



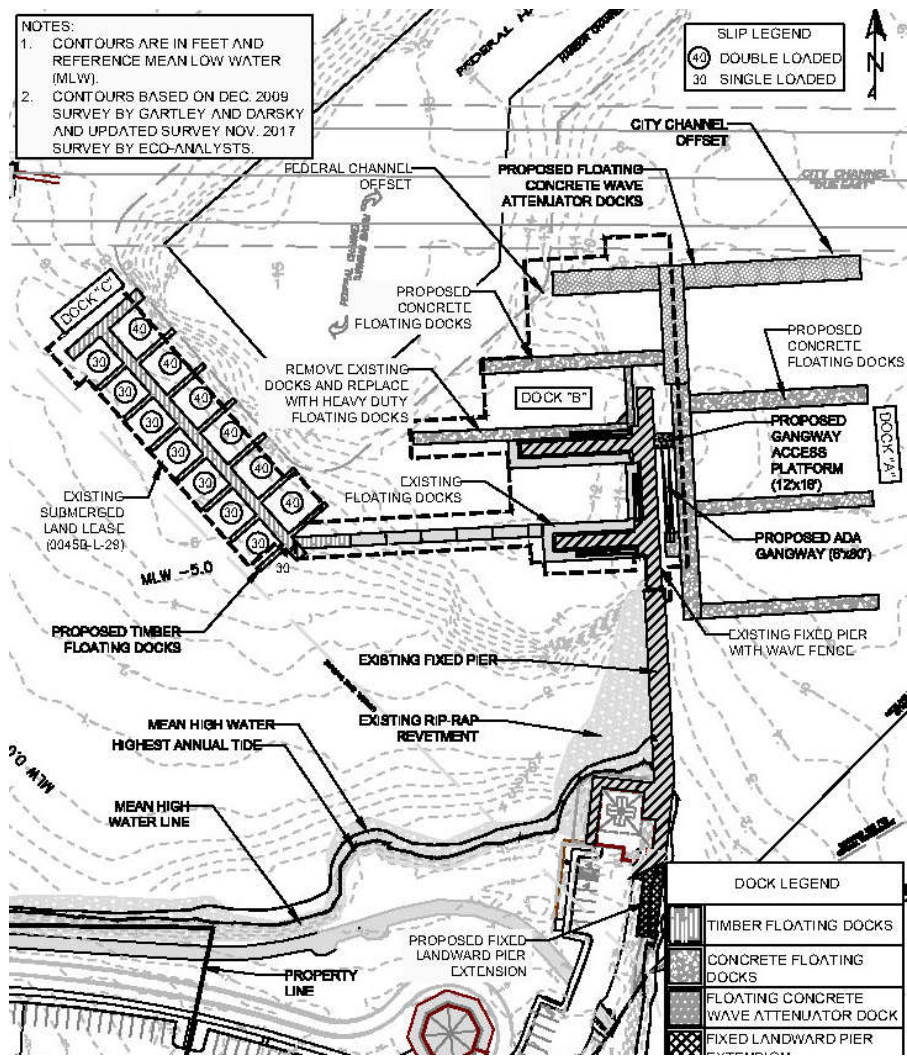
## **Project Scope**

### **Scope Overview**

The marina expansion project includes the following primary project elements:

1. Landward Extension of an Existing Fixed Pier
2. Dock A
  - Fixed Gangway Access Platform
  - 6' X 80' ADA-Compliant Gangway
  - Floating Concrete Docks
  - Floating Concrete Wave Attenuator Docks
3. Dock B - Floating Concrete Docks
4. Dock C – Floating Timber Docks
5. Dredging

This proposed marina expansion is illustrated in the following figure for reference, noting that this figure is taken from Sheet 3 of the provided Permit Drawings.



The specific scope of work is described in more detail in the following sections.

## New Structures and Docks

### *Landward Extension of Existing Fixed Pier*

The existing 16' wide fixed pier will be extended landward by 65'. This new section of pier will allow a better delineation of the entrance of the marina and the entrance of the restaurant and will provide a public viewing area. Additional landward improvements to connect this pier to public paths are not included at this time.

The structure is expected to be primarily of timber construction, including timber decking and framing on timber piles supported on concrete footings to generally match the existing pier in terms of materials and design. The total area of the structure, including necessary tie-ins to the existing pier, is 981 sf. The structure is expected to require a maximum of 30

piles, noting that the piles will be supported on a continuous concrete footer and as such will not be driven below existing grades.

### ***Dock A***

Dock A refers to those docks located to the east of the existing pier and wave screen as well as the northernmost “T” head adjacent to the City Channel. A new 12’X16’ (192-sf) 576 sf gangway access platform will be built directly adjacent to the existing fixed pier to support a new 6’x80’ (480 sf less 108 sf overlapping = 372 sf) aluminum ADA-compliant gangway to provide pedestrian access to Dock A. The gangway access platform is expected to be supported by a maximum of 6 9 piles (see subsequent discussion regarding piles). A gallows will require 2 piles to support and lift the bottom end of the gangway.

The new floating docks for Dock A will be monolithic concrete pontoons which consist of a foam core encapsulated by reinforced concrete. The outer portion of Dock A which extends past the end of the existing fixed pier will be wider and include special design characteristics such as higher mass, deeper draft, etc. to attenuate incoming waves.

Dock A includes a total of ~~15,874~~ 15,784 sf of new floating dock area, ~~6,800~~ 7,400 sf of which will be Wave Attenuating Docks. The floating docks will be anchored via a maximum of ~~55~~ 39 piles (see subsequent discussion regarding piles).

