



# Clearwater Municipal Marina Expansion Feasibility Study

*Prepared By*

**Wade Trim      Delta Seven**

**November 29, 2005**

# Table of Contents

*Clearwater Municipal Marina Expansion Feasibility Report*

<b>1.0</b>	<b>Project Description .....</b>	<b>1</b>
1.1	Study Assumptions .....	3
1.2	Project Methodology .....	4
<b>2.0</b>	<b>Submerged Lands Ownership .....</b>	<b>5</b>
<b>3.0</b>	<b>Ecological Assessment .....</b>	<b>6</b>
<b>4.0</b>	<b>Existing Marina Layout .....</b>	<b>9</b>
<b>5.0</b>	<b>Applicable Policies And Regulations .....</b>	<b>16</b>
<b>6.0</b>	<b>Potential Marina Configuration Process .....</b>	<b>18</b>
6.1	Preliminary Discussion Regarding Optional Slip Layouts .....	20
6.2	Development Of Discussion Configurations .....	22
6.3	Integration With Upland Redevelopment Plans .....	25
6.4	Refinement Of Potential Configurations.....	26
6.5	Exploratory Analysis Of The Northwest Corner Of Marina .....	27
6.6	Composite Potential Layouts .....	31
<b>7.0</b>	<b>Revenue Considerations .....</b>	<b>35</b>
<b>8.0</b>	<b>Estimated Marina Costs .....</b>	<b>36</b>
<b>9.0</b>	<b>Anticipated Schedule .....</b>	<b>38</b>
<b>10.0</b>	<b>Summary Conclusions and Recommendations.....</b>	<b>39</b>

## Figures

Figure 1 - General Location .....	1
Figure 2 - Submerged Lands Ownership .....	5
Figure 3 - Bathymetric Survey .....	7
Figure 4 - Historical Aerials of Clearwater Municipal Marina .....	10
Figure 5 - Existing Clearwater Municipal Marina Photos .....	11
Figure 6 - Boundary Examination 1 .....	21
Figure 7 - Boundary Examination 2 .....	21
Figure 8 - Exploratory Layout 1 .....	22
Figure 9 - Exploratory Layout 2 .....	23
Figure 10 - Exploratory Layout 3 .....	24
Figure 11 - Exploratory Analysis of Northwest Corner #1 .....	28
Figure 12 - Exploratory Analysis of Northwest Corner #2 .....	29
Figure 13 - Exploratory Analysis of Northwest Corner #3 .....	30
Figure 14 - Composite Layout 1 .....	32
Figure 15 - Composite Layout 2 .....	33
Figure 16 - Composite Layout 3 .....	34
Figure 17 - Anticipated Timeline .....	38

## Table

Table 1 - Estimated Marina Costs .....	37
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## Appendices

- A: Existing Utility Maps
- B: Clearwater Marina Commercial Tenant Survey Results
- C: November 14, 2005 PowerPoint Presentation to City Council

# Clearwater Municipal Marina Expansion Feasibility Study

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*Prepared for the:*



*Prepared by:*



***November 29, 2005***

*Study made possible in part with grant funding from the  
Florida Fish and Wildlife Conservation Commission  
Florida Boating Improvement Program*

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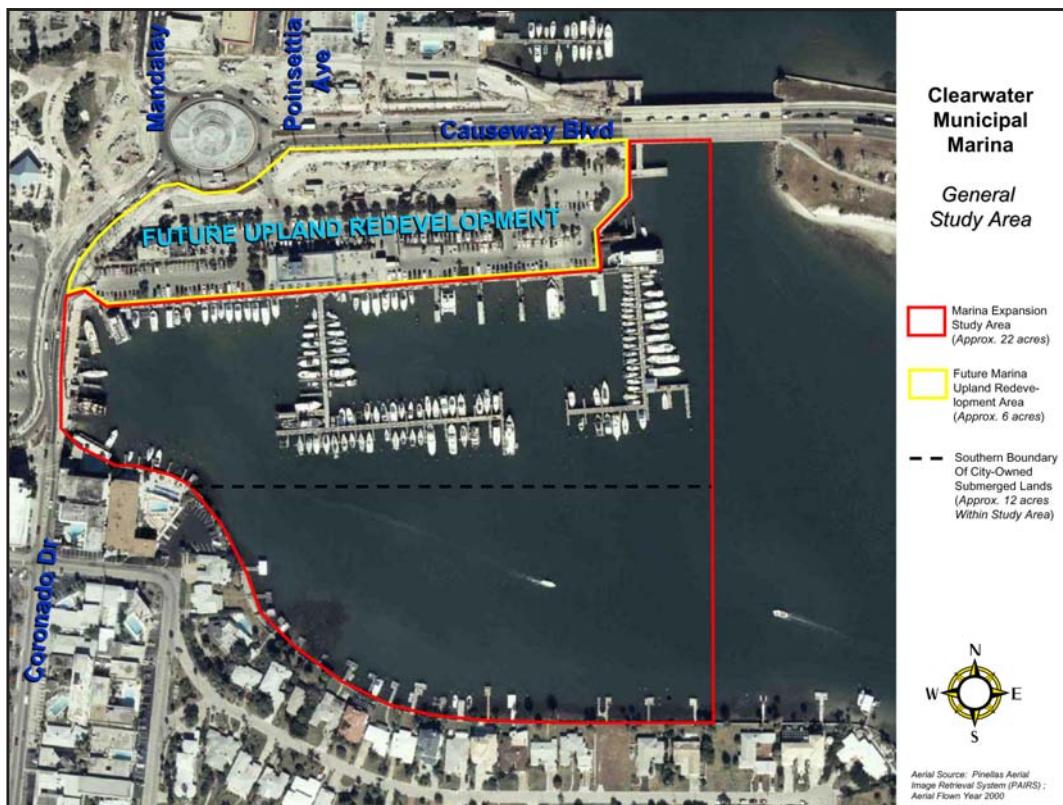
# Clearwater Municipal Marina Expansion Feasibility Study

Clearwater Municipal Marina Expansion Feasibility Report

## 1.0 Project Description

In response to the diminishing supply of private recreational docking facilities and a documented user demand for additional recreational boat slips, the City of Clearwater is considering expanding its existing Municipal Marina located on Clearwater Beach. Located on the south side of Memorial Causeway and east of the Public Parking lot, the existing public marina includes 166 slips. It encompasses approximately 12 acres of submerged lands and 3.6 acres of abutting upland support and complementary uses (plus 2 additional acres of right-of-way on the north along the east bound traffic lanes into the current parking area). The primary focus of this feasibility study is on the submerged lands portion of the marina. The underlying purpose of this study is to determine the estimated maximum number of expansion private recreational boat slips that could be accommodated within and immediately outside the existing marina footprint. Other study objectives include the identification of perceived environmental constraints to expansion, anticipated permitting issues and opportunities, order of magnitude cost estimates for design, permitting and construction, and an anticipated schedule for future expansion activities. All of the existing slips are currently located on City-owned submerged lands. **Figure 1** below depicts the general boundary of the study area.

*Figure 1- General Location*



The existing marina was originally built in 1951 and has undergone upgrades and expansions over the years. It includes 166 slips leased to both private recreational boaters and commercial users. A detailed breakdown of existing slips is provided in Section 4.0 of this study.

The City of Clearwater engaged the Consultant team including Wade Trim (planning and engineering) as the Prime Consultant and Delta Seven, Inc. (environmental studies and permitting issues and opportunities) as a subconsultant to complete this expansion feasibility study. The study is being funded by a grant from the Florida Fish and Wildlife Conservation Commission (FFWCC), Florida Boating Improvement Program. The feasibility study commenced in July 2005 and a final copy of the study must be submitted to the State on or before December 31, 2005.

It is important to understand that this study represents the first phase of a multi-phased development program associated with the marina expansion. The FFWCC funding for this phase is concerned primarily with identifying the physical opportunities and constraints associated with the future expansion. More specifically, it seeks to identify the maximum number of recreational slips that could be added to the existing marina along with potential environmental permitting issues, estimated costs and schedule. Subsequent funding from FFWCC will be sought for the second phase which will address revenue projections, return on investment, affordability determination, etc. The second phase would be followed by the preparation of design plans, permits and construction activities.

## 1.1 Study Assumptions

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The underlying assumptions upon which the feasibility study was prepared include the following:

- ◆ Marina expansion should occur primarily on City-owned submerged lands. Expansion outside of these lands will require a submerged lands lease from the State of Florida to accommodate needed expansion.
- ◆ Concrete floating dock system similar to that proposed for the future Clearwater Bayfront Marina should be used in the marina expansion. The aesthetics of any expansion should be a key consideration recognizing the visual quality and ambiance desired through *Beach By Design* and recent development approvals on the beach. The study should include the addition of a design feature to hide existing storage, refrigerators, freezers, tables, etc. currently located along the northerly sidewalk serving the commercial fishing vessels.
- ◆ The Consultant will use existing bathymetric survey and environmental data from the 2004 maintenance dredging permits issued to the City. However, the Consultant should ground truth conditions in the field.
- ◆ The study should seek to maintain the same balance of slip types as currently exists at the marina recognizing however, today's trend is toward wider vessels which should be considered in any reconfiguration of current slips.
- ◆ All slips will have water, sanitary sewer, electricity, cable TV and telephone service.
- ◆ No additional rest rooms will be addressed in the study recognizing the abutting upland area may be redeveloped at a future date.
- ◆ Any proposed lighting should compliment adjacent upland redevelopment activities.

## 1.2 Project Methods

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Because of the December 31, 2005 deadline for grant completion, the Consultant and staff developed and implemented an aggressive five-month study program that included input from staff, the City's Marine Advisory Board and City Council. A project kick-off meeting was held at the Harbormaster's Office at the Municipal Marina on July 29, 2005 where project assumptions and parameters were established as outlined above and refined and expanded over the course of the assignment. Recognizing the lack of historical "as-built" plans of the existing marina, the Consultant contracted with a local aerial photographer to prepare a color controlled aerial photograph of the existing marina and adjoining uplands.

As a result of the marina maintenance dredging completed in 2004, the Consultant was able to utilize a recent bathymetric survey of the marina along with other permit information regarding seagrass, water quality and bottom lands. Delta Seven's environmental scientists conducted field verification of the information provided. Information regarding the location and size of existing utilities serving the marina were obtained from City atlas's and used for the expansion feasibility study. Cost estimates were prepared by the Consultant based on discussions with a nationally recognized concrete floating dock company and recent construction cost information maintained in the Consultant's files.

In addition to regular discussions and progress meetings with the City's Marine Staff, the Consultant attended the September 14, 2005 regular meeting of the Marine Advisory Board to present preliminary conceptual layouts of the marina expansion requesting input from members regarding perceived expansion issues and opportunities. That same day the Consultant met with Assistant City Manager for Economic Development and the Assistant Planning Director to discuss the interface of any proposed marina expansion with other current and future development plans for the upland areas along the north and west marina boundaries. An additional meeting was held on October 3, 2005 to receive input from several of the commercial vessel owners who expressed concerns at the September 14, 2005 Advisory Board meeting regarding the conceptual location and orientation of the commercial slips. Valuable and constructive input was received from the Advisory Board and commercial users of the marina dealing with such issues as visibility and pedestrian traffic, location of fueling facilities, prevailing currents along the eastern edge of the marina vis-à-vis ingress and egress from existing slips, delivery and movement of goods and supplies to the commercial vessels, and centralized verses decentralized marketing and ticketing of passengers. In addition to the meeting above, the Consultant attended a Pre-application meeting with the FDEP on August 21, 2005 to discuss any perceived environmental issues with the proposed marina expansion. A more detailed discussion of the input received from these meetings is included in later sections of this study.

The Consultant met with the Marine Staff on October 13, 2005 to present a series of concept plans and a composite conceptual plan that reflected the thoughts of the Consultant and input received from the previous meetings with the Marine Advisory Board and commercial users. Following the October 13, 2005 meeting the Consultant prepared a formal presentation outlining the perceived opportunities and constraints associated with the marina expansion. Salient information from the presentation was also discussed with the Marine Advisory Board at its November 2, 2005 Regular Meeting. A comprehensive presentation was subsequently presented at the November 14, 2005 regularly scheduled City Council Workshop.

## 2.0 Submerged Lands Ownership

In 1925 the State of Florida transferred ownership of two parcels of land to local government for the purpose of constructing a bridge or causeway to connect the mainland to Clearwater Beach. The land grant resulted in the Clearwater Memorial Causeway. Ownership of these submerged lands by the City of Clearwater is recognized by the State of Florida and the boundaries are shown in **Figure 2**.

The marina, as it exists today, lies totally within those granted lands. Some of the Marina expansion configurations presented in this study extend beyond these property lines and onto Sovereign State Lands. These latter are, by force of law, both Aquatic Preserves and Outstanding Florida Waters. Were the marina to be expanded over these lands, special chapters of the Florida Administrative Code would apply and a submerged lands lease will be required.

**Figure 2 - Submerged Lands Ownership**



### 3.0 Ecological Assessment

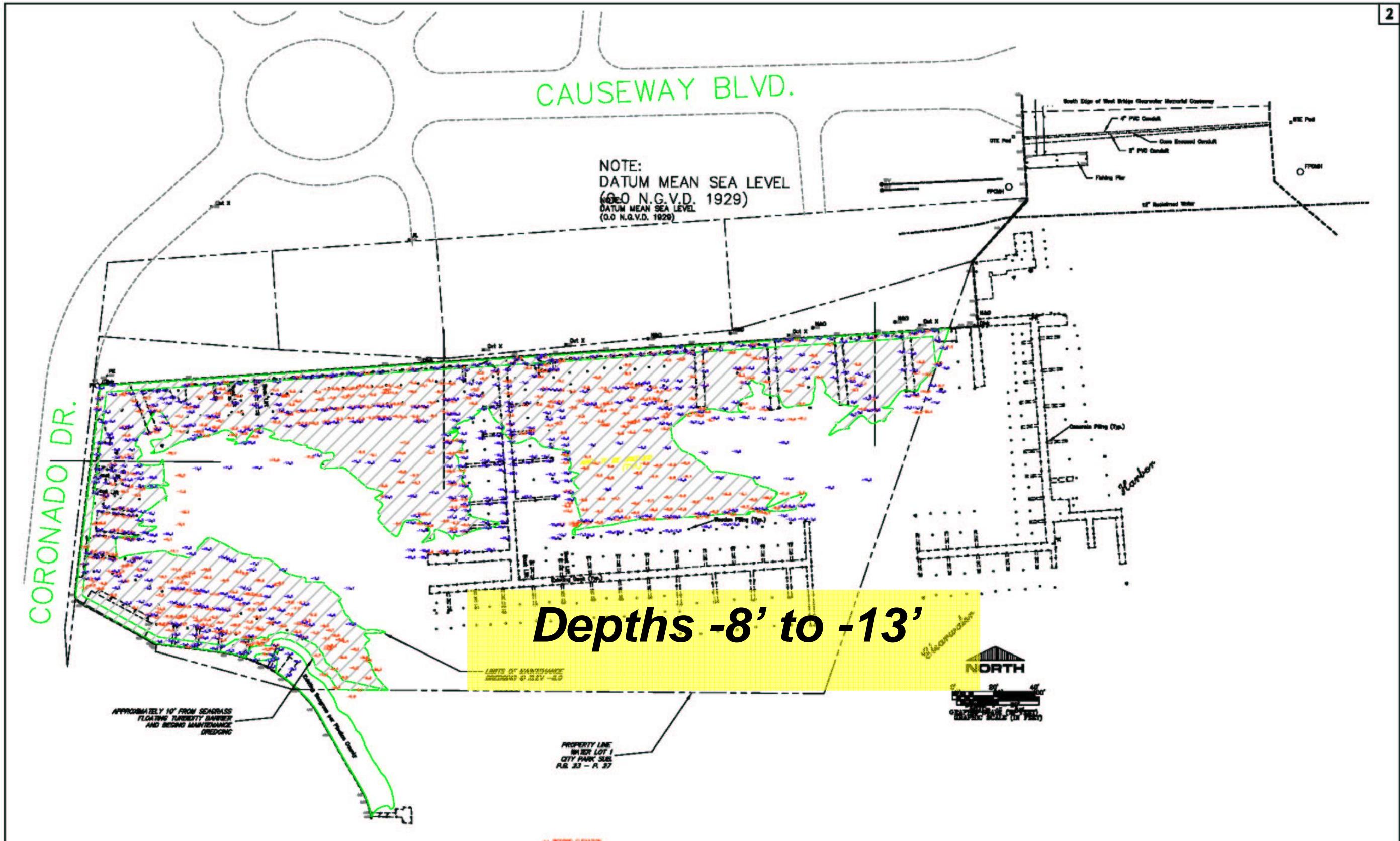
The site in question has been operated as a marine facility since 1951. The north and west boundaries of the basin are seawalled. To the east is Mandalay Channel, an artificial pass created by the filled memorial causeway and Clearwater Beach. The southern boundary of the basin is seawalled and populated with residential development constructed on filled lands. The basin and Mandalay channel have been dredged. The most recent dredging occurred in 2004. Bathymetry is presented in **Figure 3** on the following page, with depths in the marina varying between 8 and 13 feet.

Sensitive natural resources within the project boundary are limited. Habitats include sandy and muddy bay bottom, seagrass beds, and hard surfaces usable by sessile organisms such as oysters or soft corals. The combination of depth and seawalls have served to make emergent habitats virtually non existent. There are no mangroves or shore grasses. The seawalls themselves, as well as marina pilings, provide some intertidal habitat which is primarily populated with oysters and barnacles. These same structures, as well as debris and small outcrops of natural rock, provide hard substrate for subtidal sessile organisms. These habitats are either rare, confined to the shore, or ephemeral due to the unstable nature of the debris in question. The bay bottom has been periodically dredged resulting in a chronic disruption of invertebrate populations. This type of perturbation is typically very short in duration as the infauna reproduce rapidly and re-colonization occurs in a matter of months. Mobile resources, such as various fishes and the West Indian Manatee, are transient members of the system. Fishes orient to the structure and many, such as sheepshead and grunt, will take food organisms from the materials growing on piles and walls. Manatees may wander into the area, but are not expected to remain. There are no sources of either fresh or warm waters and food is limited to the small grass beds outside the marina but within the basin. These organisms occupy the major habitat of the area, the water column itself.

Not all of these resources are at risk. The infauna, sessile organisms living on hard surfaces, and the fishes, have acclimated to the habitat provided by the marina and their populations appear stable and normal. The grass beds are within the general basin, but are well outside the sphere of influence of the marina. Of the remainder, the manatee and the water quality are the resources warranting greater attention.

In Pinellas County, north of the narrows, there have been only three manatee strikes since 1974 (30 years). Caution signs, no wake zones and general boater education are to be credited. The risk associated with increasing the number of boats in this marina from 166 to the maximum projected number of 230 is insignificant.

Water quality in Clearwater Harbor has been most adversely affected by the earliest development practices (1950 - 1972). All development since 1972, however, has been subjected to the requirements of the Clean Water Act and locally subordinate regulations. The Clean Air Act has also played a role in reducing pollutant loads to the waters. Both of these Acts, as well as State and County regulations have been revised in a steadily more effective regulatory manner such that current pollutant loads are only a fraction of that in previous years. In addition, paints and piling treatments have been refined to reduce or eliminate pollutants. The design concept being entertained in this study uses floating piers and concrete pilings. These



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CITY OF CLEARWATER, FLORIDA  
PUBLIC WORKS ADMINISTRATION  
ENGINEERING  
100 S. Myrtle Ave.  
Clearwater, Fl. 33756

## **MAINTENANCE DREDGING CLEARWATER MARINA PLAN**

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INDEX BY Name	INDEXED BY C.R.	INDEX NO.	INDEX NO.
SEARCHED 1 <sup>ST</sup> "C"	DATE SEARCHED 03/02	DATE INDEXED 20010115	SEARCHED BY 2 OF 3
APPROVED FOR			
DET. SHERIFF'S OFFICE, R. SHERIFF, R.C. JR.		RECEIVED	

alternatives to pressure treated wood will serve to reduce leachate loads even after increasing the number of slips. Associated upland redevelopment may also provide an opportunity to reduce pollutant loads from surface runoff.

The water quality parameters of most concern to the State are copper and dissolved oxygen (as identified at the August 31, 2005 FDEP pre-application meeting). Copper is known to occur in high concentrations throughout Tampa Bay and Clearwater Harbor. The source is not known, but most marine contractors are now using either concrete piles or piles coated in a sheet vinyl to reduce the possibility of introducing new sources of copper into the waters. Dissolved oxygen was noted as a concern, but there are no data confirming the problem.

The reconfiguration of the marina also provides the opportunity to incorporate the latest technology in fuel transfer safety, spill clean up technology, debris and refuse controls, and other clean marina practices, serving to further enhance water quality improvements.

In summary, the high profile resources in the project area are sparse (seagrass), not at risk (manatee), or stand to be enhanced (water quality). Virtually no resources are put at risk by the contemplated expansion and others may experience reductions to the existing risk.

## 4.0 Existing Marina Layout

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The first phase of the existing Municipal Marina was constructed in 1951. **Figure 4**, on the following page, graphically depicts how the marina has expanded over the past 55 years. The current layout is the result of what happens when a marina is designed to 1950 standards and then, over the years, small incremental alterations are made in order to meet the needs of particular users. Some of these needs may have been temporary. Following the maintenance dredging in 2004, depths vary between 8 and 13 feet. The present configuration is generally unsuited to current commercial and private recreational boating needs and contains open areas that are underutilized.

