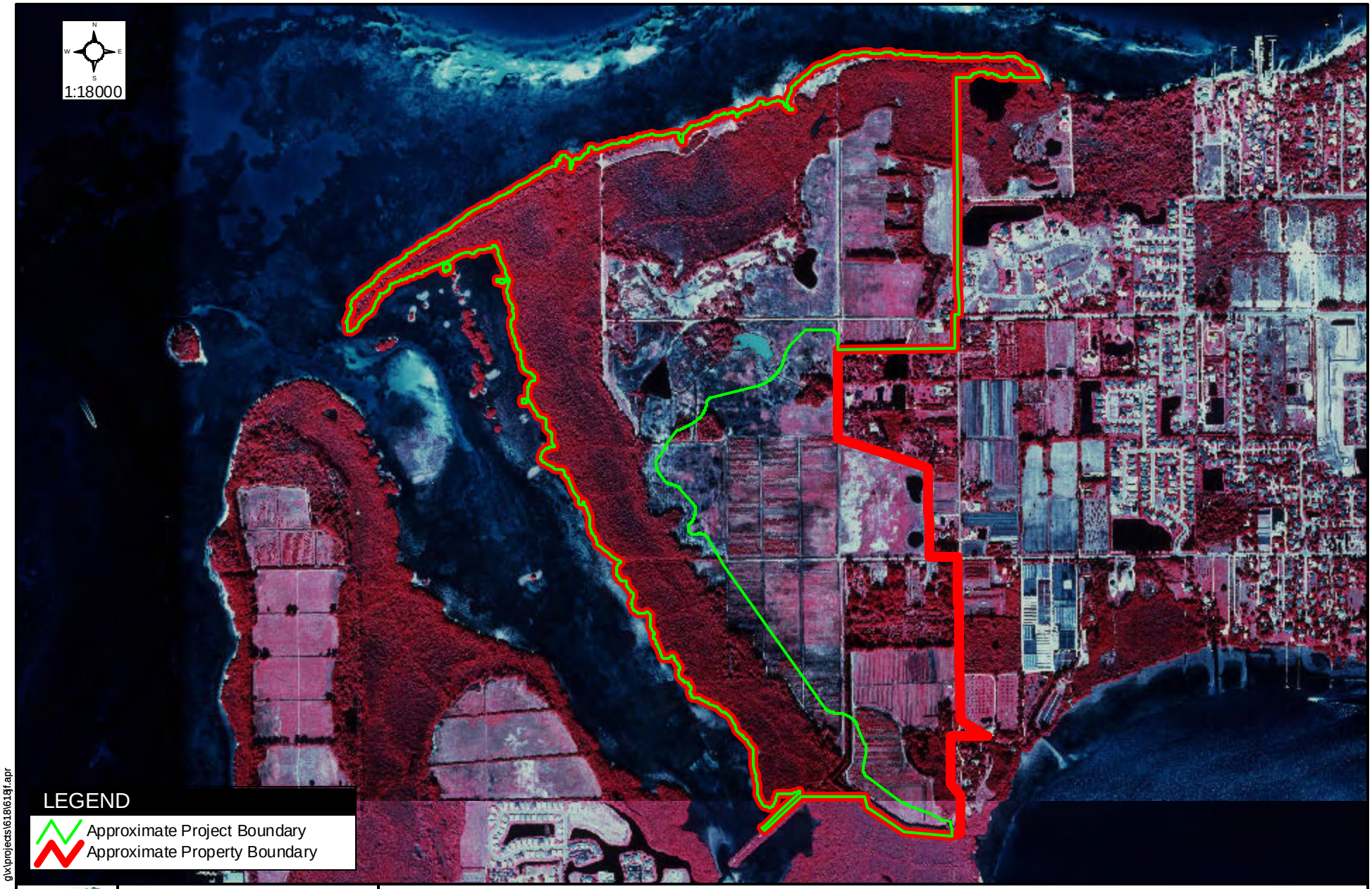
This large peninsular parcel juts between the Manatee River and Perico Bayou and has excellent restoration opportunities. Conceptual designs include the creation of tidal creeks, lagoons, seagrass beds, marsh and mangrove communities. Stormwater retrofit potentials are also available for this parcel that would remove nutrients and drive a salinity gradient for the estuarine areas. In addition, upland habitat restoration would be included in the overall restoration design for this parcel.



g:\projects\618\618usgsquads.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

ROBINSON PRESERVE PROJECT LOCATION



g:\x\projects\618\618f1.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

ROBINSON PRESERVE PROJECT SITE

Sixth Street Canal

Fiscal Year: 2004-2005	**Rank: 2**
Parcel Size (appx. ac): 32.53	**County/Municipality: Sarasota**
Project Size (appx. ac): 1.67	**Landowner: City of Sarasota**

Location: Sarasota County, FL
Cooperator Contact/Phone #: Alexandrea Davis-Shaw, City of Sarasota/941.954.4180

Site Description

Natural:

	Description	% Coverage	Approximate Acreage
Upland -	N/A	0	0
Wetland -	Estuary	2.3	0.8

Disturbed:

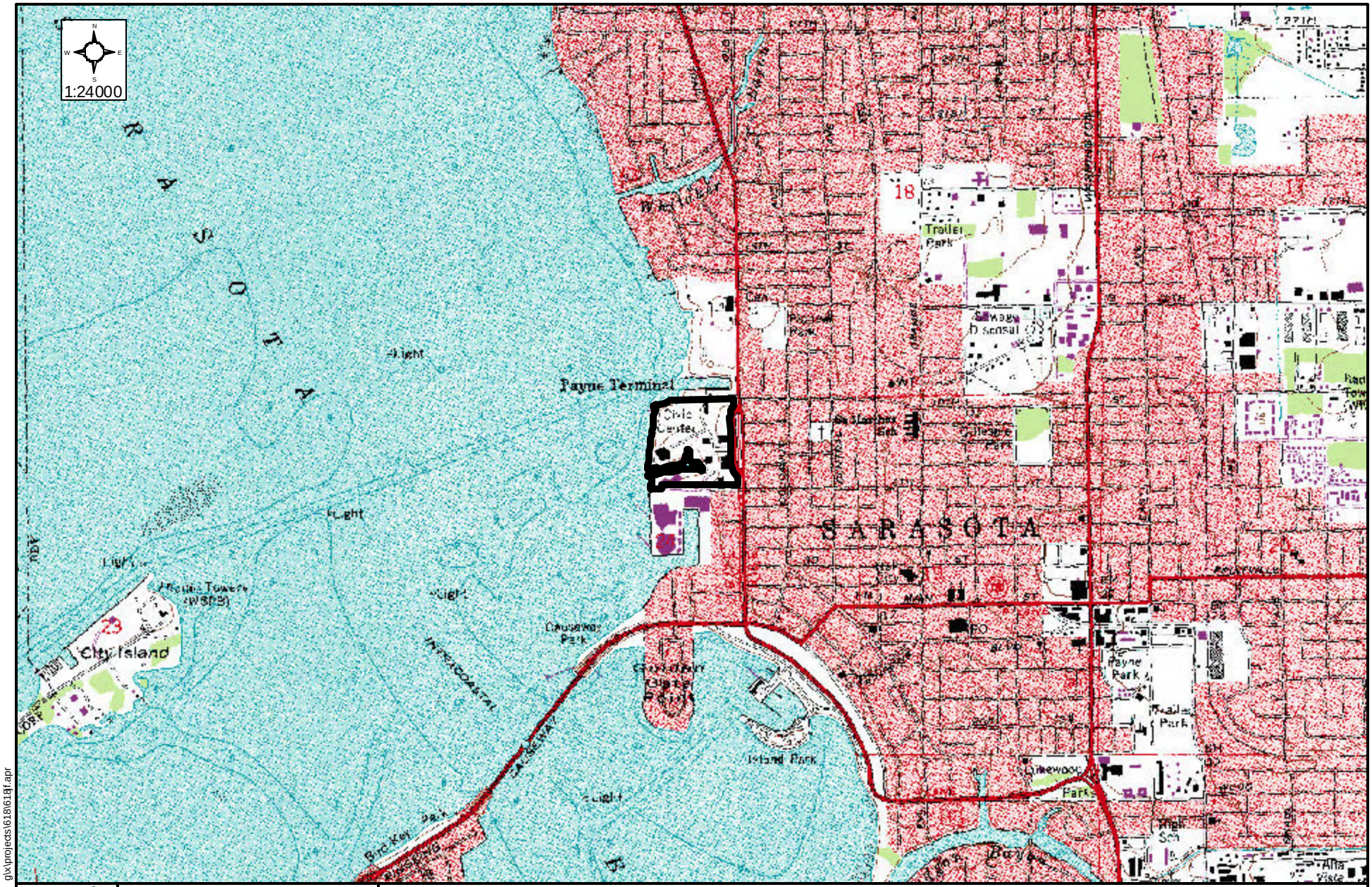
	Description	% Coverage	Approximate Acreage
Upland -	Commercial and services, Residential high density, Transportation	97.7	31.8
Wetland -	N/A	0	0

Restoration Potential

- **Proximity to Natural Habitat: 1**
- **Potential Fisheries Habitat: 2**
- **Construction Feasibility: 2**
- **Potential Difficulties:**
- **Estimated Cost: $58,450**

Summary

This project is an expansion of the restoration efforts at the GWIZ building and includes the removal of exotic vegetation and the planting of native upland and wetland vegetation. Stormwater retrofit opportunities will be examined during the project design.



g:\projects\618\618fl.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

SIXTH STREET CANAL PROJECT LOCATION

g:\x\projects\618\619f1.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

SIXTH STREET CANAL PROJECT SITE

Lido Beach

Fiscal Year: 2004-2005	**Rank: 3**
Parcel Size (appx. ac): 160.7	**County/Municipality: Sarasota**
Project Size (appx. ac): 22.1	**Landowner: Sarasota County**

Location: Sarasota County, FL
Cooperator Contact/Phone #: Laird Wreford, Sarasota County/941.861.6231

Site Description

Natural:

	Description	% Coverage	Approximate Acreage
Upland -	Hardwood Forest	10.0	23.3
Wetland -	Mangrove Swamp	70.0	111.5

Disturbed:

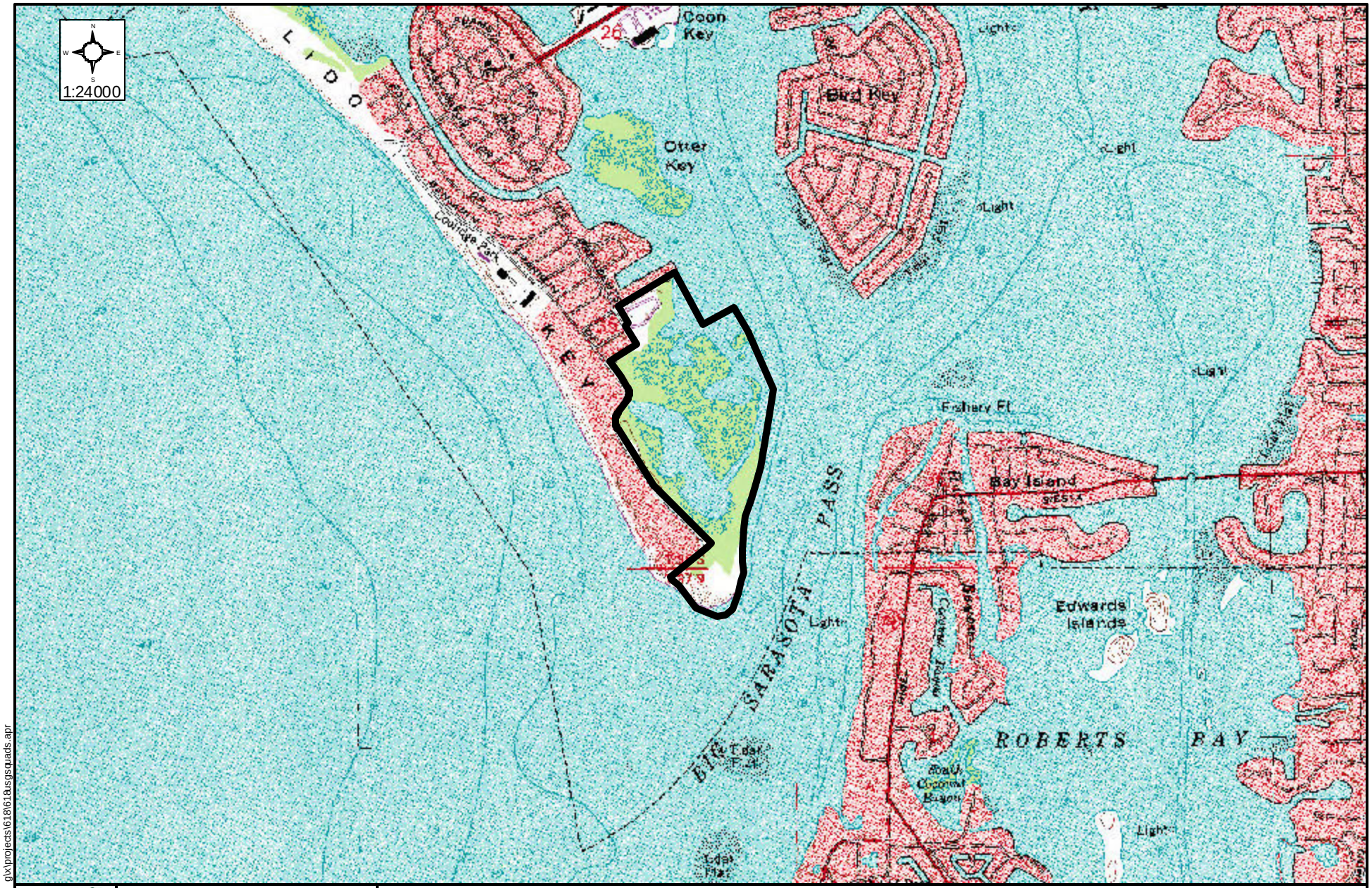
	Description	% Coverage	Approximate Acreage
Upland -	Open Land, Exotics	20.0	25.9
Wetland -			

Restoration Potential

- **Proximity to Natural Habitat: 3**
- **Potential Fisheries Habitat: 2**
- **Construction Feasibility: 2**
- **Potential Difficulties:**
- **Estimated Cost: $885,160**

Summary

This large parcel has great restoration potential, primarily in the removal of exotic vegetation and restoration of native communities. Three distinct areas are in need of exotic control and these areas could be regraded to provide estuarine habitats and coastal upland strand communities.



gis\projects\618\618usgsquads.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

LIDO BEACH PROJECT LOCATION

g:\x\projects\618\619f1.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

LIDO BEACH PROJECT SITE

Pine Island

Fiscal Year: 2004-2005	**Rank: 3**
Parcel Size (appx. ac): 86.8	**County/Municipality: Manatee**
Project Size (appx. ac): 58.9	**Landowner: City of Bradenton**

Location: Bradenton, FL
Cooperator Contact/Phone #: Danny Smith, Manatee County/941.776.2295

Site Description

Natural:

	Description	% Coverage	Approximate Acreage
Upland -	Pine Flatwoods	30	29.4
Wetland -	Estuary, Mangrove Swamp, Saltwater Marsh	40	28.0

Disturbed:

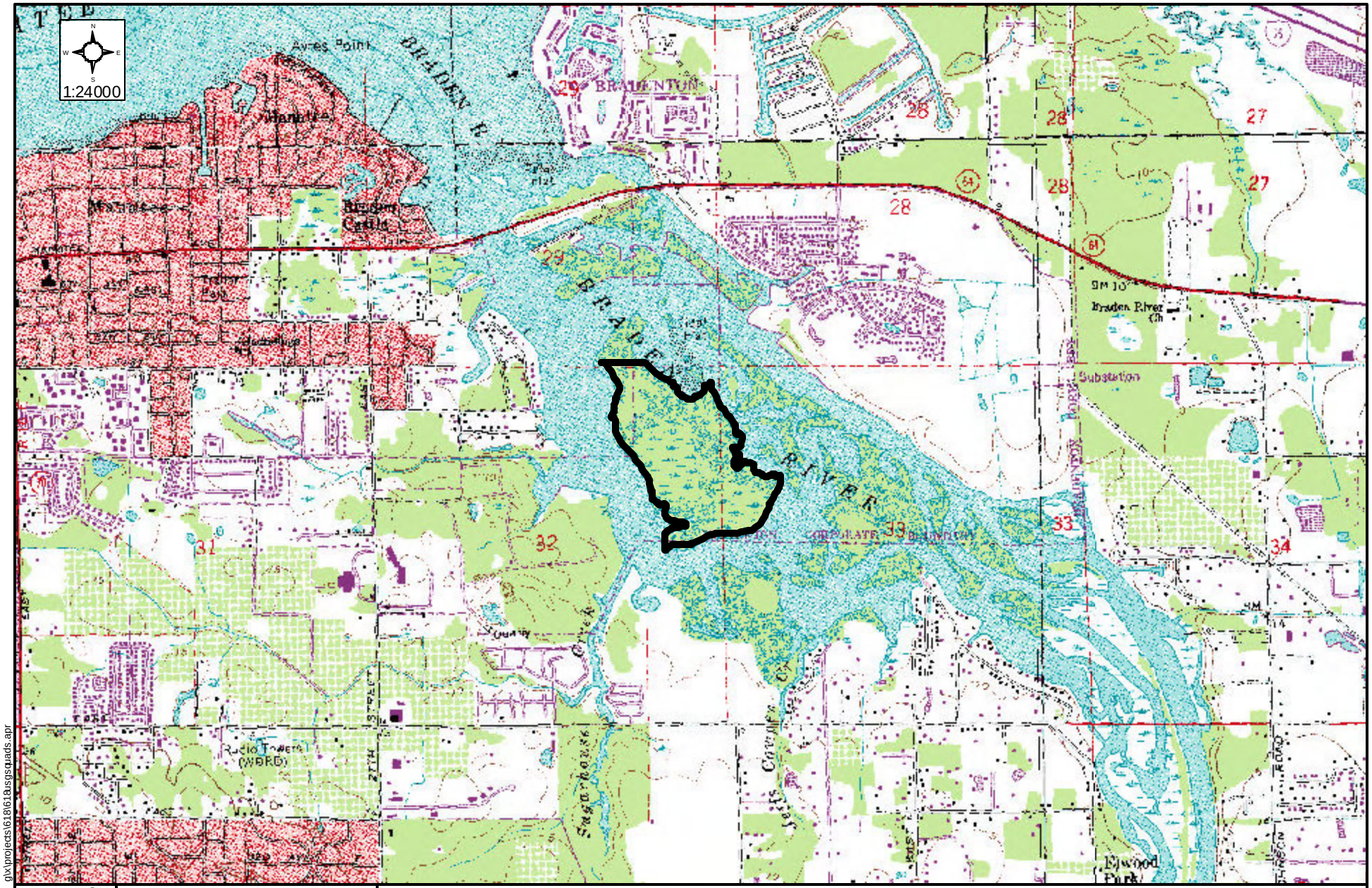
	Description	% Coverage	Approximate Acreage
Upland -	Exotic Vegetation	30	20
Wetland -	N/A	0	0

Restoration Potential

- **Proximity to Natural Habitat: 3**
- **Potential Fisheries Habitat: 3**
- **Construction Feasibility: 1**
- **Potential Difficulties: Construction access**
- **Estimated Cost: $2,946,500**

Summary

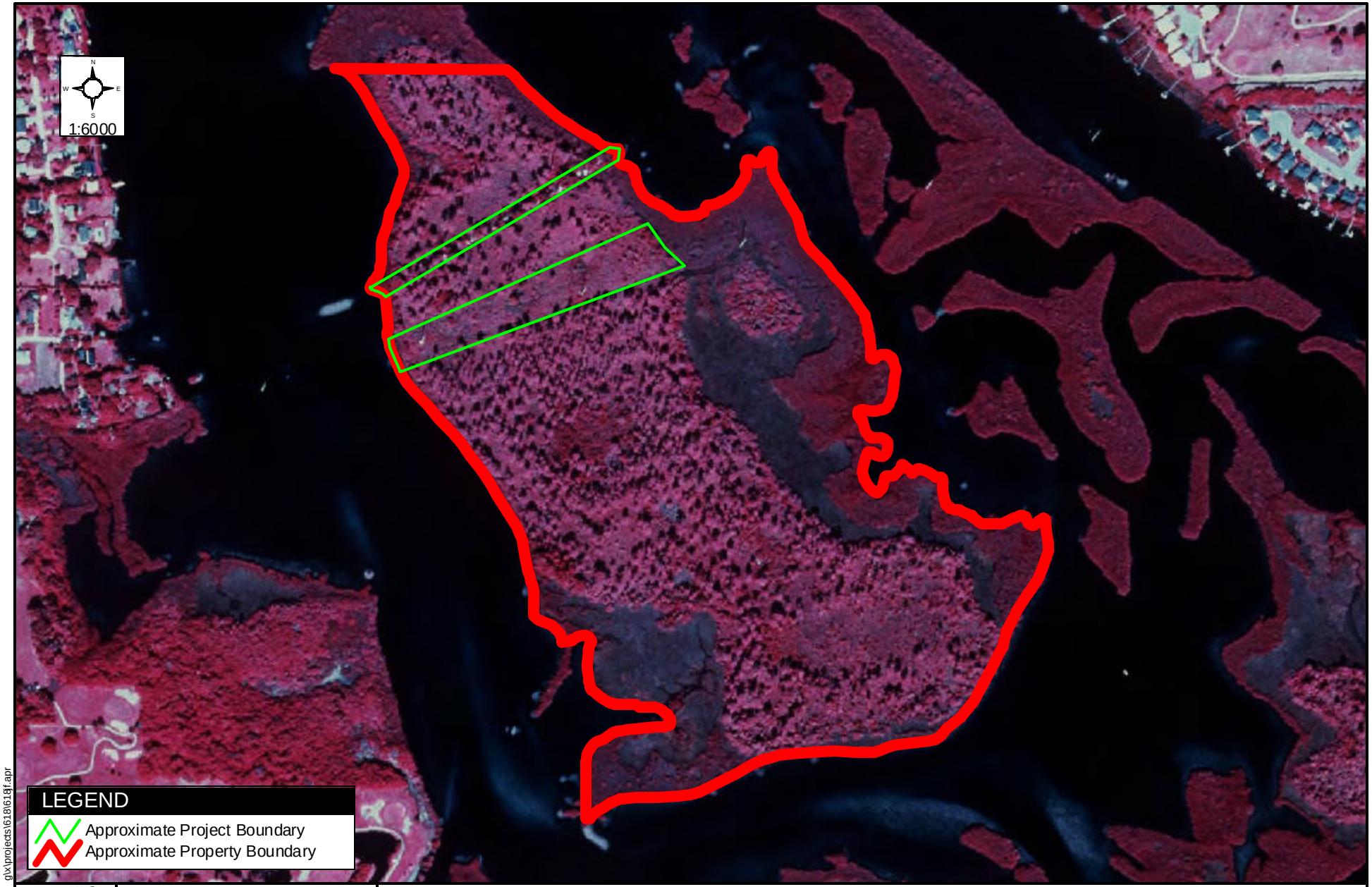
This island, located near the mouth of the Braden River, currently has a productive fringing wetland community. The interior upland area has restoration opportunities inclusive of coastal upland habitats and productive estuarine marsh communities. Restorative activities include enhancement of the existing areas, removal of exotic vegetation along the power line easement, and selective restoration of the existing railroad bed.



