

Coastal Restoration with Breakwaters

*Howard Frankland Bridge, MacDill AFB, Picnic Island, Tierra Verde, Roberts Bay
Bird Colony Islands, Snake Island, Peanut Island, and Lake Worth Lagoon*

By: Bruce Hasbrouck, CEP

Presented to:

*National Conference on Beach Preservation
Technology*

9 February 17



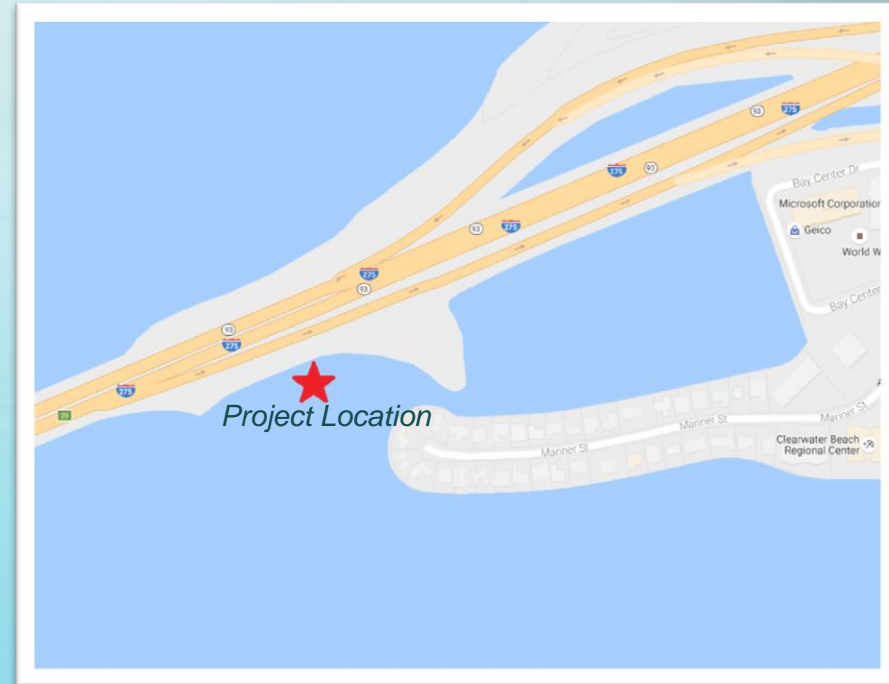
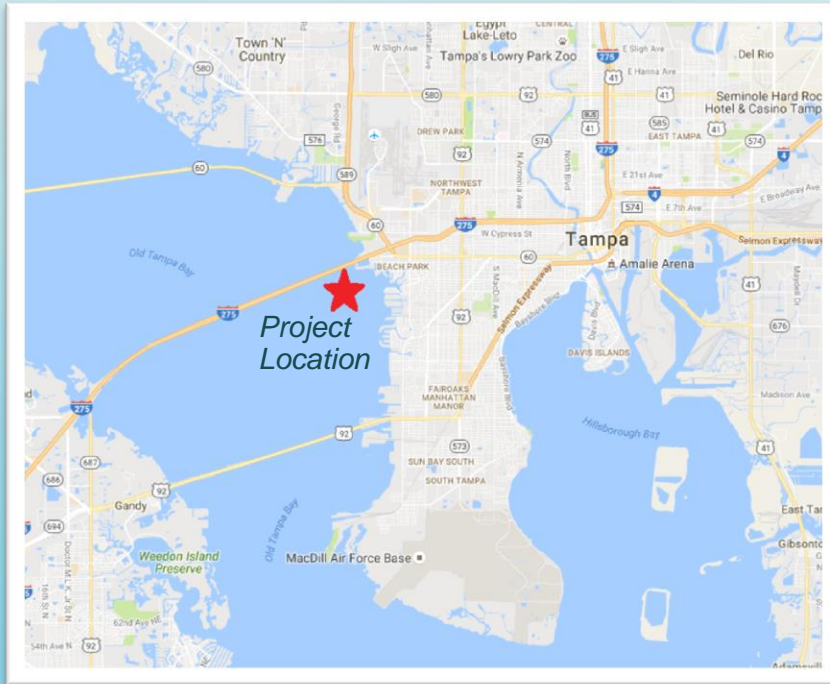
FALLER, DAVIS & ASSOCIATES, Inc.



FLORIDA SHORE & BEACH
PRESERVATION ASSOCIATION
A League of Cities and Counties on Beach and Coastal Issues



Howard Frankland Project



Project Location



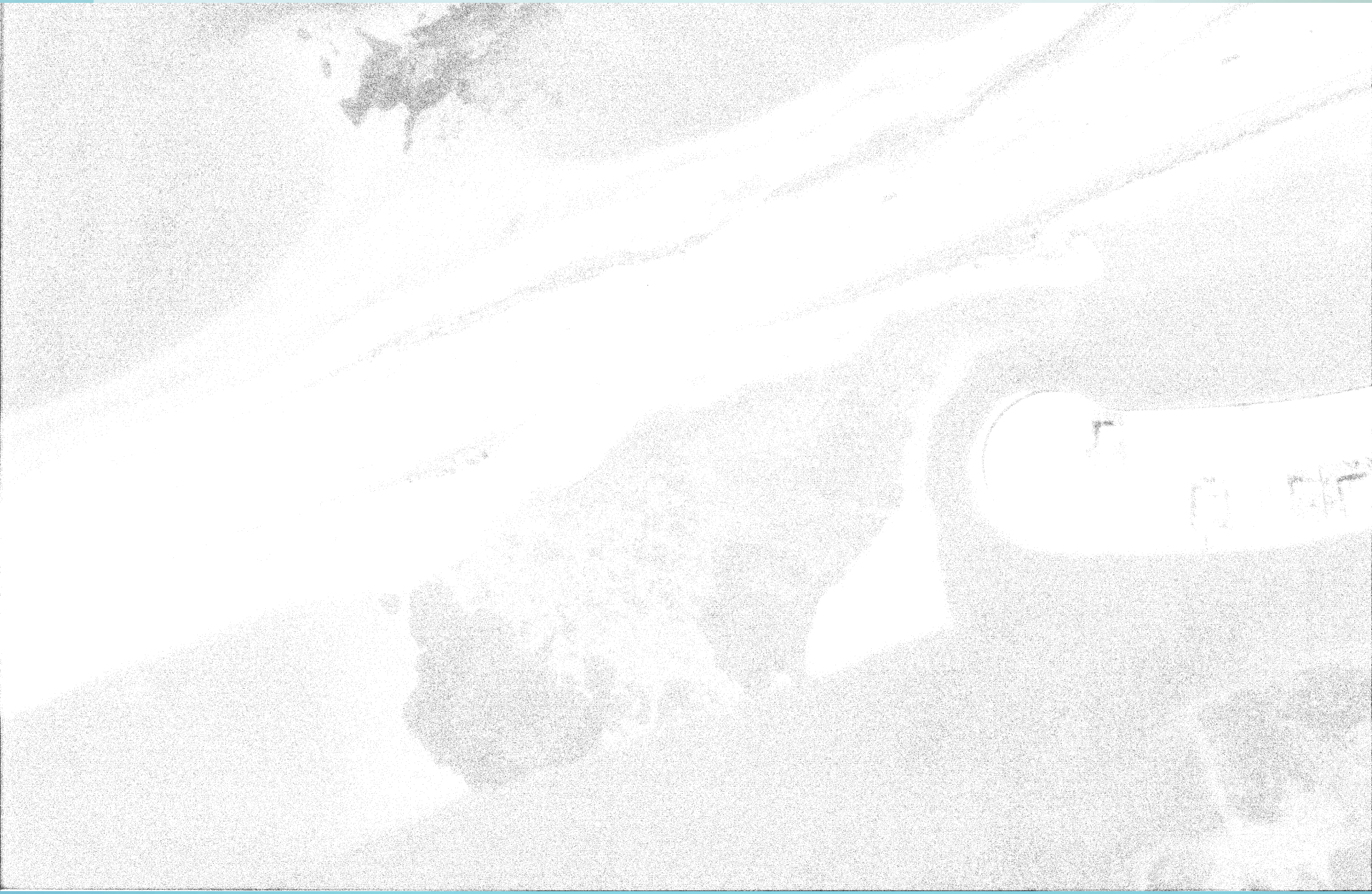
Need for Project



Erosion Over Time



October 1965



Erosion Over Time



April 2010





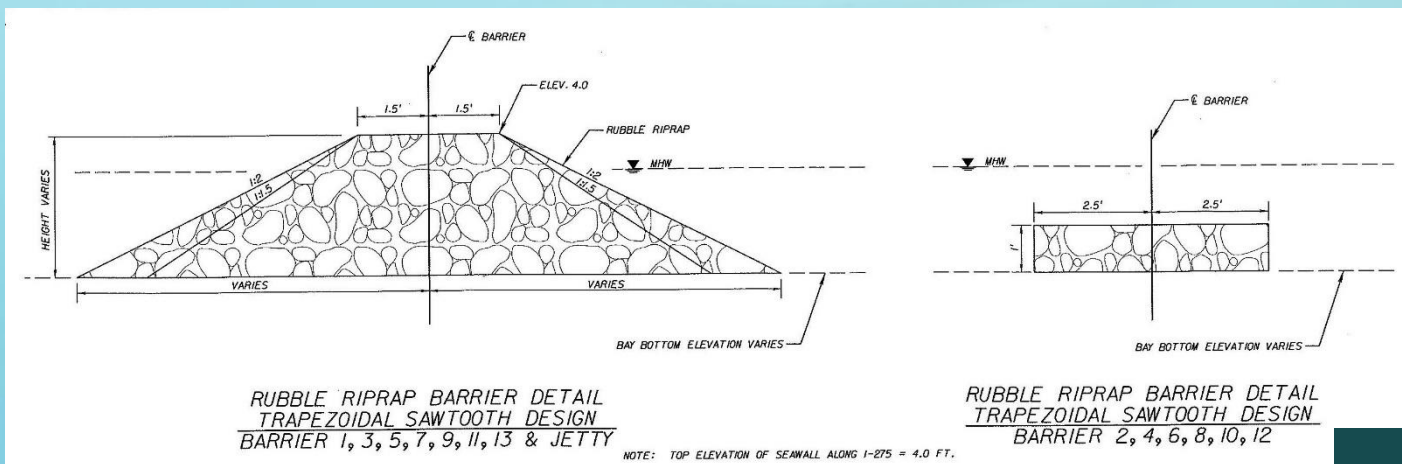
MAR 8 2006



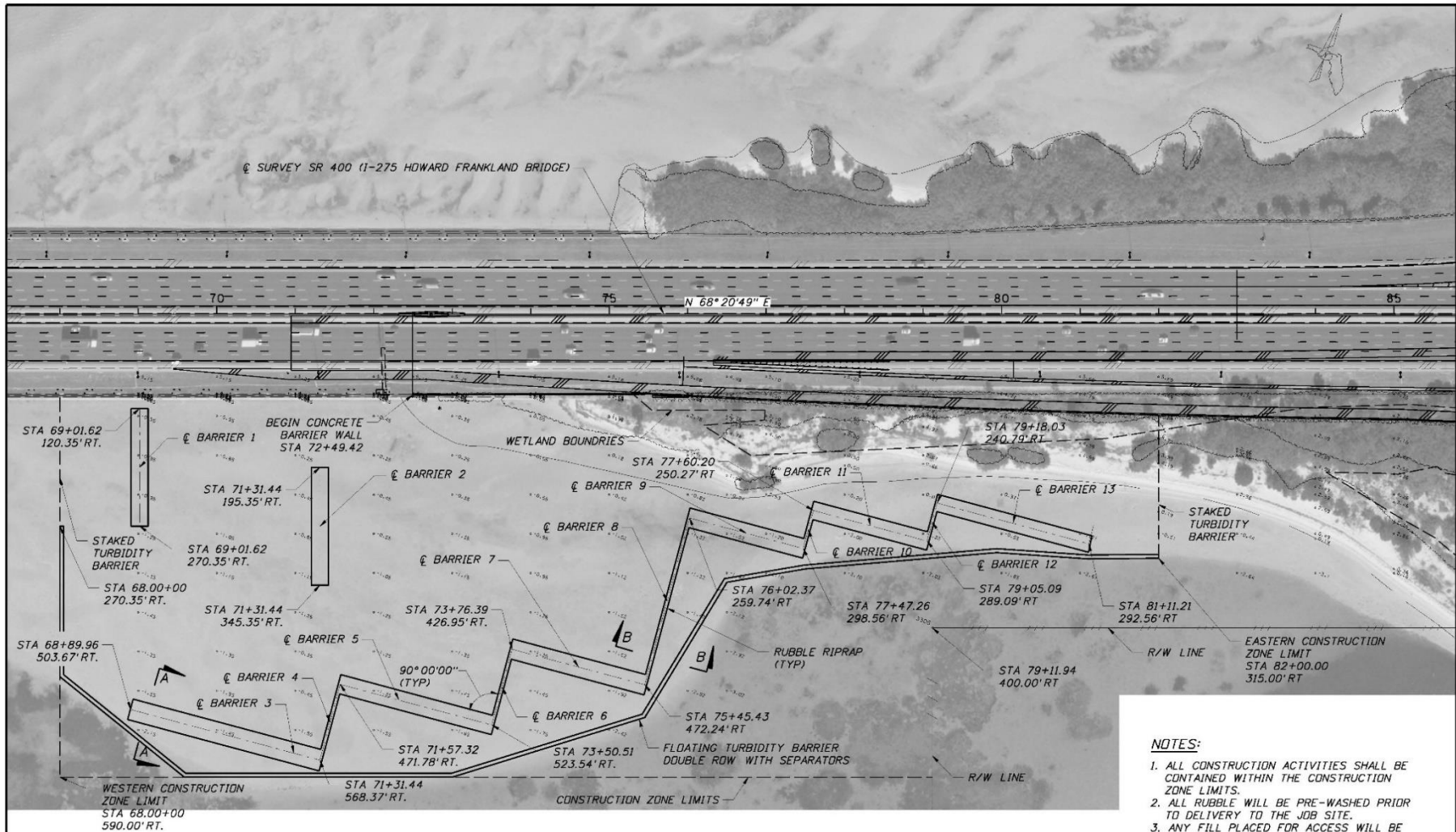
June 2006

Project

- Placement of rubble rip-rap, native limestone
- Zigzag pattern, roughly parallel to causeway
 - 1400' feet exposed (above MHW)
 - 550' feet below MHW
- Rip-rap will absorb wave action