### ***Dock B***

Dock B refers to those docks located on the western side of the existing fixed pier and wave screen. These docks will be primarily accessed by the existing gangways to the west side of the existing pier. However, a small floating concrete dock will connect Dock A to Dock B to ensure that all docks may be accessed via the new ADA-compliant gangway as/if needed. The new floating docks will be monolithic concrete pontoons as described above.

The Dock B improvements include removal of 1,628 sf of existing timber floating docks and installation of 4,023 sf of new floating concrete docks. The floating docks will be anchored via a maximum of ~~20~~ 13 piles (see subsequent discussion regarding piles).

### ***Dock C***

Dock C refers to the new dock “tree” of smaller boat slips located west of the existing floating docks. The new floating docks for Dock C will consist of timber decking and framing on polytube flotation pontoons (i.e. – foam core fully encapsulated by polyethylene cladding). The new docks will be accessed via an existing floating timber dock.

Dock C includes a total of 5,611 sf of new floating timber docks, which will be anchored via a maximum of ~~40~~ 32 piles (see subsequent discussion regarding piles).

### ***Pile Considerations***

The number of piles indicated in the previous sections and used to calculate direct impact represent the maximum number of piles anticipated to be required for the various structures/docks based upon **updated** conservative assumptions.

As is typical within the recreational marina industry, the final design of the floating dock systems (including the required number, size, and type of piles) will be completed by the selected dock manufacturer based upon their proprietary design. The dock manufacturer will be selected via a competitive bidding process which will be initiated upon receipt of regulatory authorizations, including the NRPA approval.

Since the specific number, size, and type of piles cannot be known at this time, a maximum number of piles has been determined via development of a conservative pile plan (Sheet 5 of the Permit Drawings). In practice, the total number of piles is expected to be less than the totals indicated herein.

While specific pile sizes and types are not known at this time, the following summarize the *anticipated* pile types and sizes based on conservative assumptions:

- Shoreward Extension of Existing Fixed Pier: Timber piles 12” -18” in diameter , noting that these will be supported on a concrete footing and will not require pile driving. A 2’ wide concrete footing will be considered when calculating direct intertidal impact (116 sf).
- Gangway Access Platform: Assume timber piles 12” in diameter.  
~~6~~ 9 piles@1 sf/ea= ~~6~~ 9 sf direct impact  
2 galleys piles@1 sf/ea= 2 sf direct impact
- Floating Concrete Docks (Dock A): Assume steel pipe piles 16” diameter.  
~~55~~ 24 piles@1.4 sf/each= ~~77~~ 33.6 sf direct impact
- Floating Concrete Attenuation Docks (Dock A): Assume steel pipe piles 20” diameter. ~~20~~ 15 piles@2.2 sf/ea= ~~44~~ 33 sf direct impact
- Floating Concrete Docks (Dock B): Assume steel pipe piles 16” diameter.  
~~55~~ 13 piles@1.4 sf/each= ~~77~~ 18.2 sf direct impact  
Remove 9, 12” wood piles 9 sf  
Net impact = ~~68~~ 9.2 sf
- Floating Timber Docks (Dock C): Timber piles 12” in diameter  
~~40~~ 32 piles@1 sf/ea=~~40~~ 32 sf direct impact

Additionally, the following Best Management Practices (BMPs) will be encouraged and/or required for all pile driving activities:

- Contractor shall use cushion blocks or other noise attenuation devices when using an impact hammer.
- Contractor shall use a “soft start” for a pile driving activities (i.e. – driving does not occur at full power at first).

### **Dredging**

Dredging will be required to accommodate the increased size and number of vessels that will be utilizing the facility. The dredge plan (Sheet 15-17 of the Permit Drawings) was developed to minimize the total volume of dredging required while maximizing the operational efficiency and safe navigation for visiting vessels. Tomorrow

Proposed dredge depths are indicated in the Permit Drawings and range from -6’ to -13’ relative to Mean Low Water (MLW). The proposed dredge plan results in a total of approximately 12,520 cy of excavation encompassing an area of approximately 138,000 sf or 3.2 acres.

### **Coastal Wetland Impacts**

The impacts associated with existing improvements and proposed improvements are summarized below:

Year	Structure Description	Coastal Wetland Impact				Notes:
		Direct		Indirect		
		Sub-Tidal(sf)	Intertidal(sf)	Sub-Tidal(sf)	Intertidal(sf)	
2000	Breakwater restoration, Pier, and Dredge (2000)	1068				1
2008	Boat House Conversion	0				2
2010	Some Floats and Piles added	16		3211		3
2021	Pilings	<del>235</del> 118.8				4
	Floats (Docks A, B, and C)			<del>23,880</del> 23,790		
	Access Pier and Ramp Dock A			<del>672</del> 948		
	Landward extension of pier w/footings		116		205	5,6
	Existing Impact Totals	1084		3211		
	Proposed 2021 Impact Totals	<del>235</del> 118.8	116	<del>24552</del> 24738	205	
	Cumulative Direct/Indirect Impact Total	<del>1435</del> 1318.8		<del>27968</del> 28154		

- 1 Include a combination of sub-tidal and tidal (amounts unknown)
- 2 All work adjacent to the resource, 1386 sf
- 3 Note: 65 sf of direct and 13,160 sf of indirect impact were approved in 2010
- 4 ~~244~~127.8 sf of impact from proposed piles less 9 sf of replaced piles in Dock B. Net ~~235~~ 118.8 sf
- 5 660 sf of the proposed pier extension adjacent to the coastal wetland in area of existing riprap
- 6 All impact is on a previously placed riprap revetment