The marina contains a mixture of slip sizes and types, including the following:

- ◆ 85 recreational slips
- ◆ 23 transient slips
- ◆ 48 commercial slips
- ◆ 6 fuel dock slips
- ◆ 1 commercial fuel dock on the seawall
- ◆ 1 Pinellas County reef vessel
- ◆ 1 City of Clearwater tug/barge
- ◆ 1 City of Clearwater small boat slip

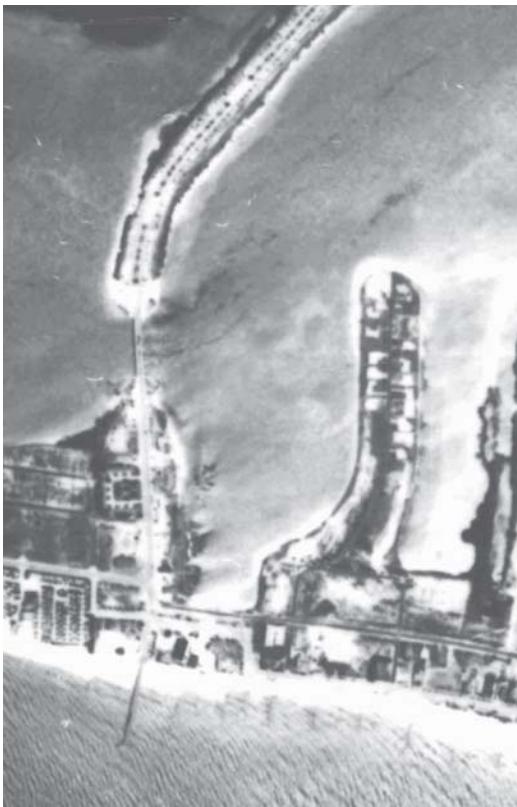
The marina is 100 percent occupied with a waiting list of approximately three years. It operates 365 days a year. Vessels up to 125 feet can be accommodated. The fuel slips provide gasoline and diesel fuel for boaters throughout the immediate area. Sewage pump-out connections are provided at all private recreational slips as well as 24-hour security, free cable TV for transient guest, weather monitoring, free fishing pier and waste oil disposal. Restrooms and showers are provided in the adjacent upland mixed use structure.

The incremental development of the marina over the years has resulted in the placement of storage, freezers, tables, ticketing, offices and inconsistent signage along the northerly and westerly sidewalks serving the commercial slips. Any future redevelopment of the marina should seek to provide these support activities in a more aesthetically pleasing manner, ideally within the upland structure, recognizing some of these activities are not water dependent (e.g. offices, storage).

The photographs on pages 11-15 (**Figure 5**) depict the existing marina.

*Figure 4 - Historical Aerials of Clearwater Municipal Marina*

**1942**



**1951**



**1965**

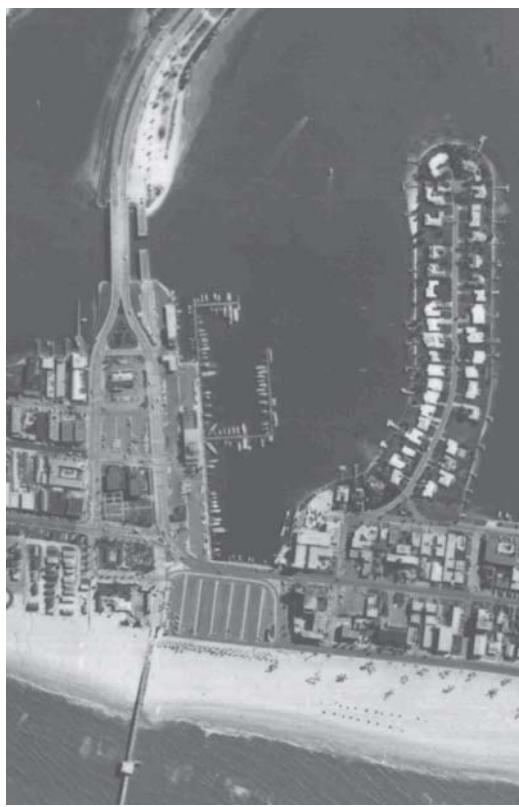


Figure 5 - Existing Clearwater Municipal Marina Photos



Figure 5 - Existing Clearwater Municipal Marina Photos (cont.)



Figure 5 - Existing Clearwater Municipal Photos (cont.)

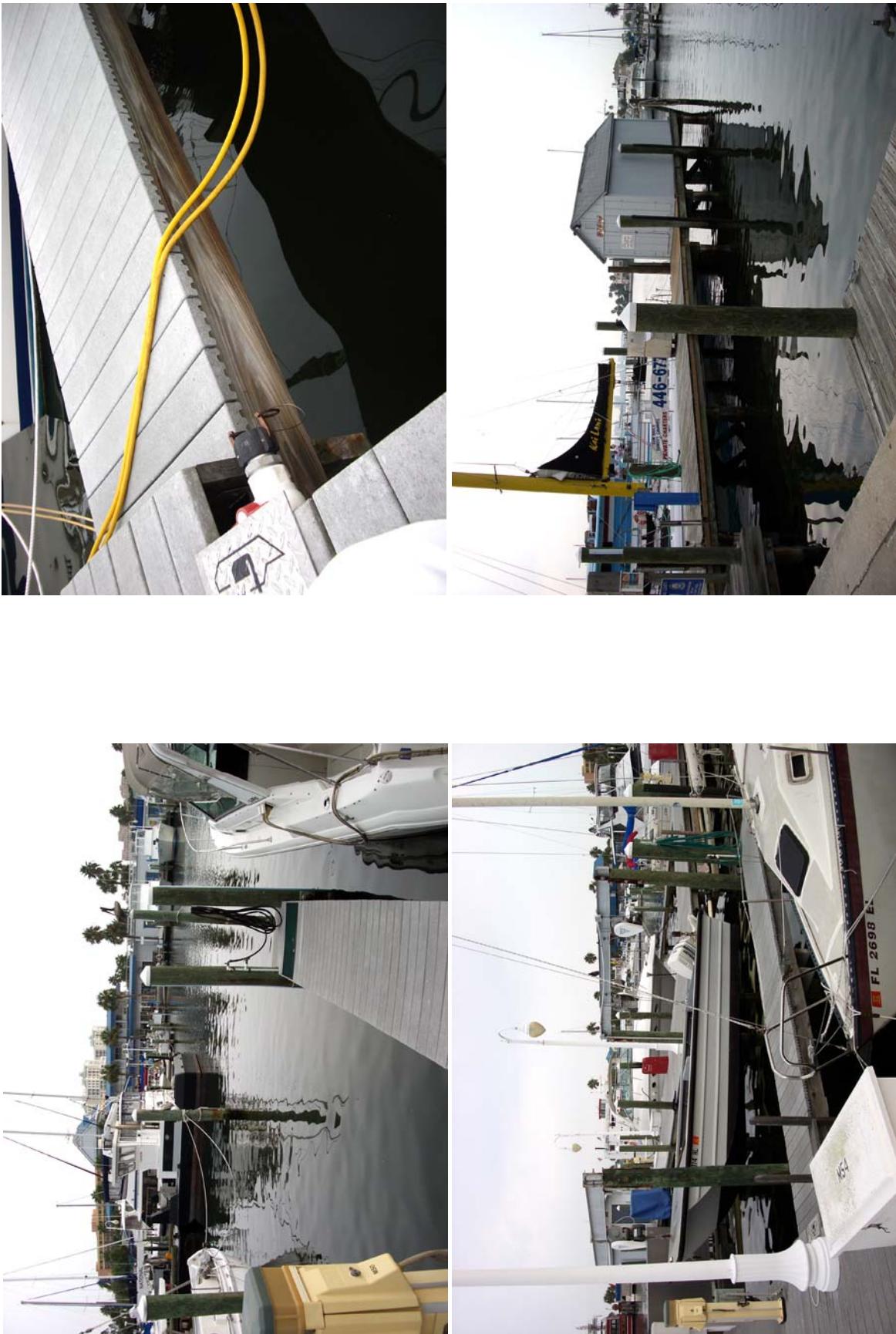


Figure 5 - Existing Clearwater Municipal Photos (cont.)

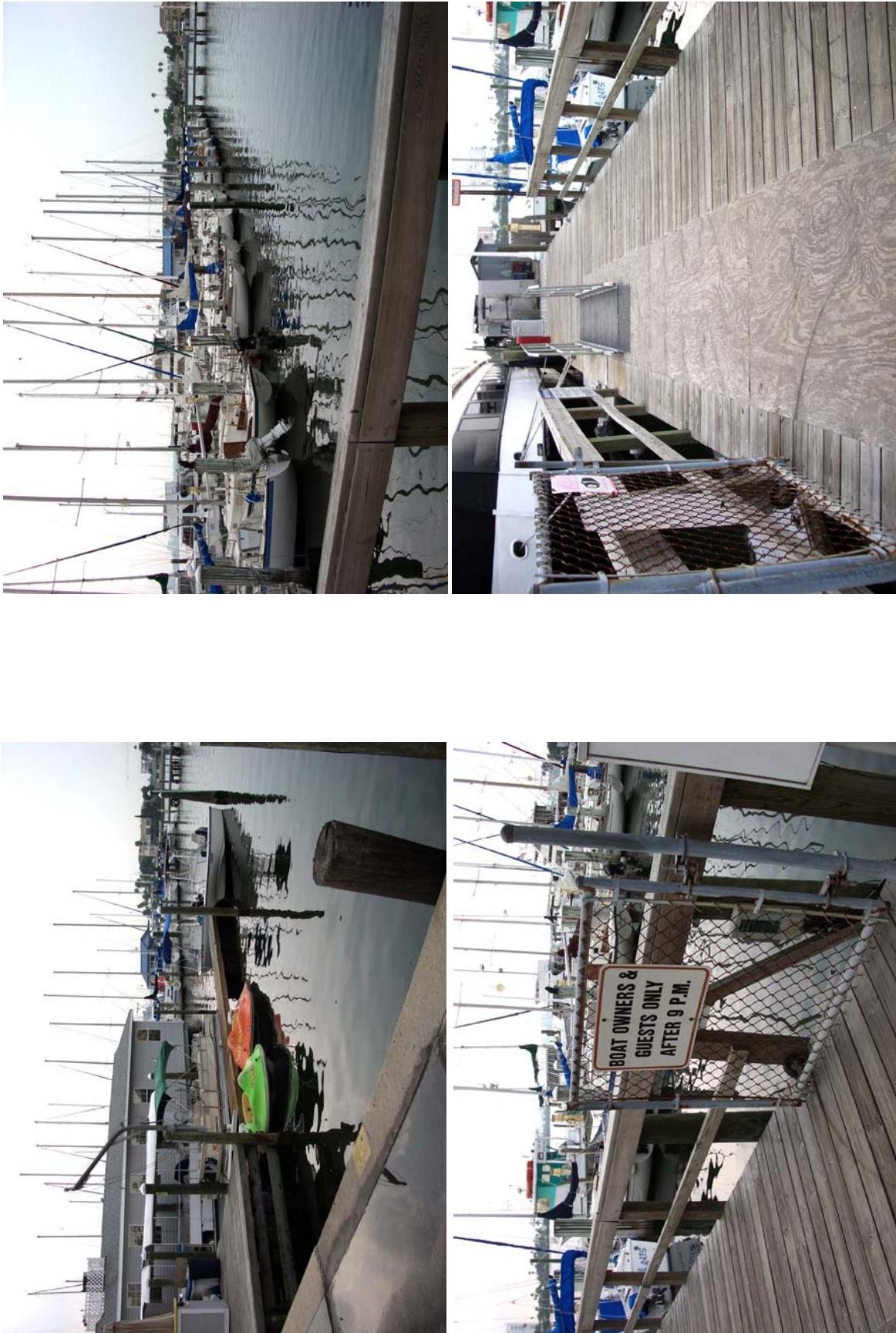


Figure 5 - Existing Clearwater Municipal Photos (cont.)



## 5.0 Applicable Policies And Regulations

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Permits and approvals will be required for the Marina expansion from the City, County, State, and Federal governments. In addition, the Tampa Bay Regional Planning Council and the Pinellas Planning Council are expected to provide guidance. Other advisories will be generated by the National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), Environmental Protection Agency (EPA) and the Florida Fish and Wildlife Conservation Commission (FFWCC). These latter comments will be directed primarily at protected or managed species and water quality while the former are more likely to focus on sociological issues. The agencies themselves will incorporate the comments into the regulatory review.

Because of the nature of the existing facility and the current conditions of the site, the ecological impacts are expected to be subordinate in magnitude to the sociological ones. Still, the agencies have indicated that the facility will be treated as if it were a newly proposed marina because of the magnitude of the reconfiguration.

The County, under the auspices of the Pinellas County Water and Navigation Control Authority, will review the project for compliance with its regulations, but not other County codes. These regulations focus on navigational and environmental issues and the facility can be designed appropriately. Pinellas County will ask for assurances that the upland facility is capable of supporting the marine facility, including providing sufficient parking.

The State permitting may be conducted by the FDEP or by SWFWMD. Under the ERP interagency agreement, SWFWMD would normally conduct permit reviews where upland development occurs concurrently. The FDEP, however, has the ability to select certain projects and retain review under its procedures. Based on conversations with the FDEP, the latter is the more probable scenario. It should be noted that the implementation of the redesign may not occur for several years and this scenario could change. State permitting is also in the process of revision. The Working Waterfronts Bill of 2005 presents new criteria and procedures for marinas being proposed by local governments. The criteria of the new laws have yet to be defined in the Florida Administrative Code, but it is clear that the intent of the legislature is to provide for some relief to the shortage of wet slips throughout the State of Florida.

The existing marina is clearly vested under the provisions of Chapter 380.06 Florida Statutes regarding Development of Regional Impact (DRI) review as evidenced by the fact that the majority of the existing slips were constructed by 1965, nearly eight years before the DRI legislation took effect. This is further evidenced by reviewing the historical aerial photographs on page 10. It is the Consultant's opinion that the additional estimated 64 slips referenced in this study could be added to the existing marina without requiring formal DRI review. The DRI threshold for new or expansion slips is 150, excluding any vested slips.

The US Army Corps of Engineers (COE) will also treat the reconfiguration as if it were a new marina. The focus of the COE is on dredging and discharges, with special attention being paid to protected and managed species and water quality. Because of the history of the site, its recent dredging, and the conversion from fixed piers to floating piers, the project appears to be permittable by the COE.

One particular comment from the agencies was that education on manatees must address the coastal cruiser as that boater may not be as aware of manatees as are most Florida boaters. Regulators were concerned over copper concentrations and dissolved oxygen levels, but these are general concerns which can be addressed in the design and permit development process.

It is also important to note that the use of the slips for commercial or private recreational purposes are not constrained by permits or regulations. While slips accommodating live aboard vessels are required to meet certain standards, the use of a slip for a commercial enterprise is the result of the City responding to the economic demand of the person wishing to do business.

Both State and Federal regulations include an assessment of the general benefit to the public in the construction of new marinas. These public interest tests are particularly important where a lease of bottom lands is required from the State. Regulators stated that fish attractors or habitat improvements will be considered in the public interest. The treatment of upland stormwater will be considered a public benefit as well.

## 6.0 Potential Marina Configuration Process

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In developing different marina configurations, the Consultant followed a deliberate and iterative process resulting in three "Exploratory Marina Layouts". It is important for the reader to recognize there is an unlimited number of optional layouts depending on such criteria as navigational safety, currents, visibility, slip length and width, number of commercial, recreational and/or day slips, etc.

In examining the primary goal of increasing the number of private recreational slips, the Consultant used the process outlined below. Step one sought to define planning boundaries focusing on ecological, physical, geographic, and proprietary limitations. Within these boundaries, regulatory limitations are examined. The sum of these limits provides the "planning space" within which options, such as vessel size, access, and amenities can be explored.

### **Ecological Limitations**

Ecological concerns are discussed in Section 3.0 and are focused on manatees and water quality. Neither of these result in constraints on the actual configuration of the facility. The latter, however, includes a concern over high copper concentrations. Floating docks and concrete pilings are not a source for new copper.

### **Physical Limits**

The physical limits are water depth and the currents of Mandalay Channel. Water depths are generally in excess of 8 feet and would not represent a concern as long as vessels remain in less than deep draft categories. The currents in Mandalay Channel are reported to be strong constraining maneuverability and navigational safety. The actual length of the seawall presents a physical limit to the number of vessels which can be moored directly to that wall. The latter is a stated preference of several commercial users, and therefore, must be considered.

### **Geographic Limits**

Geographically, the boundaries are Mandalay Channel itself and the unmarked channel are used to enter the existing marina. To the south, along the south shore, are residential properties most of which have moorings as amenities. These boaters have navigational needs which must not be unduly infringed upon by the expansion of the marina. To accommodate this, a setback line was drawn sufficiently offshore of the ends of these docks to allow for safe navigation. This line was used as the southern boundary of the unmarked channel. A channel width of 150 feet was assumed. The northern edge of this channel becomes the southern geographical limitation of the marina expansion area.

Wind and wave exposure were also considered as a potential geographic limit. Northern, Western, and Southern exposures are sheltered by adjacent land masses. Memorial Causeway reduces the Eastern fetch so that waves are not extreme except in extreme storm conditions. Exposure, therefore, was not considered limiting.

## **Proprietary Limits**

The initial assumption used in the study was that the facility should be located on Water Lot One. During initial phases of the work, it was learned that the City also has title to the lands east of Water Lot One as a result of the 1925 land grant. Lands to the South are Sovereign State Lands. During the course of the study, the limitation of remaining on Clearwater Property was removed because State Officials expressed only minimal concerns over the expansion. The passage of the Working Waterfronts Bill was also considered in the removal of the proprietary limitation.

## **Regulations**

Regulatory restraints arise from City, County, State, and Federal Regulations. These will be addressed in a later section, but are summarized here. Each of these regulations focus on the protection of natural resources and the safety of navigation. For planning purposes, therefore, the regulatory limits were perceived to be ecological impacts and safety issues, not the process of obtaining permits.

## **Planning Goals**

Meeting the goals actually represents the final set of limitations. Specifically the project must meet the needs of the citizens of the City of Clearwater. The statement imposes a limit that the project cannot be socially or economically unacceptable.

Within that framework, the desires or goals given to the planning team were to:

- ◆ maximize the number of private recreational slips
- ◆ maintain the existing mixture of commercial and private recreational uses
- ◆ focus increases in slips on private recreational uses
- ◆ maintain the general mixture of the size of the slips
- ◆ assure functional integration with the upland redevelopment
- ◆ improve facility itself by making slips wider, adding finger piers, improve amenities, and converting to a floating system

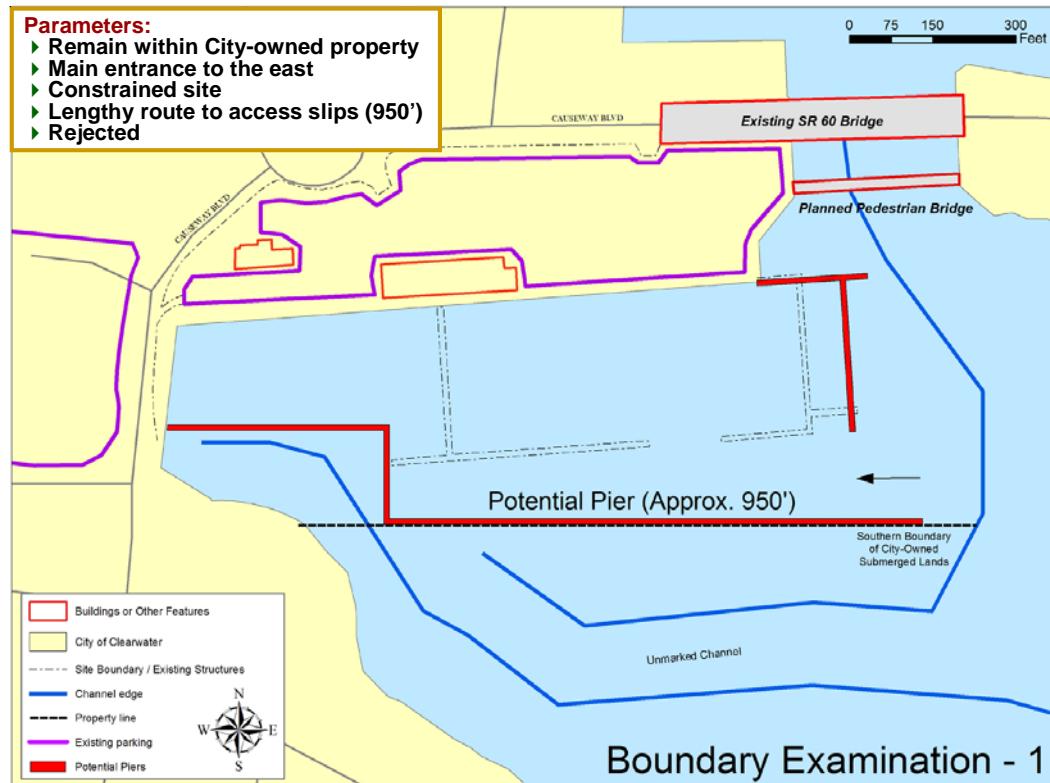
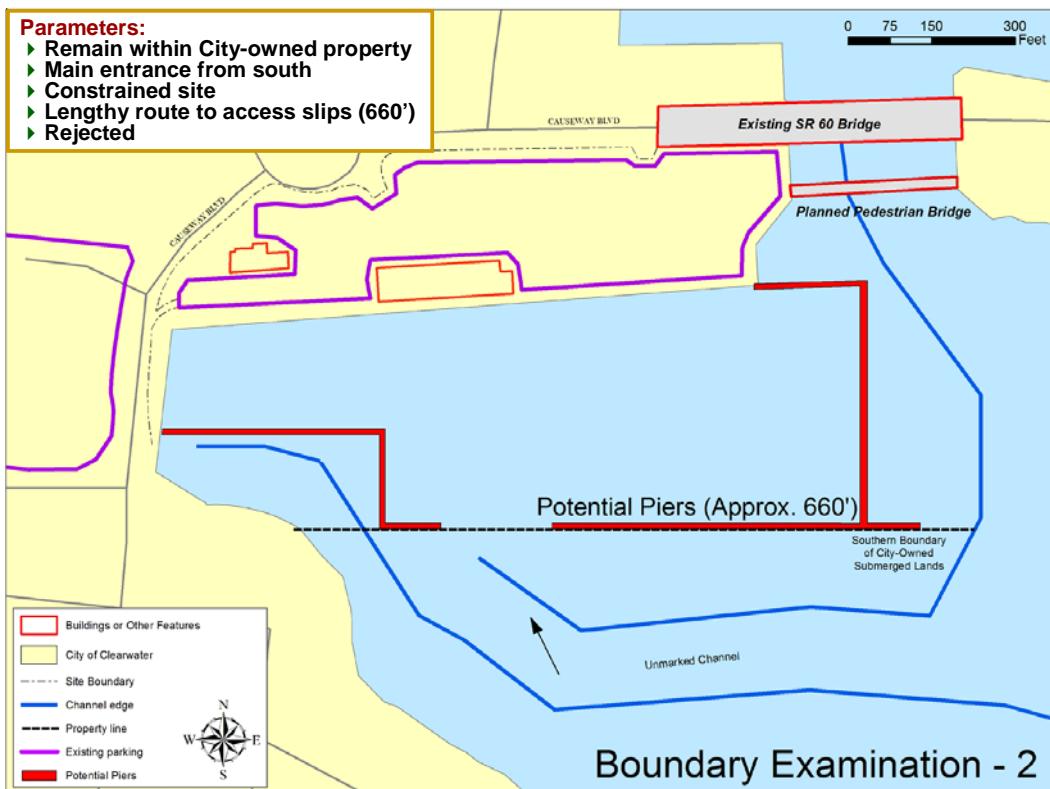
## 6.1 Preliminary Discussion Regarding Optional Slip Layouts

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Early in the process, the planning team recognized that adding new wet slips was not the only way to increase the public access. Alternatives include boat ramps, high and dry storage facilities, mooring fields, and even an alternate site located at the southeastern tip of the Memorial Causeway. The latter was particularly interesting because of the planned addition of a pedestrian bridge which could provide access from the main facility. Each of these was rejected, primarily because grant funding by the State for this project was specific to expanding the exiting marina and the City plans to assess the feasibility of three separate sites for a future high and dry facility under a forthcoming State grant.