Project




PLAN

NOTES:

1. ALL CONSTRUCTION ACTIVITIES SHALL BE CONTAINED WITHIN THE CONSTRUCTION ZONE LIMITS.
2. ALL RUBBLE WILL BE PRE-WASHED PRIOR TO DELIVERY TO THE JOB SITE.
3. ANY FILL PLACED FOR ACCESS WILL BE REMOVED.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION



Kishner Campo & Associates Corp.
 201 N. Franklin Street
 Suite 400
 Tampa, FL 33602
 Florida C.O.A. No. 02317
 Thomas J. Shaw, PE No. 50787

DESIGN BY: FCM - CM	STATE OF FLORIDA		
DRAWN BY: FCM - CM	DEPARTMENT OF TRANSPORTATION		
CHECKED BY: FCM - CM	ROAD NO.	COUNTY	PROJECT NAME
DESIGNED BY: FCM - CM	93	HILLSBOROUGH	SR 93 (I-275 HOWARD FRANKLAND BRIDGE) ROCK BARRIER
DATE: 11-08	412531-5-52-01		

SHEET TITLE		PLAN
PROJECT NAME		SR 93 (I-275 HOWARD FRANKLAND BRIDGE) ROCK BARRIER
REF. DWG. NO.		
SHEET NO.	BI-4	

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 6005-23.003, F.A.C.



09/23/2010



09/23/2010



09/23/2010





























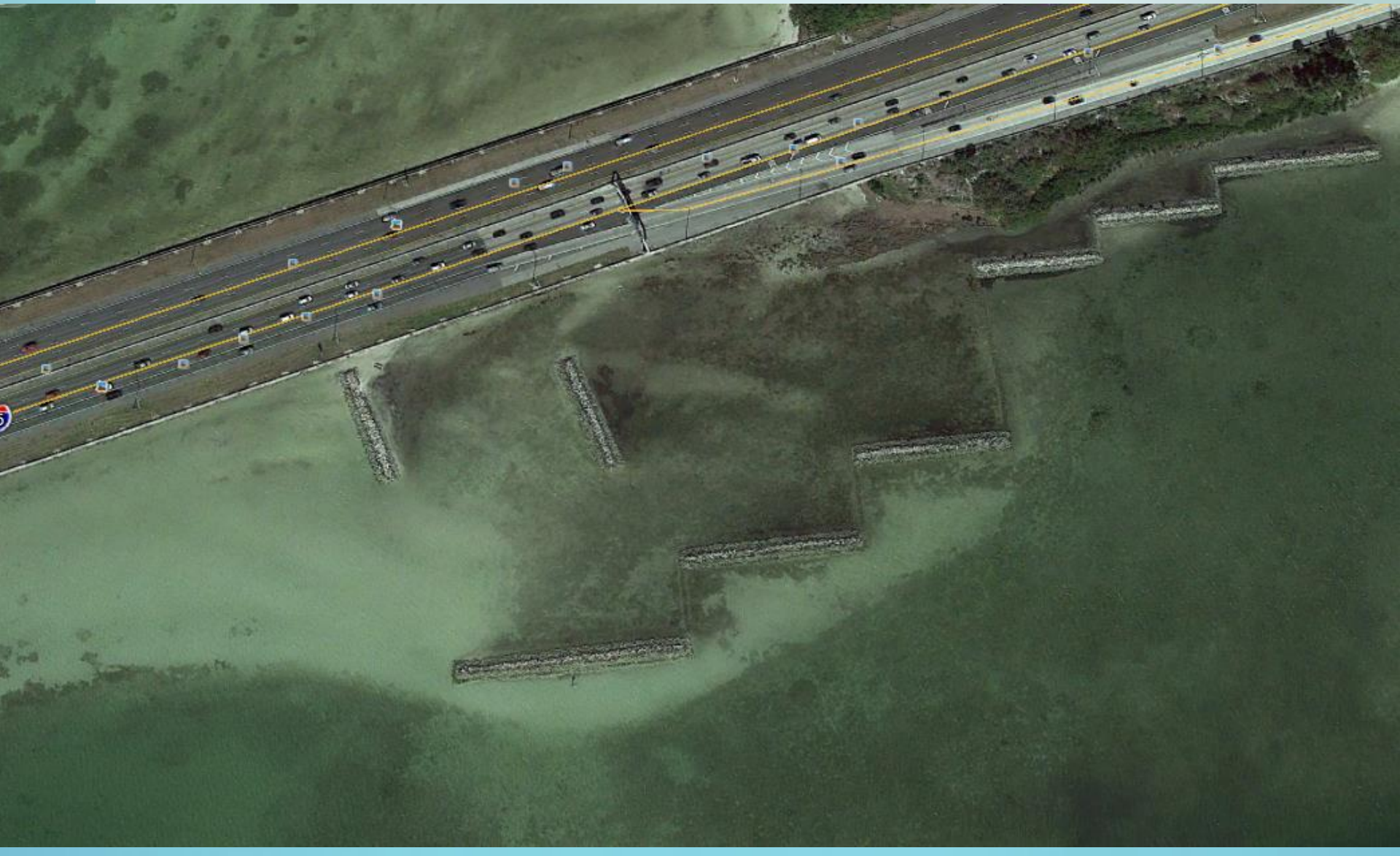
April 2012



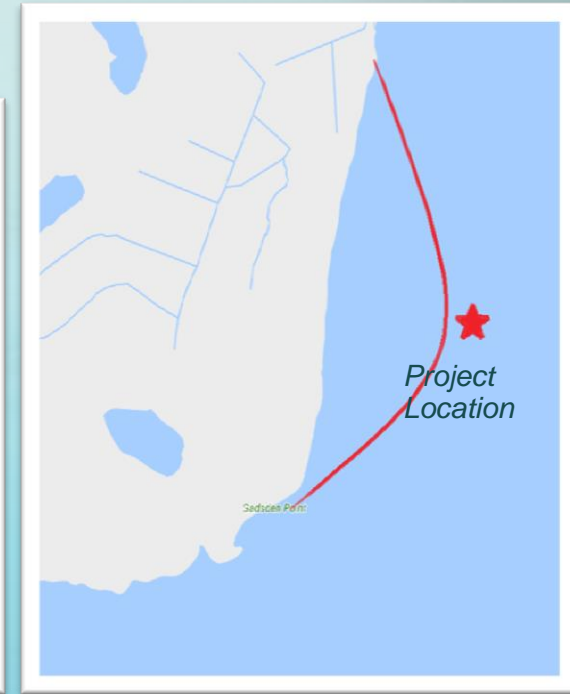
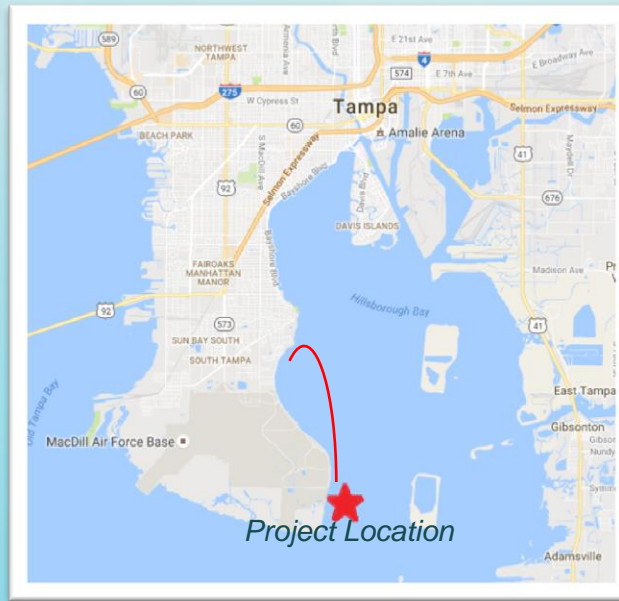
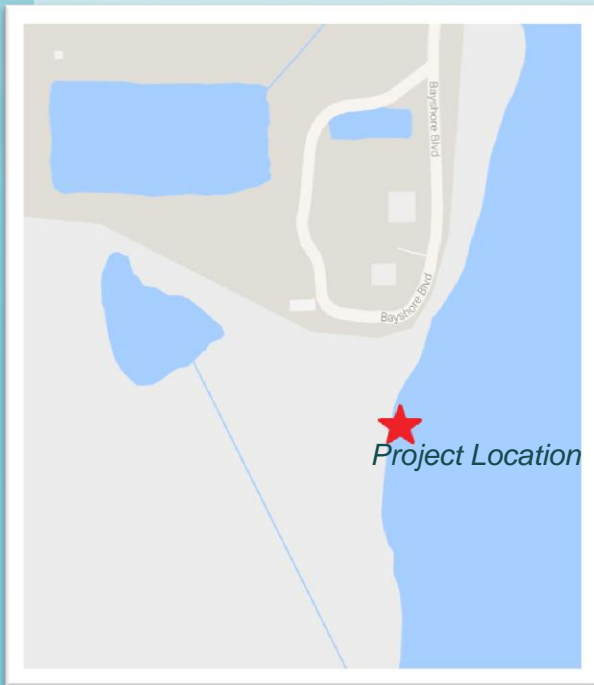
January 2014