gis\projects\618\618usgsquads.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

PINE ISLAND PROJECT LOCATION



g:\x\projects\618\618fig1.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

PINE ISLAND PROJECT SITE

Ballard Elementary on Wares Creek

Fiscal Year: 2004-2005	**Rank: 5**
Parcel Size (appx. ac): 9.1	**County/Municipality: Manatee**
Project Size (appx. ac): 1.6	**Landowner: School Board of Manatee County**

Location: Bradenton, FL
Cooperator Contact/Phone #: Seth Khon, City of Bradenton/941.708.6300

Site Description

Natural:

	Description	% Coverage	Approximate Acreage
Upland -	N/A	0	0
Wetland -	Estuary (Stream)	0.8	0.1

Disturbed:

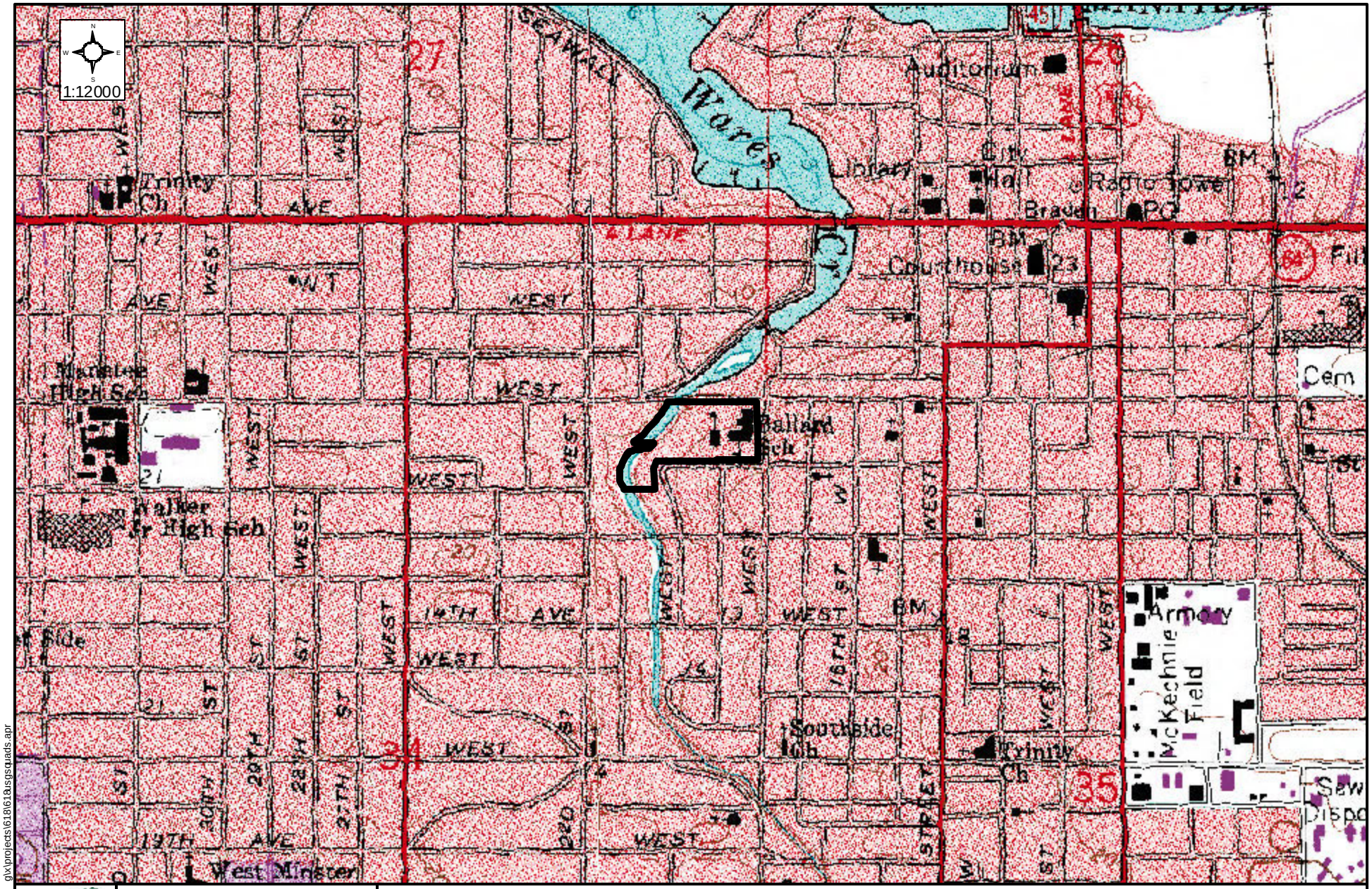
	Description	% Coverage	Approximate Acreage
Upland -	Institutional	99.2	9.0
Wetland -	N/A	0	0

Restoration Potential

- **Proximity to Natural Habitat: 1**
- **Potential Fisheries Habitat: 3**
- **Construction Feasibility: 2**
- **Potential Difficulties: Limited space for effective stormwater retrofit opportunities**
- **Estimated Cost: $56,000**

Summary

This potential tidal creek restoration project is located behind Ballard Elementary School in Bradenton. Restorative activities include removal of Brazilian pepper, establishment of intertidal marshes, and implementation of stormwater retro-fit opportunities. This project also has enormous educational opportunities working with the students to participate with the planning and implementation of this project.



gis\projects\618\618usgsquads.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

BALLARD ELEMENTARY PROJECT LOCATION

g:\x\projects\618\618f1.apr

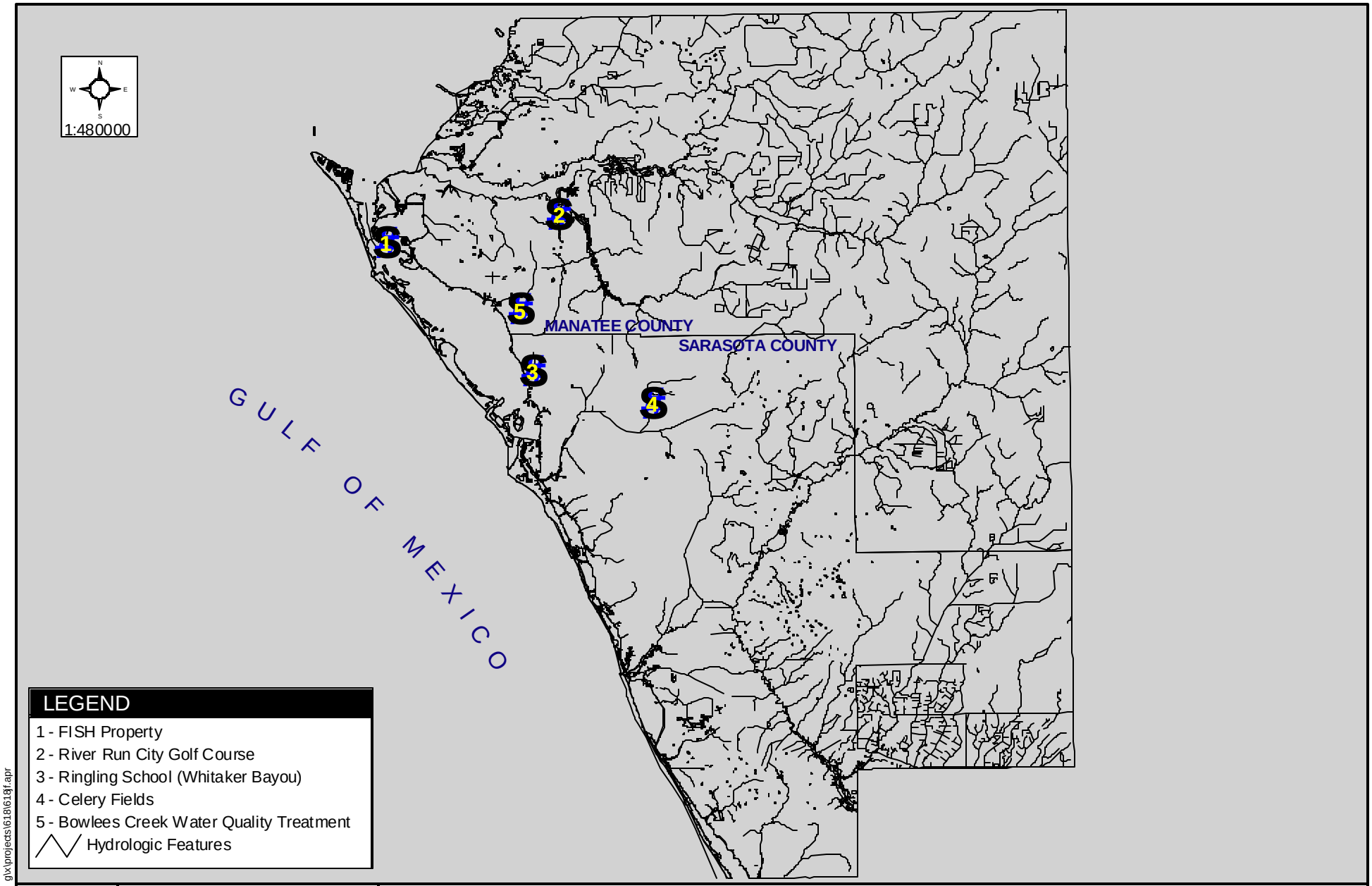
Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

BALLARD ELEMENTARY PROJECT SITE

SARASOTA BAY NATIONAL ESTUARY PROGRAM
FIVE-YEAR HABITAT RESTORATION PLAN
FY 2005-2006

PROJECTS PROPOSED FOR FY 2005-2006

FISH Property
River Run City Golf Course
Ringling School (Whitaker Bayou)
Celery Fields
Bowlees Creek Water Quality Treatment



gis\projects\618\61 9f.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

APPROXIMATE LOCATIONS OF PROPOSED SBNEP HABITAT RESTORATION SITES - FISCAL YEAR 2005-2006

FISH Property

Fiscal Year: 2005-2006	**Rank: 2**
Parcel Size (appx. ac): 70.1	**County/Municipality: Manatee**
Project Size (appx. ac): 20.0	**Landowner: Florida Institute of Saltwater Heritage (FISH)**

Location: Cortez, FL
Cooperator Contact/Phone #: Allen Garner, FISH/941.794.0280

Site Description

Natural:

	Description	% Coverage	Approximate Acreage
Upland -	Hardwood Conifer	0.12	8.1
Wetland -	Estuary, Mangrove Swamp, Forested Wetland	0.7	50.3

Disturbed:

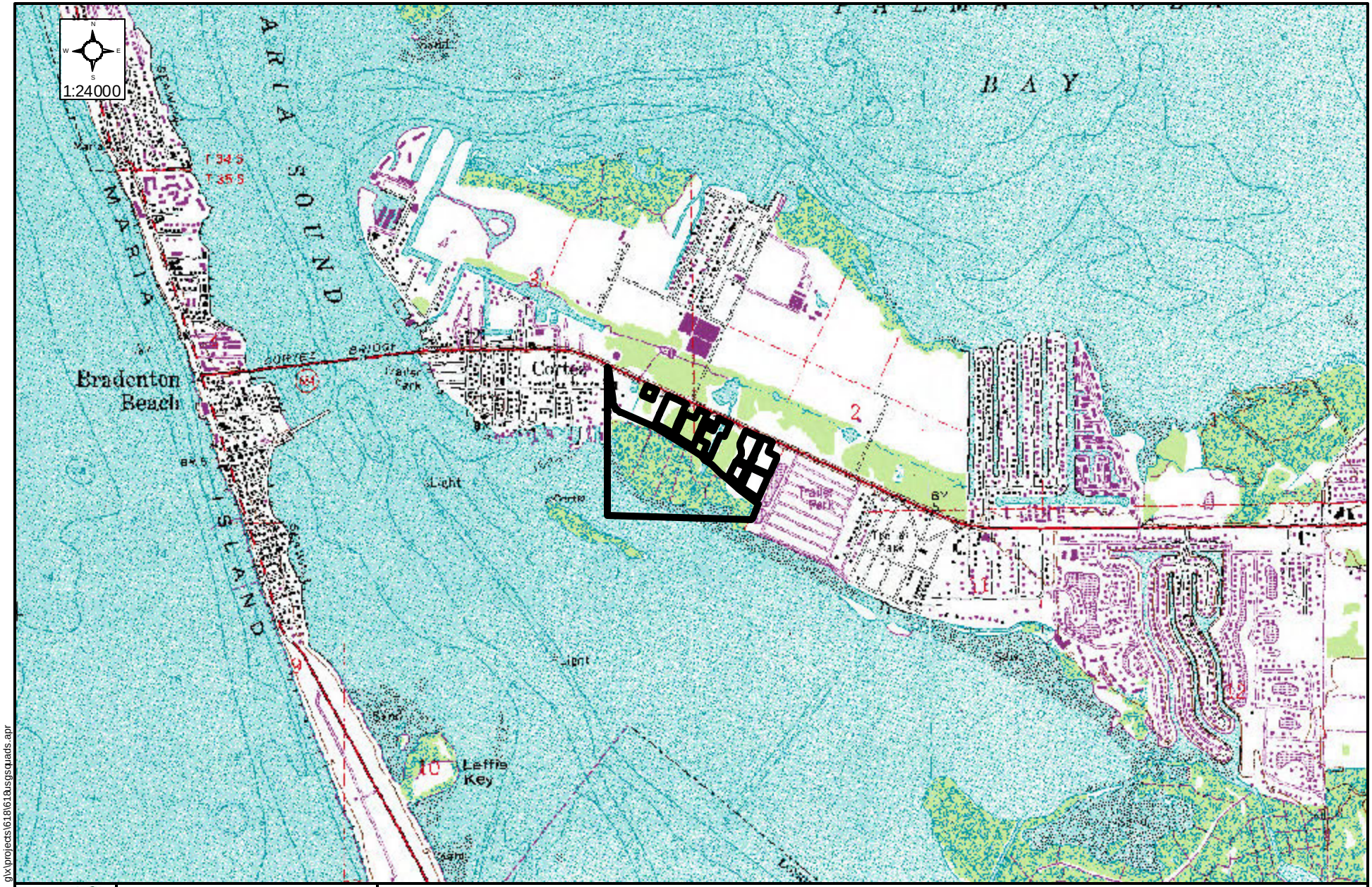
	Description	% Coverage	Approximate Acreage
Upland -	Open Land, Exotics	0.2	11.6
Wetland -	Reservoirs	<.01	0.1

Restoration Potential

- **Proximity to Natural Habitat: 3**
- **Potential Fisheries Habitat: 2**
- **Construction Feasibility: 2**
- **Potential Difficulties:**
- **Estimated Cost: $700,000**

Summary

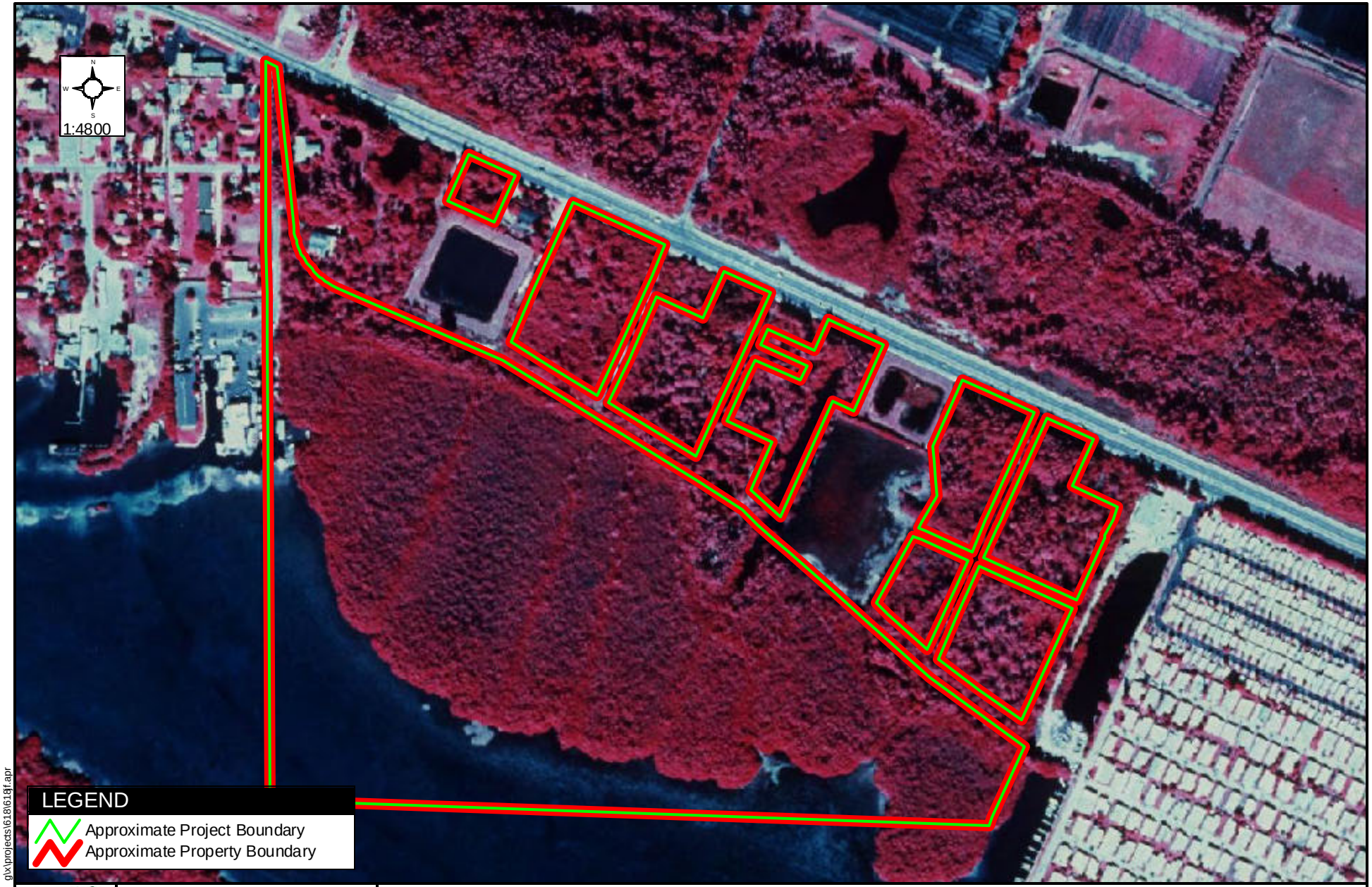
This project has great restoration potential for the upland areas adjacent to the existing mangrove forest. The existing exotic vegetation would be removed and replaced with native vegetation to restore both upland and wetland communities.



gis\projects\618\618usgsquads.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

FISH PROPERTY PROJECT LOCATION



g:\x\projects\618\618f.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

FISH PROPERTY PROJECT SITE

River Run City Golf Course

Fiscal Year: 2005-2006	**Rank: 3**
Parcel Size (appx. ac): 35.3	**County/Municipality: Manatee**
Project Size (appx. ac): 14.0	**Landowner: City of Bradenton**

Location: Bradenton, FL
Cooperator Contact/Phone #: Seth Kohn, City of Bradenton/941.708.6300

Site Description

Natural:

	Description	% Coverage	Approximate Acreage
Upland -	Hardwood Conifer	2.2	0.8
Wetland -	Mangrove Swamp, Saltwater Marsh,	66.4	23.4

Disturbed:

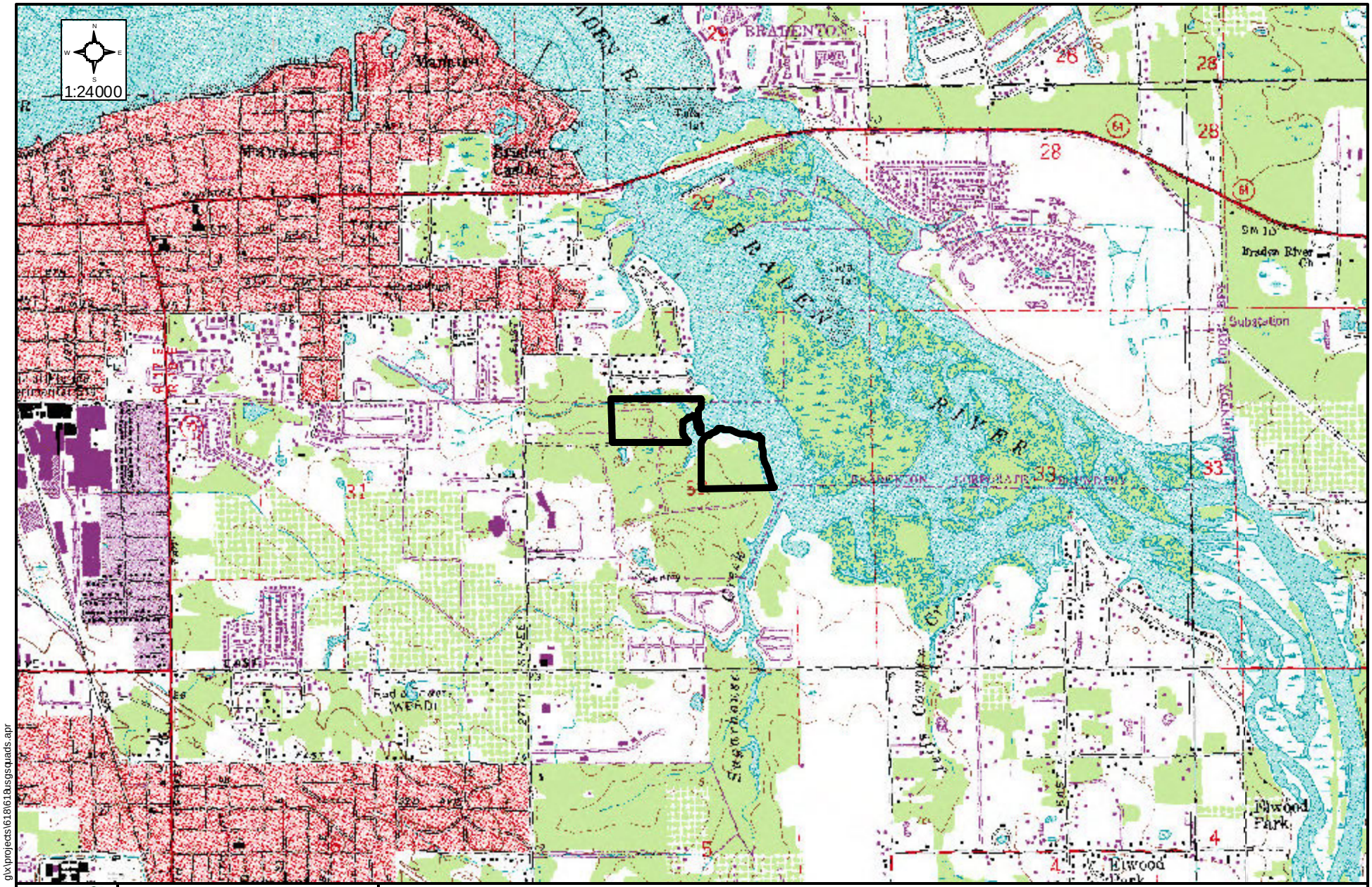
	Description	% Coverage	Approximate Acreage
Upland -	Recreational	31	10.9
Wetland -	Reservoir	0.4	0.1