Boat ramps and dry storage facilities are not water intensive, but are land intensive requiring extensive parking and upland facilities. The mooring field concept requires ferry services and each vessel requires a large space in which to swing on its mooring. There was insufficient space considering the location of channels, seagrasses, and other restraints. The facility at the alternate location was considered beyond the boundaries of the study but remains a potential location for day moorings subject to future investigation.

Focusing on new recreational wet slips with the constraint of remaining on City property, two configurations were produced and quickly rejected by the planning team. See **Figures 6** and **7** on the following page. Each configuration would require private boat owners in the most distant slips to walk in excess of 700 feet to reach their vessel. The configuration restricts safe navigation and reduces water surface available for slips. Taken in conjunction with the FDEP's minimal concerns over leasing state lands, the decision was made to abandon the proprietary limitation.

**Figure 6 - Boundary Examination 1****Figure 7 - Boundary Examination 2**

## 6.2 Development Of Discussion Configurations

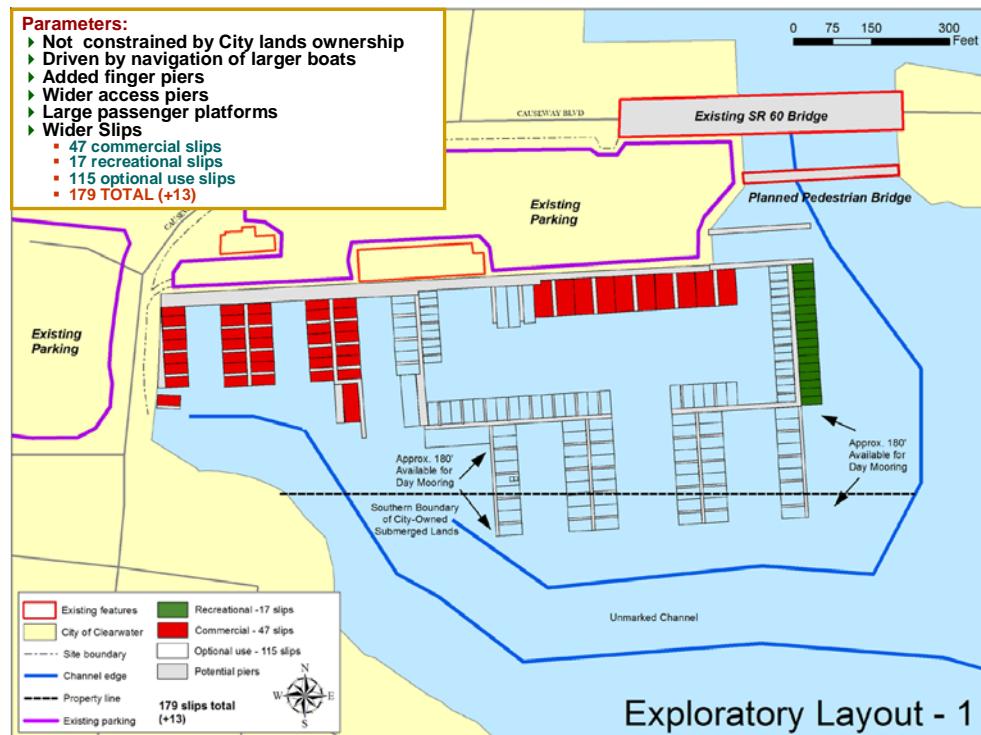
The need to develop discussion with the potential users was addressed by preparing three configurations (Exploratory Layouts), each maximizing or assessing different use and design options. One of these was presented to the Marine Advisory Board on September 14, 2005 for the specific purpose of generating discussion over which optional attributes were perceived as more valuable to the users. These optional components included slip size and width, the location of fueling facilities, and navigational concerns or options. Commercial users are also concerned with storage, trash disposal, ticket sales, visibility, availability of ice or the ability to load and unload perishables or the daily catch. Passenger safety was also identified as a priority issue.

The three Exploratory Layouts are presented in this section -in **Figures 8, 9 and 10** labeled **Exploratory Layouts 1, 2 and 3**.

### 6.2.1 Exploratory Layout 1

This configuration (**Figure 8**) was driven primarily by easing the navigation of the larger vessels. In the existing marina these vessels are located in a manner which requires that a large turning or maneuvering basin be located in an area that could otherwise be utilized for additional slips. The layout also includes wide access piers and very wide passenger waiting platforms to enhance public safety. Wider slips and finger piers were also added. The layout was rejected. While it provides for an increase of 13 slips, the relocation of the passenger vessels away from the seawall creates some logistical problems. During this evaluation, a differentiation was made between passenger vessels requiring high levels of logistical support, such as a dinner boat, and passenger vessels with little to no need for loading and unloading supplies, such as a parasail operator.

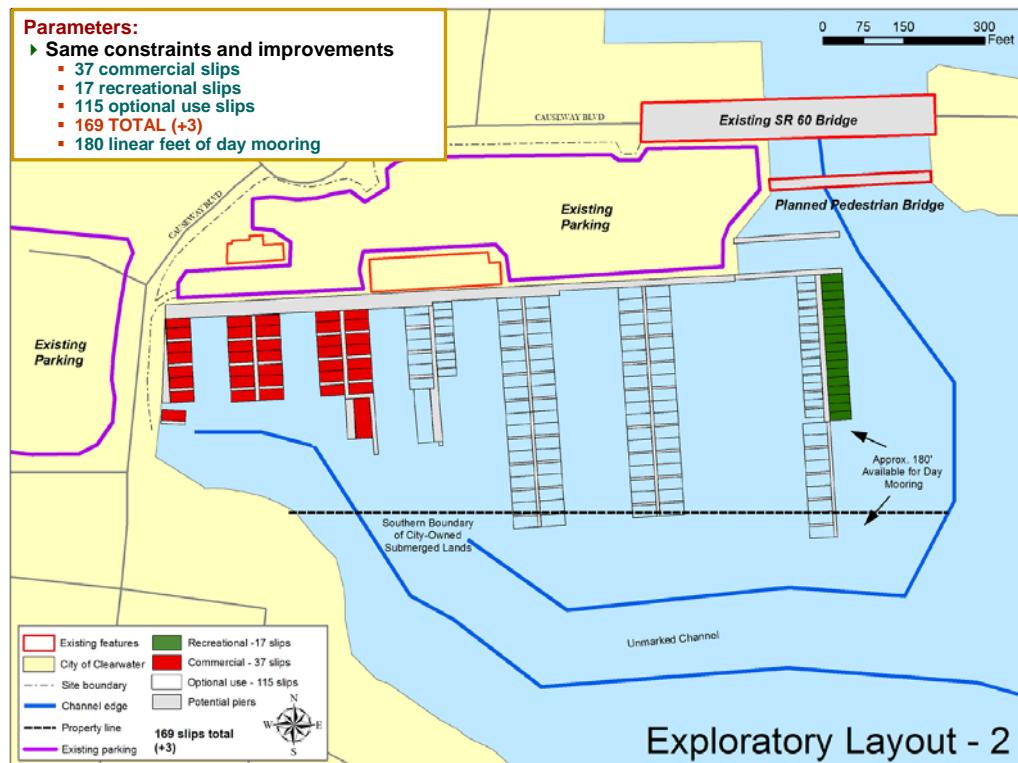
**Figure 8 - Exploratory Layout 1**



### 6.2.2 Exploratory Layout 2

This configuration (**Figure 9**) was driven by the concept of eliminating all seawall mooring, thereby eliminating preferential slips, and by reducing the general size of the boats. Encroachment onto state lands was also limited. This option creates a facility which is easily used by either commercial or private recreational users, but does not offer the support services needed for commercial users. It was rejected, but did highlight the ability to maximize slips and minimize walking distances using straight line pier configurations.

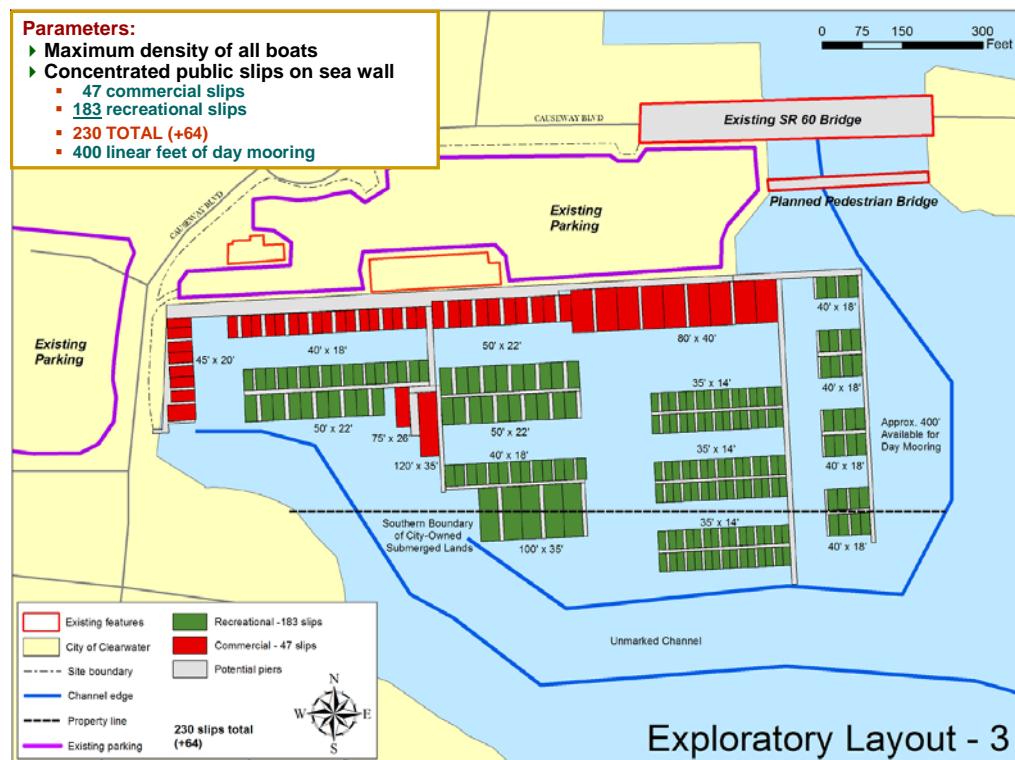
**Figure 9 - Exploratory Layout 2**



### 6.2.3 Exploratory Layout 3

This configuration (**Figure 10**) was driven by the principle goal of maximizing private recreational slips. It would provide 230 total slips, an increase of 64 private recreational mooring spaces. The slips are wider and generally larger than in the existing marina and each is enhanced with a finger pier for easy access. The easternmost pier would also provide in excess of 400 feet of day mooring space. Exploratory Layout 3 was used to develop the dialogue with the Marine Advisory Board and the existing tenants.

**Figure 10 - Exploratory Layout 3**



## 6.3 Integration With Upland Redevelopment Plans

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Concurrent with the development of the three Exploratory Layouts, City staff expressed the need of the commercial boaters to have storage space off the docks, ticketing spaces, fuel, visibility, and the integration of these with the eventual redevelopment of the upland parcel. A specific design program for the future redevelopment of this parcel has not been developed by the City. Potential upland uses could include a hotel, public parking, guideway station, retail, office or service space, ships store, restaurants, and upland storage, ticketing and reservation stations, etc. It is important that the ultimate layout of the marina and the upland redevelopment program be coordinated and confirmed to ensure each facility complements the other. This future upland facility would likely help remove some of the unsightly support activity that currently exist along the northern walkway between the marina and upland structures.

It was noted that a portion of the customers of the commercial fleet were impulse users, most coming from beachfront hotels, restaurants or the parking lot. The existing ticket sales facilities may not compliment the ambience envisioned for the future marina. The safety of pedestrians clustered along Coronado Drive was also an expressed concern. There is also the strong potential that the focal point of the upland facility could shift to the east with the future redevelopment which will likely occur after 2009 when the current Post Office lease expires. Again, any proposed marina reconfiguration should interface easily with an upland mixed use facility generally located midway along the north sea wall.

As part of this feasibility study the City Marine staff sent a survey to all the current commercial marina slip users. This survey identified the source of clients, days at sea per month, and vessel information (i.e., length, beam, draft). A copy of the survey results is in **Appendix B** of this report. One of the questions in the survey was whether their passengers were walk-up passengers or if they made advance reservations. It is critical to acknowledge the difference in these two categories when compared to the superficial corollary pair of impulse and pre-planned passenger types. It is likely that a large number of passengers without reservations simply knew they did not need a reservation, but had planned to take the trip. It is presumed that most people are unlikely to embark on a cruise, fishing trip, or adventure that may be several hours in duration on an impulse. Short trips, such as parasail adventures, or sight seeing trips are more likely to attract an impulse passenger.

Exploratory Layouts were prepared while considering the changes in the associated uplands as well as the planning constraints mentioned previously.

## **6.4 Refinement Of Potential Configurations**

The dialogue that resulted from the multiple discussions with users, staff, and agencies led to valuable refinements in the planning criteria. Salient points include:

- ◆ The future market is not known, but if current trends persist, the need for private moorings will become greater.
- ◆ The future market demand as it relates to length and beam of slips is expected to trend towards both longer and wider vessels. Clearwater is developing a larger percentage of large vessel owners and Catamaran and Trimaran hulls are becoming more prominent.
- ◆ The finger piers are an amenity that, if eliminated could result in more slips, but would degrade the overall functionality and quality of the structure.
- ◆ The interface in design and function between the envisioned upland redevelopment and any selected marina configuration is critical to the future success of the facility.
- ◆ Commercial users can be segregated into groups based on their source of passengers, need for logistical support, passenger load, and the type of business being conducted.
- ◆ Currents in Mandalay Channel may be too great to allow expansion eastward of the existing easternmost bank of slips. Modeling of the channel would be appropriate as part of the design phase.
- ◆ There is a potent pressure among some commercial users to maintain the existing configuration of the slips in the northwest corner of the facility.

## 6.5 Exploratory Analysis Of The Northwest Corner Of Marina

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The final point in the above list is the concern that some commercial vessel owners have regarding changes to the northwest corner of the existing marina. Identified perception of needs include:

- ◆ **Location of established business:** Some users voiced the concern that their passengers would not know where to find them if they moved.
- ◆ **Reliance on walk up passengers:** Users voiced concern that their passenger base was walk up and moving away from the corner would put them further from the pedestrian traffic patterns from which they draw customers.
- ◆ **Visibility:** Users voiced a concern that if they were to move down the seawall, their potential passengers would not be able to see them, and therefore the impulse based trip might not be taken.
- ◆ **Storage:** Users expressed a concern regarding the proximity of assigned bunker space.
- ◆ **Ticket sales:** Users expressed a concern that ticket sales located in other areas would not be productive, believing that the sight of the boat itself is a strong inducement to sales.
- ◆ **Improvements:** Several users expressed a sense of investment based in having constructed ticket booths, storage units, sales offices, and corporate offices all at their own expense. Any relocation within the marina was perceived as a loss of this investment.

These perceptions may not reflect actual needs, but each of them are founded on basic economics and business elements. As mentioned previously, the walk-up customer may or may not be an impulse customer. There are no data at this time to refine this distinction further. "Location" is a long standing maxim in attracting customers. It is, however, only a reflection of the integration of behaviors extant in the vicinity. For example, a good location can become a poor one with the installation of a traffic signal. The analog here is that a good location will only remain good if the pedestrian and automobile traffic patterns do not change, if the economy does not change, and if adjacent uses do not change. Current location, therefore, in and of itself is irrelevant in light of planned changes to all of the elements mentioned. Sub elements of location though remain exceptionally relevant. Visibility, logistical support, customer safety, customer satisfaction, and lesser elements of location are all strong influences on commercial success or failure. In a similar manner, the location of ticket points of sale are mentioned as a critical element, but it is possible that the current location may not be the best under future conditions. In some instances, the change in location of one or two popular, reservation based vessels, could affect pedestrian traffic patterns throughout the marina. It is possible, that such a relocation would actually increase the number of good locations by stretching traffic patterns and dispersing crowds, increasing exposure to other areas of the marina. These elements have not been studied as a part of this work, but are recommended for inclusion in future design considerations.

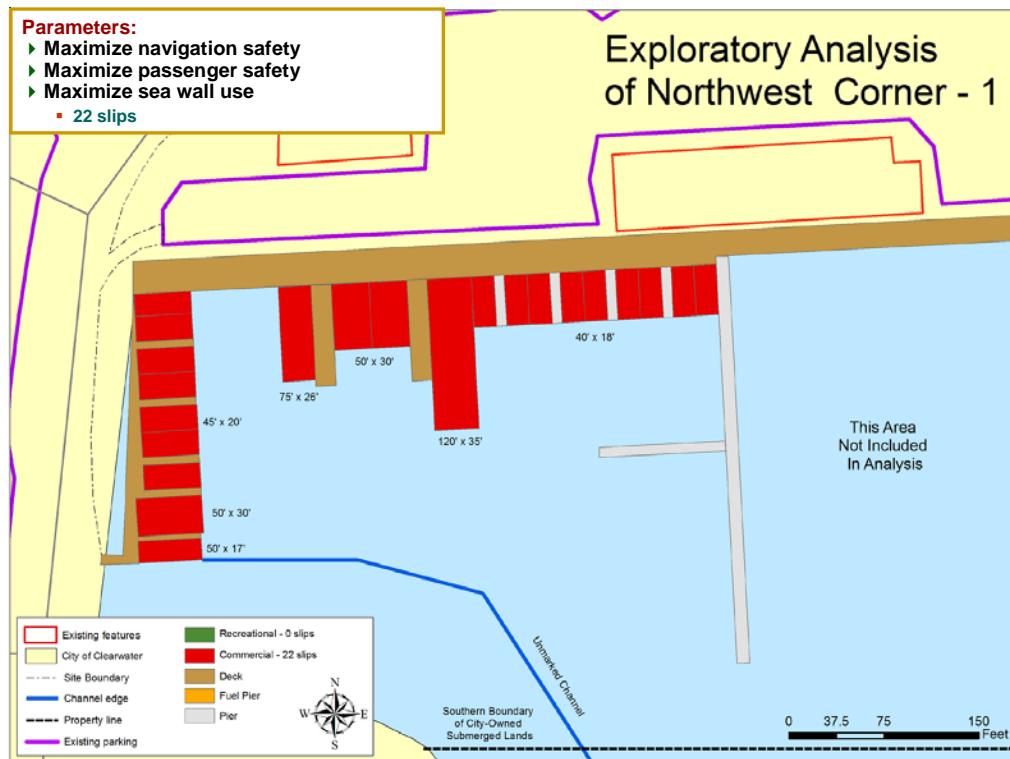
In discussions with City Staff, Marine Advisory Board and commercial boaters, there are specific obstacles and opportunities associated with the Northwest Corner of the existing marina. Consequently, the Consultant conducted exploratory analysis involving these potential slip layouts. It is important for the reader to understand that the specific number of slips discussed in each layout below reflects only those slips in the northwest corner. Additional commercial slips would likely be provided along the existing seawall.

### 6.5.1 Exploratory Analysis Of Northwest Corner: Layout One

In this layout (**Figure 11**) navigational safety and passenger safety are maximized. Slips along the west wall are designated for commercial vessels with low passenger capacities and little to no needs for logistical support and storage. These are expected to be parasail operations, personal watercraft operations, and others catering to impulse users with little baggage and few amenities.

Larger vessels with high passenger capacities and high logistical and storage needs are on the western portion of the north wall. Finger piers are very wide allowing passengers to move off the wall and parking area, onto a staging area. To the east of these vessels are medium sized boats with high logistical and storage needs and moderate passenger capacities. Charter fishermen would be typical for this area. The first configuration allows for 22 additional slips.