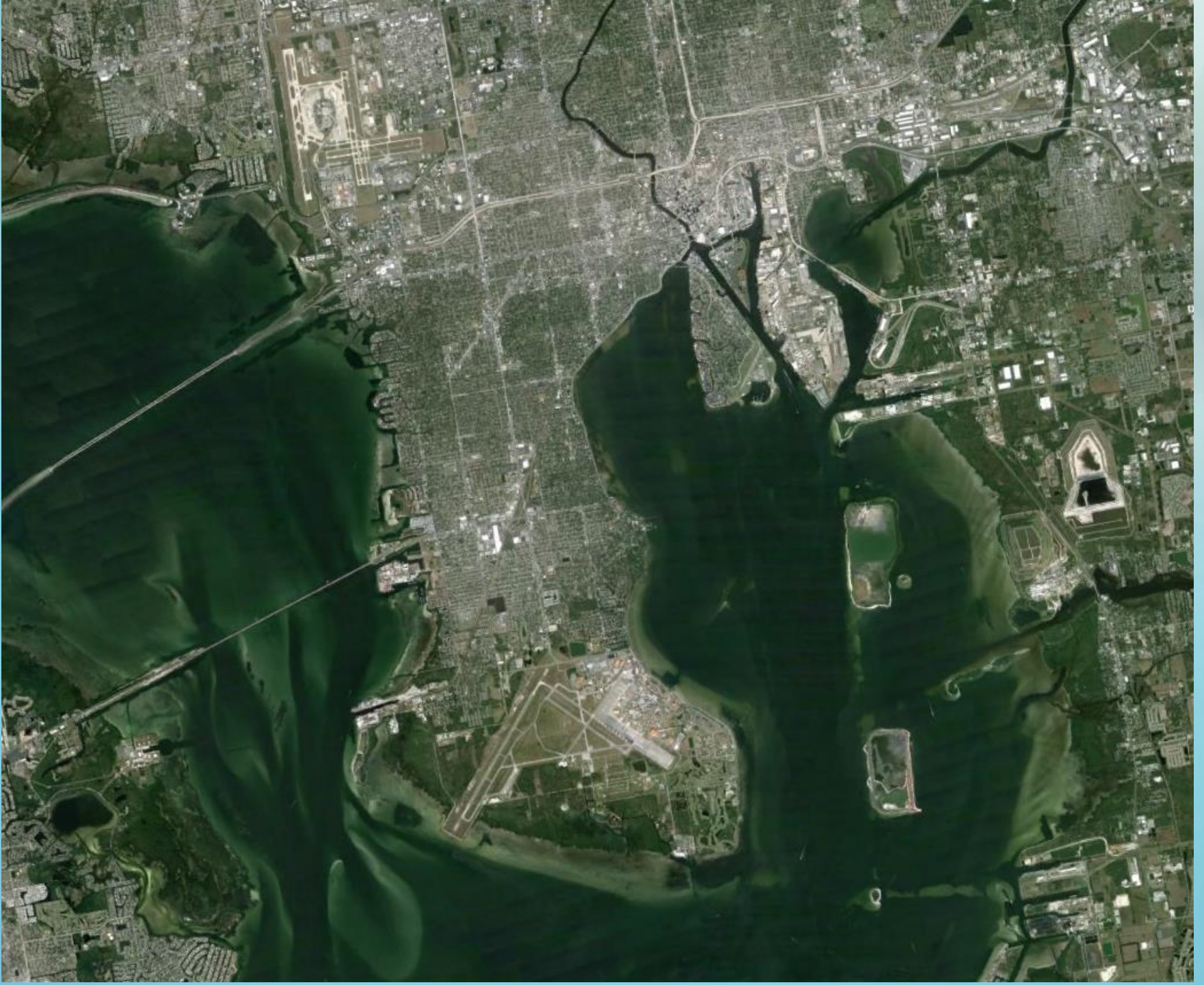


February 2016



MacDill Projects





December 2003



January 2008



April 2012



February 2016



December 2005



November 2007



April 2010



April 2012



February 2016



February 2007



April 2010



March 2013



February 2016









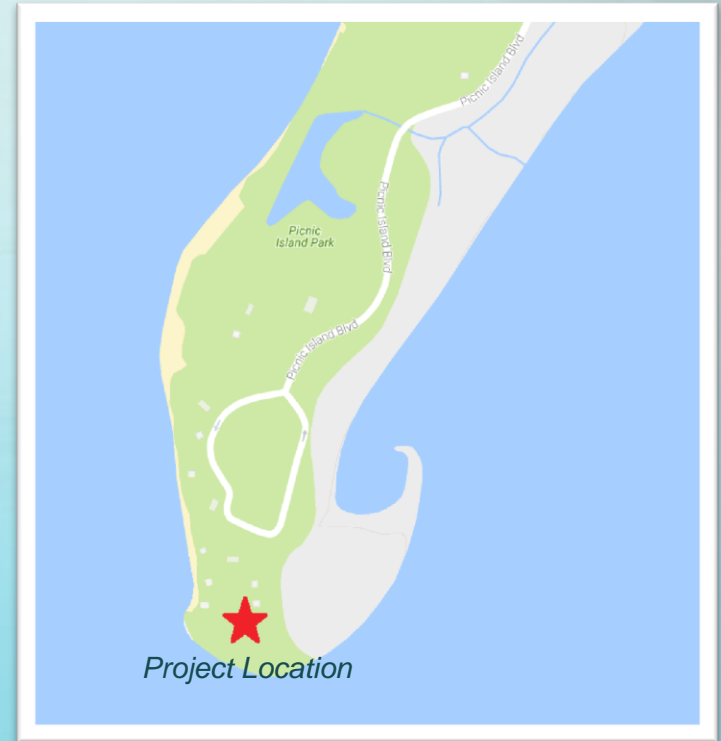
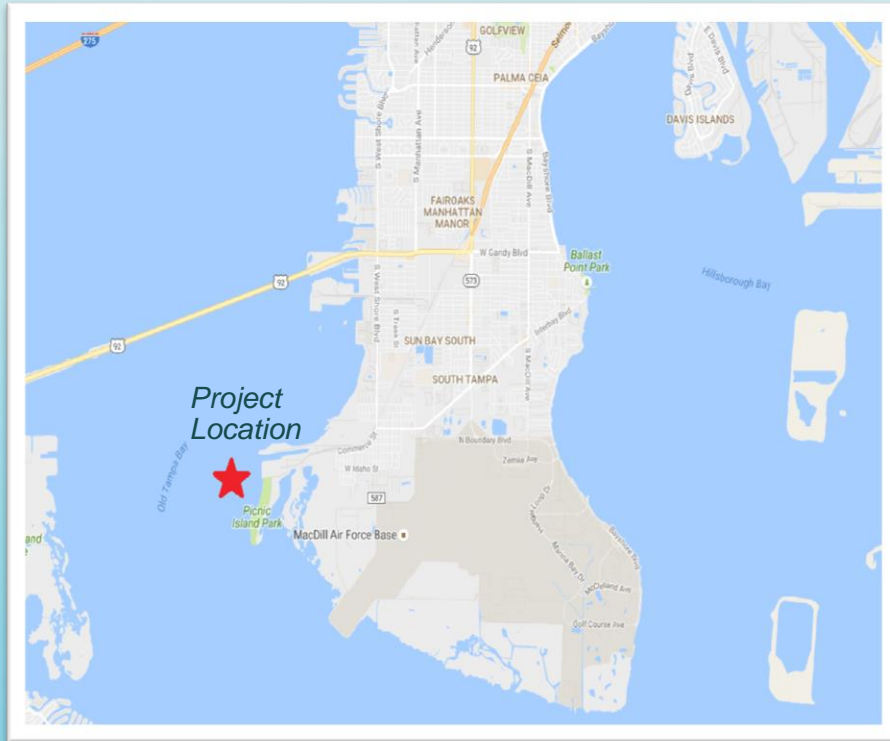




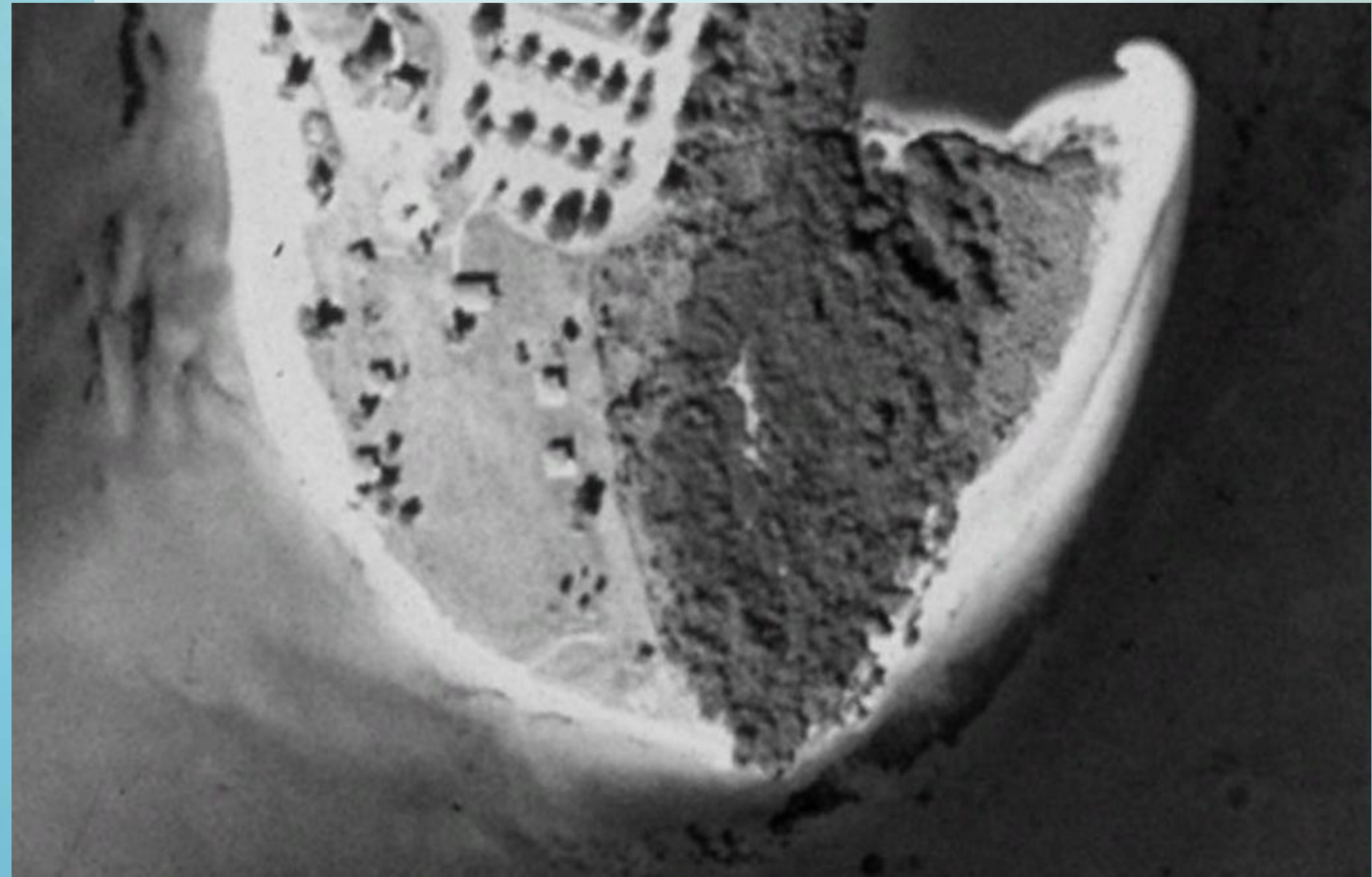




Picnic Island Project



December 1998





May 2002



March 2006



March 2009



February 2016

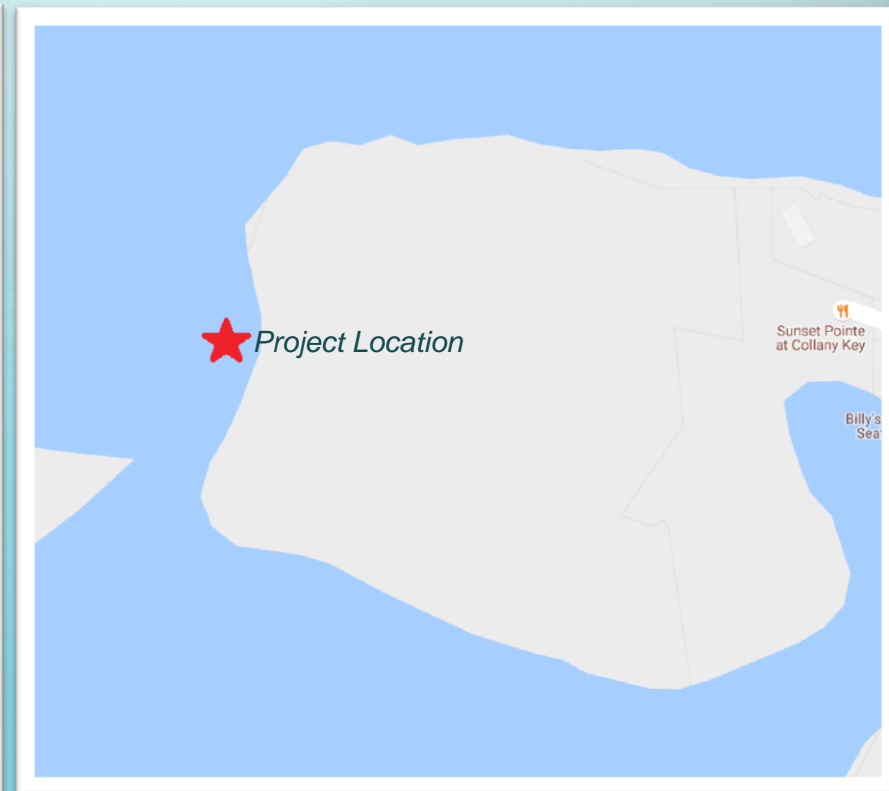
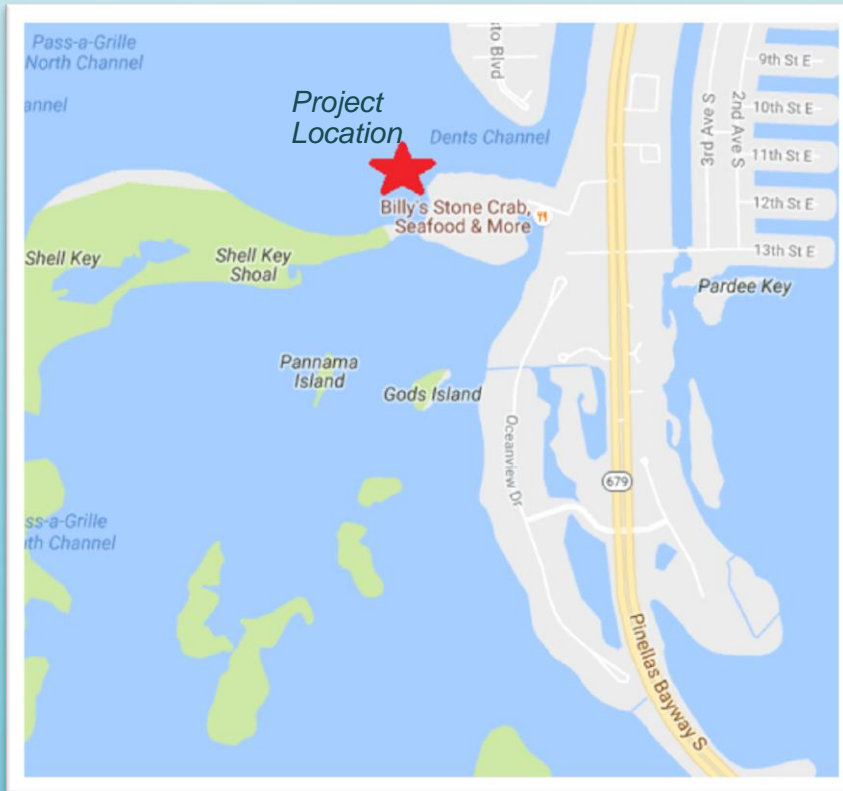