Restoration Potential

- **Proximity to Natural Habitat: 2**
- **Potential Fisheries Habitat: 3**
- **Construction Feasibility: 2**
- **Potential Difficulties:**
- **Estimated Cost: $491,050**

Summary

This large publicly owned golf course is adjacent to the Braden River and has great restoration potential. The coastal areas could be restored to provide productive estuarine habitats and coastal upland communities. In addition, the existing water features could be incorporated into biological treatment systems to improve stormwater runoff to the river.



g:\projects\618\618usgsquads.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

RIVER RUN CITY GOLF COURSE PROJECT LOCATION

g:\x\projects\618\619f1.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

RIVER RUN CITY GOLF COURSE PROJECT SITE

Ringling School (Whitaker Bayou) and MLK

Fiscal Year: 2005-2006	**Rank: 5**
Parcel Size (appx. ac): 9.2	**County/Municipality: Sarasota**
Project Size (appx. ac): 1.1	**Landowner: Ringling School of Art & Design, City of Sarasota**

Location: Sarasota Bay, FL
Cooperator Contact/Phone #: Philip Chiocchio, Ringling School of Art & Design/941.359.7575

Site Description

Natural:

	Description	% Coverage	Approximate Acreage
Upland -	N/A	0	0
Wetland -	N/A	0	0

Disturbed:

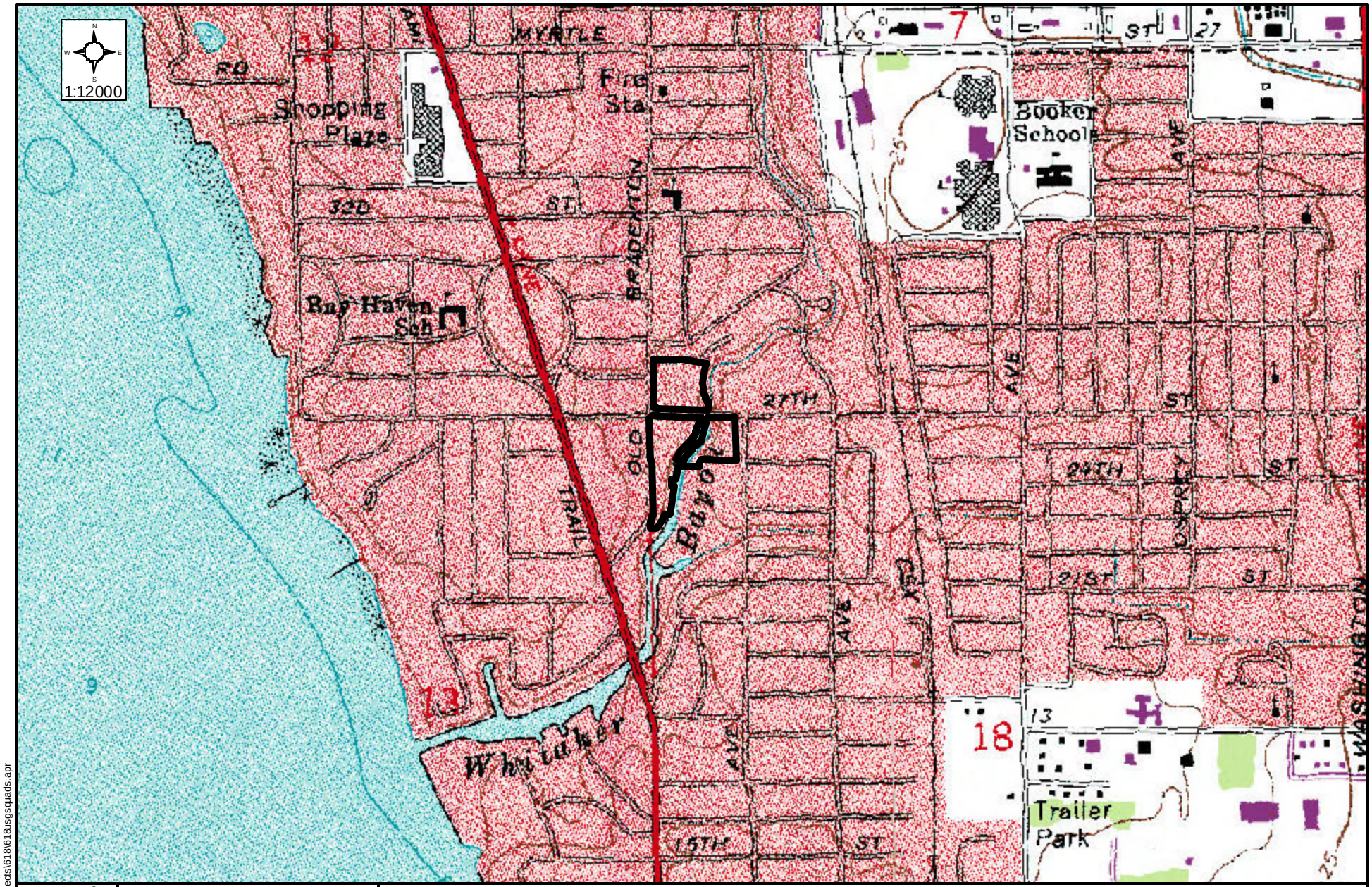
	Description	% Coverage	Approximate Acreage
Upland -	Residential Commercial	95.1	8.7
Wetland -	Estuary	4.9	0.5

Restoration Potential

- **Proximity to Natural Habitat: 1**
- **Potential Fisheries Habitat: 2**
- **Construction Feasibility: 2**
- **Potential Difficulties:**
- **Estimated Cost: $37,800**

Summary

This parcel along Whitaker Bayou has habitat restoration opportunities along the banks of the bayou. The removal of exotic vegetation and subsequent planting of native vegetation along the banks would help restore the estuarine community.



gis\projects\618\618usgsquads.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

RINGLING SCHOOL AND MLK PARK
PROJECT LOCATION

g:\x\projects\618\618f1.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

RINGLING SCHOOL AND MLK PARK PROJECT SITE

Celery Fields

Fiscal Year: 2005-2006	**County/Municipality: Sarasota**
Parcel Size (appx. ac): 480.71	**Rank: 6**
Project Size (appx. ac): 50.0	**Landowner: Sarasota County**

Location: Sarasota, FL
Cooperator Contact/Phone #: Ben Quartermaine, Sarasota Co./941.861.0913

Site Description

Natural:

	Description	% Coverage	Approximate Acreage
Upland -	Shrub and Brushland	0.5	2.9
Wetland -	Freshwater Marsh, Wet Prairie	65.1	313.0

Disturbed:

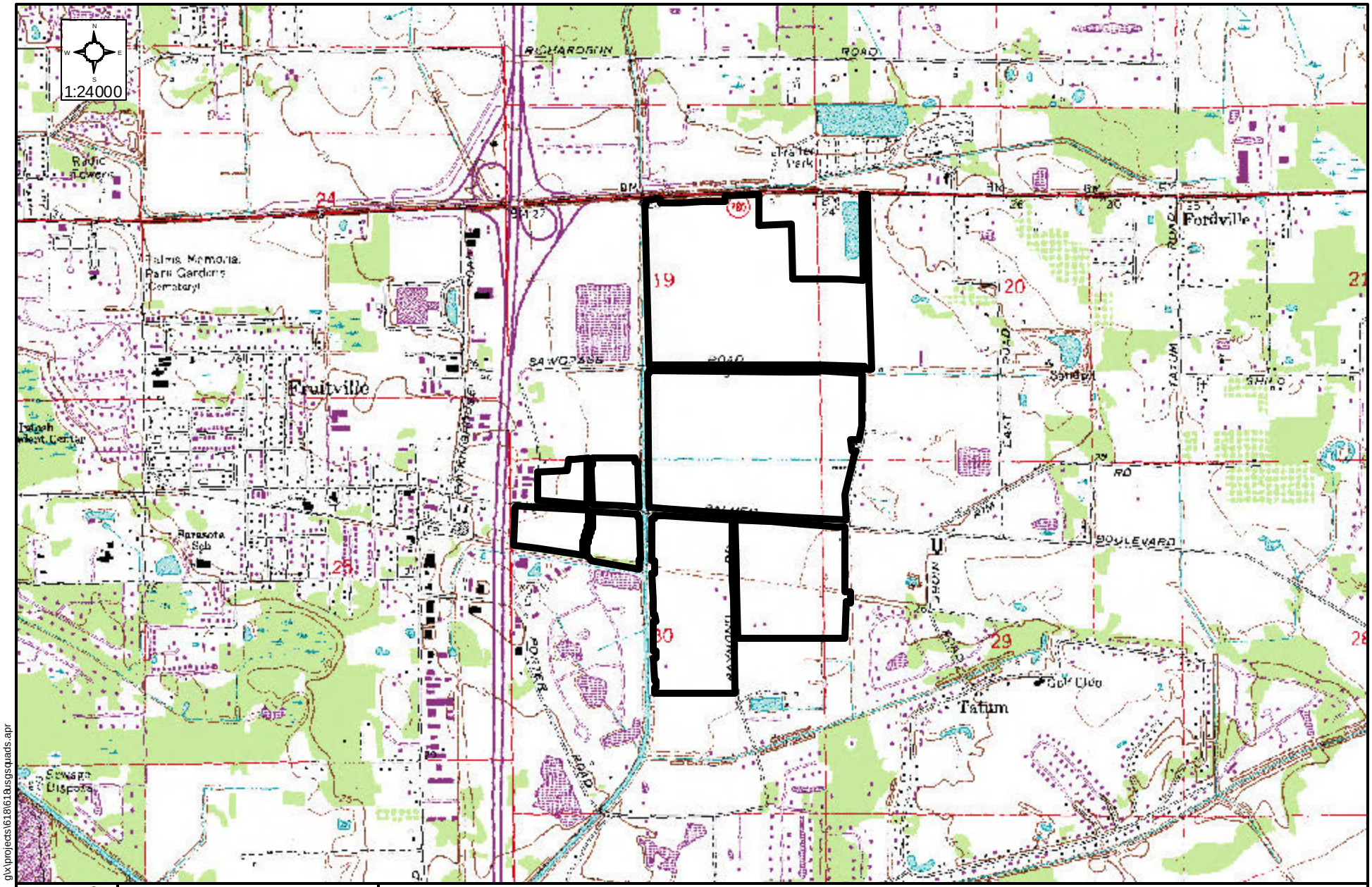
	Description	% Coverage	Approximate Acreage
Upland -	Open Land	34.4	165.3
Wetland -	N/A	0	0

Restoration Potential

- **Proximity to Natural Habitat: 1**
- **Potential Fisheries Habitat: 1**
- **Construction Feasibility: 2**
- **Potential Difficulties:**
- **Estimated Cost: $2,000,000**