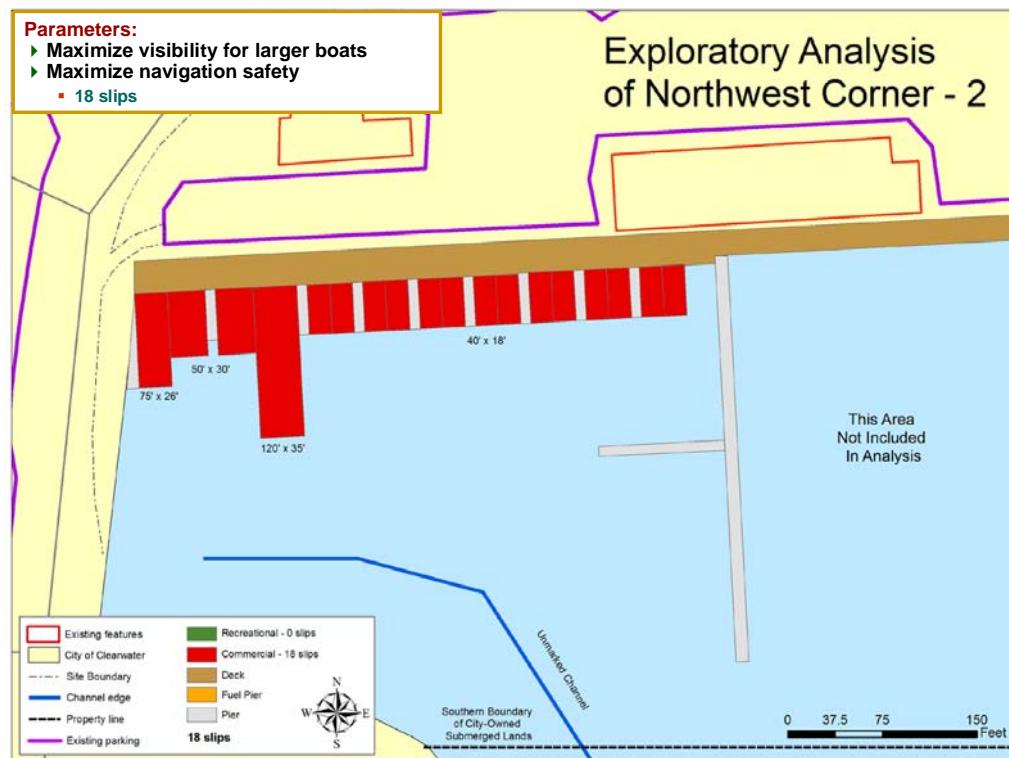
*Figure 11 - Exploratory Analysis of Northwest Corner #1*



### 6.5.2 Exploratory Analysis Of Northwest Corner: Layout Two

This analysis was conducted to explore the affects of putting large passenger capacity boats in the corner in order to maximize visibility. Navigational safety is accommodated by eliminating mooring along the west wall. The layout is similar to the existing condition, but the moorings are adjusted to reflect a more organized and modern facility. Slips to the east, along the wall, are expected to be occupied by moderate passenger capacity vessels with a high need for logistical support and storage. The second configuration (**Figure 12**) satisfies the need for visibility, but does little to enhance passenger safety. The layout provides 18 slips, but personal water craft facilities could be added to the west wall.

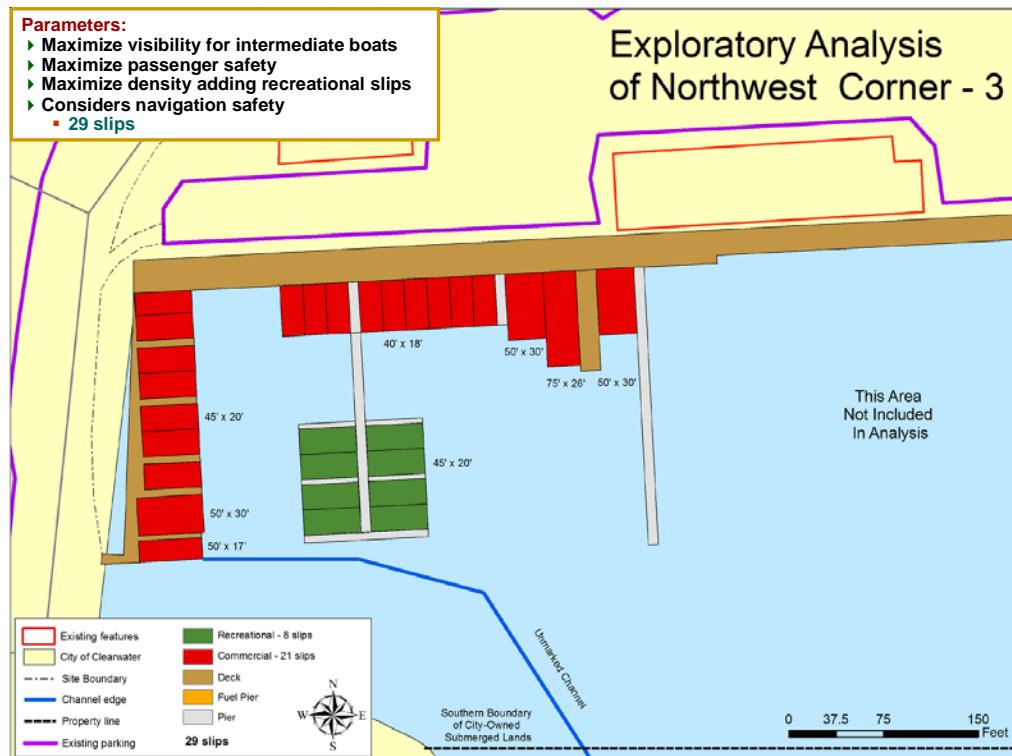
*Figure 12 - Exploratory Analysis of Northwest Corner #2*



### 6.5.3 Exploratory Analysis Of Northwest Corner: Layout Three

The third configuration (**Figure 13**) was developed based on several criteria. Passenger safety was maximized by providing high passenger capacity slips more to the east. The perception that was expressed regarding visibility must be weighed against the fact that large and tall boats can be easily seen even from a distance of a hundred to a hundred and fifty feet. Navigational safety was maximized by providing a turning basin for the larger boats that is not constrained to the west as it is in layout two. Intermediate sized, small capacity, boats with low logistical needs are located along the west wall, maximizing their visibility. These boats are also most likely to attract impulse passengers and are at sea frequently. The collective result is that the western bank of slips will be empty most of the day, and there will be few passengers waiting on the sidewalk. The relocation of the larger commercial vessels also allowed the insertion of a small bank of private slips. The configuration provides 29 moorings.

*Figure 13 - Exploratory Analysis of Northwest Corner #3*



## 6.6 Composite Potential Layouts

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During the course of data collection and user group discussion, it was learned that several of the initial assumptions and some of the project goals were in need of modification. It was determined that environmental and regulatory restrictions were not driving the potential for reconfiguration as much as the existing and future market conditions. Variables which remain very uncertain include future market demands for slips of various lengths and widths. The future demands for private recreational slips are uncertain, but are expected to rise. The comparative demand between private recreational and commercial users is also uncertain. It is, however, evident that the future market is likely to be controlled by a shortage in supply for both commercial and private recreational slips.

This study is funded by the Florida Fish and Wildlife Conservation Commission (FFWCC), Florida Boating Improvement Program administered through the Florida Department of Environmental Protection with the stated objective to determine the feasibility of increasing moorings for privately owned recreational boaters. For this reason, and this alone, the following composites were prepared by keeping the number of commercial slips constant and altering the sizes and locations of private recreational slips. Locations of commercial users were shifted for demonstration purposes only.

It is important to note that there are no restrictions other than those the City places on itself with regards to commercial and private recreational slips. A commercial slip is a commercial slip simply because the City chooses to allow its use by a commercial vessel. While it is true that certain slips are better suited to commercial users than are others, the designation is fundamentally arbitrary.

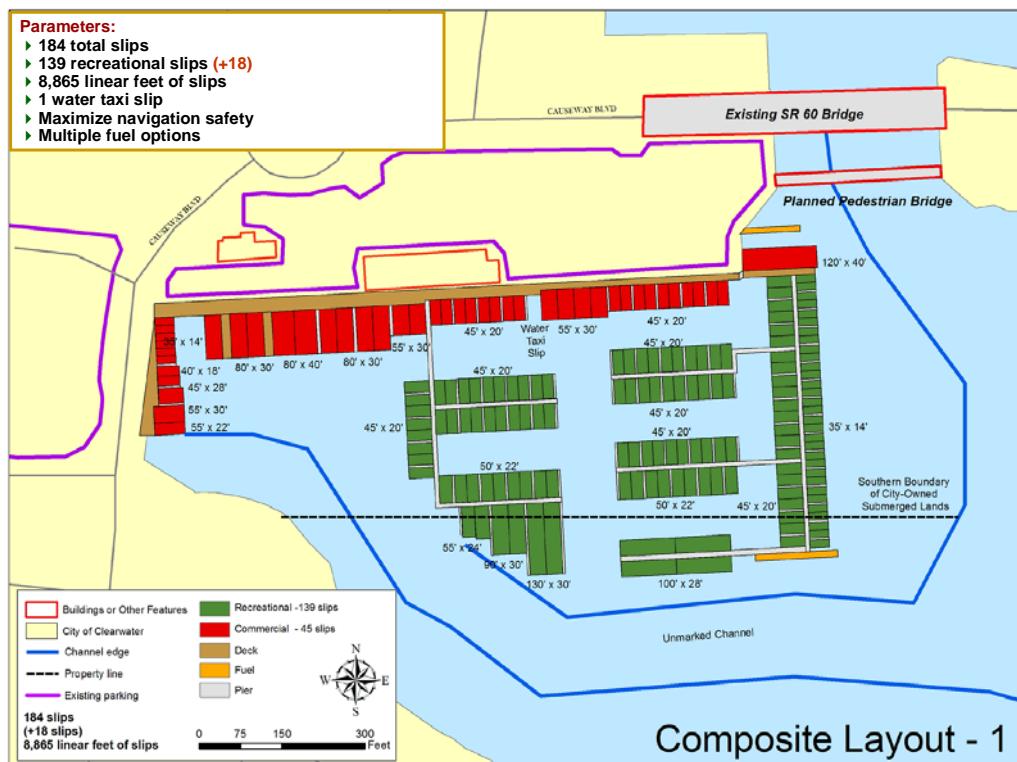
The term composite layout is being used in this study in lieu of the more traditional "alternative" for several reasons. First, in the layouts, sub elements may appear in several places or not at all. For example, there are numerous potential locations for fueling stations. More specifically, Layout Three shows four potential locations. It is not the intent of this report to suggest that four be constructed, but to show that four are feasible. Similarly, in Layout One, a ferry slip is shown which does not appear in Layout Three. The ferry slip is shown to demonstrate that almost any slip can be used for this purpose, or more than one slip may be used. The location and size of the designated slip are largely variable. Final selections of slips for fueling or use by a ferry should wait until design level plans are developed.

### 6.6.1 Composite Layout One

Composite Layout One (**Figure 14**) identifies 184 total slips, 139 designated as private recreational slips. It includes a water taxi (ferry) slip and two fueling options. The commercial fueling station is not shown. The configuration has been designed to maximize navigational safety, passenger safety, commercial logistics, and to isolate privately used slips for security reasons. The latter four criteria apply to all three composites.

The configuration provides a wide range of slip sizes, including some slips for private boats in excess of 80 feet in length. Smaller more maneuverable boats are clustered to the east, nearer the eddies of the currents of Mandalay Channel.

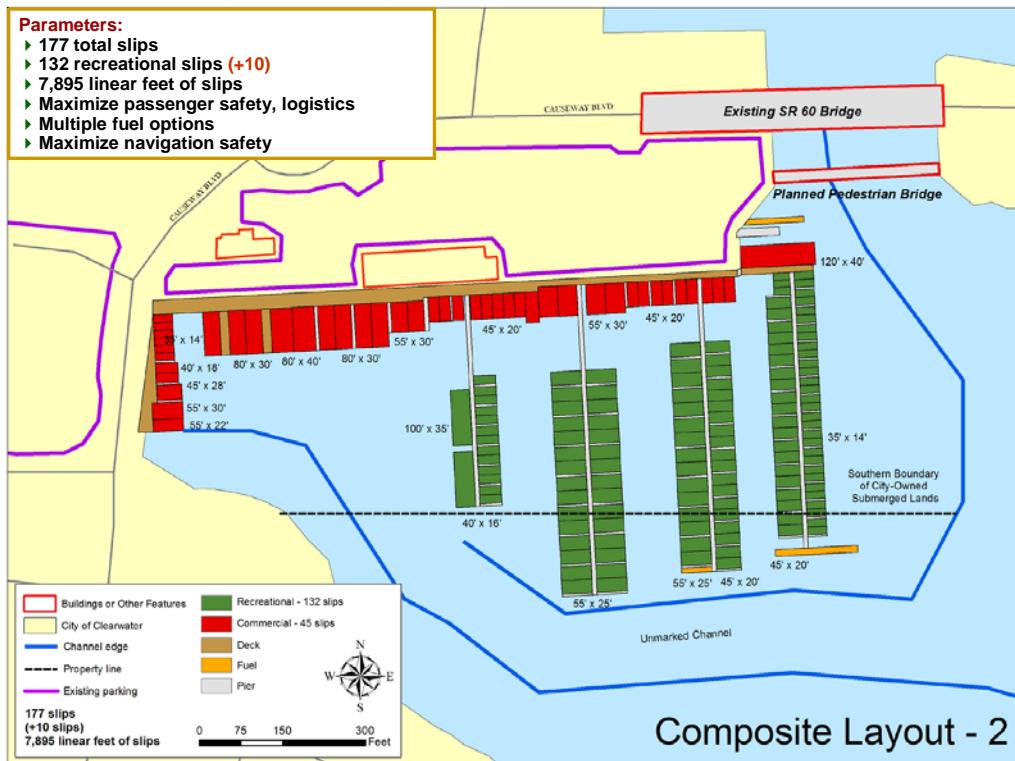
**Figure 14 - Composite Layout 1**



### 6.6.2 Composite Layout Two

Composite Layout Two (**Figure 15**) provides for a total of 177 slips, 128 of which are designated for private recreational use. While maintaining the criteria of safety, logistics, and security, the slip mixture contains fewer places for large private slips and more spaces for mid range boats (45-55').

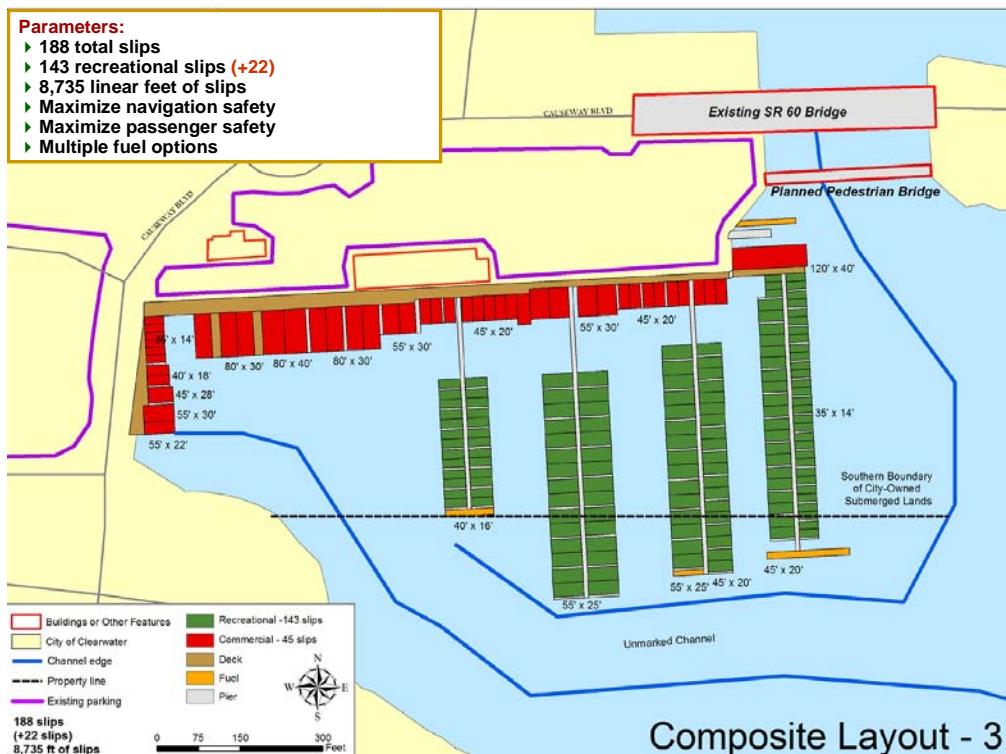
**Figure 15 - Composite Layout 2**



### 6.6.3 Composite Layout Three

Composite Layout Three (**Figure 16**) reflects a concept which maximizes the number of slips, while sacrificing the larger slips. Private recreational moorings are limited to 55 feet in length. The configuration does provide 188 total slips, 143 of which would be designated for private recreational use.

**Figure 16 - Composite Layout 3**



## **7.0 Revenue Considerations**

Revenues (fees) are calculated by multiplying the length of the boat by a rate. To provide a quick estimate of potential revenues for marinas with different mixtures of slip sizes, a total length of rentable slips was generated. At capacity, each configuration will generate revenue based on this total. Composite Layout One provides for a cumulative total of 8,865 linear feet of mooring space. Composite Layout Two has 8,415 linear feet of slip space, while Composite Layout Three provides 8,735 linear feet.

This feasibility study does not include a market study, revenue projections, return on investment or an affordability determination. The grant funding for this study was provided for the purpose of determining whether additional recreational slips could be accommodated within and/or adjacent to the existing marina. Follow-up grant funding will likely be requested by the City to address these project issues as the next phase.

## 8.0 *Estimated Marina Costs*

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For future budgeting purposes, an order of magnitude cost estimate of \$8,100,000 has been developed for the design, permitting, bidding, and construction of the marina. The estimate includes a 15% contingency. The costs were developed in concert with an internationally recognized marina designer/developer that has constructed numerous concrete floating marina systems throughout Florida and the southeast. **Table 1** on the next page provides a general breakdown of major anticipated costs.

With the exception of upland utility connection costs, the cost estimate includes only construction proposed outside of the existing seawalls with all work commencing at the gangway connections to the seawalls. The estimate assumes the adequate structural integrity of the existing seawalls recognizing a structural analysis of the existing seawall was not included in the scope of this assignment. No upland development costs are included recognizing the upland tract will be developed under a separate design program sometime after 2009. The cost estimate is based on an estimated maximum number of 230 boat slips. Items included in the cost estimate would be the floating concrete docks manufactured, delivered and installed with piling and pile driving. Utility systems construction includes electrical service to each slip along with potable water, sanitary sewer, cable TV for transient slips and telephone service. In addition a fire protection system would be installed and pump-out services provided with a central vacuum system which would allow vessel pump-out at the slip without having to move to a single pump-out location. All utility infrastructure improvements would need to be brought to these entrance locations from the upland tract. Existing utility maps are provided in **Appendix A**.

Typical sizes of pipe for water would be a main line of 2" downsizing to 1" on the individual docks main walkways. The sewer pump-out system would consist of a 2" line throughout the marina and the fire protection system would consist of a 4" main line along the North dock, downsizing to 3" for each of the individual docks main walkways.

Depending on the specific number and location of fuel service slips, a preliminary budget estimate for fueling improvements of \$200,000 is proposed. The City has upgraded the underground fuel tanks on the upland tract to meet current standards, thereby reducing the overall fuel system costs that would normally be associated with a new marina.

The existing marina includes 31,007 square feet of wood decking. Based on information provided by the nationally recognized marine contractor, marina demolition costs could range from \$35.00 to \$50.00 per square foot (i.e. \$1,085,000 to \$1,550,000) depending upon potential pollutants within the existing materials and off-site disposal costs. However, in discussions with the City staff and marine contractor, a more realistic estimate is \$500,000 is being used given a grinder could be utilized at the site limiting the volume and number of hauls.

Further, the estimated costs are based on design criteria which would likely survive Category 1 or 2 storm event. A Category 1 or 2 was selected given the protection afforded the marina on three sides and limited historical storm damage. An estimated 25 percent cost increase could be assumed if designed to a Category 3 storm event. All engineering for structural and utility systems is also included in the total project

cost estimate which is based on 2005 dollars. If construction occurs in 2009 or subsequent years, an inflation factor should be utilized.

As previously discussed, a specific redevelopment program for the upland tract has not been developed to date. In discussions with the City's Economic Development Director, Planning and Marine staff, the Marine Advisory Board and several commercial vessel owners, there is a distinct need to coordinate the design program for future upland redevelopment with the marina redevelopment. For example, much of the storage, office space, and ticketing currently located on the docks and needed to support the commercial vessels could be integrated into an upland mixed-use structure. Likewise, the proposed uses and specific location of a multi-use facility on the upland tract could affect where select commercial vessel owners would desire to locate within the marina. City staff is currently discussing optional upland uses for the site. Should the City desire to partner with a developer of the upland tract, that developer would likely have specific goals regarding the uses proposed.

Finally, some cost savings would likely be realized if the marina redevelopment and upland redevelopment occurred simultaneously. However, as previously noted, the marina redevelopment could occur in advance of any upland redevelopment. Additionally, the City should consider a design-build delivery system for the marina recognizing the potential cost and time savings that could be realized.

**Table 1 - Estimated Marina Costs  
Assumes 230 Slip Marina**

Floating docks & piling = \$26,000 / slip x 230 slips <sup>1</sup>	\$5,980,000
Site demolition	\$500,000
Fueling system <sup>2</sup>	\$200,000
Upland utility improvements to support marina	\$115,000
Design-build Performance Specification Package	\$25,000
Hydrographic study	\$15,000
Wind study	\$10,000
Geotechnical engineering	\$20,000
Bathymetric survey / as-built survey	\$20,000
Permitting services	\$75,000
Construction engineering & inspection services	\$50,000
<b>Subtotal</b>	<b>\$7,010,000</b>
<b>Contingency (15%)</b>	<b>\$1,051,500</b>
<b>TOTAL</b>	<b>\$8,061,500</b>

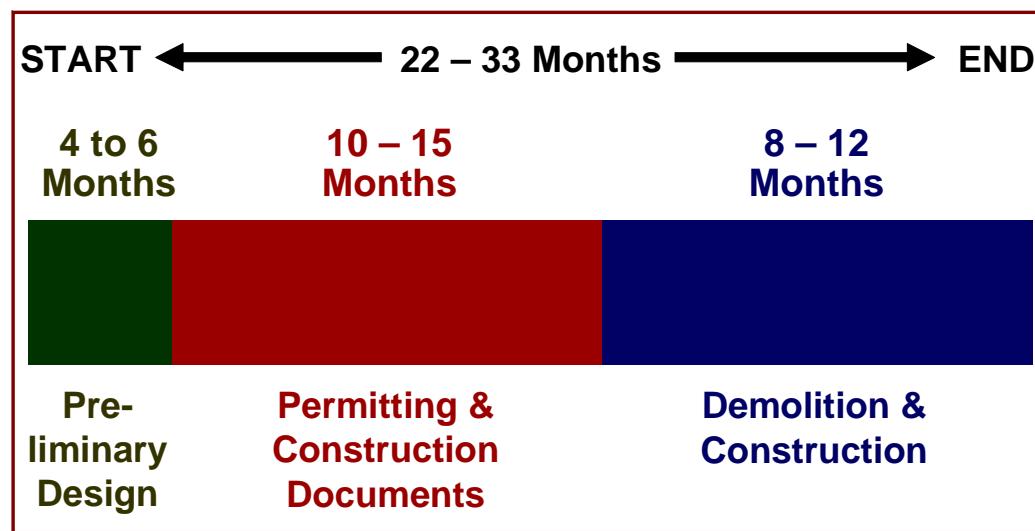
1) Slip cost for floating concrete system generally range from \$22,000 to \$26,000 per slip. This slip cost includes design plans, dock manufacturing, delivery and installation with piling and pile driving and all utilities (i.e. water, sewer, electricity, cable TV, telephone, lighting and limited storage).