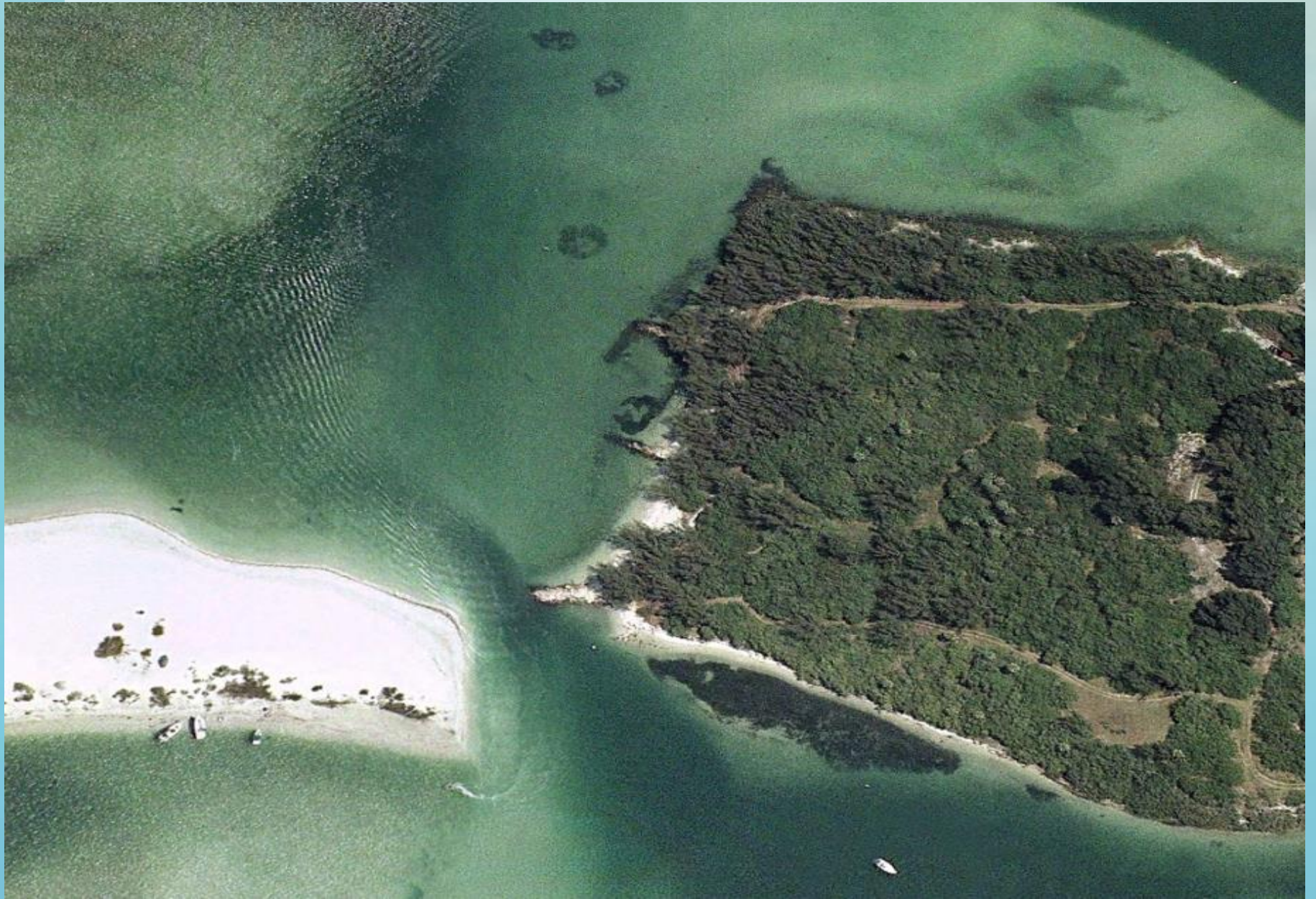
Tierra Verde



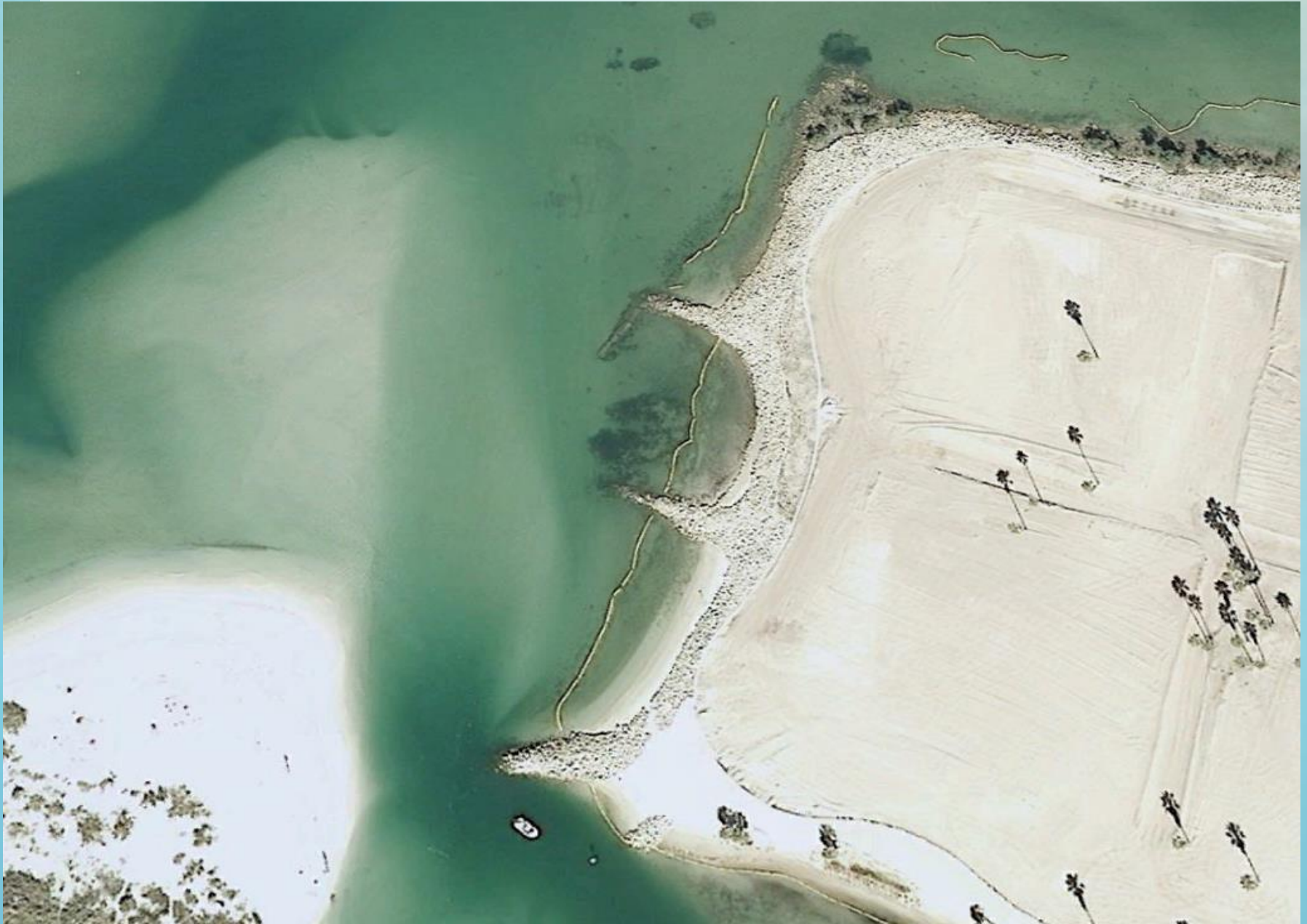
December 2005



May 2002



January 2008



April 2010



March 2013



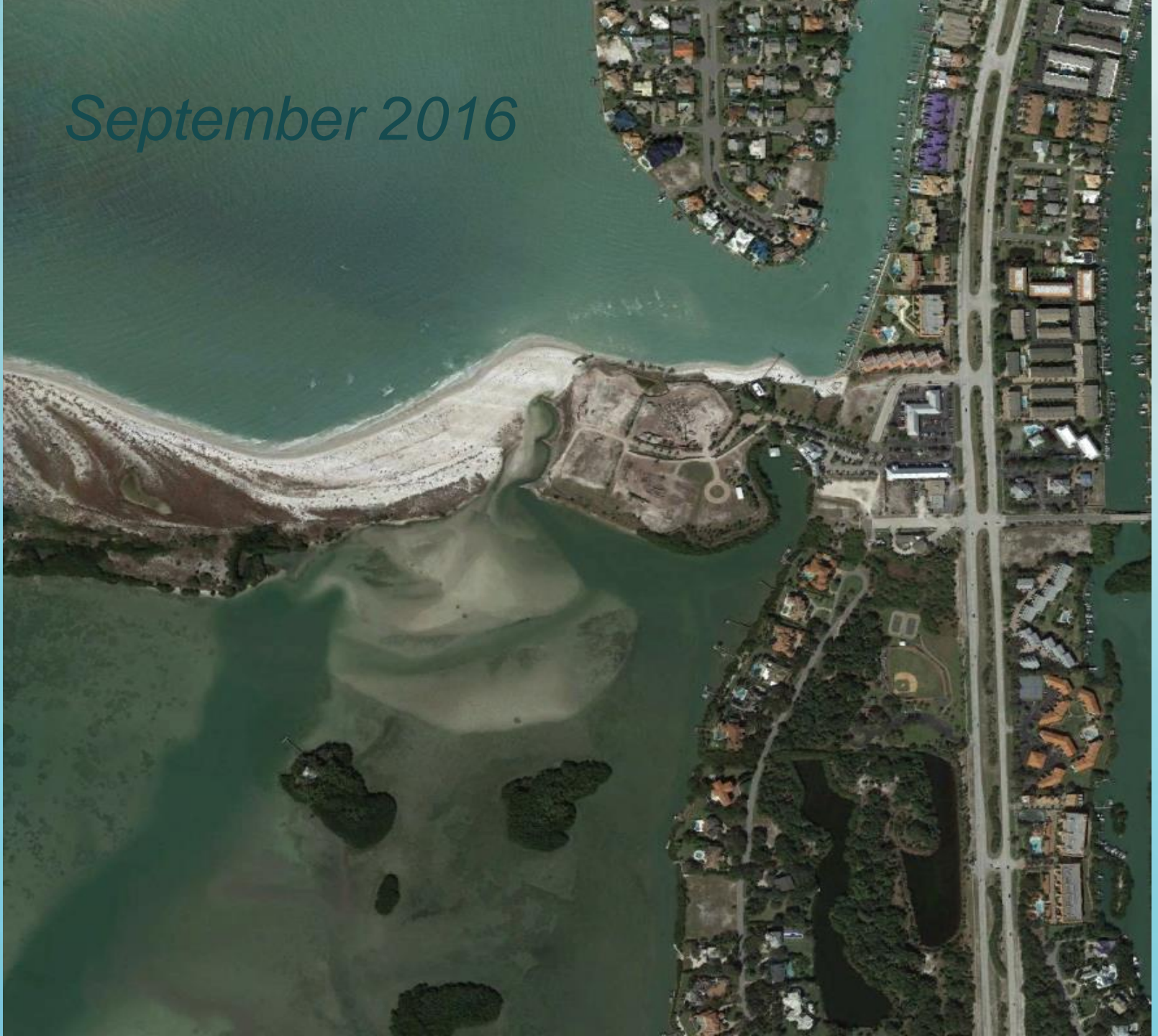
January 2014



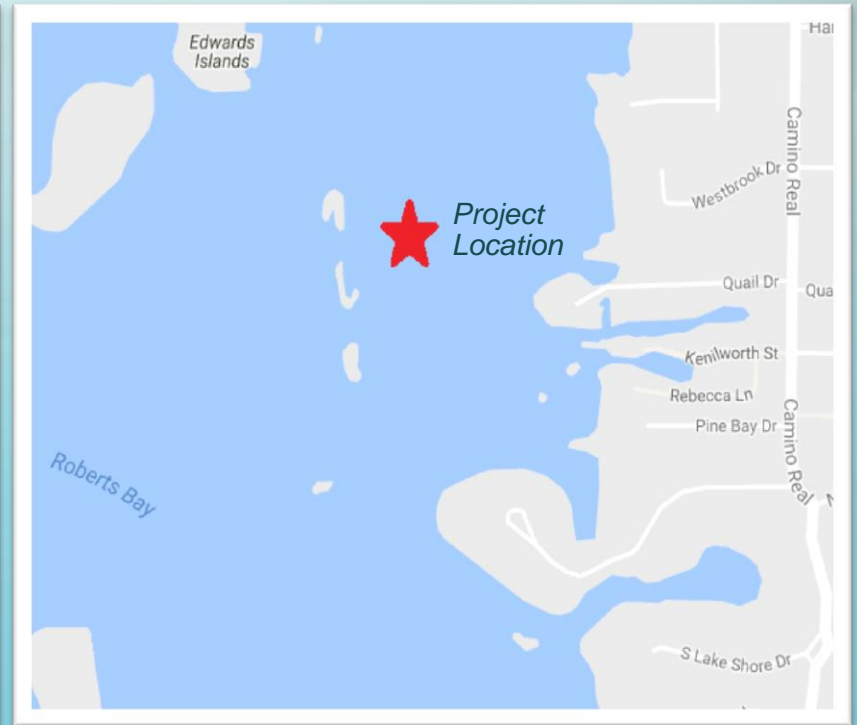
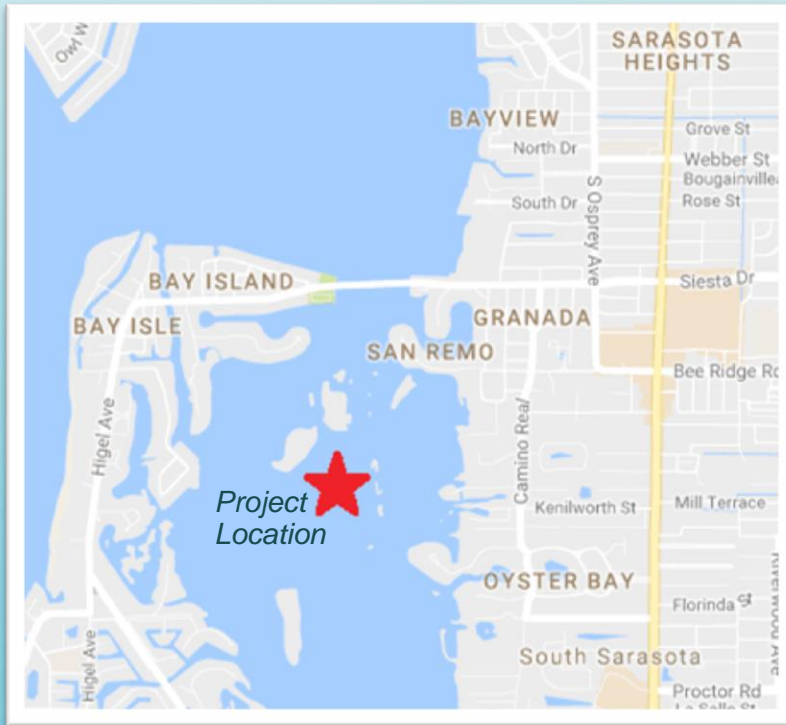
