



TAYLOR ENGINEERING, INC.

**Permitting and  
Constructing the  
Intracoastal Waterway  
Deepening Project**  
*Broward County, Florida*



*WEDA Dredging Summit &  
Expo 2017*



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Tuesday, June 27, 2017

# Presentation Outline

## 1. Overview

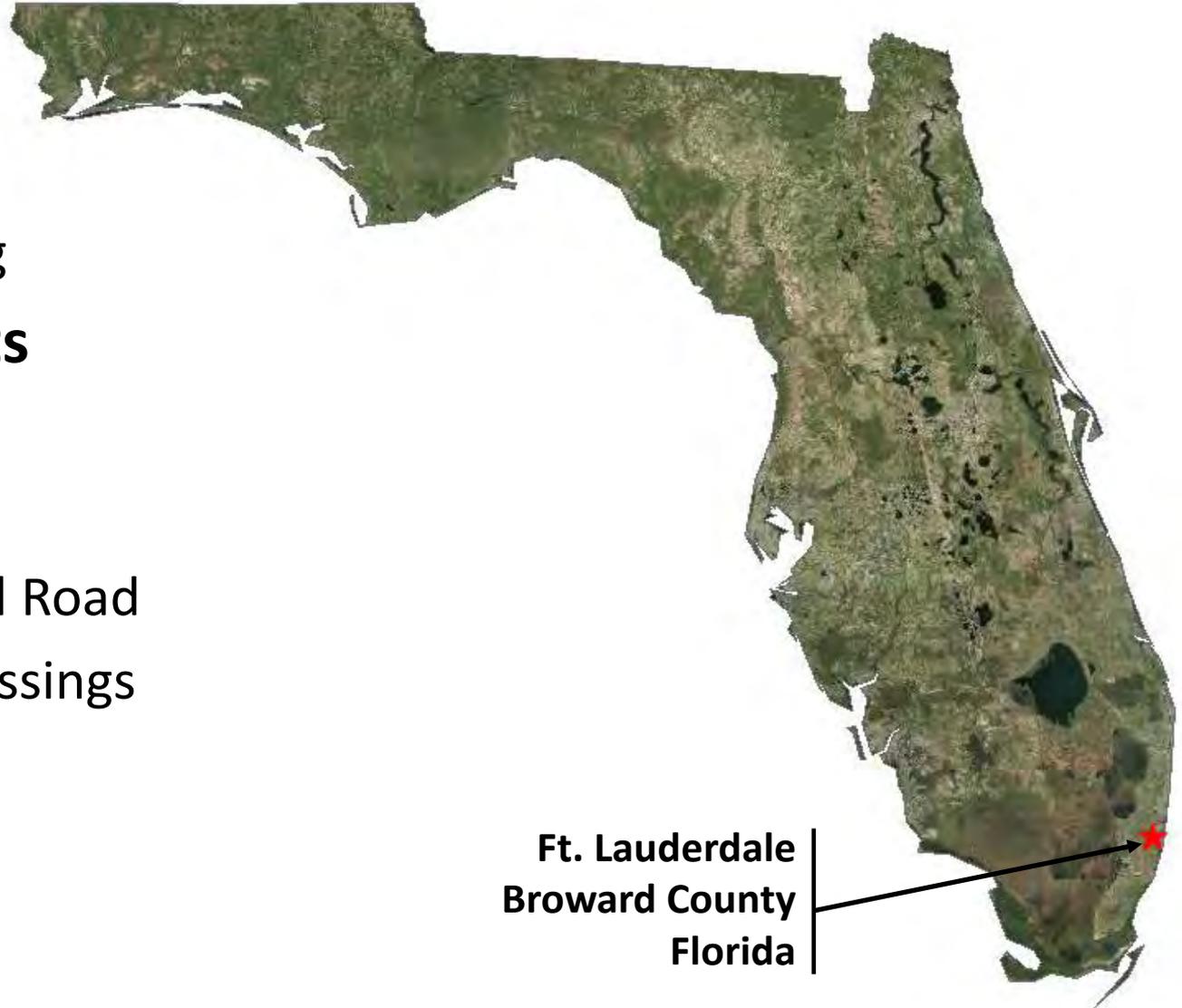
- a) Location
- b) Client
- c) Permitting