Summary

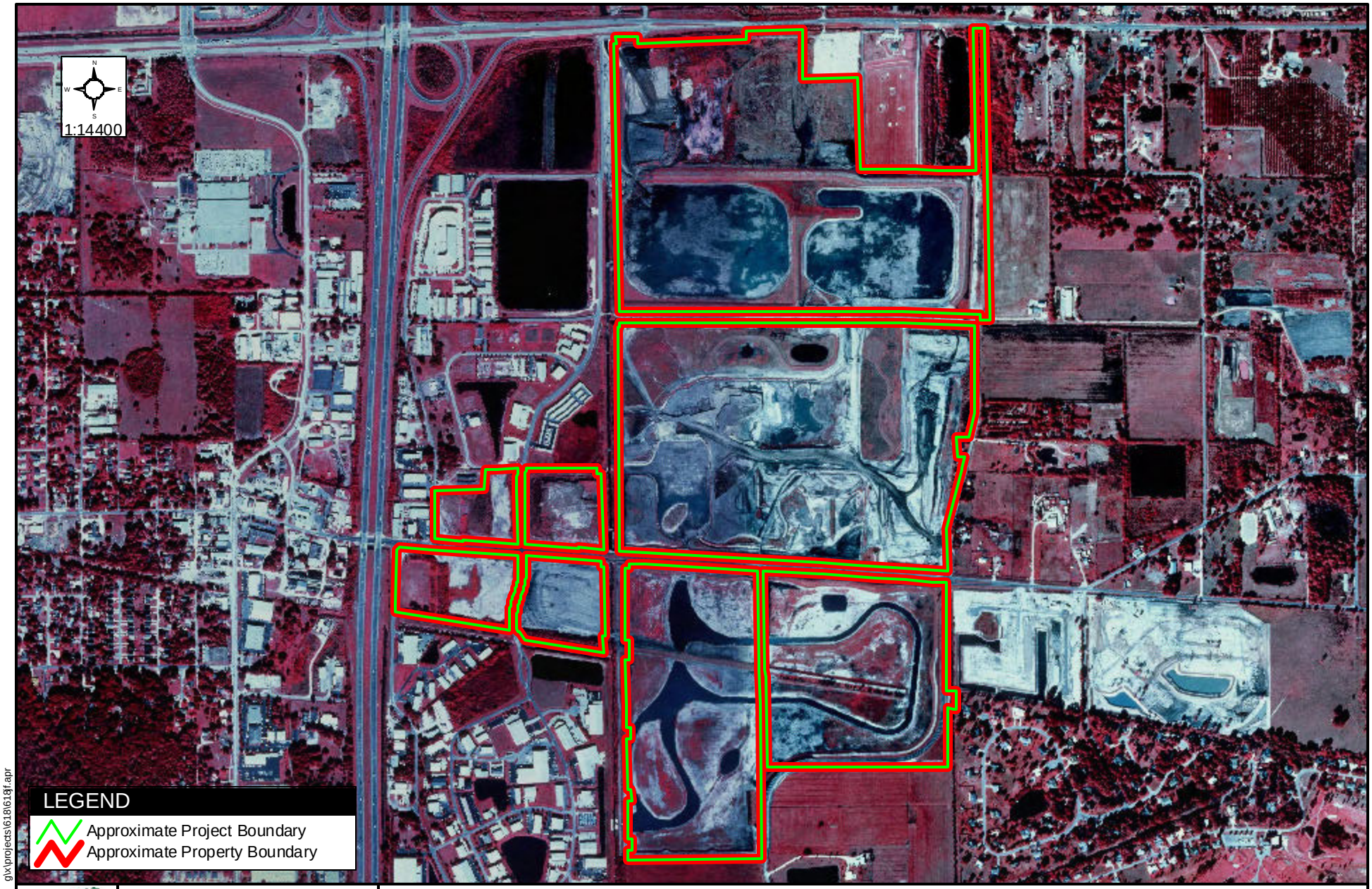
This regional project is managed by Sarasota County to provide flood attenuation and passive stormwater retrofit opportunities to the Phillippe Creek drainage basin. Although large areas are functioning as designed, some portions and new additional land acquisitions can be restored to provide additional environmental benefits to the area.



gis\projects\618\618usgsquads.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

CELERY FIELDS PROJECT LOCATION



g:\x\projects\618\618f1.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

CELERY FIELDS PROJECT SITE

Bowlees Creek Water Quality Treatment

Fiscal Year: 2005-2006	**Rank: 10**
Project Size (appx. ac): 5 acres	**County/Municipality: Manatee**
Parcel Size (appx. ac): 30 acres	**Landowner: Manatee County**

Location: Manatee County, FL
Cooperator Contact/Phone #: Sia Molanazar, Manatee County/941.708.7480

Site Description

Natural:

	Description	% Coverage	Approximate Acreage
Upland -	Urban Land	0	0
Wetland -	Channelized Creek	0	0

Disturbed:

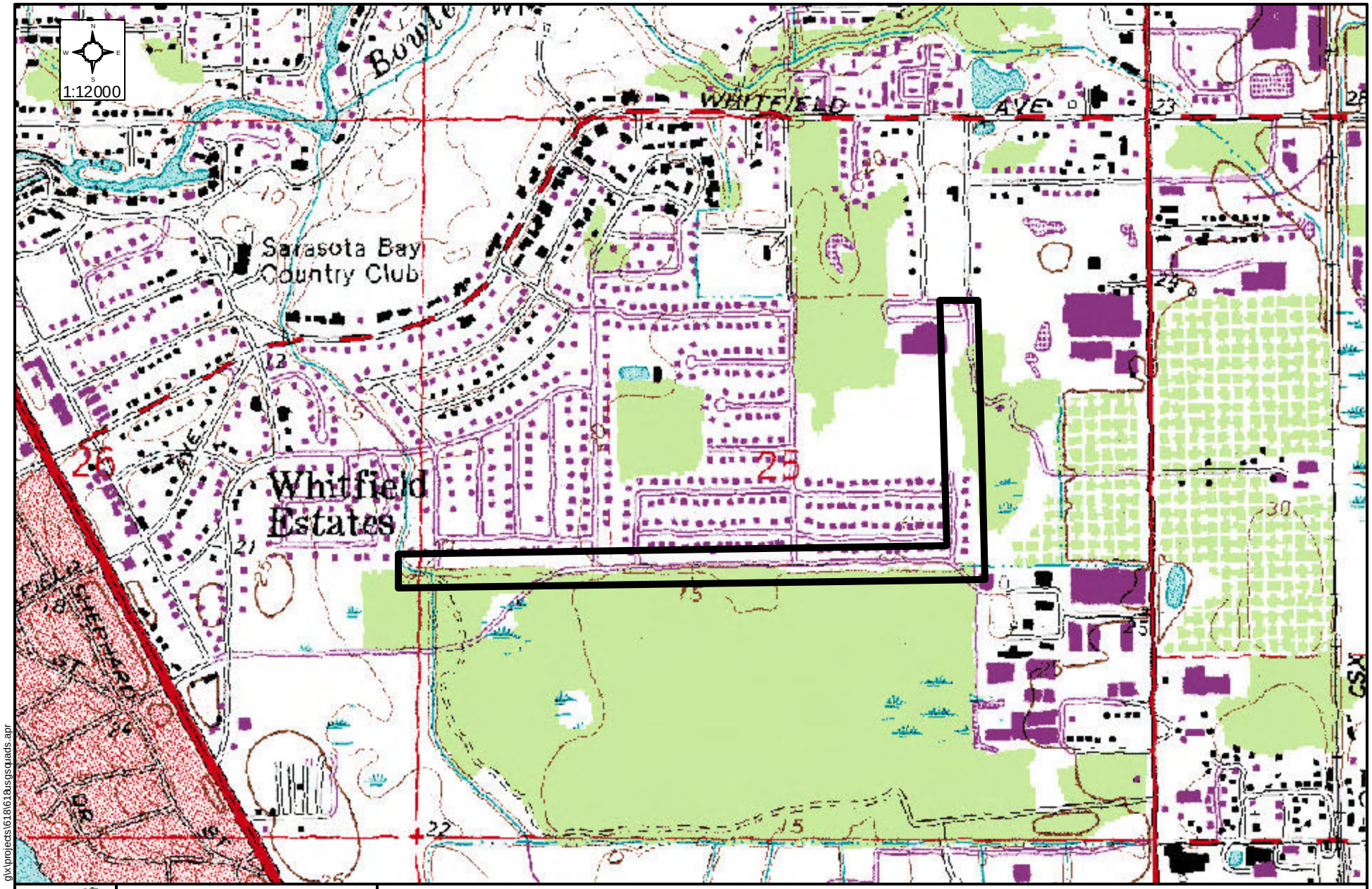
	Description	% Coverage	Approximate Acreage
Upland -	Urban land	84.7	25
Wetland -	Channelized Creek	16.7	5

Restoration Potential

- **Proximity to Natural Habitat: 1**
- **Potential Fisheries Habitat: 1**
- **Construction Feasibility: 1**
- **Potential Difficulties: Limited space**
- **Estimated Cost: $**

Summary

This linear project is slated for stormwater retrofit activities to treat a large drainage basin. It is currently being designed under a cooperative agreement between the SWFWMD and Manatee County. This existing drainage ditch could be enhanced to provide stormwater treatment opportunities and potentially some habitat restoration values. This project is currently being evaluated to determine its stormwater retrofit potentials by the SWIM program of the SWFWMD.



gis\projects\618\618usgsquads.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

BOWLEES CREEK WATER QUALITY TREATMENT (Nicholson Stormwater Pond) PROJECT LOCATION

g:\x\projects\618\618f.apr

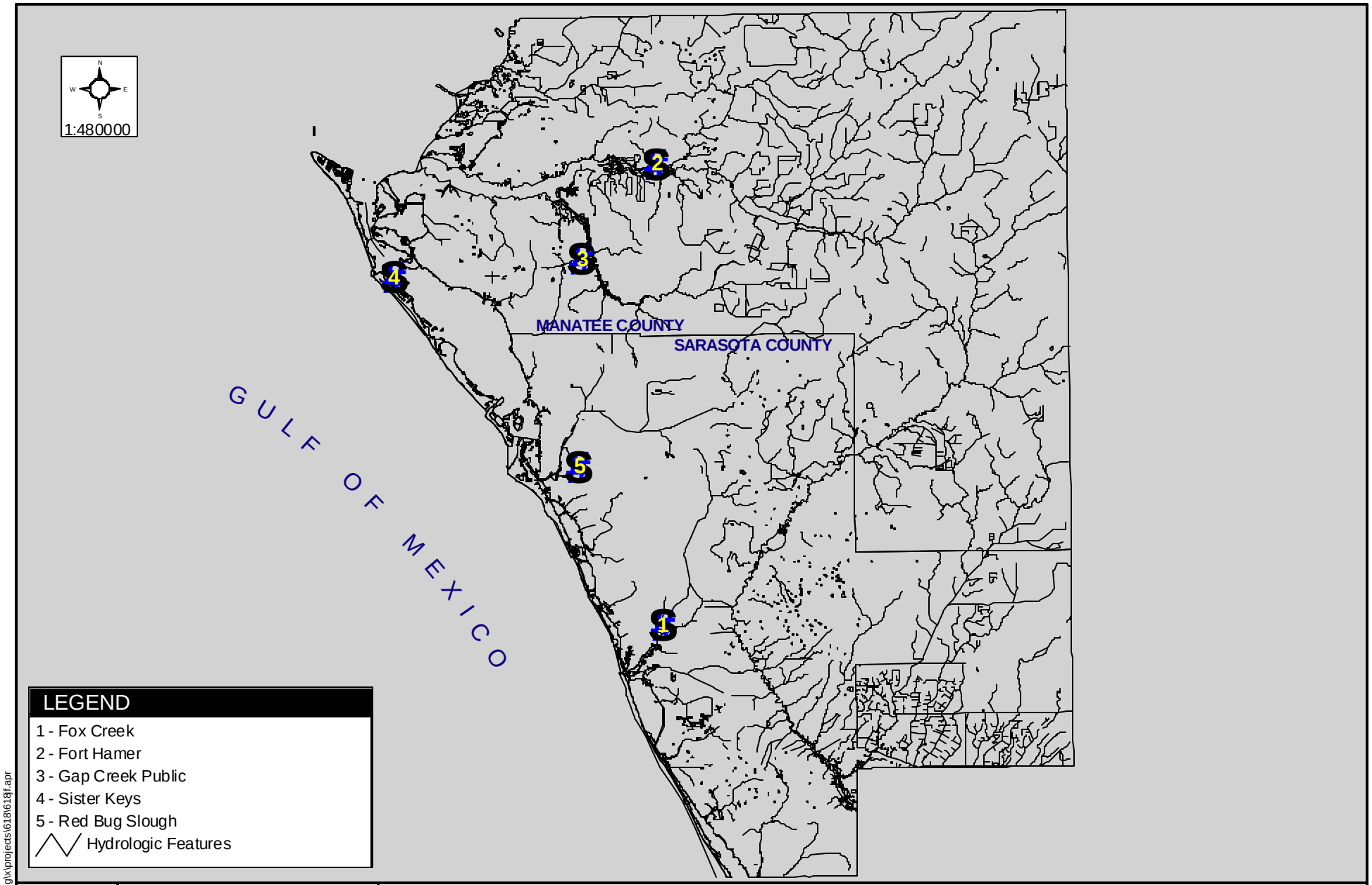
Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