February 2016

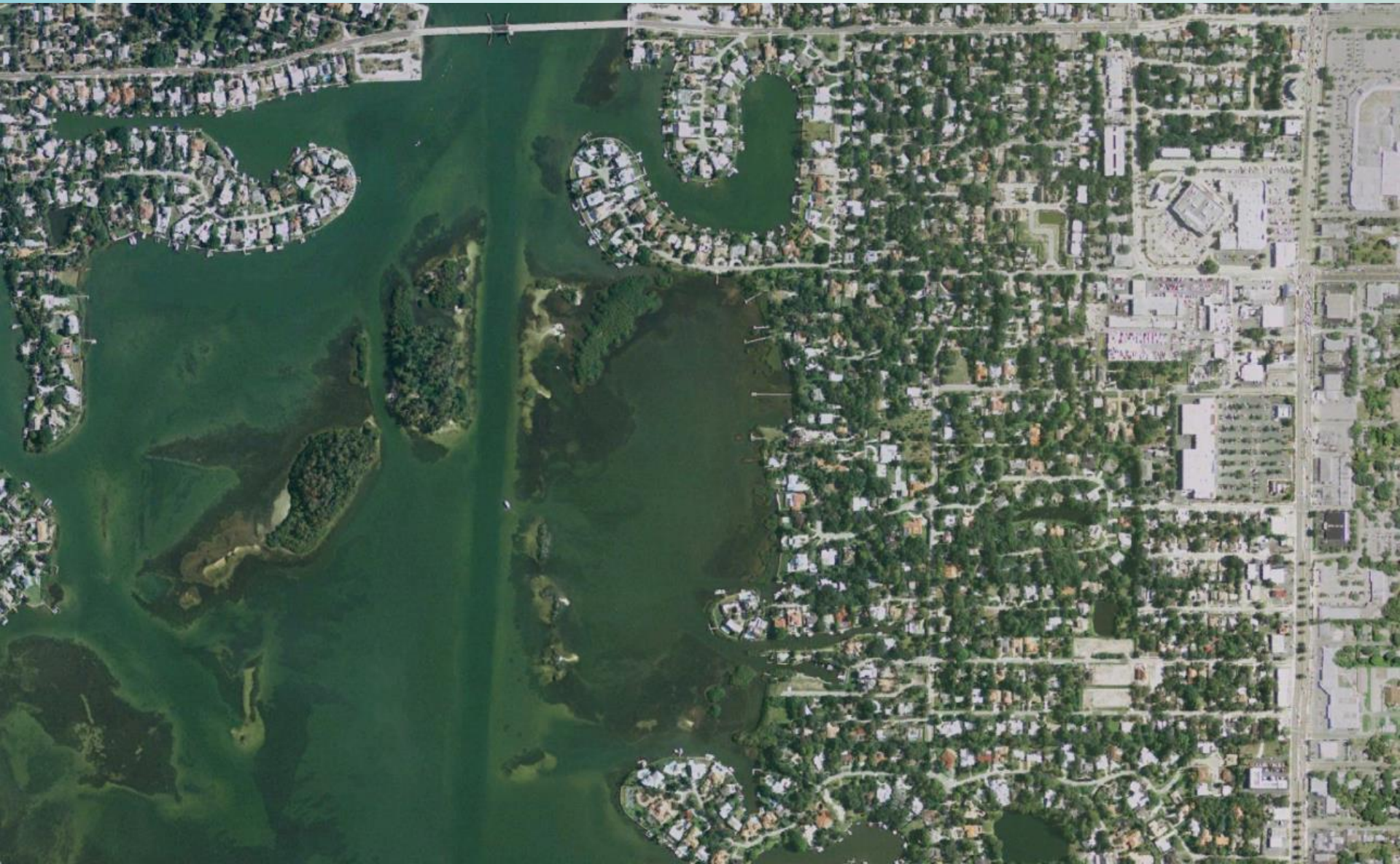


September 2016



Roberts Bay Bird Colony Islands Project





January 2007



January 2008



March 2009



February 2016



January 2006



January 2008



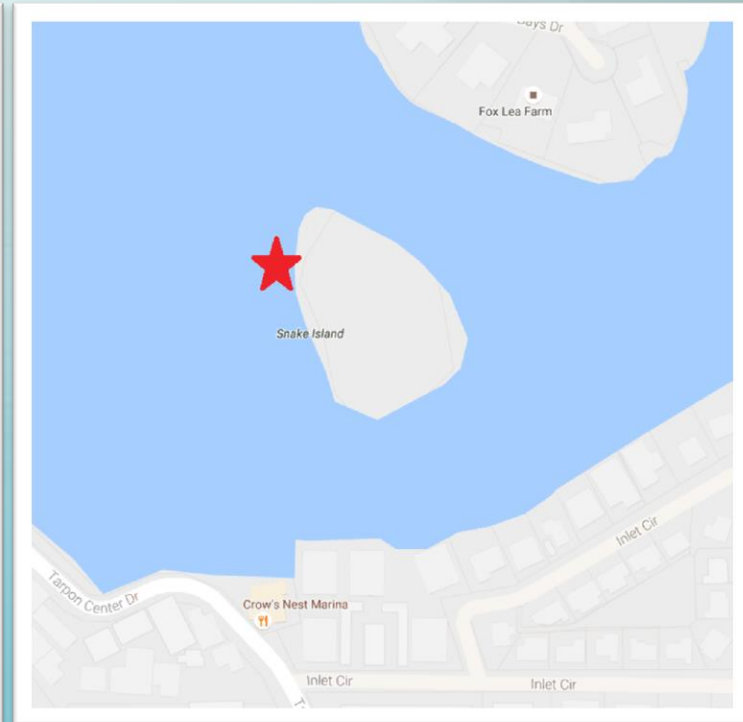
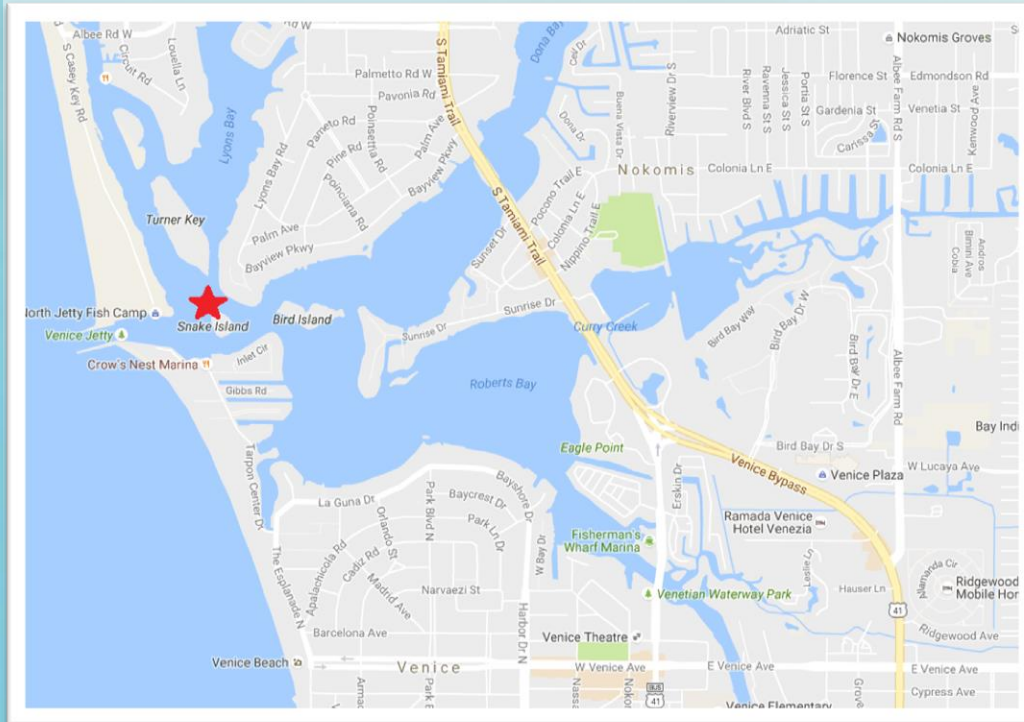
December 2010