2) Excludes underground fuel tanks which have been upgraded by the City.

## 9.0 Anticipated Schedule

Assuming a design-build delivery system, a 33-month schedule is anticipated. This includes the selection of the design-build team, development of the Performance Specification Package, preparation of construction documents, securing of environmental and development permits and approvals, demolition of the existing marina and construction of the new marina. However, it is reasonable that the schedule could be abbreviated assuming environmental permits and approvals can be obtained in less than 15 months and demolition and reconstruction are expedited.

*Figure 17 - Anticipated Timeline*



## 10.0 Summary Conclusions and Recommendations

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The underlying purpose of this study was to determine the estimated maximum number of private recreational boat slips that could be accommodated within and/or immediately outside the existing marina footprint. The study also sought to identify perceived environmental constraints to expansion, anticipated permitting issues and opportunities, order of magnitude cost estimate for design, permitting and construction, and an anticipated timeline for future expansion activities. Numerous salient conclusions were reached and several recommendations offered for consideration by the City are outlined below.

### **Summary Conclusions and Recommendations**

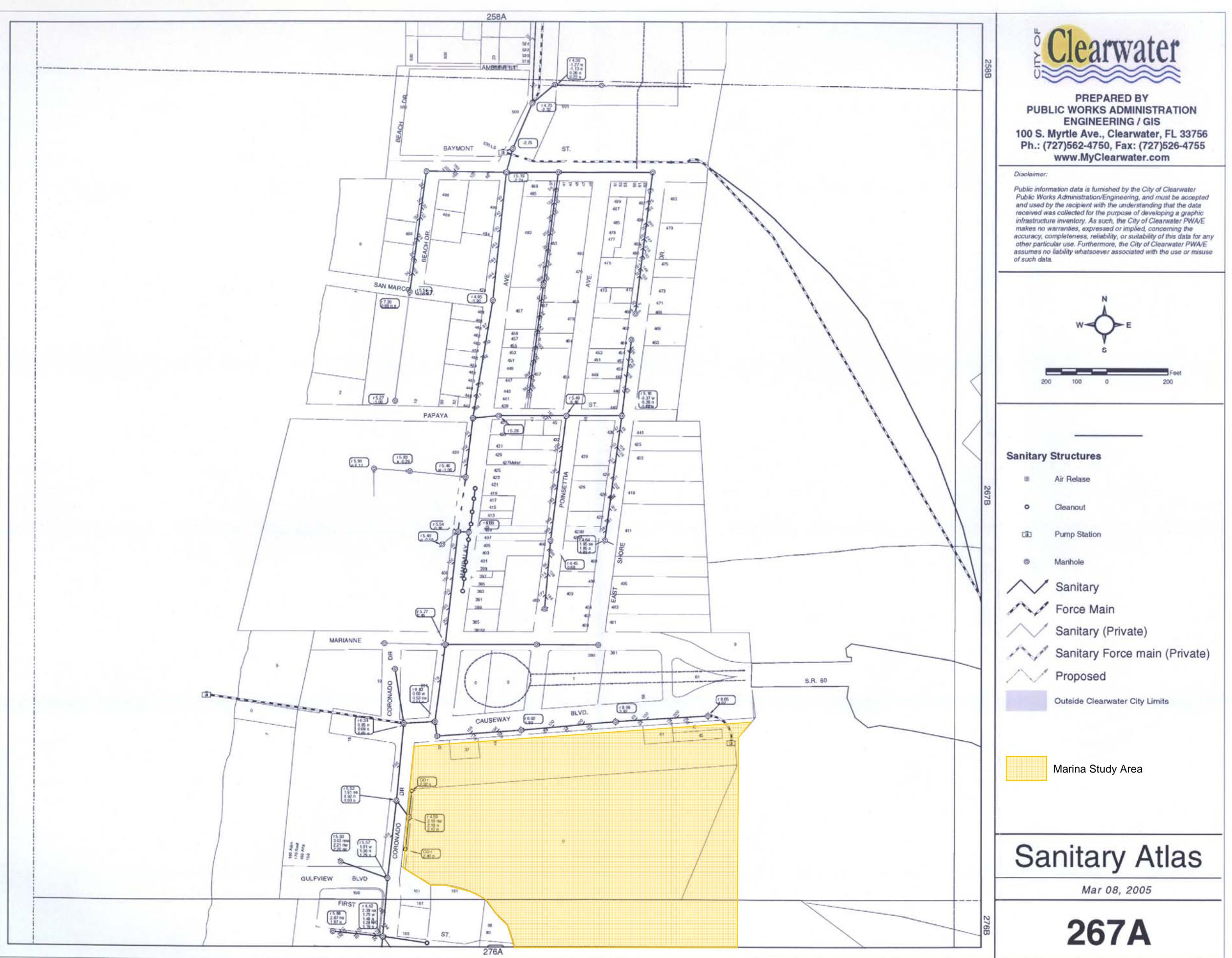
1. Built in 1951 and expanded over the past 55 years, the existing marina layout is inefficient and includes significant underutilized open areas. The reconfiguration of the marina could result in the addition of approximately 64 private recreational slips assuming a mixture of slip sizes.
2. The existing marina lies totally on submerged lands owned by the City of Clearwater. Expansion outside of these City-owned lands can occur. However, a submerged lands lease from the State will be required and special chapters of the Florida Administrative Code will apply to any development proposed. Such a lease is not a constraint to redevelopment of the marina.
3. An ecological assessment of the marina area indicates that virtually no resources are put at risk by the contemplated expansion. More specifically, high profile resources in the project area are sparse (seagrass), not at risk (manatee), or stand to be enhanced (water quality).
4. Because of the nature of the existing facility and the current conditions of the site, ecological impacts are expected to be subordinate in magnitude to the sociological impacts. Notwithstanding, the permit agencies have indicated that the facility will be treated as if it were a newly proposed marina because of the magnitude of the reconfiguration.
5. The majority of the existing slips are clearly vested under the provisions of Chapter 380.06 Florida Statutes and the addition of approximately 64 slips should not require the project to be subject to a Development of Regional Impact (DRI) review.
6. Environmental and regulatory restrictions will not drive the potential for reconfiguration as much as the existing and future market conditions. To determine the appropriate mix of slip sizes, a cursory market study is recommended prior to final design.
7. The incremental development of the marina has resulted in the location of storage, offices, freezers, tables, ticketing, and signage along the northerly and westerly pedestrian walkways generally inconsistent with the ambiance of recently constructed marinas and the quality of redevelopment occurring on Clearwater Beach. The proposed concrete floating dock system should significantly enhance the desired ambiance and aesthetics of the immediate area.
8. The Working Waterfronts Bill of 2005 presents new criteria and procedures for

marinas being proposed by local governments. While the specific criteria of the new laws have yet to be defined in the Florida Administrative Code, the City will be required to comply with this Act. However, it is clear that the intent of the Legislature is to provide some relief to the shortage of wet slips throughout the State.

9. Because of the history of the site, the maintenance dredging in 2004, and the conversion from fixed piers to floating concrete piers, the project appears to be permittable by the Army Corps of Engineers.
10. The currents in Mandalay Channel are reported to be strong constraining maneuverability and navigational safety. Modeling of the channel would be appropriate as part of the design phase before adding new slips to the east side of the marina.
11. The reconfiguration and expansion of the marina could occur without the redevelopment of the abutting uplands. However, any program for the upland redevelopment should consider accommodating non water dependent uses currently associated with the existing marina.
12. The future market demand as it relates to length and beam of slips is expected to trend towards both longer and wider vessels. This trend will likely result in fewer slips in the final marina reconfiguration. The proposed finger piers are an amenity that if eliminated could result in more slips, but would degrade the overall functionality and quality of the structure.
13. In the final reconfigured marina commercial users could be segregated into groups based on their source of passengers, need for logistical support, passenger load, and the type of business being conducted.
14. During the final design of the marina, special consideration should be given to the layout of slips in the northwest corner of the existing marina. The ultimate reconfiguration of this area should seek to balance navigational safety, passenger safety, visibility, seawall use, and opportunities for adding recreational slips.
15. Recognizing the expansion study was funded by the FFWCC with the stated objective to determine the feasibility of increasing moorings for privately owned recreational boaters, the composite layouts were developed by keeping the number of commercial slips constant and altering the sizes and locations of private recreational slips.
16. An order of magnitude cost estimate of \$8,100,000 has been developed for the design, permitting, demolition and construction of a reconfigured marina containing approximately 230 slips. With the exception of upland utility connection costs, the cost estimate includes only construction proposed outside of the existing seawalls.
17. A 33-month schedule has been identified for this project assuming a design-build delivery process. It is reasonable to assume environmental permits and approvals may be obtained in less than 15 months and demolition and construction completed in slightly less than 12 months.

## **APPENDIX A**

### *Existing Utility Maps*

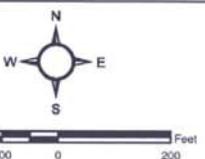




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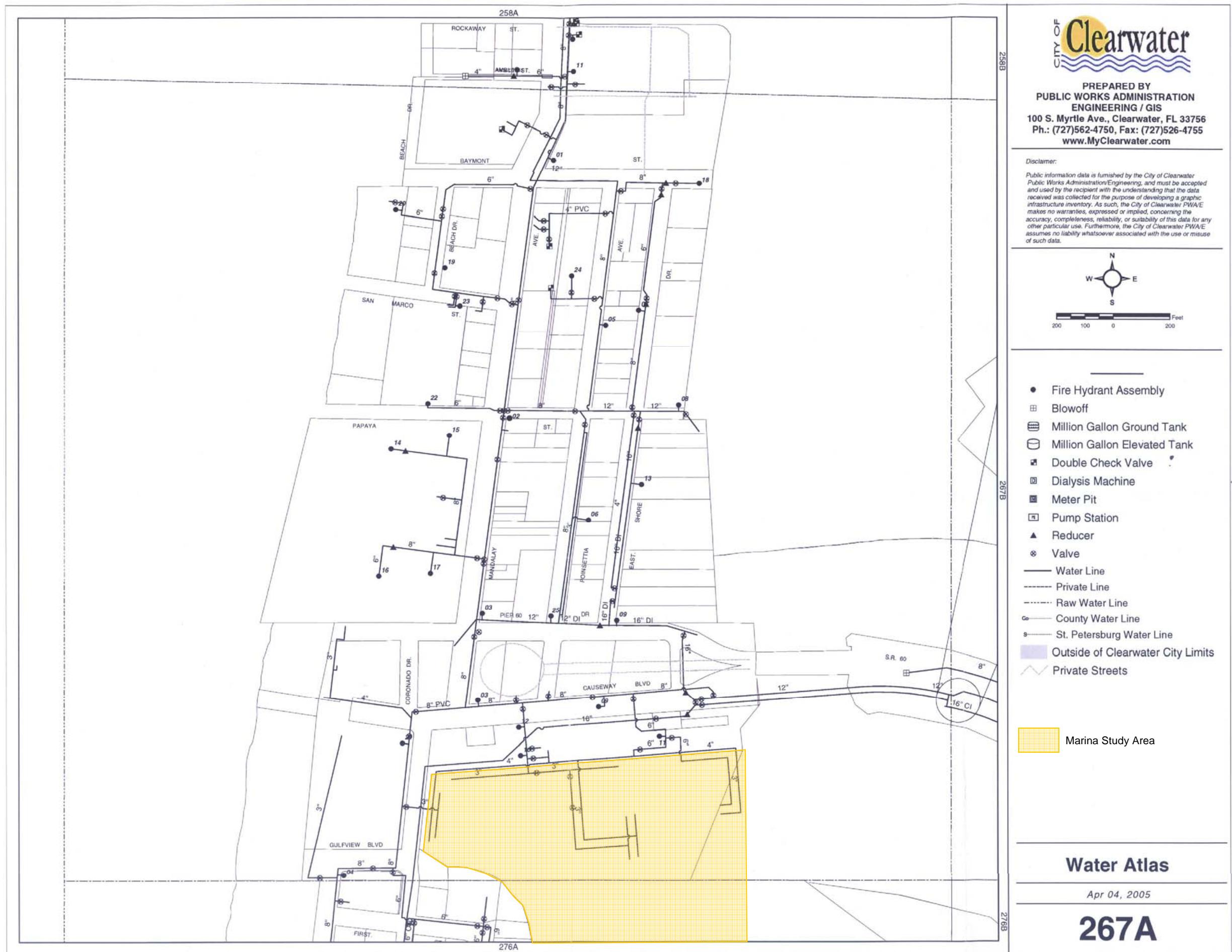
- Fire Hydrant Assembly
- Blowoff
- Million Gallon Ground Tank
- Million Gallon Elevated Tank
- Double Check Valve
- Dialysis Machine
- Meter Pit
- Pump Station
- ▲ Reducer
- Valve
- Water Line
- Private Line
- Raw Water Line
- County Water Line
- St. Petersburg Water Line
- Outside of Clearwater City Limits
- △ Private Streets

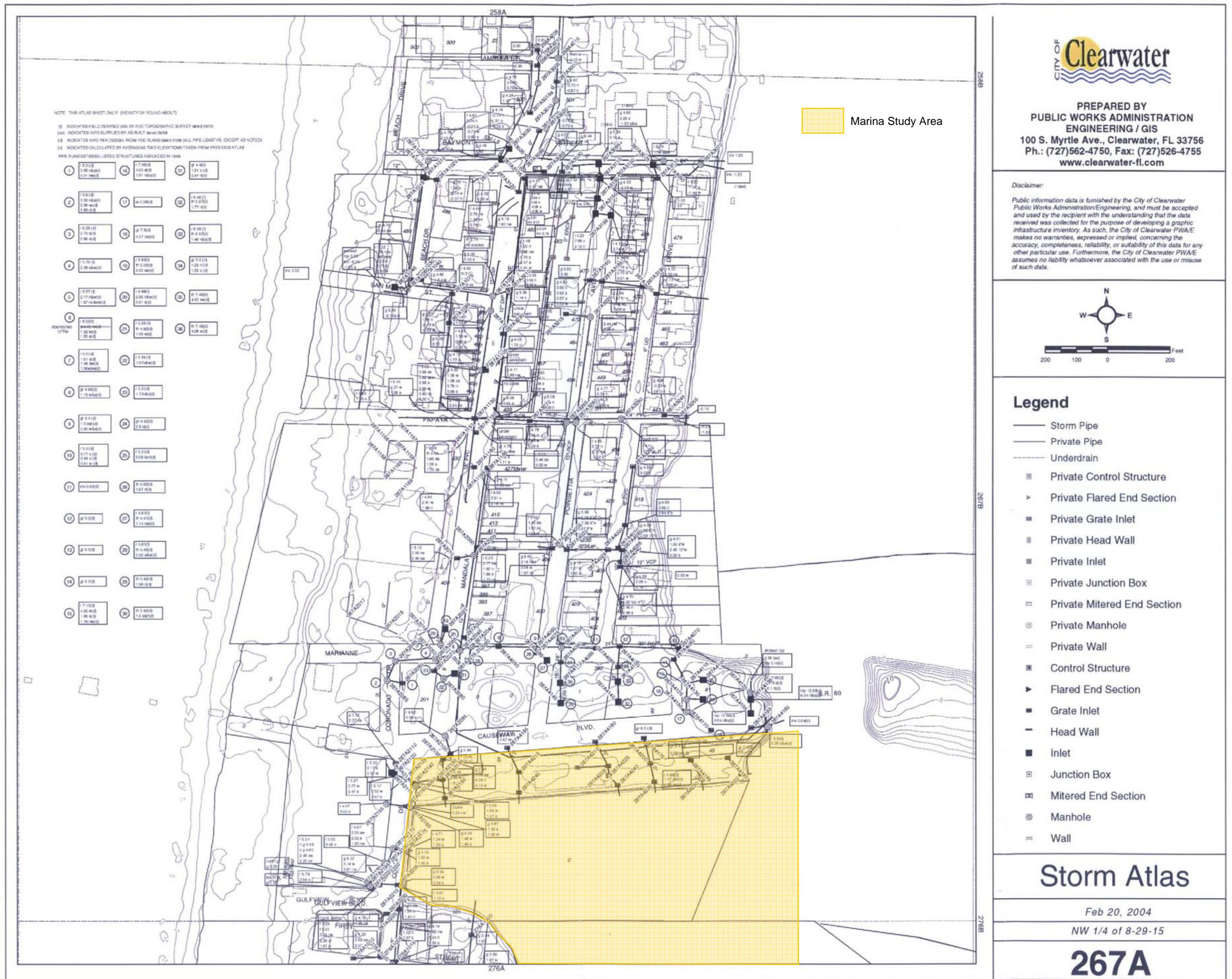


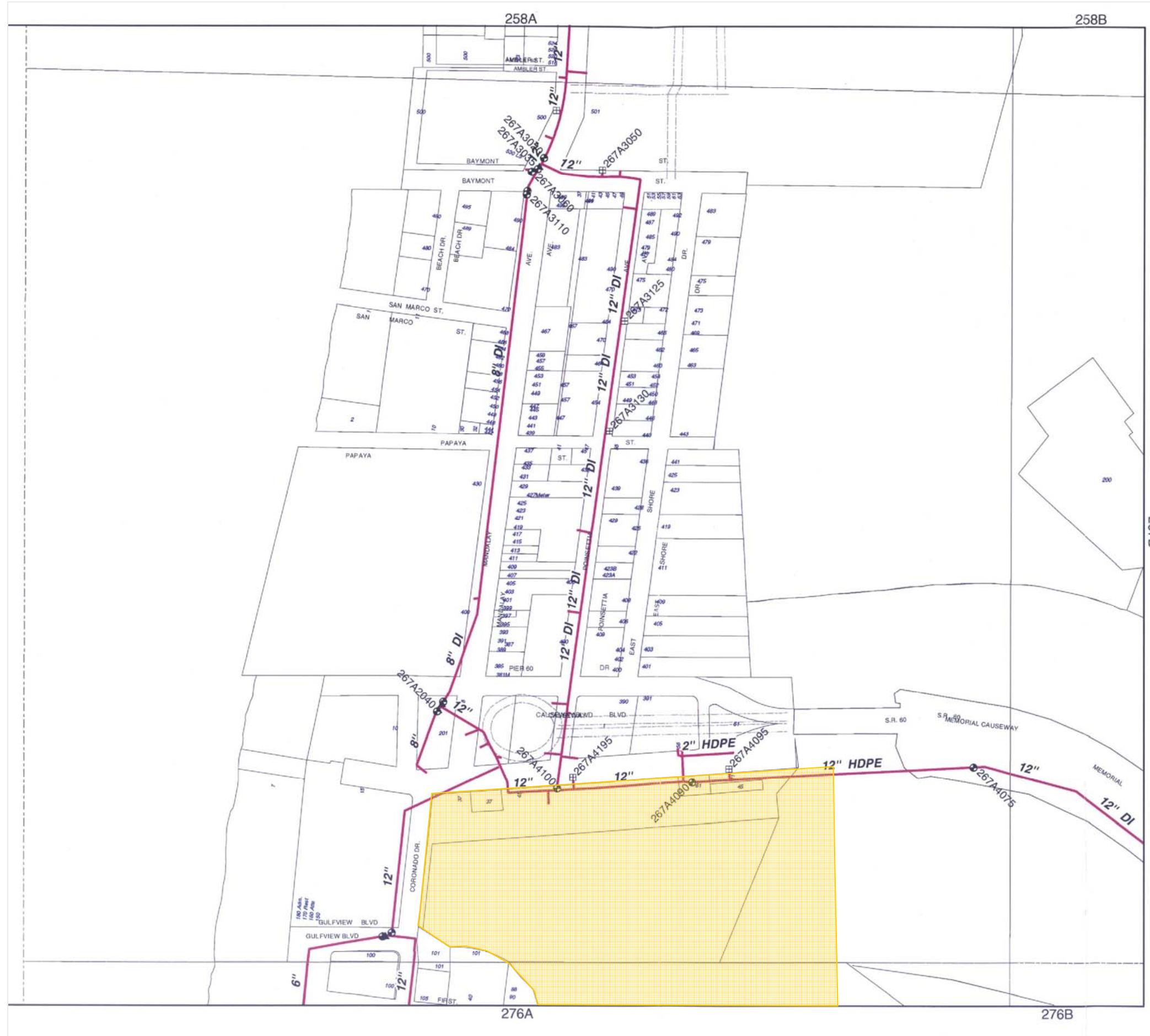
Water Atlas

Apr 04, 2005

267A



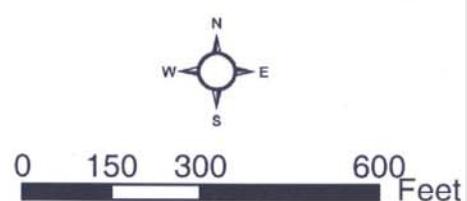




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1 inch equals 300 feet



**Legend**

- ✓ EFFLUENT
- ✗ RAW
- ⌘ Reclaimed Water Line

**Reclaimed Fixtures**

- ARV
- BO
- CAP
- ✚ CROSS
- ✖ GV
- ◆ HYDRANT
- MASTER RCW METER STA
- ◎ MONITORING WELL
- PLUG
- ▲ REDUCER

**Reclaimed Water**

May 11, 2005

**267A**

## ***APPENDIX B***

### ***Clearwater Marina Commercial Tenant Survey Results***

Clearwater Marina Commercial Tenant Survey Results as of October 10, 2005										
Slip #	# Pass	Boat Name	Business Name	Type Of Business	Source of Clients		Days @ Sea per Month	Vessel Information (Feet)		
					Walk up	Reservation		Length Overall	Beam	Draft-Loaded
2	12	Fly N Time III	Sky's the Limit	parasail	80%	20%	15off/20-25	28	9	2.3-3
3&4	149	Pirate's Ranson	Bill & Pam Wozencraft	sightseeing	60%	40%	30	75	20	5.5
5	125	Clw Express	Clw Ferry Svc	sightseeing	80%	20%	30	59	18.5	4
6	49	Island Time	Island Time Adventures	sightseeing	80%	20%	15	45	12	2.5
7	43	Thriller 02	Thriller 02, Inc	speed boat	99%	1%	29	55	12	4
8	12	Skyscreamer	Nutin Fancy Fishin	parasail	70%	30%	29	33	10	3
9	6	rental boats	Nutin Fancy Fishin	currently empty	-	-	-	-	-	-
10 to 15	143	Sea Screamer	SeaScreamer of Treasure Islan	speed boat	95%	5%	30	73	20	6
16	35	Little Toot	Marine Entertainment	sightseeing	80%	20%	25	36	12.5	3
17&18	149	Show Queen	Paul Kelley	dinner/sightseeing	40%	60%	30	65	28	4.5
19	19	jet ski rental	Makin Waves	jet ski rental	100%	0%	28-29	-	-	-
20	31	rental boats	Xtreme Watersports	rental boats	70%	30%	20	-	-	-
21	6	Fly N Time 1	Nutin Fancy Fishin	parasail	70%	30%	29	29	10	3
22	20	rental boats	Marine Ent/Clw Boat Rntl	rental boats	70%	30%	25	-	-	-
23	6	Red Red Wine	Tideen Corp.	charter sail	50%	50%	30	36	14	7.6
24	41	Island Hopper	Tideen Corp.	sightseeing	50%	50%	30	40	12	2
25	6	jet ski rental	Gulfside Watercraft Adventures	jet ski rental	50%in sea	50%in sea	30in;20off	-	-	-
26	6	Dos Amigos	Thomas Sprague	charter fishing	20%	80%	17-18	34	12	3.5
27	6	Two C's	Gregg Corder	charter fishing	75%	25%	14	35	11	3.5
28	6	Above Average	Richard Nicajevsky	charter fishing	70%	30%	14.33 ave.*	30	12	3
29	6	Phantom	Robert Hamilton	charter fishing	50%	50%	15 ave	35	?	3.5
30	6	Flo-Jo	Tom Stacey	charter fishing	50%	50%	25	40	13.5	4.5
31	6	Reel Deal	Robert Hamilton, Inc.	charter fishing	75%	25%	19	36	13	4.5
32	6	Fanta Sea	Tom Stacey	charter fishing	50%	50%	25	42	13.75	4.5
33	14	Rajin Cajun	George & Sue Foster	charter fishing	50%	50%	not given	50	15	7
34	22	Gulfstream II	George & Sue Foster	charter fishing	50%	50%	not given	51	15	7
35	6	Snoopy	William Moran	charter fishing	90%	10%	20	40	14.66	4
36	6	Tom Cat II	Harry Russell	charter fishing	15%	85%	20 ave.	35	12	4