BOWLEES CREEK WATER QUALITY TREATMENT (Nicholson Stormwater Pond) PROJECT SITE

SARASOTA BAY NATIONAL ESTUARY PROGRAM
FIVE-YEAR HABITAT RESTORATION PLAN
FY 2006-2007

PROJECTS PROPOSED FOR FY 2006-2007

Fox Creek
Fort Hamer
Gap Creek (Publicly Owned)
Sister Keys
Red Bug Slough



gis\projects\618\618f.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

APPROXIMATE LOCATIONS OF PROPOSED SBNEP HABITAT RESTORATION SITES - FISCAL YEAR 2006-2007

Fox Creek

Fiscal Year: 2006-2007	**Rank: 1**
Parcel Size (appx. ac): 227.0	**County/Municipality: Sarasota**
Project Size (appx. ac): 50.0	**Landowner: Sarasota County**

Location: South Sarasota County, FL
Cooperator Contact/Phone #: Ron VanFleet, Sarasota County/941.861.0852

Site Description

Natural:

	Description	% Coverage	Approximate Acreage
Upland -	Pine Flatwoods	28	63.6
Wetland -	Stream Swamps, Wet Prairie	9	20.4

Disturbed:

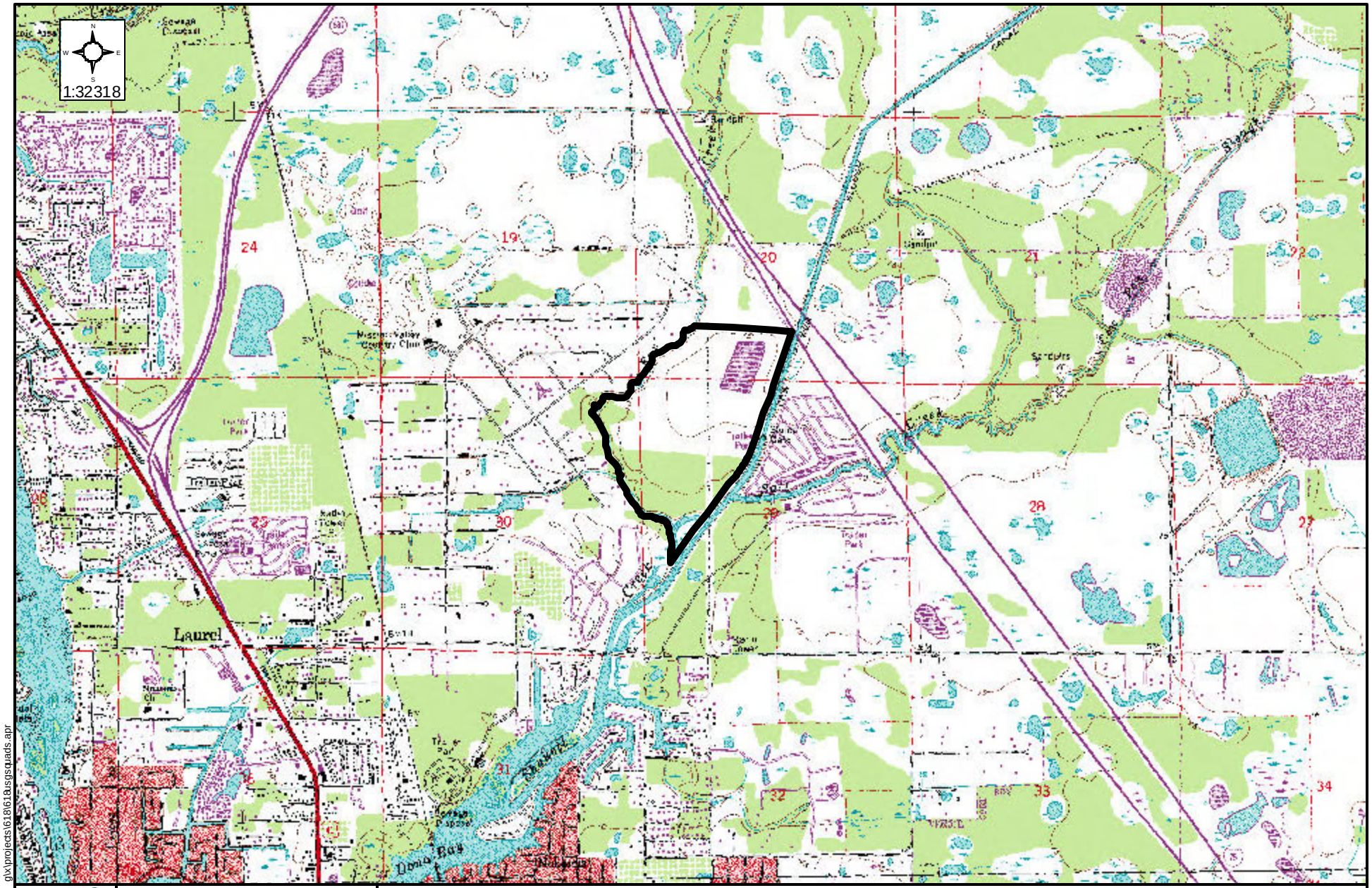
	Description	% Coverage	Approximate Acreage
Upland -	Pastureland, Utilities	56.4	128.1
Wetland -	Reservoirs	6.6	14.9

Restoration Potential

- **Proximity to Natural Habitat: 2**
- **Potential Fisheries Habitat: 3**
- **Construction Feasibility: 2**
- **Potential Difficulties:**
- **Estimated Cost: $2,000,000**

Summary

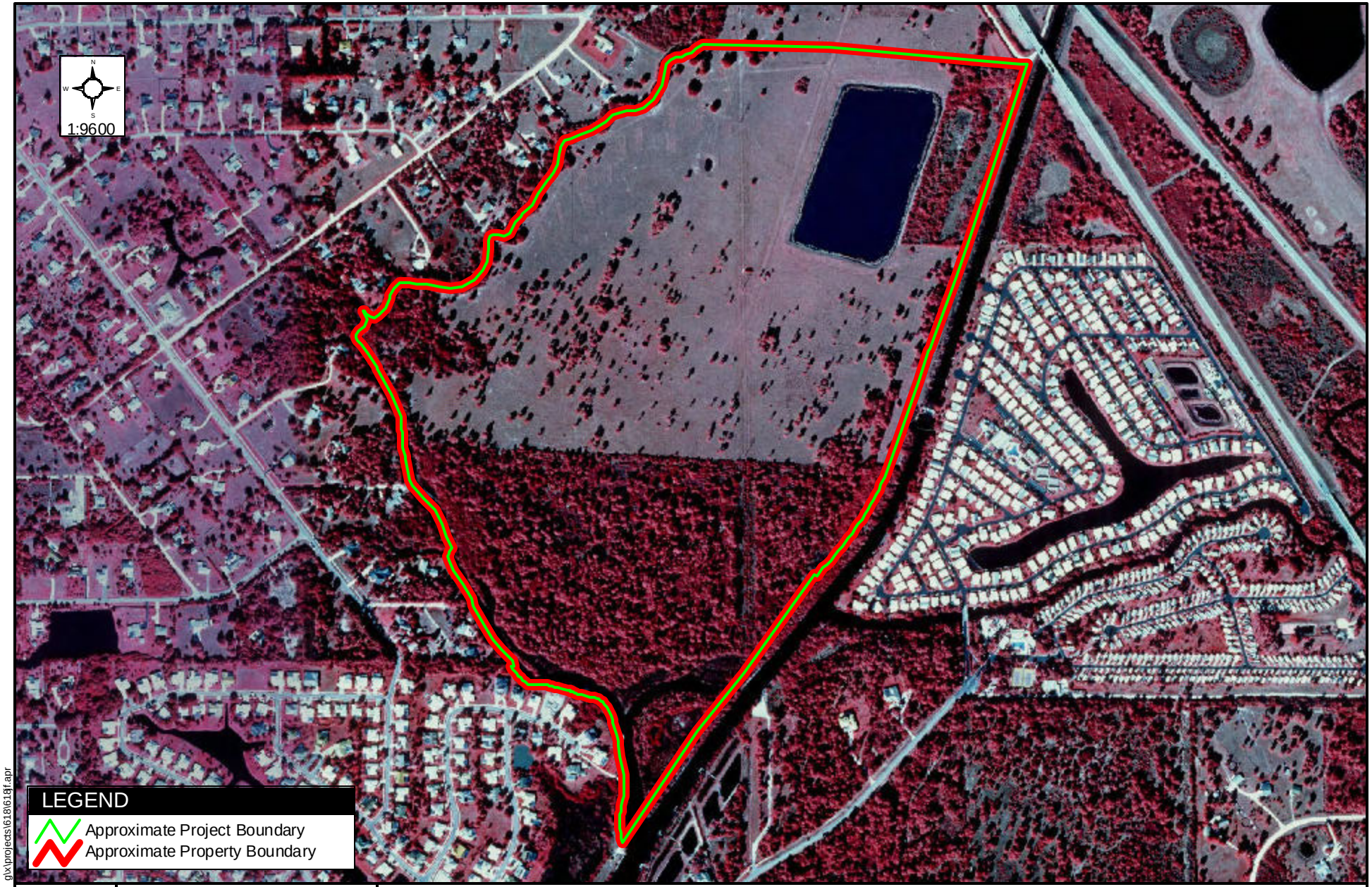
This project near the confluence of Fox Creek and Cow Pen Slough provides an excellent opportunity for habitat restoration and biological treatment systems. Portions of the dredged creek bed could be restored to meandering sloughs while providing habitat and nutrient uptake potentials and providing fisheries habitat.



g:\x\projects\618\618usgsquads.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

FOX CREEK PROJECT LOCATION



g:\x\projects\618\618f.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

FOX CREEK PROJECT SITE

Fort Hamer

Fiscal Year: 2006-2007	**Rank: 5**
Parcel Size (appx. ac): 6.8	**County/Municipality: Manatee**
Project Size (appx. ac): 2.2	**Landowner: Manatee County**

Location: Manatee County, FL
Cooperator Contact/Phone #: Charlie Hunsicker, Manatee County/941.745.3727

Site Description

Natural:

	Description	% Coverage	Approximate Acreage
Upland -	N/A	0	0
Wetland -	Estuary, Saltwater Marsh	24	1.6

Disturbed:

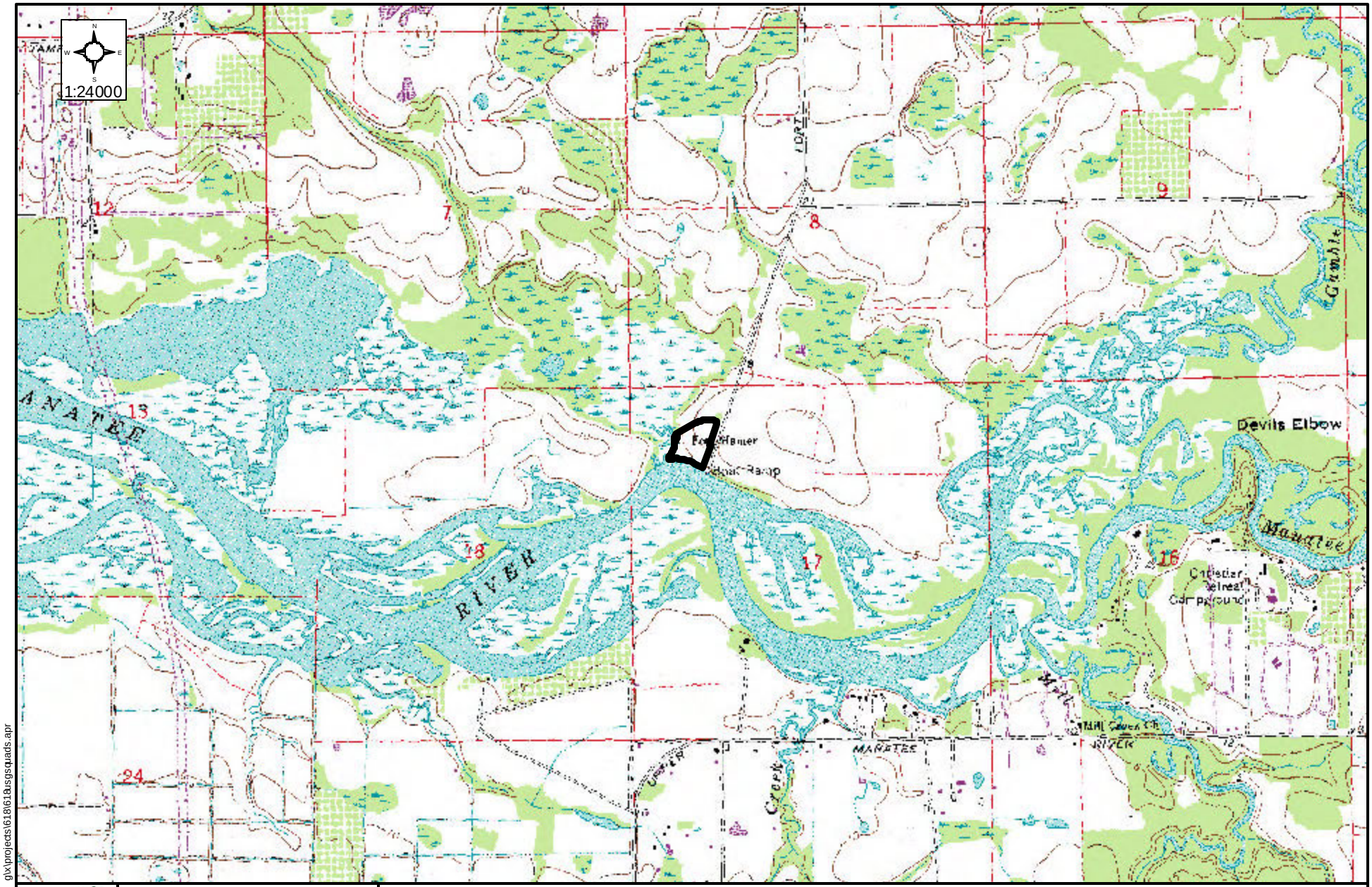
	Description	% Coverage	Approximate Acreage
Upland -	Open Land/Institutional	76	5.2
Wetland -	N/A	0	0.5

Restoration Potential

- **Proximity to Natural Habitat: 3**
- **Potential Fisheries Habitat: 3**
- **Construction Feasibility: 2**
- **Potential Difficulties:**
- **Estimated Cost: $78,400**

Summary

This site along the Manatee River has both stormwater retrofit and habitat restoration opportunities. The existing drainage ditch could be meandered to increase nutrient uptake and the exotic vegetation would be removed and planted with native marsh species.



g:\x\projects\618\618usgsquads.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

FORT HAMER PROJECT LOCATION

g:\x\projects\618\618f.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

FORT HAMER PROJECT SITE

Gap Creek (Public)

Fiscal Year: 2006-2007	**Rank: 6**
Parcel Size (appx. ac): 9.1	**County/Municipality: Manatee**
Project Size (appx. ac): 3.8	**Landowner: State of Florida**

Location: Manatee County, FL
Cooperator Contact/Phone #: Charlie Hunsicker, Manatee County/941.745.3727

Site Description

Natural:

	Description	% Coverage	Approximate Acreage
Upland -	Hardwood Conifer	38.5	3.5
Wetland -	N/A	0	0

Disturbed:

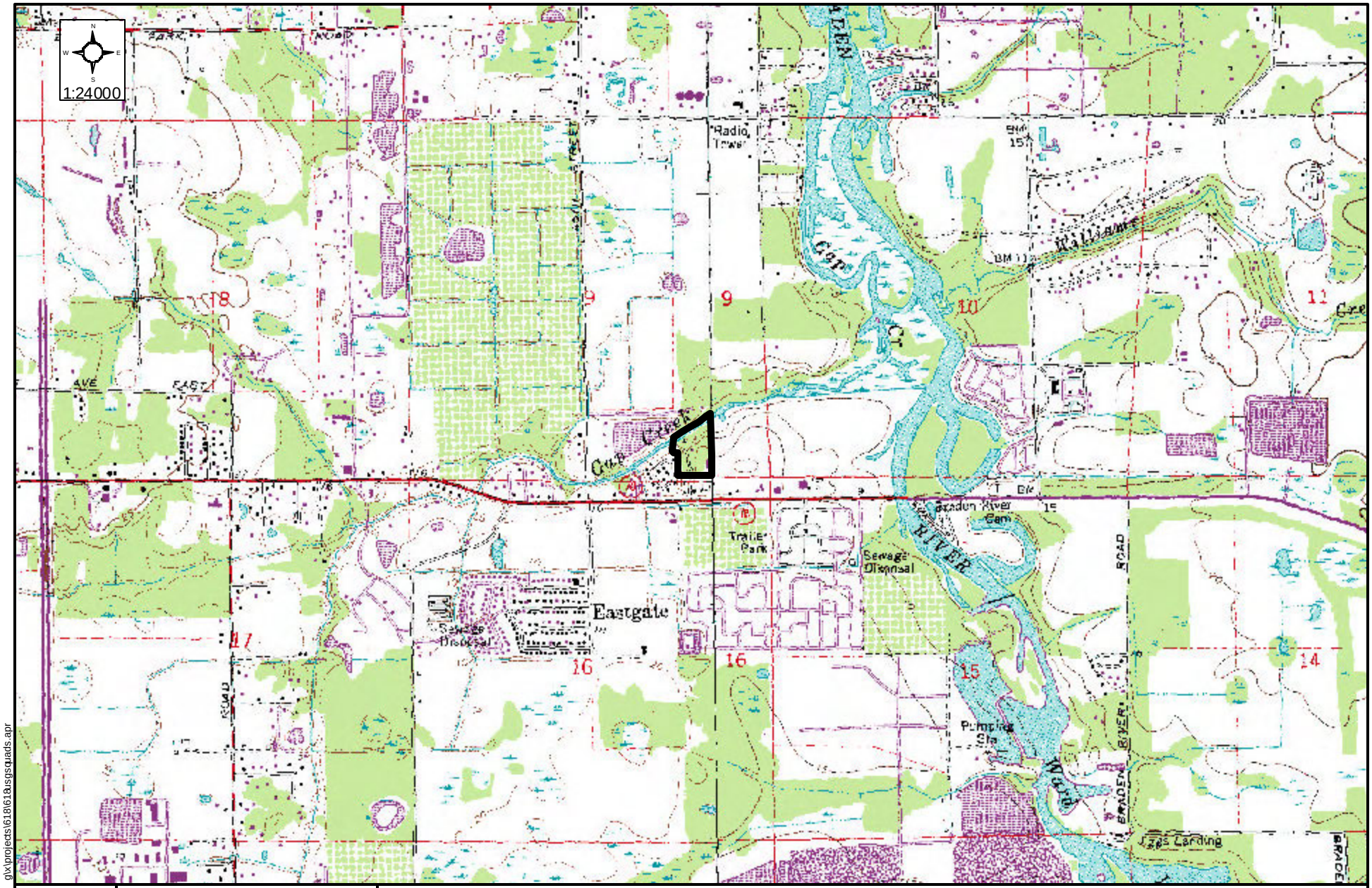
	Description	% Coverage	Approximate Acreage
Upland -	Residential	61	5.0
	Institutional		
Wetland -	Creek	1	0.5

Restoration Potential

- **Proximity to Natural Habitat: 3**
- **Potential Fisheries Habitat: 3**
- **Construction Feasibility: 2**
- **Potential Difficulties: Limited area**
- **Estimated Cost: $152,000**

Summary

This site has stream restoration potentials for Gap Creek. The banks are currently deeply incised and could provide limited stormwater treatment and the enhancement of its natural vegetative communities.



gis\projects\618\618usgsquads.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

GAP CREEK (Publicly Owned) PROJECT LOCATION

g:\x\projects\618\619f.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

GAP CREEK (Publicly Owned)
PROJECT SITE

Sister Keys

Fiscal Year: 2006-2007	**Rank: 6**
Parcel Size (appx. ac): 64.4	**County/Municipality: Manatee**
Project Size (appx. ac): 25.8	**Landowner: Town of Longboat Key**

Location: East of Long Boat Key, FL
Cooperator Contact/Phone #: Steve Shields, Town of Longboat Key /941.316.1959

Site Description

Natural:

	Description	% Coverage	Approximate Acreage
Upland -	N/A	0	0
Wetland -	Estuary, Mangrove Swamp,Tidal Flats	66.6	42.9

Disturbed:

	Description	% Coverage	Approximate Acreage
Upland -	Exotic Vegetation	33.4	21.5
Wetland -	N/A	0	0

Restoration Potential

- **Proximity to Natural Habitat: 3**
- **Potential Fisheries Habitat: 2**
- **Construction Feasibility: 1**
- **Potential Difficulties: Construction access**
- **Estimated Cost: $1,288,500**

Summary

This mangrove island complex has dredge spoil deposits that are currently covered with exotic vegetation (BP and AP). Potential restoration measures include removal of the exotics and regrading some of the areas to provide estuarine habitats and improve the remaining upland habitat areas.

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

SISTER KEYS PROJECT LOCATION

g:\projects\618\618usgsquads.apr

g:\x\projects\618\618f.apr

Sarasota Bay NEP
Five-Year Habitat
Restoration Plan

SISTER KEYS PROJECT SITE

Red Bug Slough

Fiscal Year: 2006-2007	**Rank: 6**
Parcel Size (appx. ac): 69.5	**County/Municipality: Sarasota**
Project Size (appx. ac): 27.1	**Landowner: Sarasota County**

Location: Sarasota County, FL
Cooperator Contact/Phone #: Rob Kluson, Sarasota County/941.861.6244

Site Description

Natural:

	Description	% Coverage	Approximate Acreage
Upland -	Hardwood Conifer/Disturbed Uplands	52	36.2
Wetland -	Forested Wetland	45	31.3

Disturbed:

	Description	% Coverage	Approximate Acreage
Upland -	Residential	1	0.5
Wetland -	Creek	2	1.5

Restoration Potential

- **Proximity to Natural Habitat: 2**
- **Potential Fisheries Habitat: 2**
- **Construction Feasibility: 1**
- **Potential Difficulties:**
- **Estimated Cost: $1,354,000**

Summary

This former creek bed has been heavily impacted by development and channelization activities. Restoration opportunities include channel stabilization, stream restoration, exotic vegetation removal, and potential stormwater retrofit opportunities.