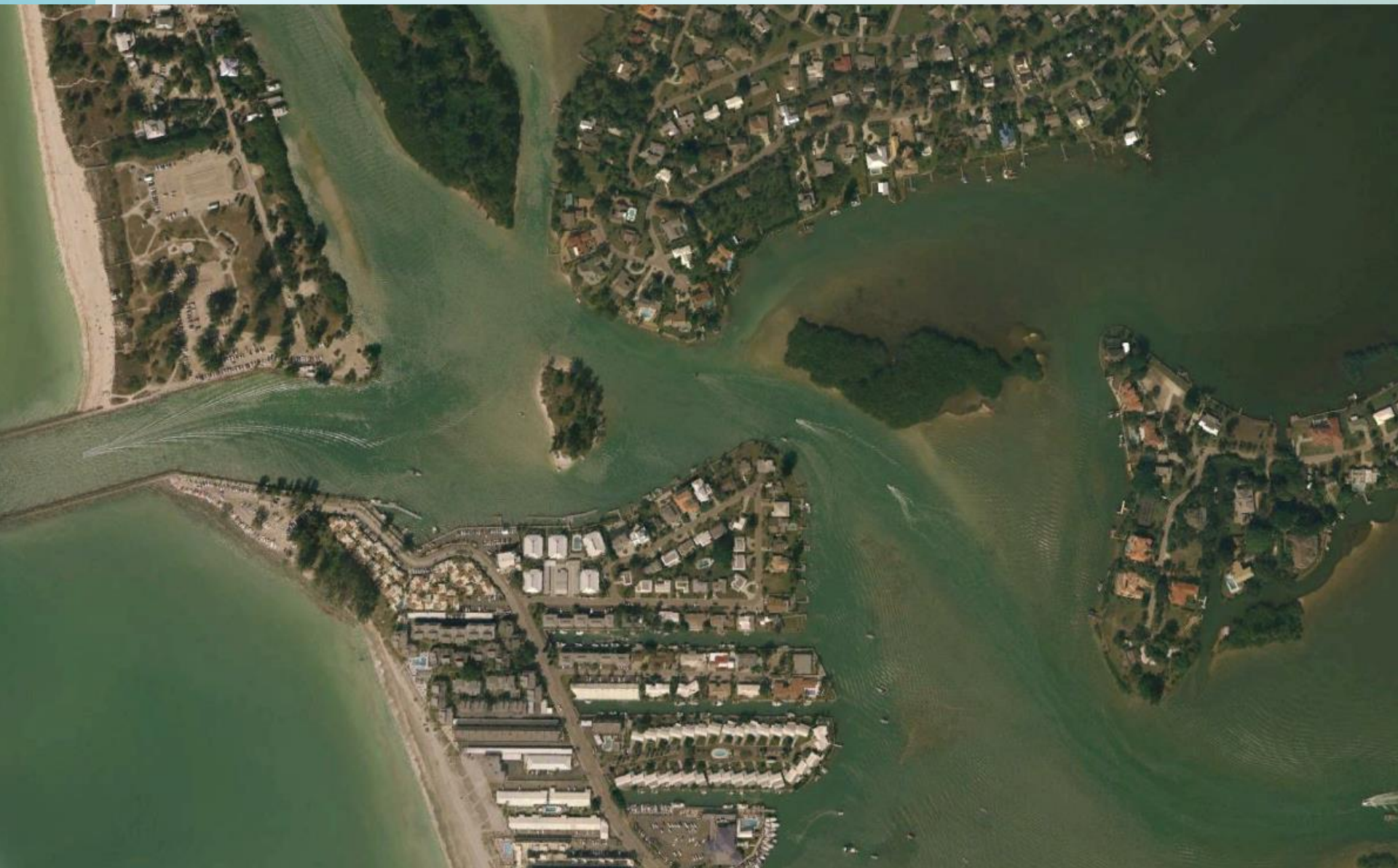
January 2013



Snake Island Project



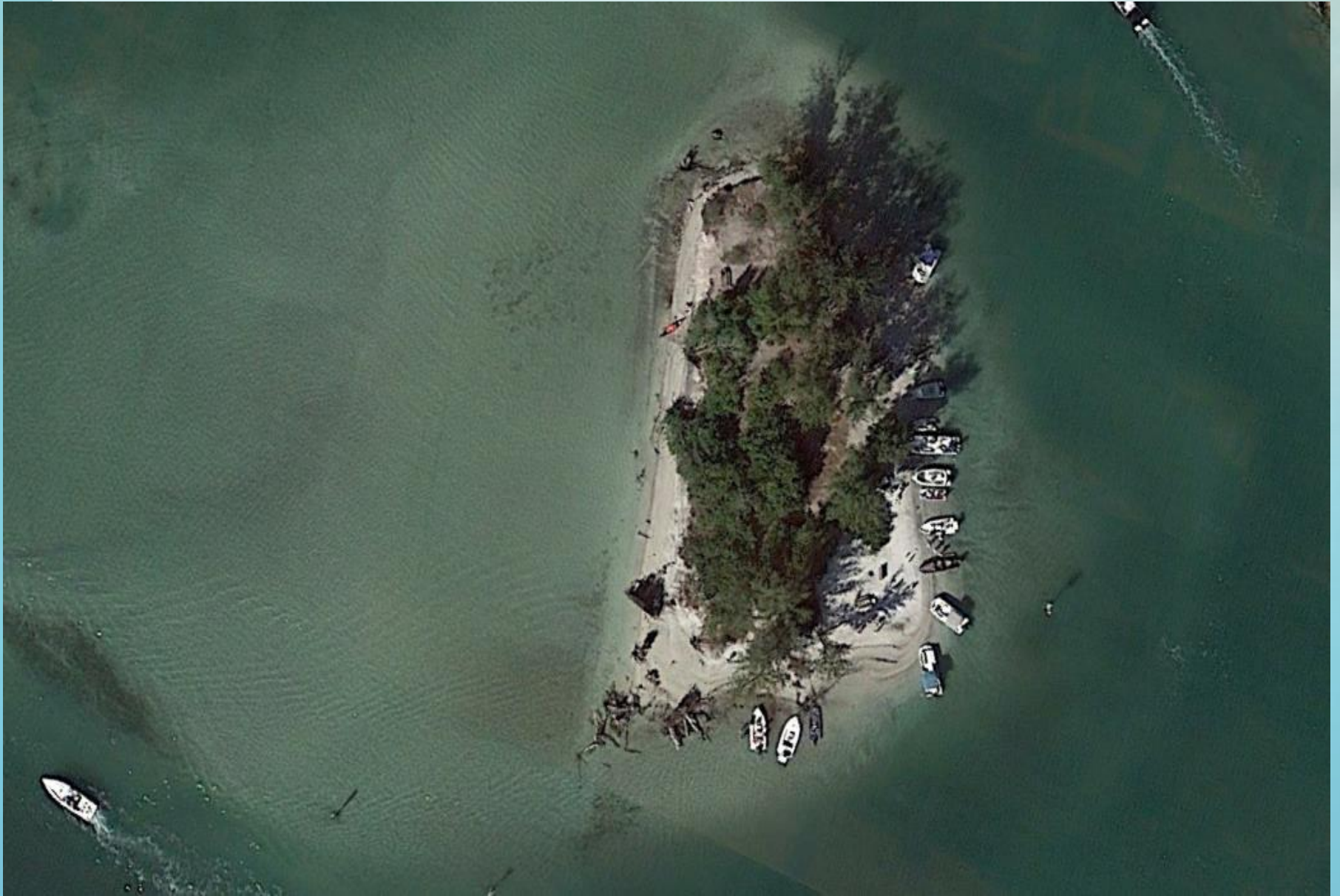
December 2004



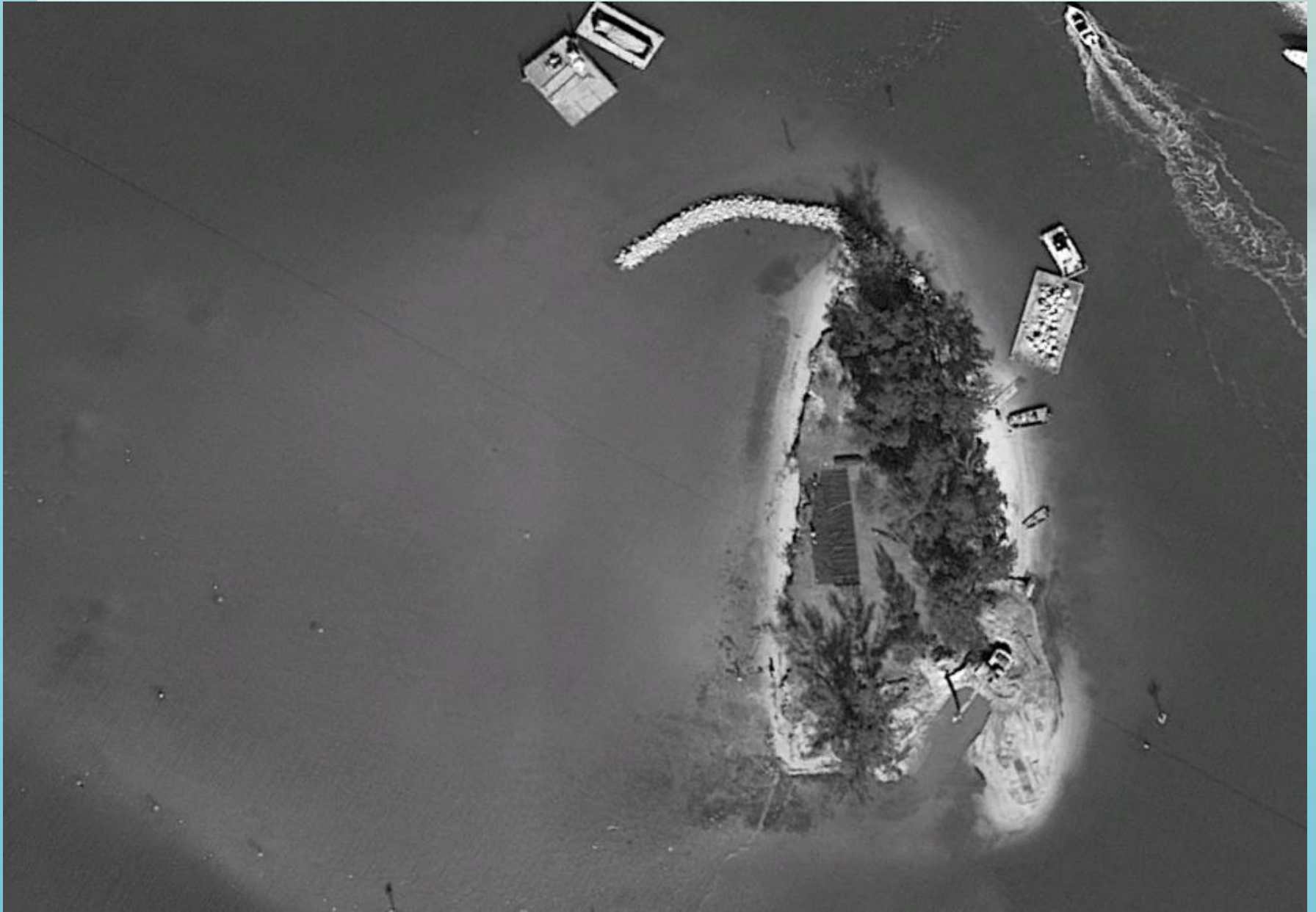
January 2007



January 2013



February 2014



April 2014

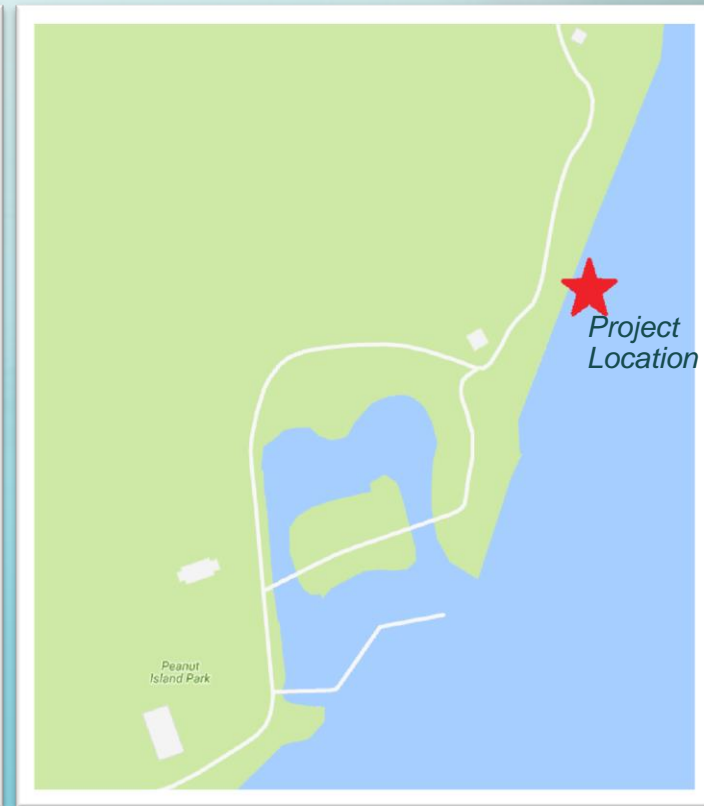
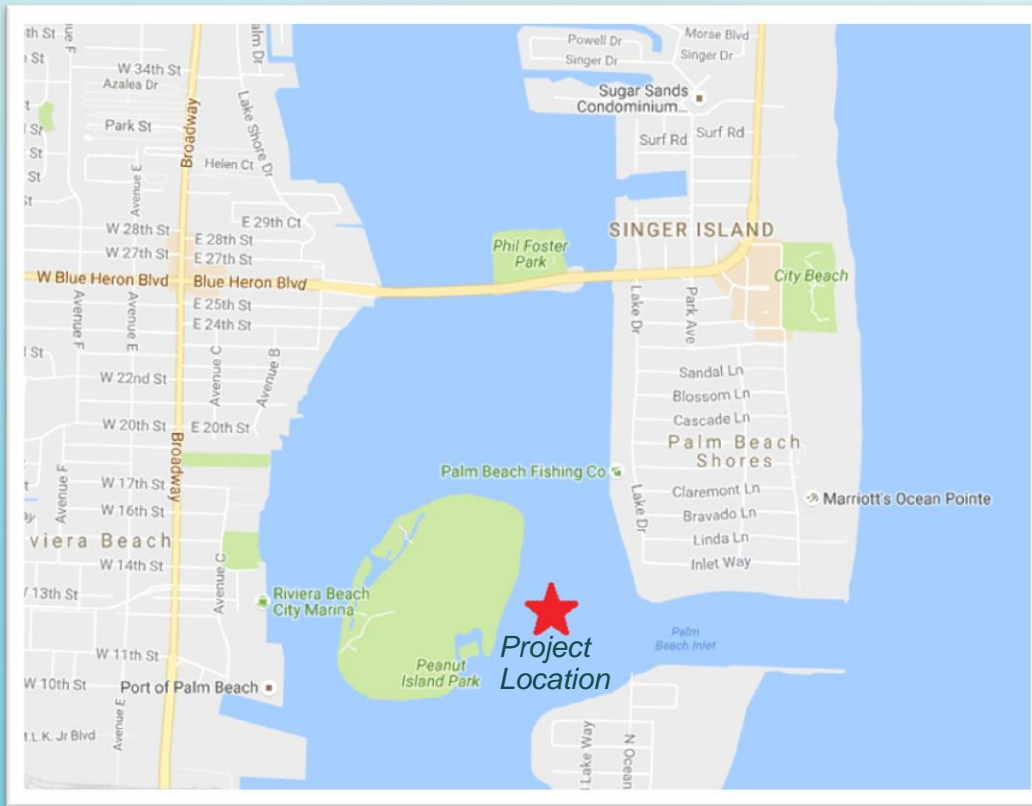