Clearwater Marina Commercial Tenant Survey Results as of October 10, 2005										
Slip #	# Pass	Boat Name	Business Name	Type Of Business	Source of Clients		Days @ Sea per Month	Vessel Information (Feet)		
					Walk up	Reservation		Length Overall	Beam	Draft-Loaded
37	6	Strike Zone	Gary Folden	charter fishing	30%	70%	15	29	9	3
38	6	Gypsy	Thomas Hylton	charter fishing	50%	50%	12	36	12	3.5-4
39	6	Daisy Mae	Daniel Hood	charter fishing	25%	75%	20	45	16	5
40	4	Fanta Cat	Steven McEnerney	charter fishing	40%	60%	10off/15in	27	8.5	3 - 3.5
41	6	Gulfstream I	George & Sue Foster	charter fishing	50%	50%	not given	40	12	7
42	6	86 Proof	John Topicz	charter fishing	not given	not given	18	43	15.3	5.5
43	12	100 Proof	John Topicz	charter fishing	not given	not given	16	47	15.8	4
44	6	Double Hook	Florida Coast Charters	charter fishing	35%	65%	14	38	14.8	35"
45	6	temporarily empty			-	-	-	-	-	-
46	6	On Line	Jerry Lewis	charter fishing	50%	50%	16-20	32	12	3
47	6	Tradewinds	BC Lawncare, Inc.	charter sail	90%	10%	10	60	14	4.5
48		Tortuga	Pinellas County barge	barge	-	-	-	-	-	-
49	49	Kai Lani	Michael Judge	charter cat/sail	50	50	15-20	50	30	4'6"
50	74	Double Eagle II	William Gilmore, Inc.	party fishing	50%	50%	20-30	65	26	5
51	99	Double Eagle III	William Gilmore, Inc.	party fishing	50%	50%	20-30	88	33	5
52	150	Super Queen	Dave Spaulding	party fishing	40%	60%	25	85	32	6
53	87	Gulf Queen	Dave Spaulding	party fishing	40%	60%	25+	75	23	4.5
54		slip no longer exists			-	-	-	-	-	-
55	89	Dixie Queen	Dave Spaulding	party fishing	10%	90%	8-10	85	25	5.5
56	n/a	City commercial fuel dock			-	-	-	-	-	-
57	39	boat rentals	Clearwater Boat Rental	boat rentals	10%	90%	25	-	-	-
58	49	Island Explorer	Florida West Coast Charters	sightseeing	25%	75%	28	40	12	3
152	300	Starlite Majesty	Anderson Bay Cruises	dinner/sightseeing	10%	90%	25	115	32	7

Phil Henderson Jr. indicated his percentages for slip 58 and 152 are guesses, they haven't developed a formula to track.

\* Monthly figures for Above Average fishing charter were the average of 12 months in previous slip 45

## ***APPENDIX C***

***November 14, 2005***  
***PowerPoint Presentation to City Council***



# Clearwater Municipal Marina Expansion Feasibility Study

## City Council Workshop

November 14, 2005

*Presented By*

**Wade Trim      Delta Seven**

# Grant Objectives & Limitations

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## ◆ FFWCC Grant

- Study Due December 31, 2005
- First Step In Marina Redevelopment Process
- Assessment To Determine Feasibility Of Adding Recreational Slips

## ◆ Feasibility Study Does Not Include:

- Market Study
- Cost Benefit Analysis
- Affordability Determination

# Grant Objectives & Limitations

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## ◆ Next Steps

- City Council Direction
- Market / ROI / Affordability Study
- Apply for FFWCC Grand Application
  - Design, Permitting, Construction



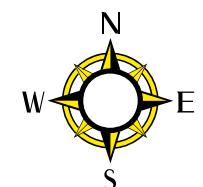
**Clearwater  
Municipal  
Marina**

*General  
Study Area*

■ **Marina Expansion  
Study Area  
(Approx. 22 acres)**

■ **Future Marina  
Upland Redeve-  
lopment Area  
(Approx. 6 acres)**

— **Southern Boundary  
Of City-Owned  
Submerged Lands  
(Approx. 12 acres  
Within Study Area)**



*Aerial Source: Pinellas Aerial  
Image Retrieval System (PAIRS) ;  
Aerial Flown Year 2000*

# Feasibility Study Objectives

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- ◆ Provide Additional Recreational Boat Slips
- ◆ Maintain Balance Of Commercial & Recreational Slips
- ◆ Identify Regulatory Approvals & Permitting Issues & Opportunities
- ◆ Develop Pre-design Cost Estimate For Budgeting
- ◆ Develop Estimated Schedule For Design, Permitting & Construction

# Feasibility Study Assumptions

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- ◆ Expand Predominately On City-owned Submerged Lands
- ◆ Marina Ambiance & Aesthetics Should Compliment "*Beach By Design*" Redevelopment Activity
- ◆ Replace Fixed System With Concrete Floating Dock System
- ◆ Provide Wider Slips

# Feasibility Study Assumptions

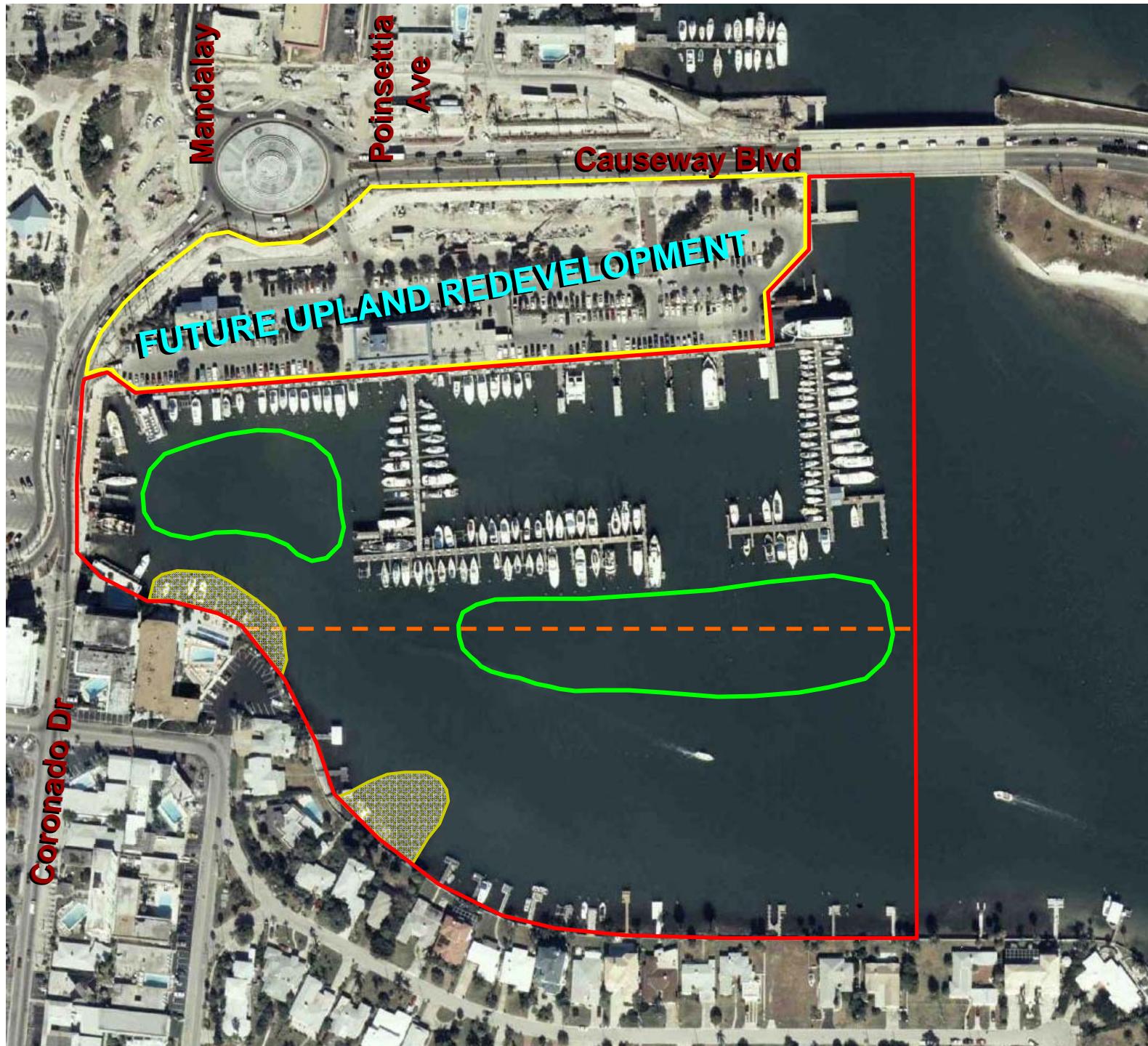
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- ◆ **Provide Utilities To Each Slip**
  - Potable Water
  - Sanitary Sewer
  - Electricity
  - Cable TV
  - Telephone
- ◆ **Provide Easily Accessible Fueling Slips**
- ◆ **Current Uplands Not A Constraint To Marina Reconfiguration**

# Existing Municipal Marina

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- ◆ Built In 1951
- ◆ 166 Slips: Current Use
  - 85 Recreational
  - 48 Commercial
  - 23 Transient
  - 6 Fuel Slips
  - 1 Commercial Fuel Dock
  - 1 Pinellas County Reef Vessel
  - 1 Clearwater Tug / Barge
  - 1 City Small Boat Slip
- ◆ 18 +/- Acres Of City-owned Submerged Land & Uplands
- ◆ Maintenance Dredging 2004
- ◆ Northwest Corner Requires Special Attention



## Clearwater Municipal Marina

*Existing  
Conditions*

166 Existing Slips

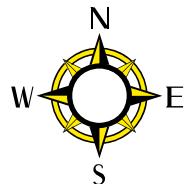
Marina Expansion  
Study Area  
(Approx. 22 acres)

Future Marina  
Upland Redeve-  
lopment Area  
(Approx. 6 acres)

Under Utilized

Southern Boundary  
Of City-Owned  
Submerged Lands  
(Approx. 12 acres  
Within Study Area)

Seagrasses



Aerial Source: Pinellas Aerial  
Image Retrieval System (PAIRS) ;  
Aerial Flown Year 2000

# Existing Environmental Site Conditions

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◆ Seagrasses	No Constraint
◆ Manatees	Manageable Issue
◆ Water Quality	Manageable Issue
◆ Existing Depths	8' to 13'

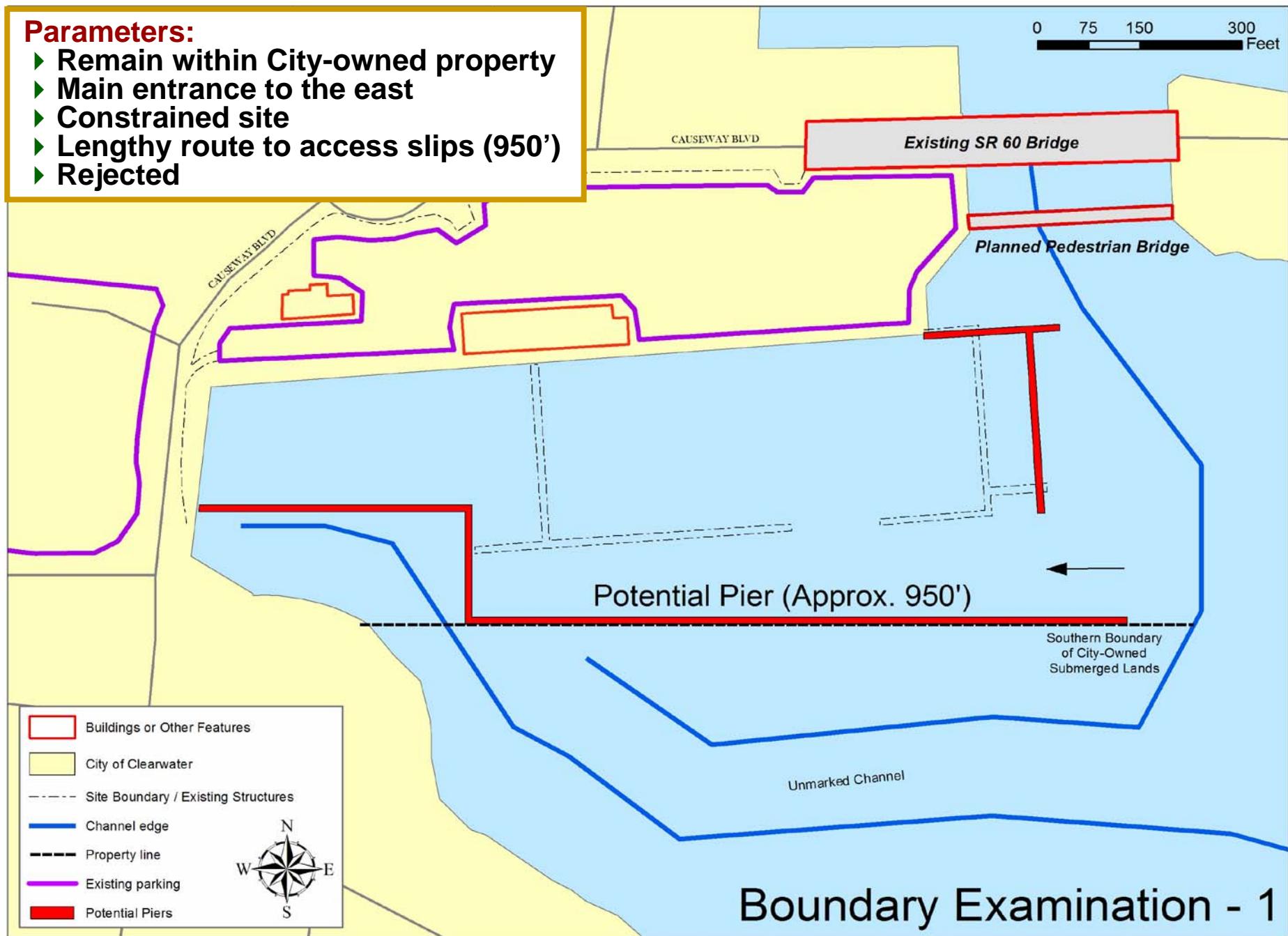
# Process for Conceptual Layouts

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- ◆ Boundary Examinations
- ◆ Potential Marina & Upland Amenities
- ◆ Exploratory Layouts
- ◆ Discussion Concept
- ◆ Exploratory Analysis NW Corner
- ◆ Composite Layouts

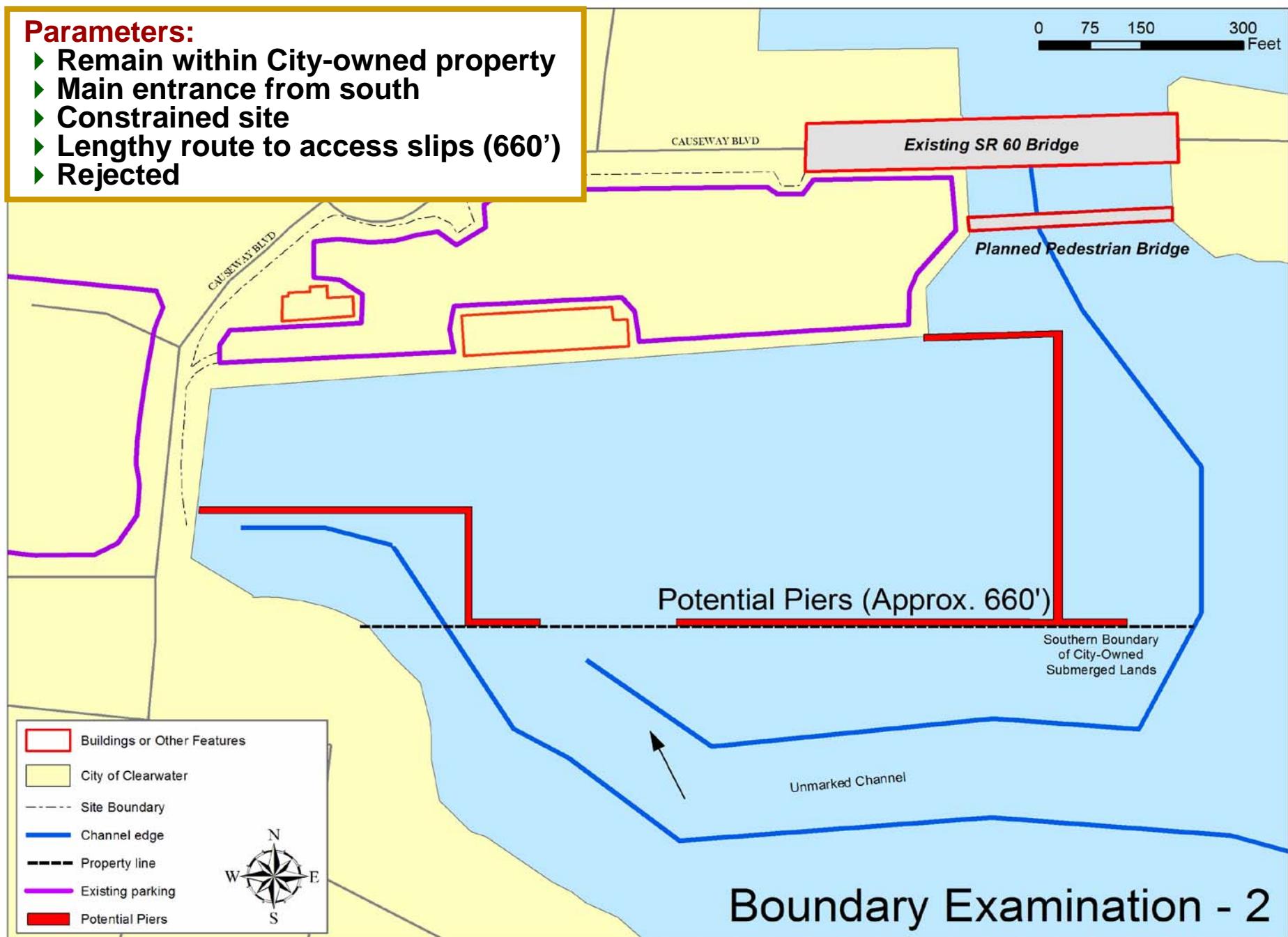
**Parameters:**

- ▶ Remain within City-owned property
- ▶ Main entrance to the east
- ▶ Constrained site
- ▶ Lengthy route to access slips (950')
- ▶ Rejected



