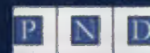




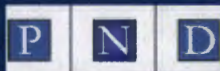
# Sitka Transient Float (STF) Replacement



January 14, 2015



## PND Design Team



**Dick Somerville, P.E.**  
Principal Civil Engineer



**Mark Morris, P.E.**  
Principal Electrical Engineer

## Tonight's Presentation Project Scoping Phase

- STF Development Goals, Objectives & Budget
- Site Conditions – Survey & Geotechnical
- Wave Conditions & Float Design Recommendations
- Concept Plans for Replacing STF
- Pole Tending Float Options
- Potable Water and Fire Suppression System
- Power & Lighting System Options
- Cost Estimates – Base Bid & Additive Alternate
- Preferred Scope to Move Forward to Final Design
- Proposed Project Schedule

## STF Goals, Objectives & Budget

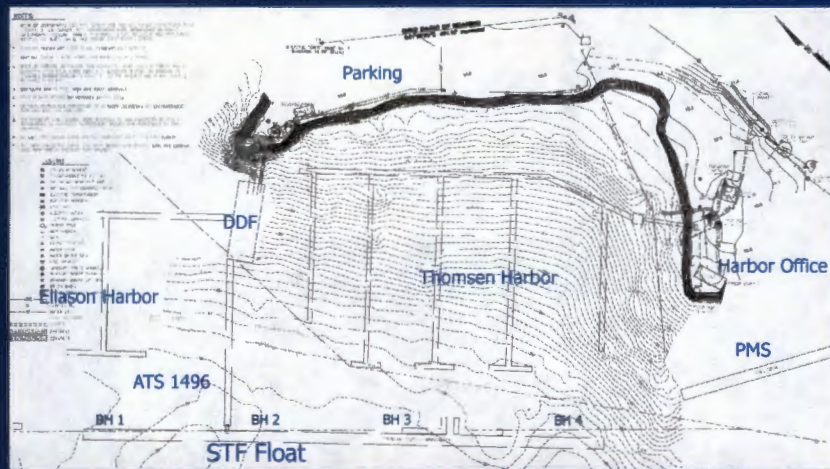
- Demolish existing concrete/timber float in its entirety
- New float must be durable, easy to maintain, must provide vessel moorage on both sides and comparable wave protection for the harbor
- Construct Pole Tending Float if budget allows
- Combined potable water and fire suppression system with heat trace
- Glare shielded LED lighting
- Power pedestals if budget allows
- Cathodic protection for piles – sacrificial anodes
- **Total Project Budget All In = \$6.15M**



## Aerial View of Project Site



## Site Conditions – Bathymetry, ATS Boundary & Geotechnical



## Site Conditions – Waves November 2011 Storm Sustained westerly winds @ 40 knots



## 2013-14 USACE Improvements

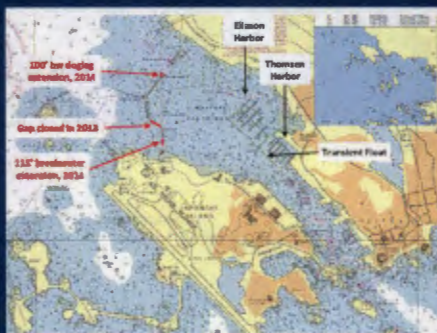


Figure 1. Site Harbor (MOAA Chart 17527)



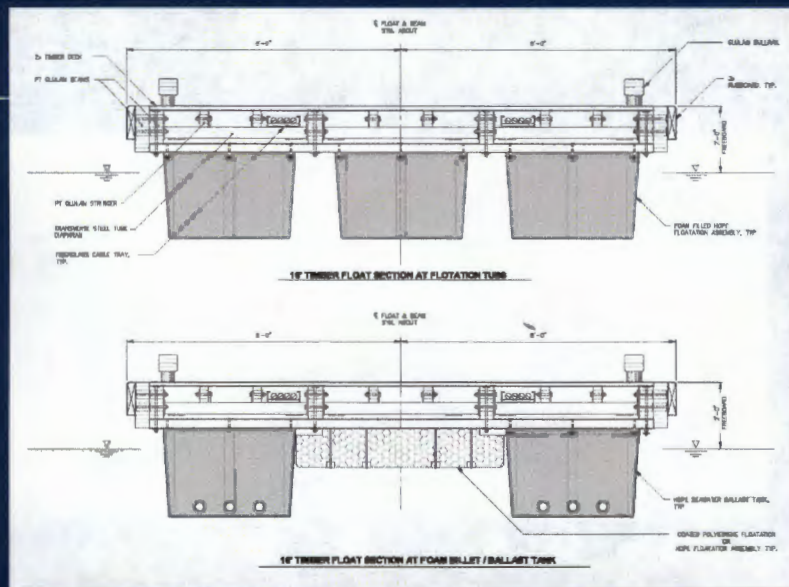
Figure 2. Aerial Photo – Channel Rock Breakwaters and Thomson Harbor (5/13/2013)