February 2016





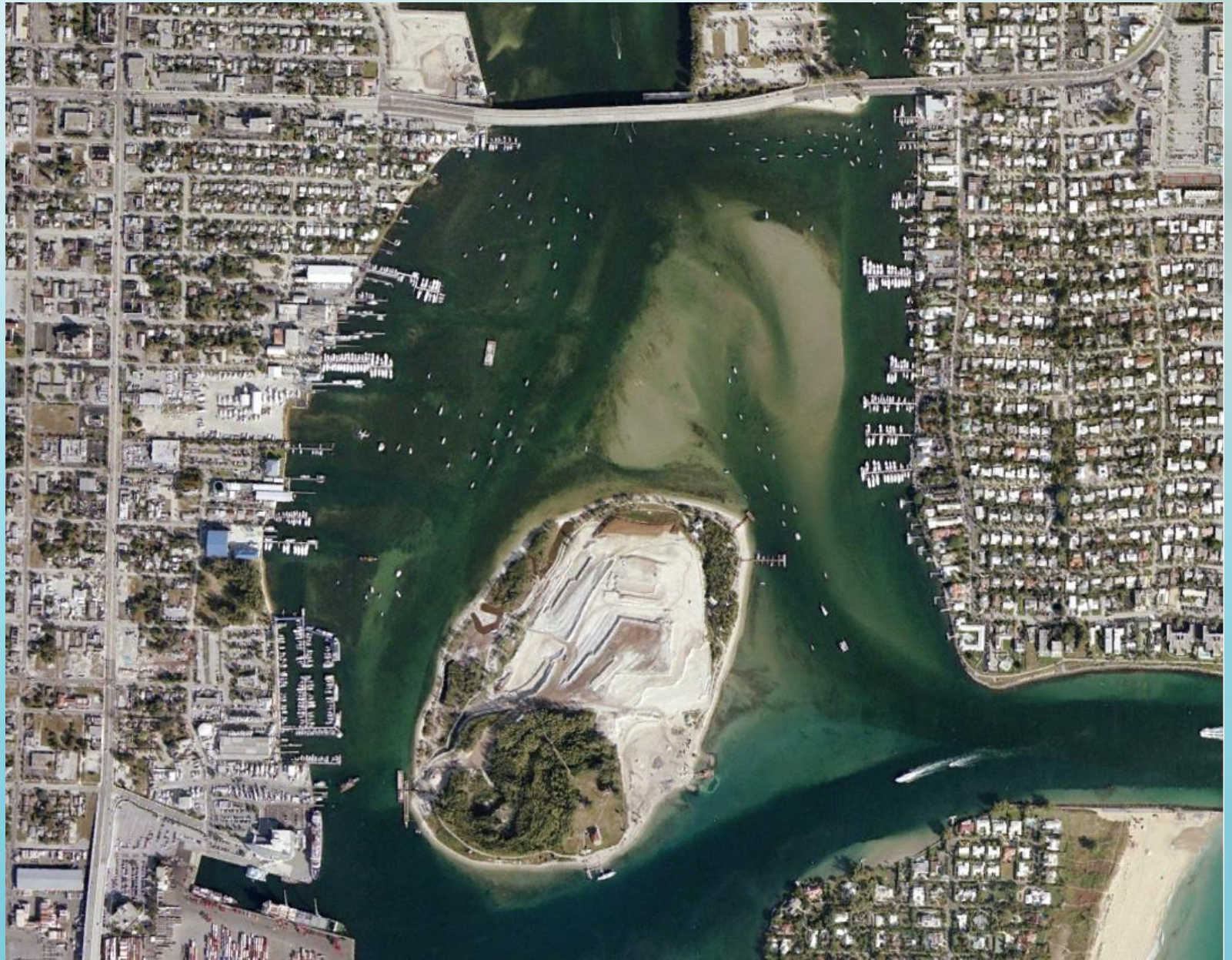
Peanut Island Project



December 2002



February 2004



September 2016



Overgrown with Australian Pines



Snorkeling Reef System



Construction, 2005



Peanut Island, 2008



January 2005



January 2009



January 2014



February 2016



Southern shoreline of Peanut Island, Facing Northwest.



Before: November 11, 2007



After: July 9, 2009

Southern Shoreline of Peanut Island, Facing Northeast.



Before: November 11, 2007



After: July 9, 2009

Southeastern Peanut Island Lagoon, Facing West.



Southeastern Peanut Island Shoreline, Facing South



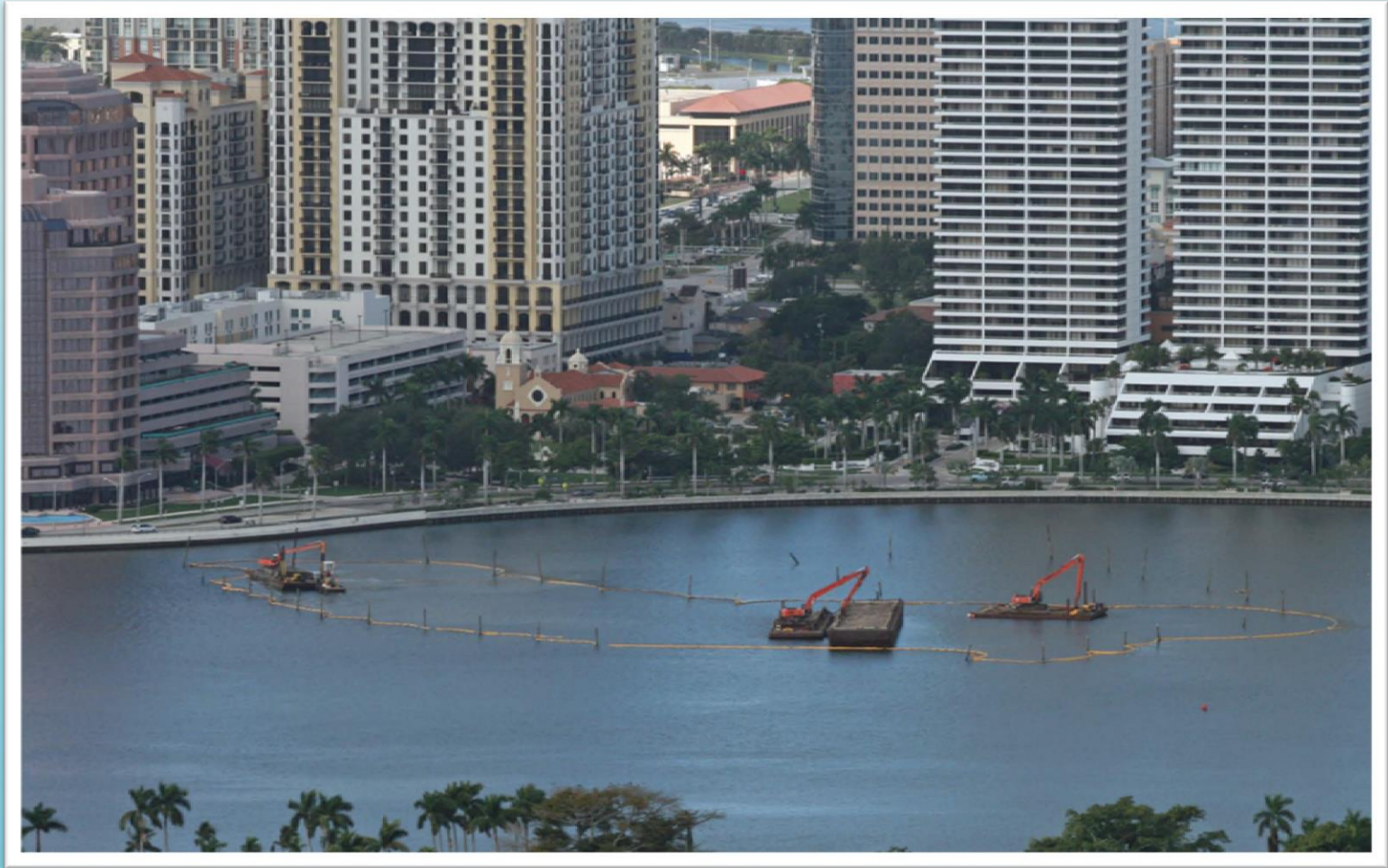
Before: September 29, 2008



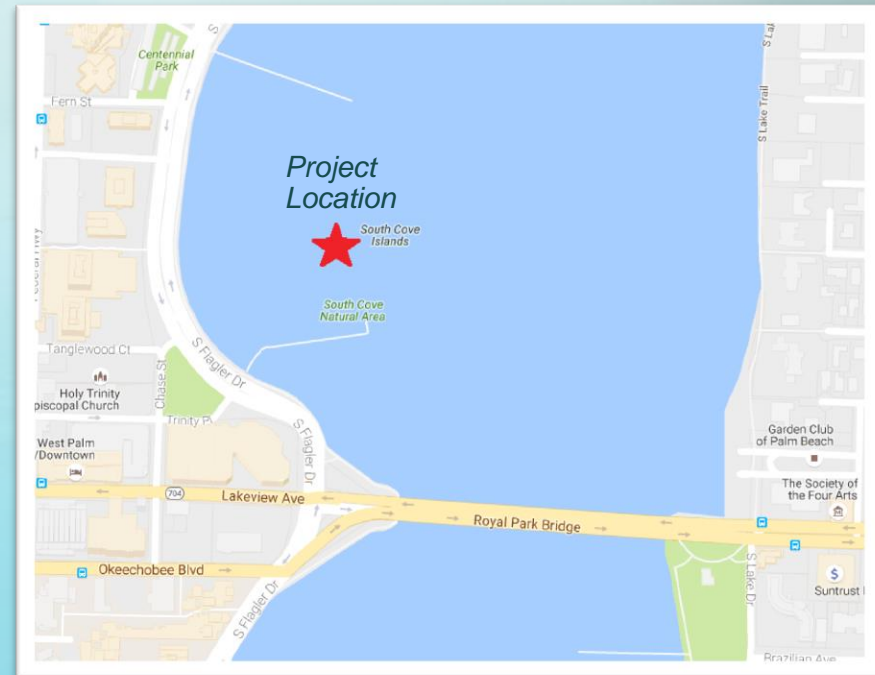
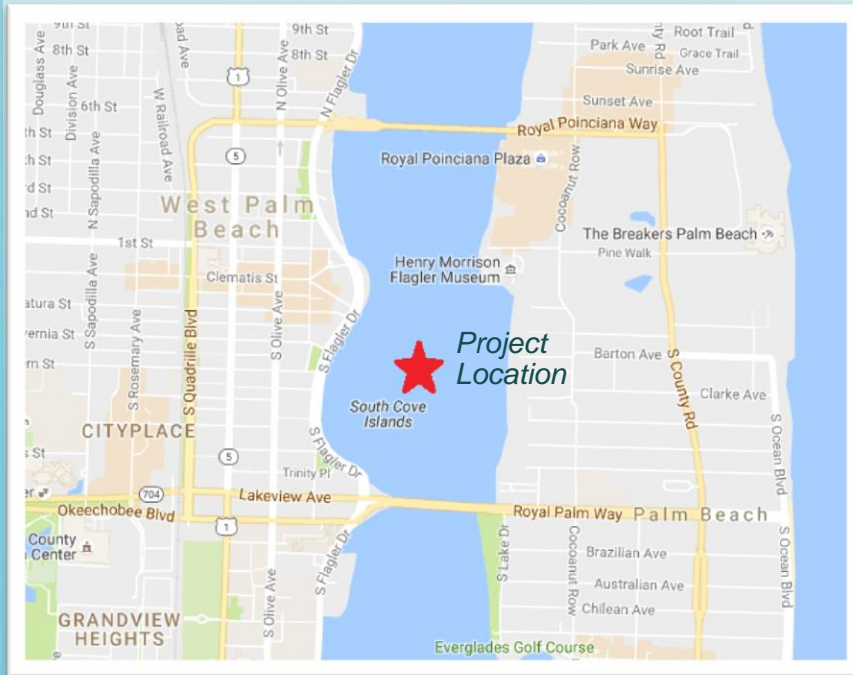
After: June 25, 2009