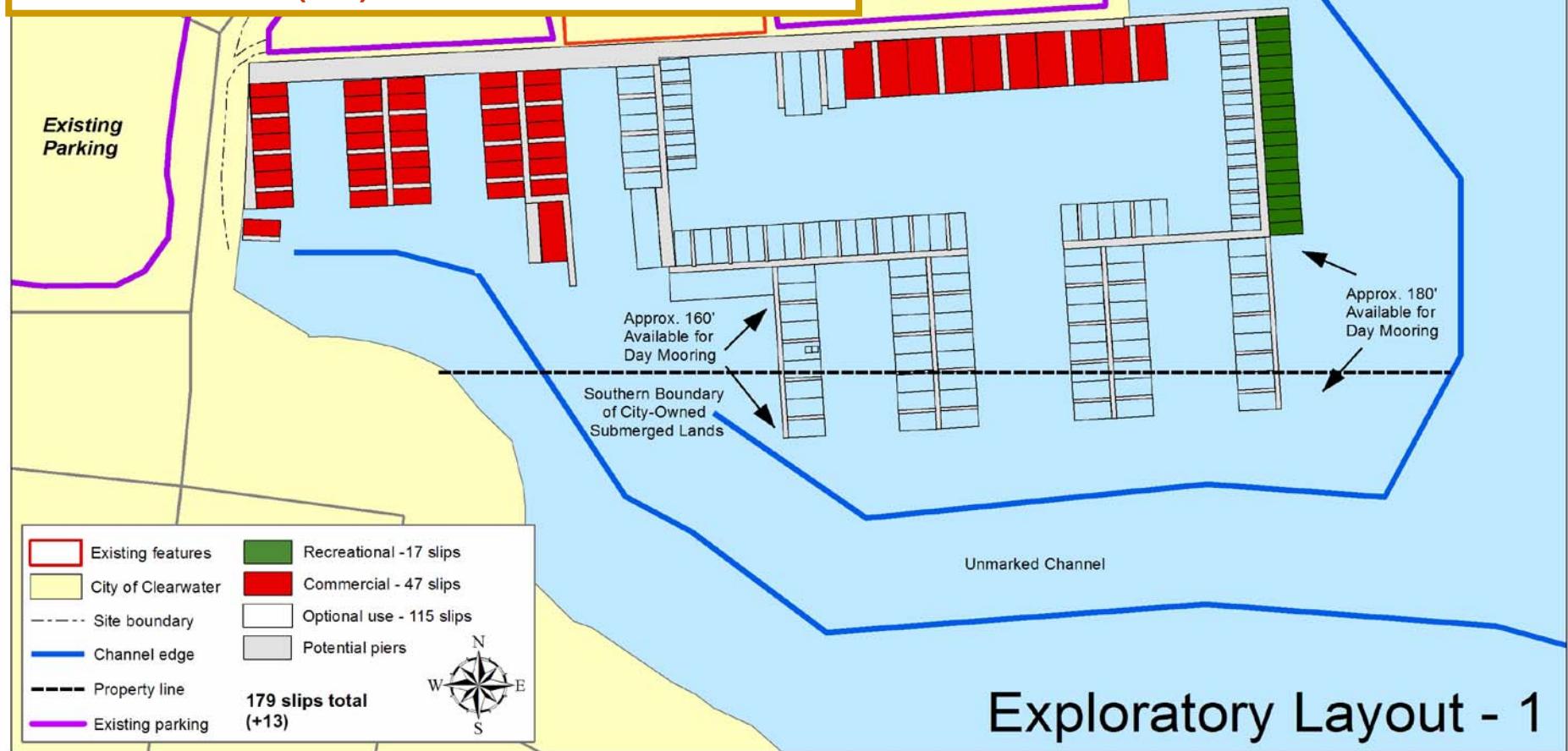
**Parameters:**

- ▶ Remain within City-owned property
- ▶ Main entrance from south
- ▶ Constrained site
- ▶ Lengthy route to access slips (660')
- ▶ Rejected



## Parameters:

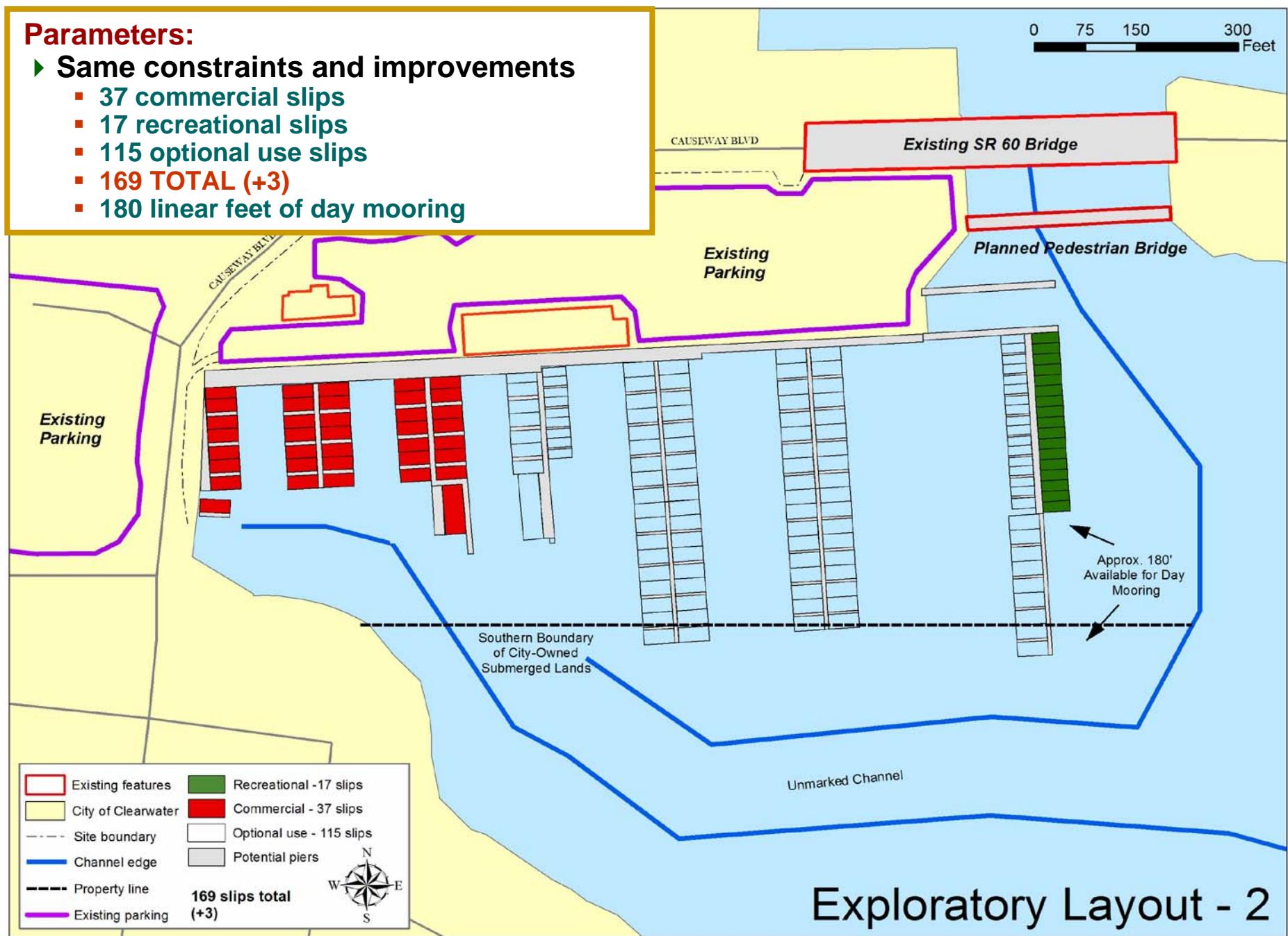
- ▶ Not constrained by City lands ownership
- ▶ Driven by navigation of larger boats
- ▶ Added finger piers
- ▶ Wider access piers
- ▶ Large passenger platforms
- ▶ Wider Slips
  - 47 commercial slips
  - 17 recreational slips
  - 115 optional use slips
  - 179 TOTAL (+13)



## Parameters:

### ► Same constraints and improvements

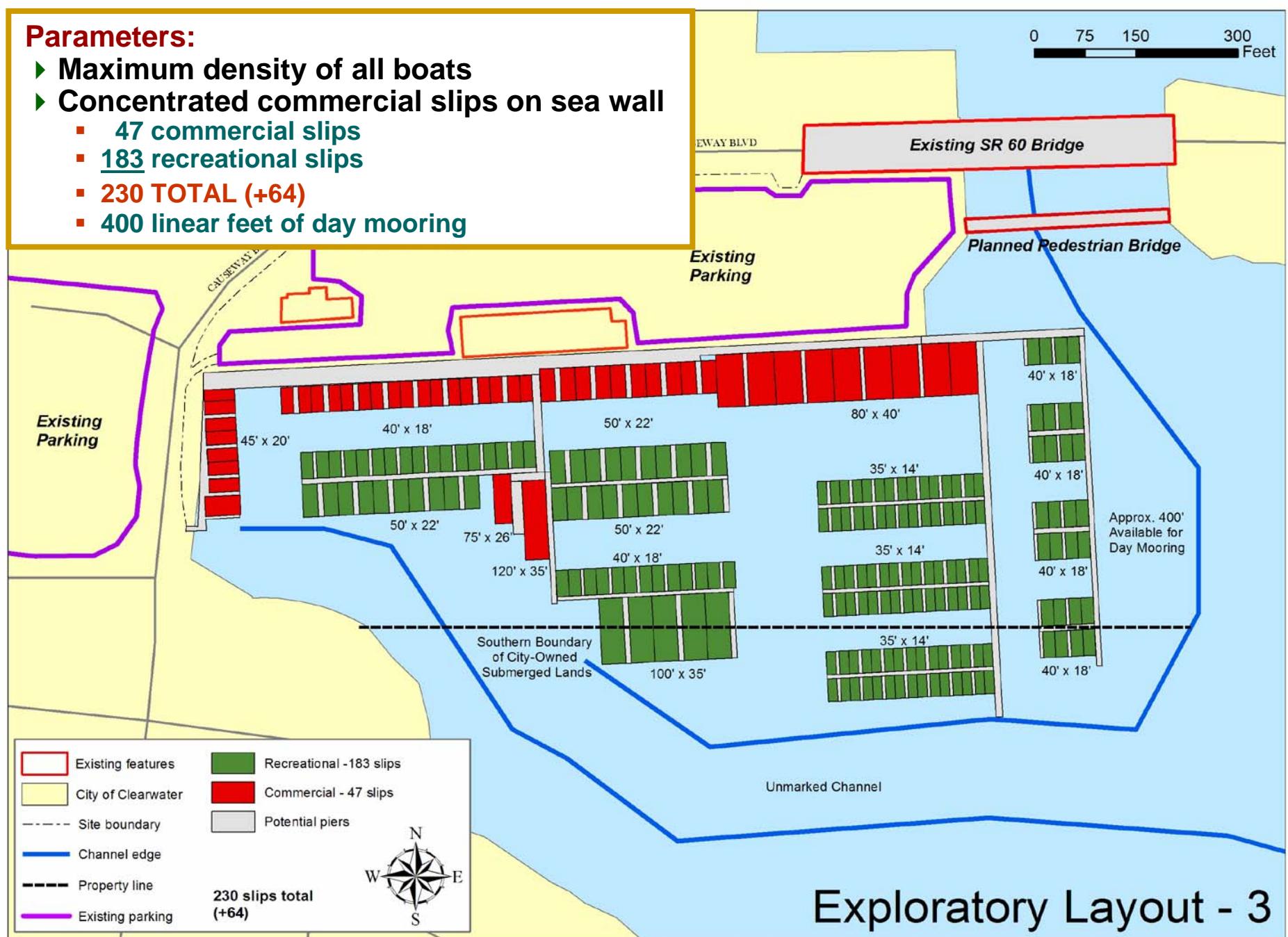
- 37 commercial slips
- 17 recreational slips
- 115 optional use slips
- **169 TOTAL (+3)**
- 180 linear feet of day mooring



## Parameters:

- ▶ Maximum density of all boats
- ▶ Concentrated commercial slips on sea wall
  - 47 commercial slips
  - 183 recreational slips
  - 230 TOTAL (+64)
  - 400 linear feet of day mooring

0 75 150 300 Feet



# Key Project Meetings

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- ◆ Aug. 31, 2005      FDEP Pre-application
- ◆ Sept. 14, 2005      Marina Advisory Board:  
                                  Discussion of Users' Needs
- ◆ Sept. 14, 2005      Econ. Dev. & Planning:  
                                  Upland Redevelopment

# Key Project Meetings

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## ◆ Oct. 3, 2005 Commercial Tenants: Discuss Design

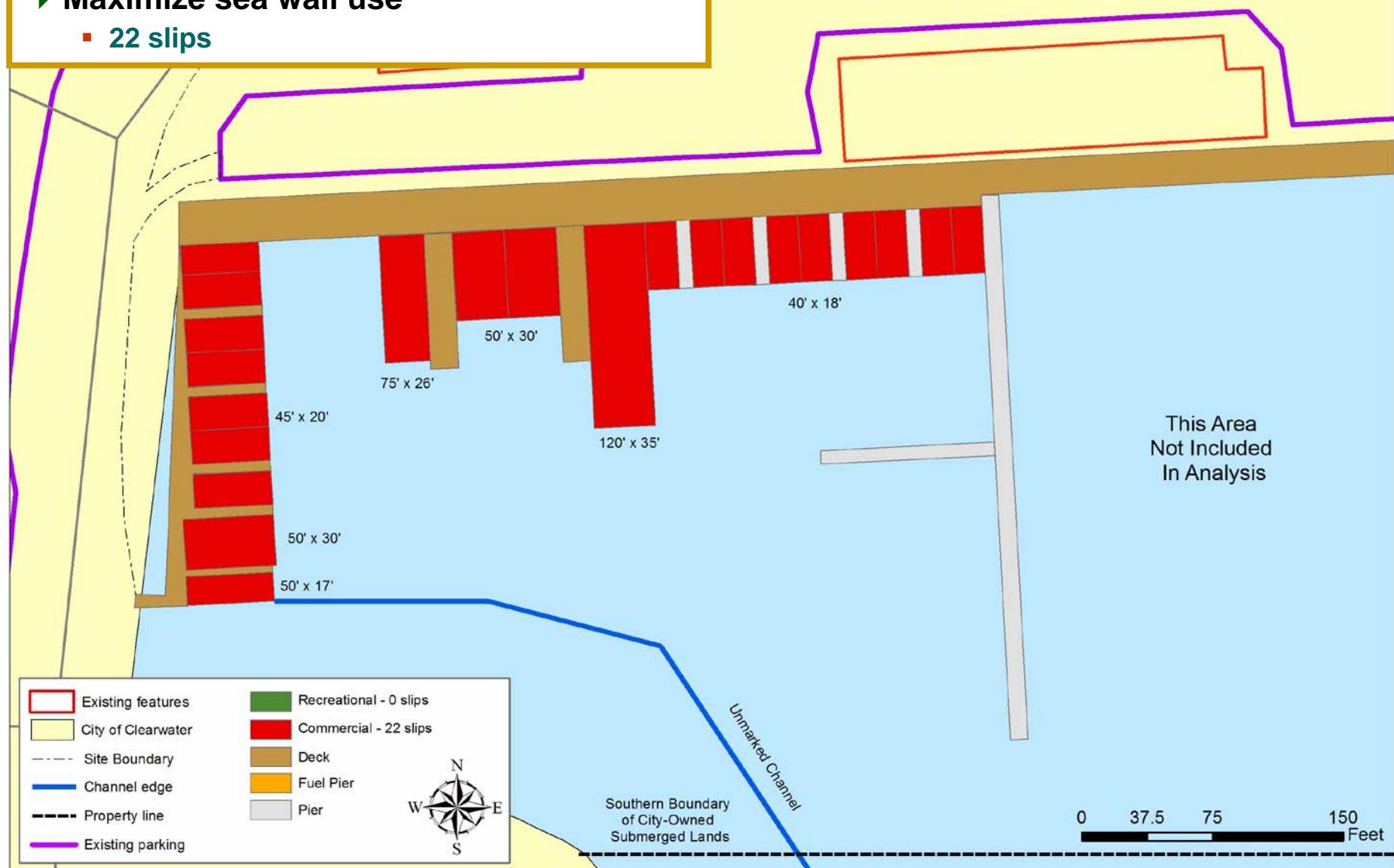
- Visibility & Slip Location
- Logistical Needs
- Support Facilities
- Pedestrian Access & Movement
- Passenger Capacity
- Location Of Fuel Docks
- Public Safety
- Navigational Safety / Currents
- Future Upland Development (2009+)
- Sources Of Commercial Customer Base
  - Walk-ups
  - Reservations

## ◆ Survey Of Commercial Tenants By City Marine Staff

## Parameters:

- ▶ Maximize navigation safety
- ▶ Maximize passenger safety
- ▶ Maximize sea wall use
  - 22 slips

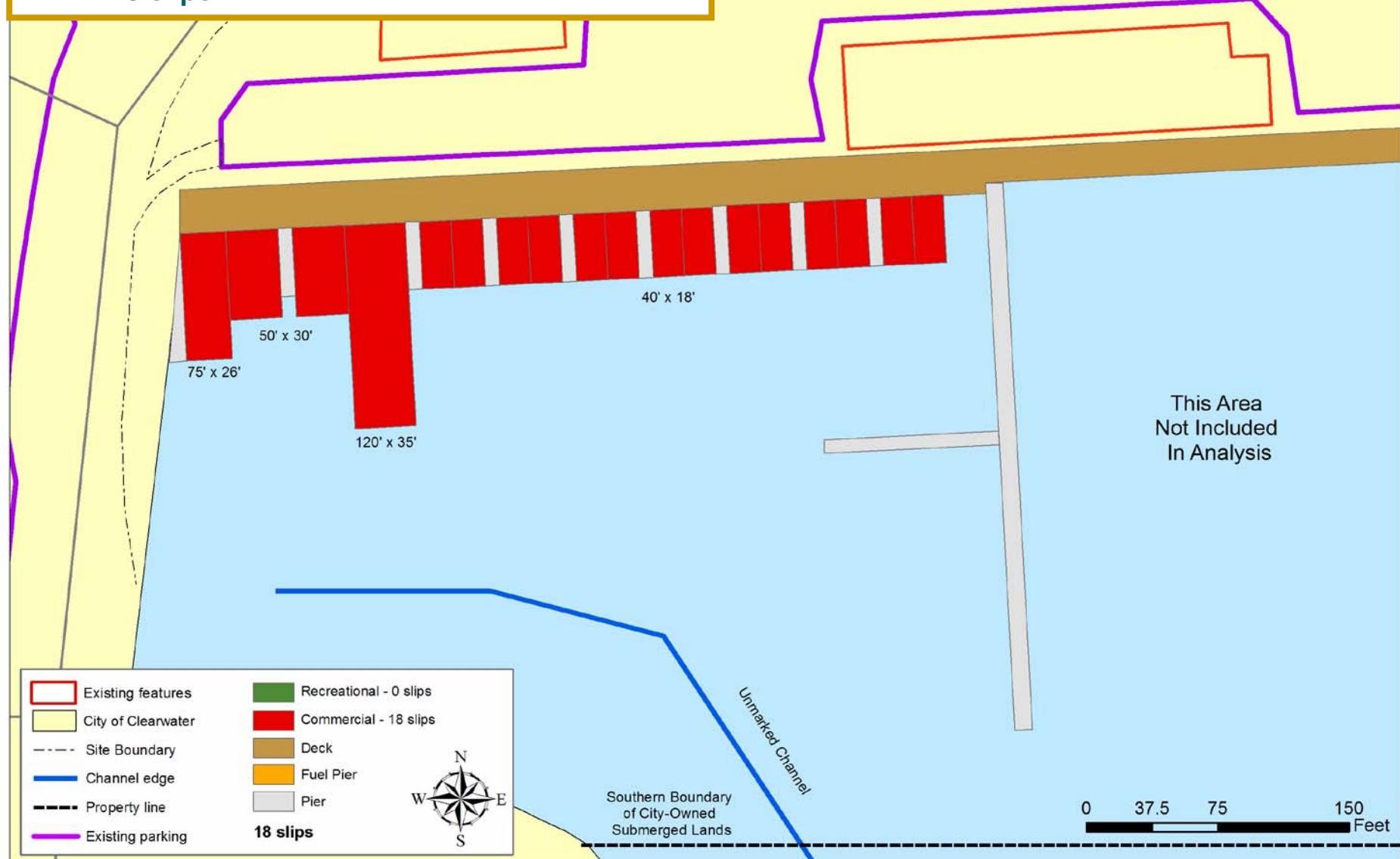
## Exploratory Analysis of Northwest Corner - 1



## Parameters:

- ▶ Maximize visibility for larger boats
- ▶ Maximize navigation safety
- 18 slips

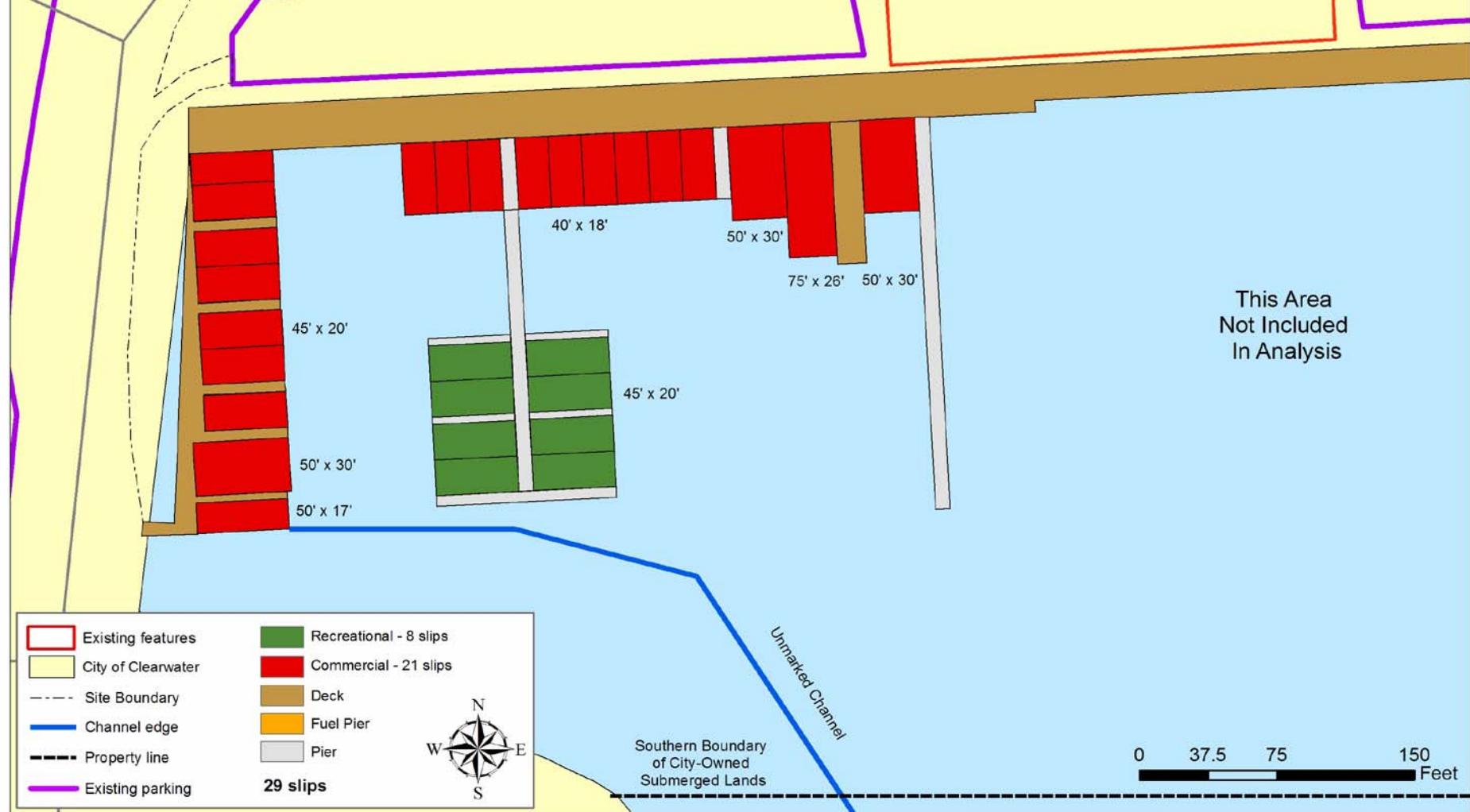
## Exploratory Analysis of Northwest Corner - 2