## 2. Components

- a) Dredging
- b) DMMA
- c) Truck Haul Road
- d) Utility Crossings

## 3. Summary

*Project Location*



Ft. Lauderdale  
Broward County  
Florida

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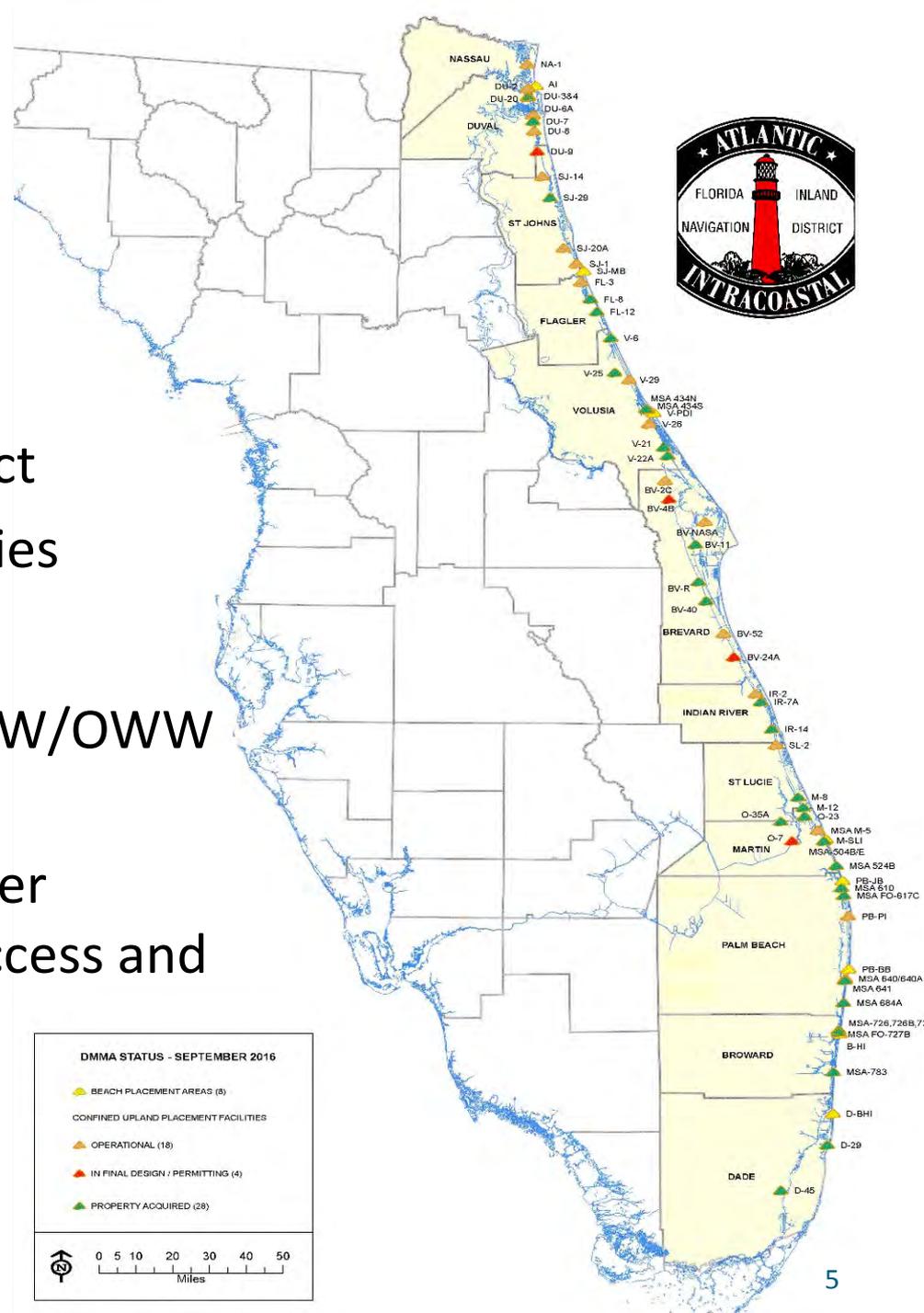
# Overview – Client

## 1. Owner:

- F.I.N.D.
- Established in 1927
- Special state taxing district
- 650 kilometers, 12 counties

## 2. Mission:

- Local sponsor of the ICWW/OWW Federal projects
- Provide assistance to other agencies for waterway access and improvement projects



# Overview – Permitting

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## 1. Project Objective

- a) Deepen from -3 to -4.6 meters (+0.6 meter allowable overdepth) Mean Low Water
- b) Provide increased access for mega yachts to obtain repair and retrofit services from existing boatyards

## 2. Economic Evaluation

- a) 2011 Gulf Engineers & Consultants
- b) Increased Net Income (sum of present valued of the annual benefits):
  - ±49-55 meter LOA: \$7.3 million
  - ±55-73 meter LOA: \$73.7 million
  - ±73-85 meter LOA: \$186.6 million



# Overview – Permitting

## 1. Regulatory Agencies

- a) U.S. Army Corps of Engineers
- b) Florida Department of Environmental Protection
- c) Florida Department of Transportation
- d) Broward County



## 2. License Agreements

- a) Port Everglades
- b) Florida Power & Light



## 3. Permitting Timeline

- a) Permit application: October 2007
- b) Final permits & licenses received: March 2015
- c) Permit modifications during construction: 3





# Components – Dredging

1. **Contractor:** Cashman Dredging and Marine Contracting

2. **Schedule:**

- a) RFQ: 6/15/2015
- b) Bids due: 10/6/2015
- c) Contract award: 11/2/2015
- d) NTP: Base – 1/22/2016; Alternate – 9/26/2016
- e) Contract time: 730 days from NTP
  - Dredging: 5/4/2016 – 12/22/2016
  - Expected completion: 8/15/2017
  - Contract completion: 1/21/2018