Lake Worth Lagoon Project

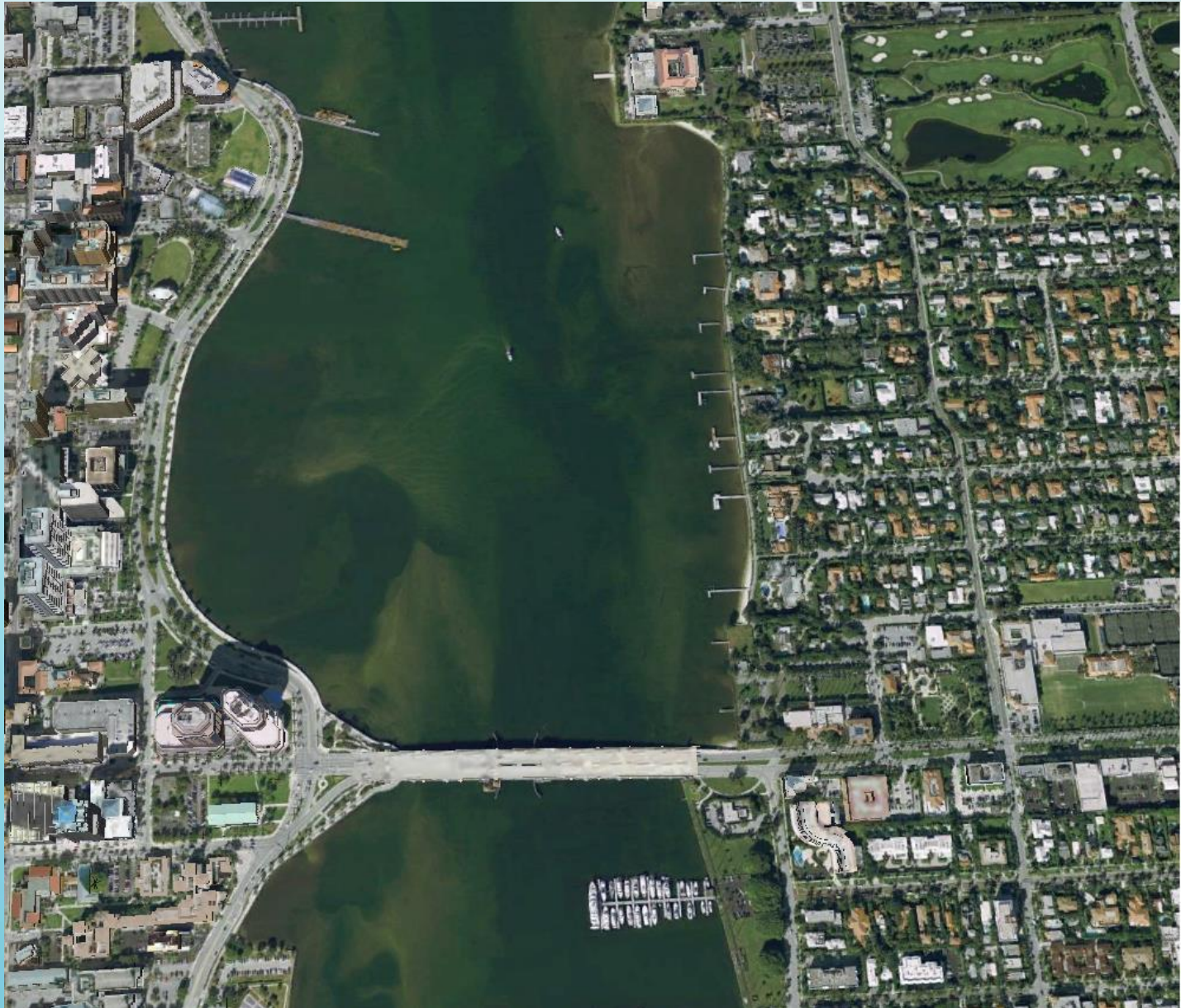
(South Cove Natural Area)



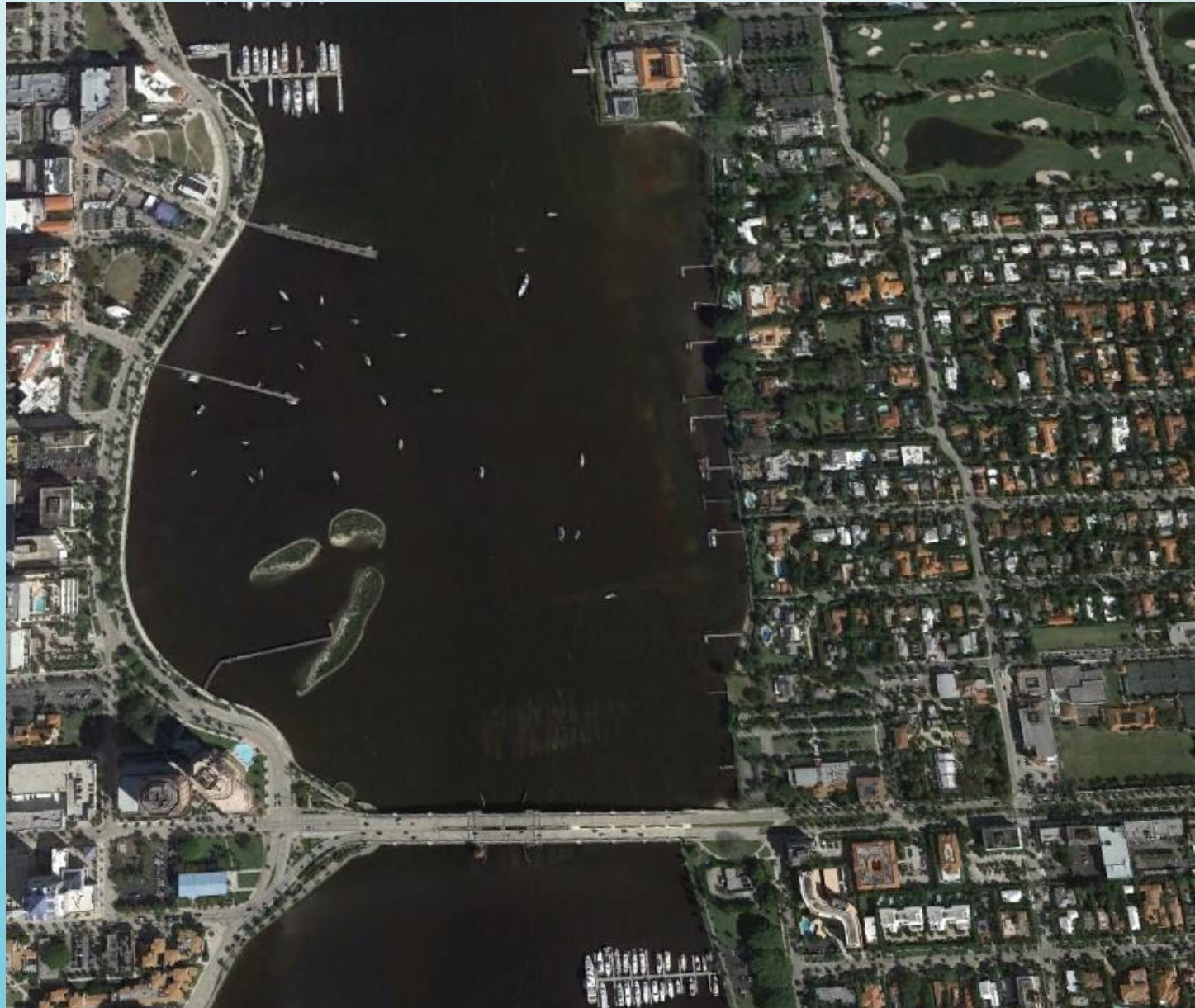
Project Location



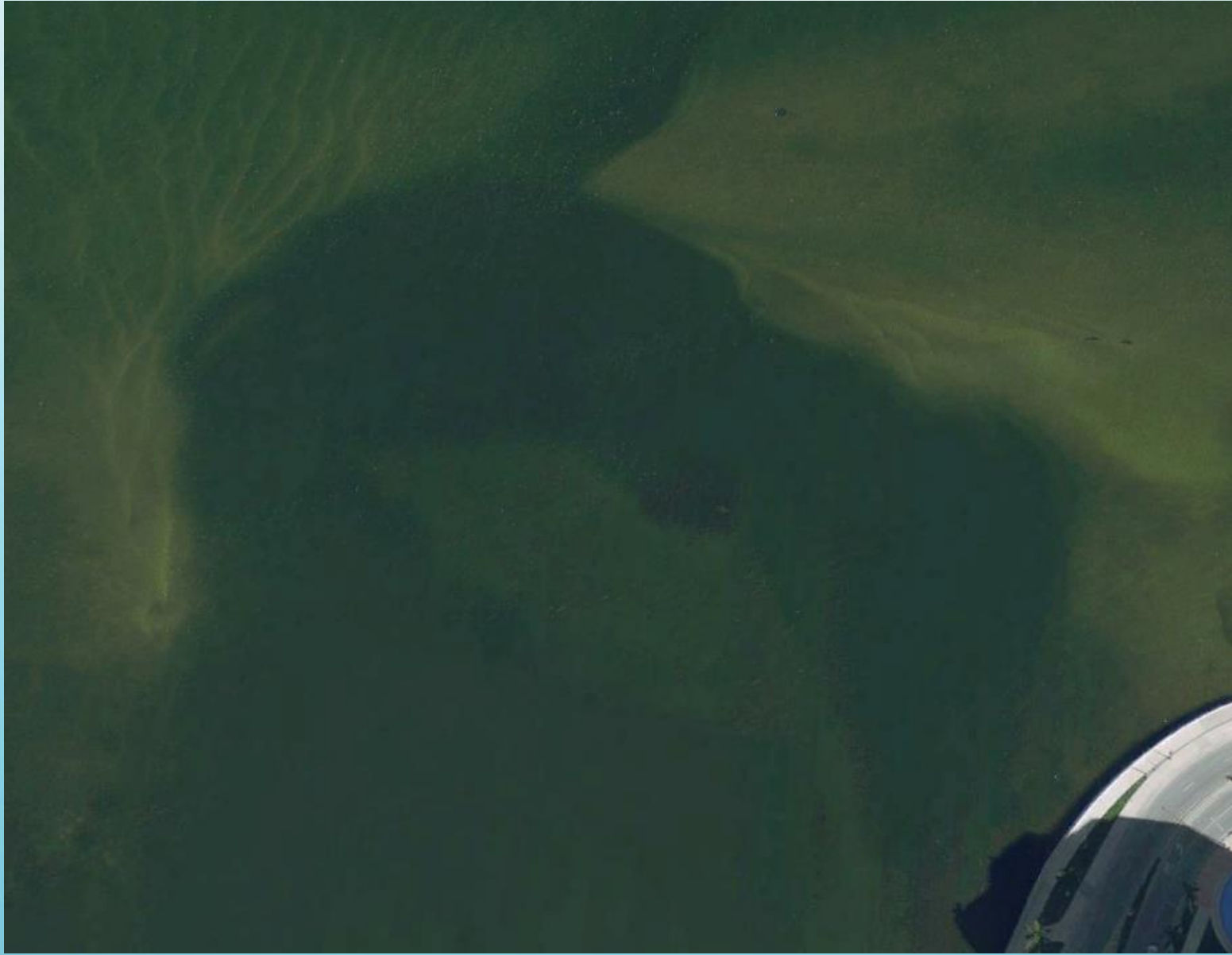
February 2009



September 2016



January 2009



December 2010



May 2011



January 2014



February 2016





PERMIT No.: 07-027