## Parameters:

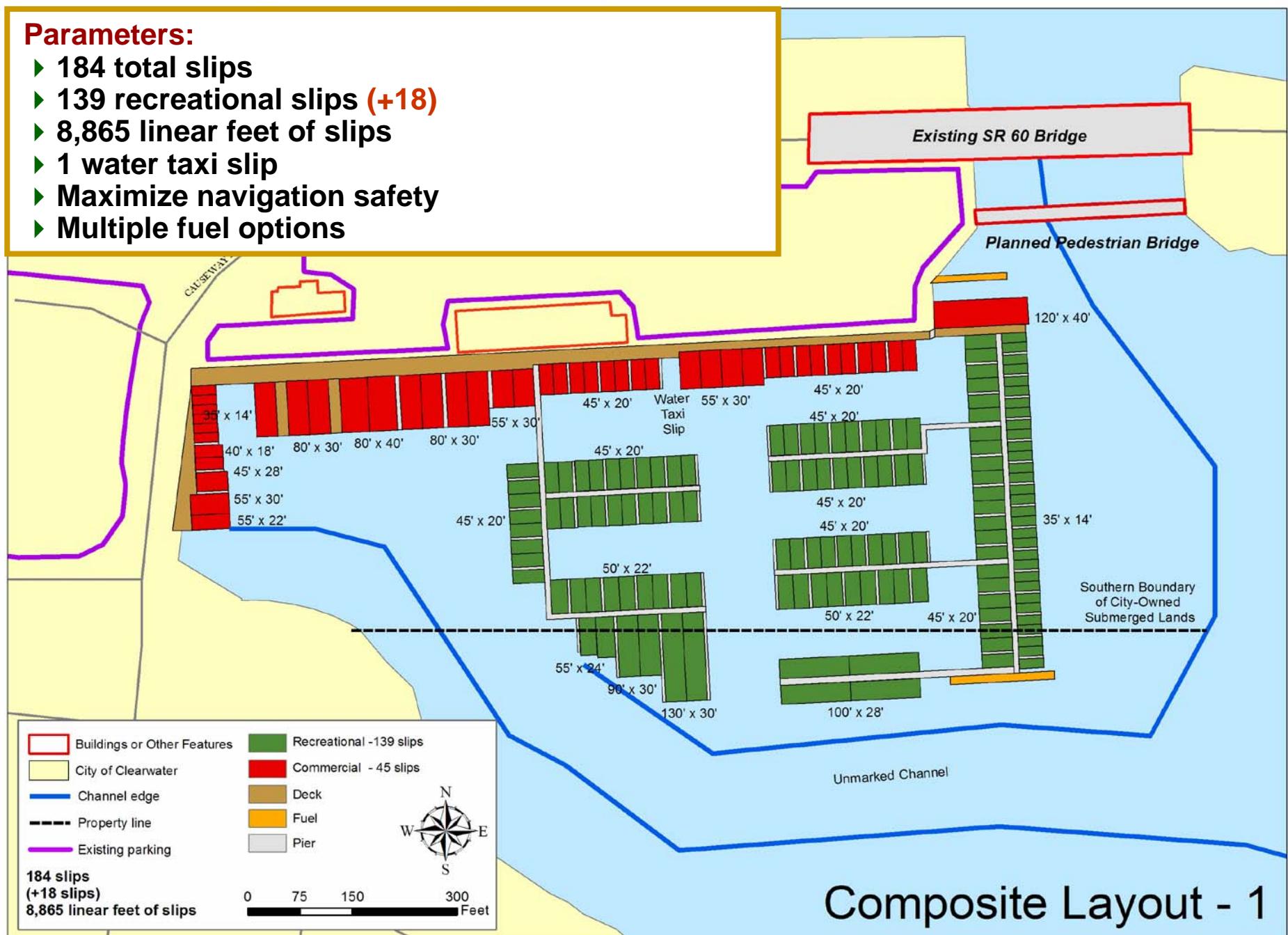
- ▶ Maximize visibility for intermediate boats
- ▶ Maximize passenger safety
- ▶ Maximize density adding recreational slips
- ▶ Considers navigation safety
  - 29 slips

## Exploratory Analysis of Northwest Corner - 3



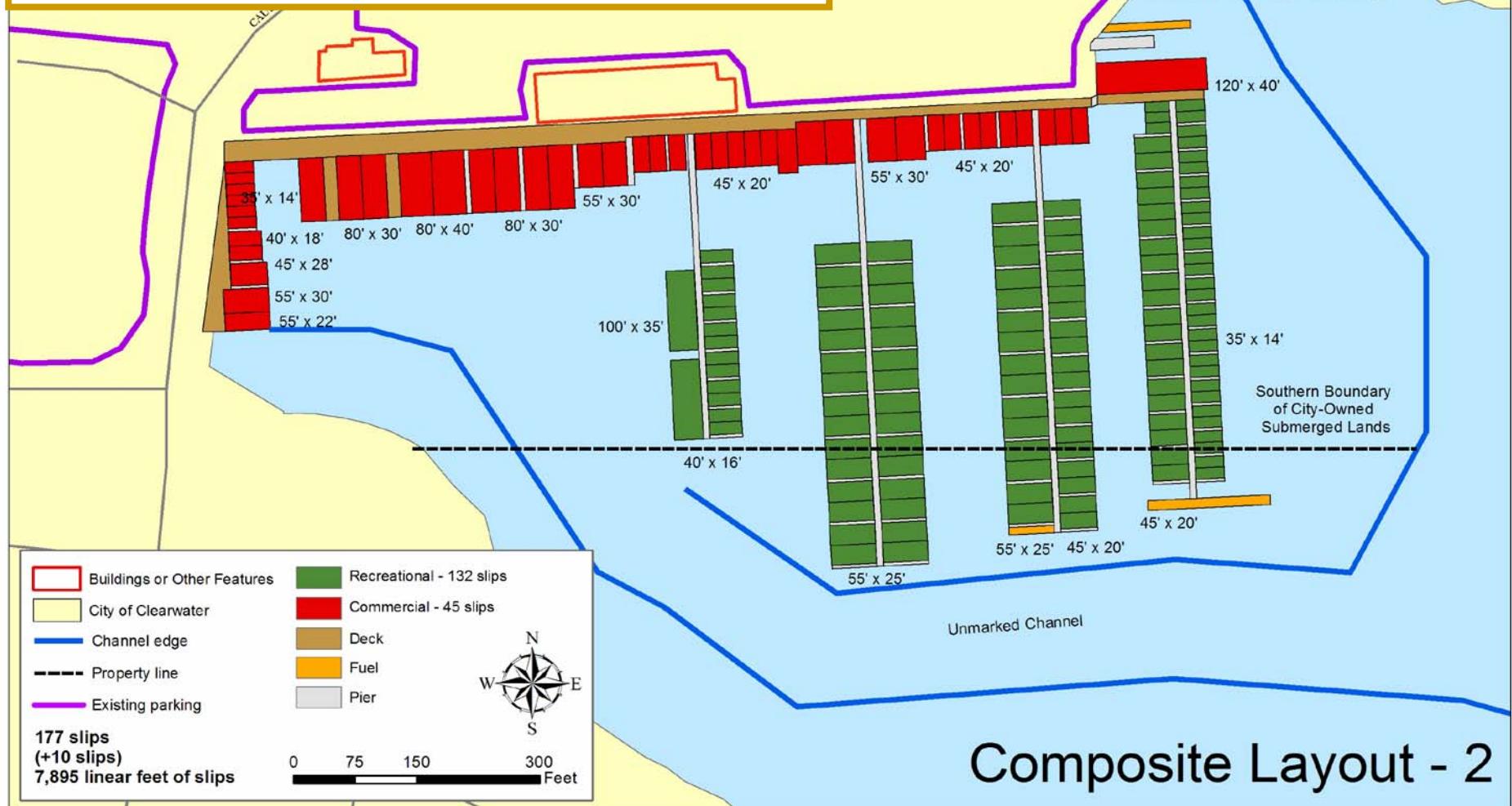
## Parameters:

- ▶ 184 total slips
- ▶ 139 recreational slips (+18)
- ▶ 8,865 linear feet of slips
- ▶ 1 water taxi slip
- ▶ Maximize navigation safety
- ▶ Multiple fuel options



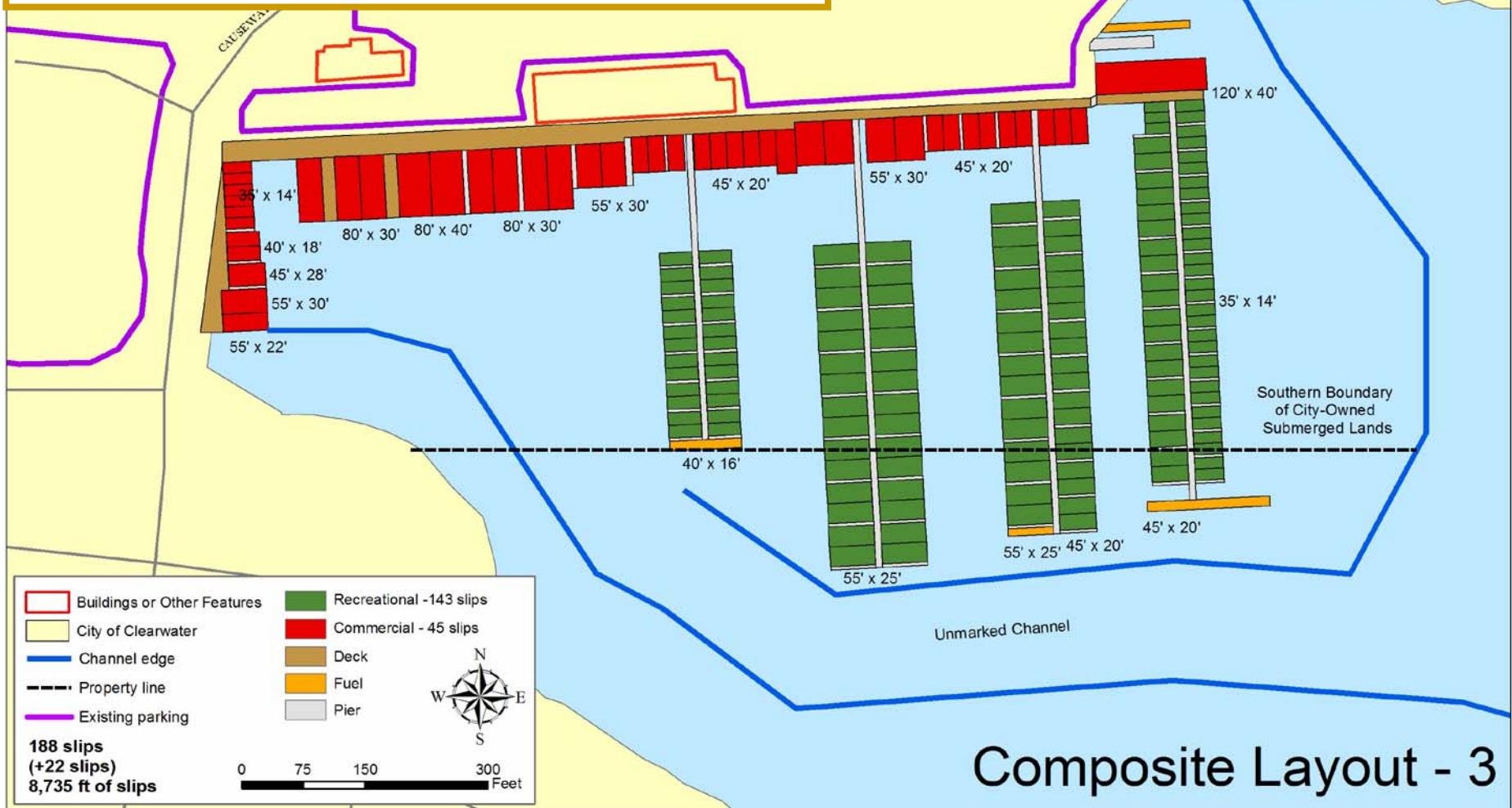
## Parameters:

- ▶ 177 total slips
- ▶ 132 recreational slips (+10)
- ▶ 7,895 linear feet of slips
- ▶ Maximize passenger safety, logistics
- ▶ Multiple fuel options
- ▶ Maximize navigation safety



## Parameters:

- ▶ 188 total slips
- ▶ 143 recreational slips (+22)
- ▶ 8,735 linear feet of slips
- ▶ Maximize navigation safety
- ▶ Maximize passenger safety
- ▶ Multiple fuel options



# Environmental Permits Required

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- ◆ City

- ◆ County

- Water & Navigation Control Authority

- ◆ State

- Department of Environmental Protection (DEP) or
  - Southwest Florida Water Mgmt. District (SWFWMD)

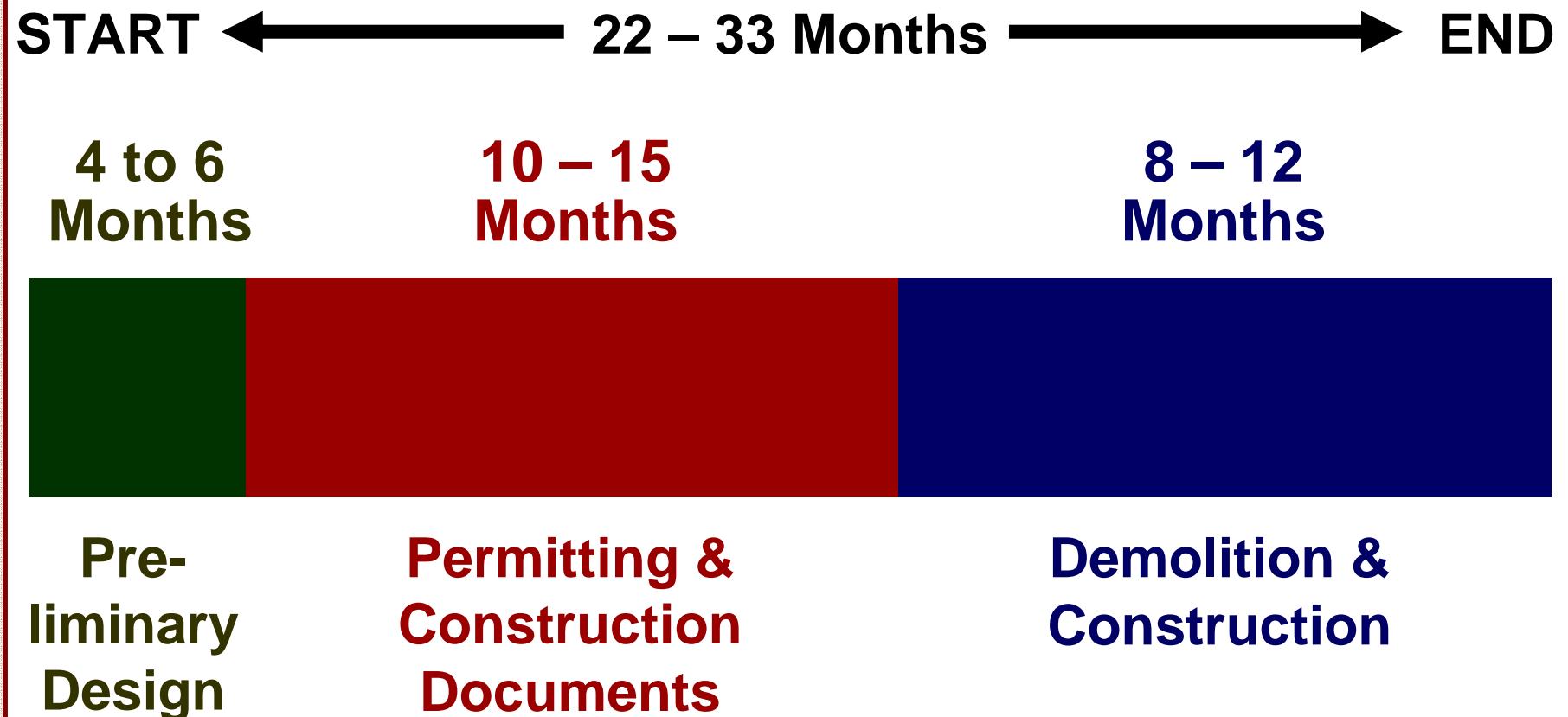
- ◆ Federal - USACOE

# Pre-Design Cost Estimate

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- ◆ Probable Estimate Of Design, Permitting And Construction
  - \$8,061,500
- ◆ Market Study / Cost Benefit Analysis / Affordability in Next Phase
- ◆ Operated With Existing Staff

# Marina Expansion Anticipated Timeline



# Summary Conclusions

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- ◆ Can Add Up To 64 New Recreational Slips
- ◆ Submerged Lands Lease Required
- ◆ Compliance With Environmental Regulations Is Manageable
- ◆ \$ 8,061,500 Estimated Project Budget

**Marriott Waterside, Tampa**



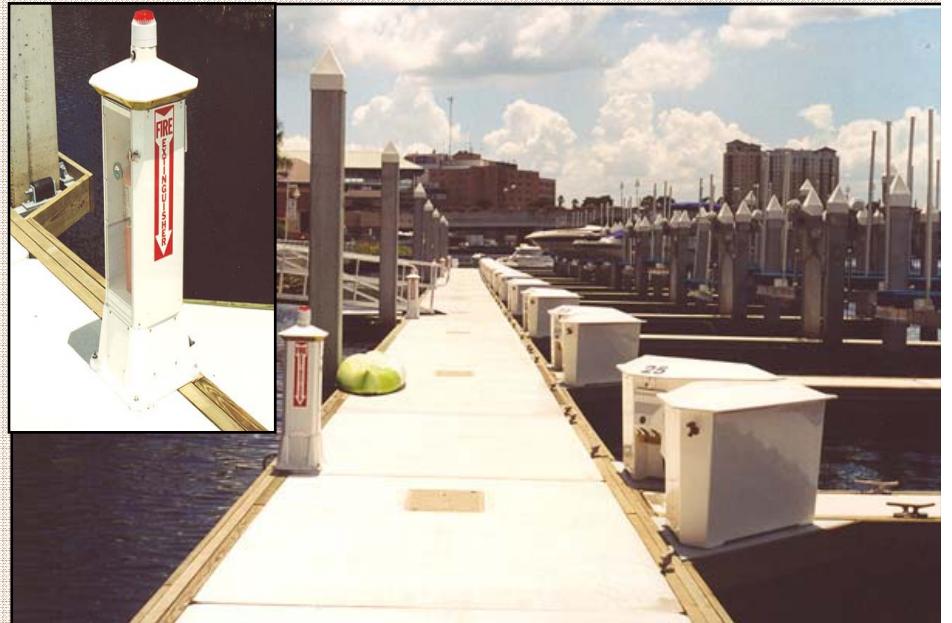
**Sunrise, Florida**



**Esplanade, Marco Island**



**Grandview Condominiums, Tampa**



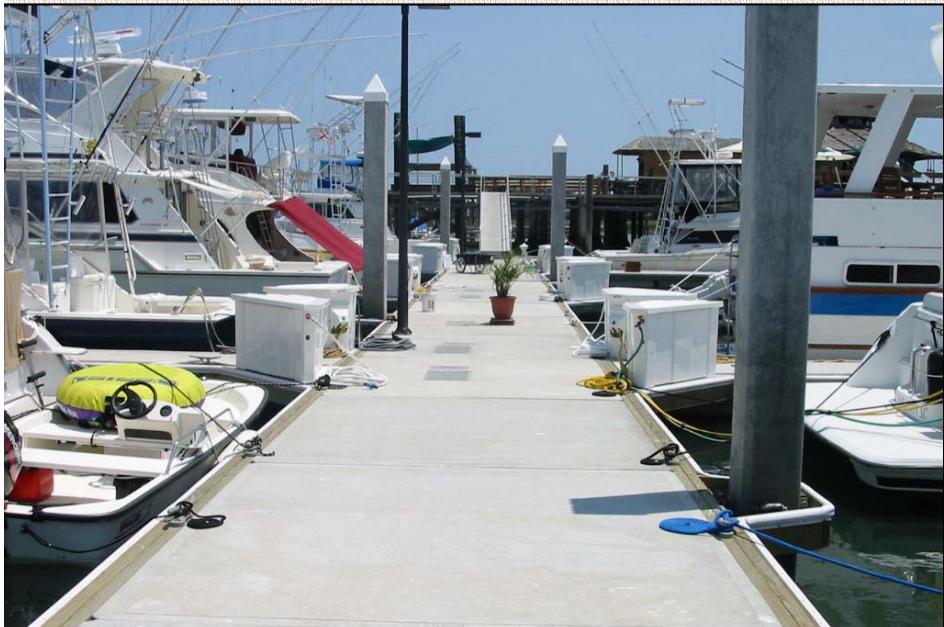
## Marco Island Yacht Club



## Elliott Bay Marina, Washington



## Bahia Bleu Marina, Georgia



## City Dock, Charleston, SC