## Float Assessment & Design Recommendations

- Concrete & Timber Floats were assessed in 12', 16' and 21' widths.
- Long period surge & sea swell wave transmission into the harbor will be similar for all float options. Floating wave attenuators are not generally effective in these conditions.
- Wider floats are more effective for attenuating short period waves (3-4 seconds max.)
- Float motion is larger for narrower floats
- A minimum float width of 16' is recommended for pedestrian safety and attenuating short period waves
- Concrete floats typically have less wave transmission than timber floats due to greater mass and continuous deeper draft.
- Timber floats are preferred by CBS Harbor staff for routine maintenance & should be ballasted to increase mass

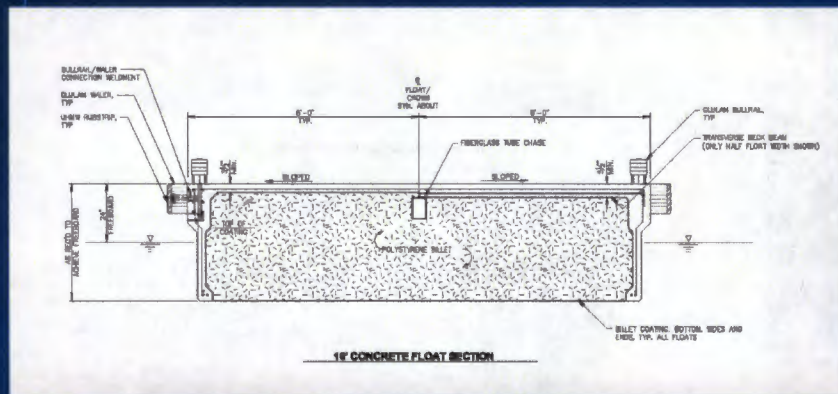
### HD Ballasted Timber & Polytub Float



### HD Ballasted Timber & Polytub Float

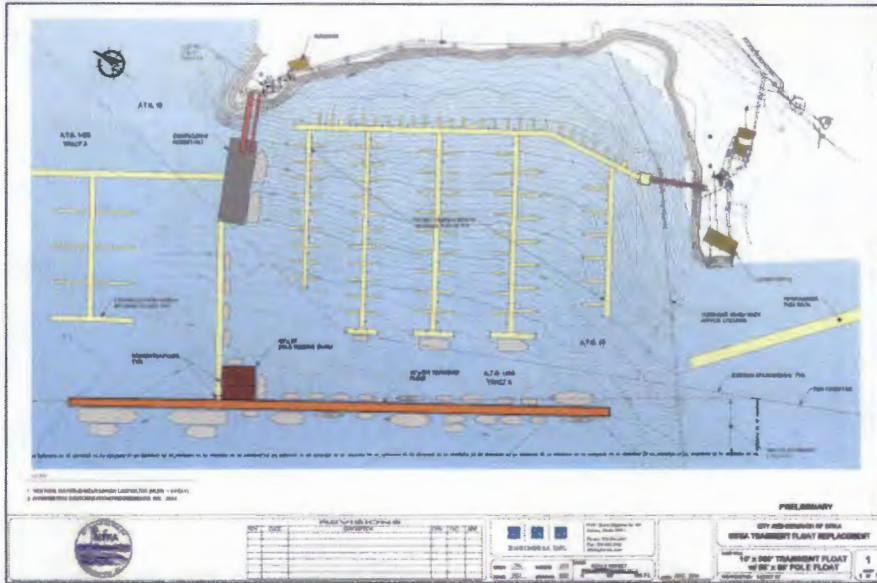


### Concrete Float Section

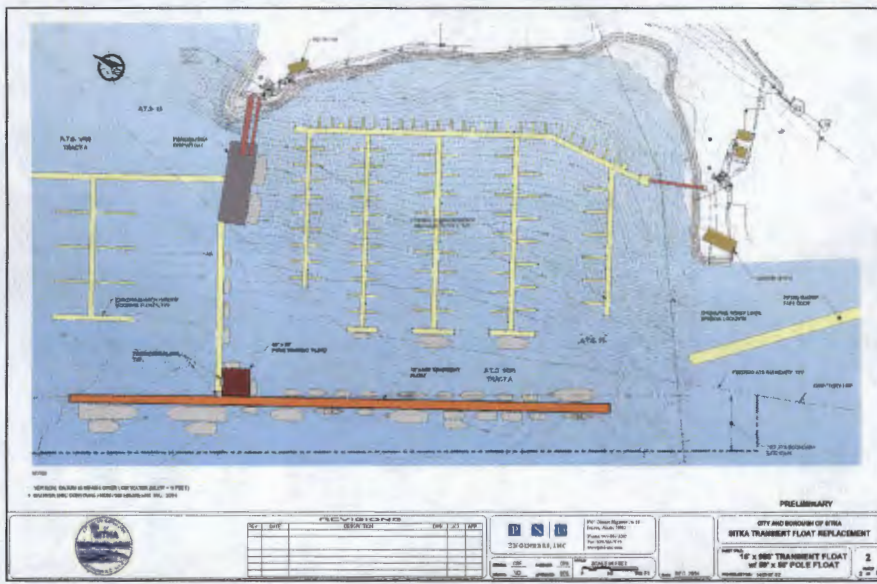


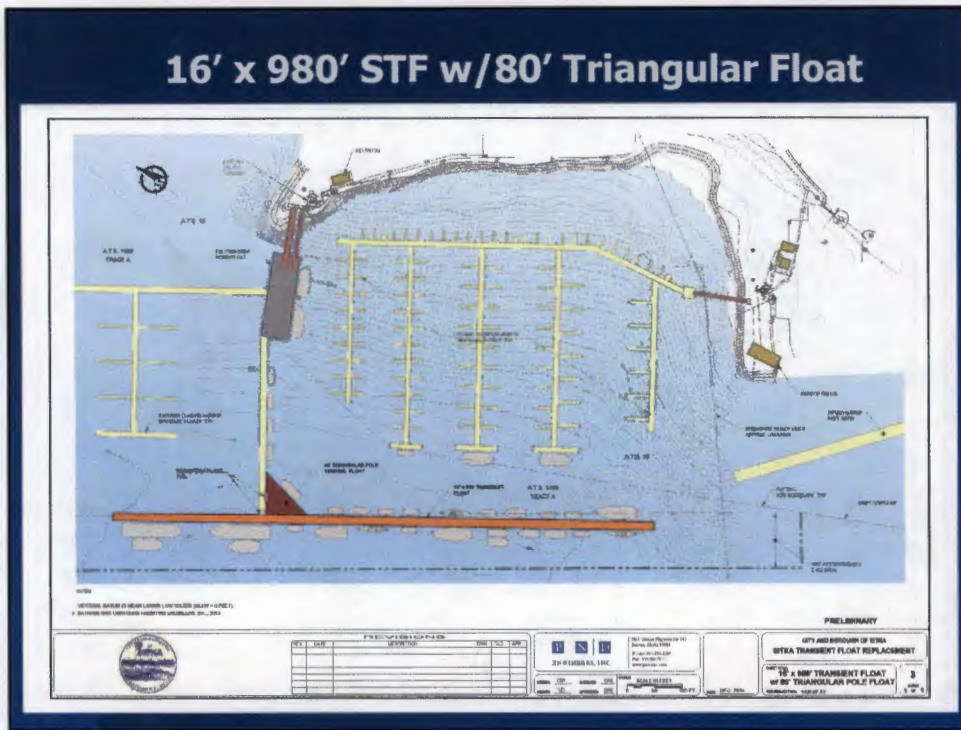


### 16' x 980' STF w/ 60x60 Pole Float



### 16' x 980' STF w/ 50x50 Pole Float





## Potable Water & Fire Suppression System

- Combined potable water and fire system with single service pipe similar to ANB harbor
- Wet on demand system for both potable and fire water
- Year round service with heat traced pedestals
- (7) potable water pedestals will be spaced approximately 150' OC each with (2) 3/4" hose connections
- (5) fire suppression pedestals will be evenly spaced on the float each with 1 1/2" angle valves having fire hose thread connections
- Fire hose and extinguisher cabinets will also be provided



## Power and Lighting System Options

- Two options studied:
  - Option 1 – full electrical package with power, LED lighting and heat trace for water system on the new float. Dual service 30A/50A power pedestals would be spaced about 70' OC down both sides of float. Construction Bid Cost = \$850K
  - Option 2 – LED lighting and heat trace improvements only with main service equipment and feeder cables to connect power pedestals in the future. Construction Bid Cost = \$415K
- New upland service equipment required to separate from Eliason due to recent NEC ground fault protection requirements

## Power and Lighting System Options



## Cost Estimates - All In Construction + Contingency + Indirects

Description	Total Project Cost
Base Bid: 16'x980' Ballasted Timber Float w/ Electrical Option No. 2	\$6.311 M
Base Bid: 16'x980' Concrete Float w/ Electrical Option No. 2	\$7.274 M
Additive Alternate A: Pile Anodes	\$0.142 M
Electrical Option No. 1 Power Pedestals	\$0.608 M
60'x60' Pole Tending Float	\$0.947 M
50'x50' Pole Tending Float	\$0.682 M
80' Triangular Pole Tending Float	\$0.807 M

## CBS Preferred Scope to Move Forward to Final Design

Description	Total Project Cost
Base Bid: 16'x980' Ballasted Timber Float w/ Electrical Option No. 2	\$6.311 M
Additive Alternate A (AAA): Pile Anodes	\$0.142 M
Total Required Budget	\$6.453 M
Funds in Hand	\$6.150 M
<b>Additional Funds Required for Base Bid</b>	<b>\$0.161 M</b>
<b>Additional Funds Required for Base Bid + AAA</b>	<b>\$0.303 M</b>



## Proposed Project Schedule

Description	Timeframe
Confirm Preferred Scope to Move Forward	Tonight
Prepare Permit Applications & Submit to Agencies	Winter 2015
Complete Design Phase	Spring 2015
Bid & Construction Award Phase Complete	Early Summer 2015
Float Fabrication Complete	Fall 2015
Field Installation Complete	March 15, 2016

## STF Float Replacement Thank you for your comments!