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# Components – Dredging

## 3. Volume:

- a) Dredge: 137,620 cubic meters to -4.6 meters (+0.6 meter allowable overdepth) Mean Low Water; Actual amount removed = 156,741 cubic meters
- b) Haul: 143,993 cubic meter (5% maximum allowed over dredge volume)



## 4. Equipment:

- a) Liebherr 944 excavator (50 m x 15 m x 3 m)
- b) ±2,200 metric ton hopper barge (70 m x 13 m x 3.6 m)

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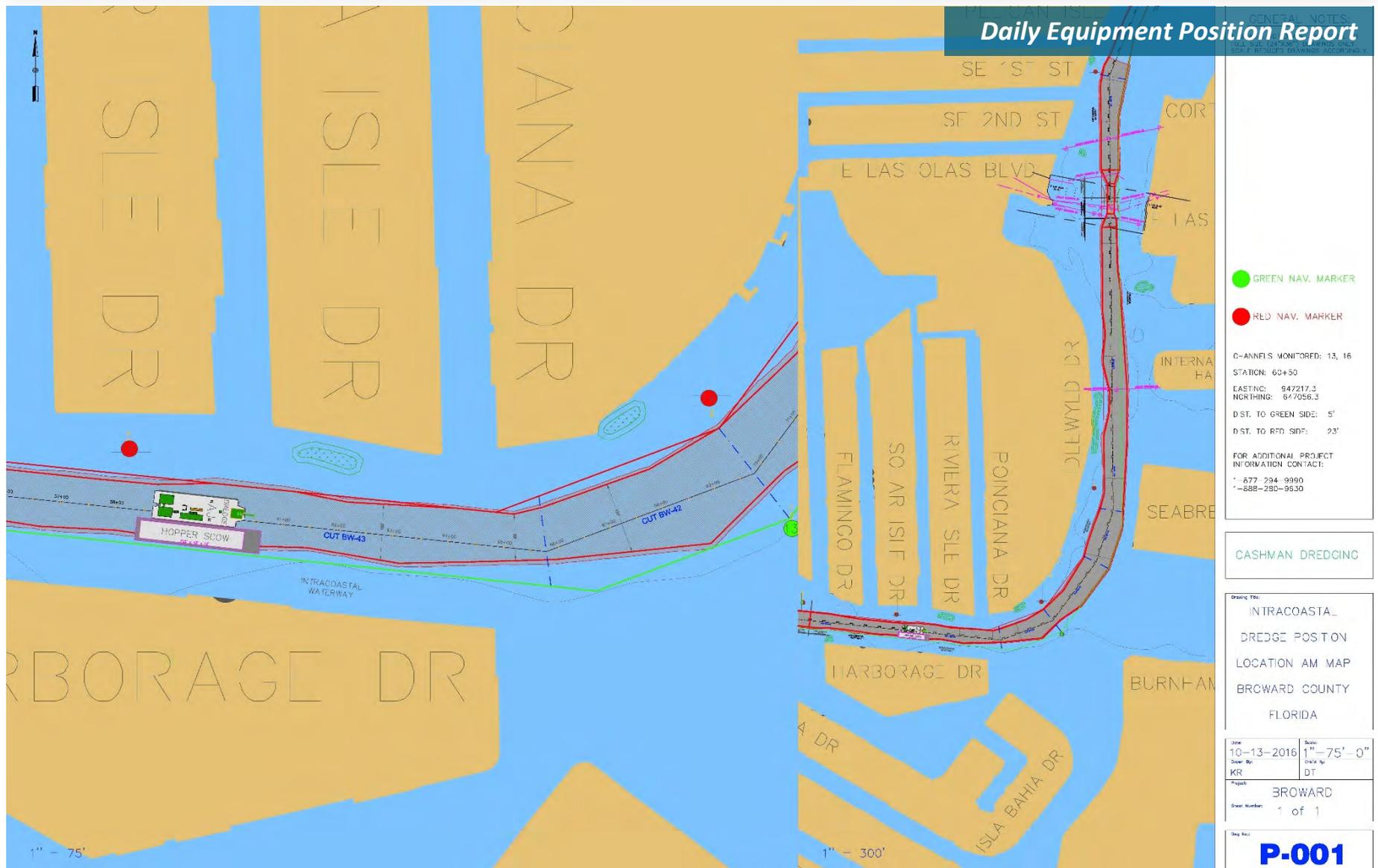


## 5. Production:

- a) 965 cubic meters/day
- b) 160 working days



# Components – Dredging



# Components – Dredging

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# Components – DMMA

March 2016

June 2016

October 2016

October 2016

April 2017



# Components – Truck Haul Road

- 1. Property:** Broward County and Florida Power & Light
- 2. Size:** 4.3 - 4.9 meters wide x 548 meters long
- 3. Limitations:** one-way traffic; no hauling 6 - 8 AM and 4 - 6 PM on NE 7<sup>TH</sup> Avenue
- 4. Issues:** NE 7<sup>TH</sup> Avenue



# Components – Truck Haul Road

March 2016

October 2016

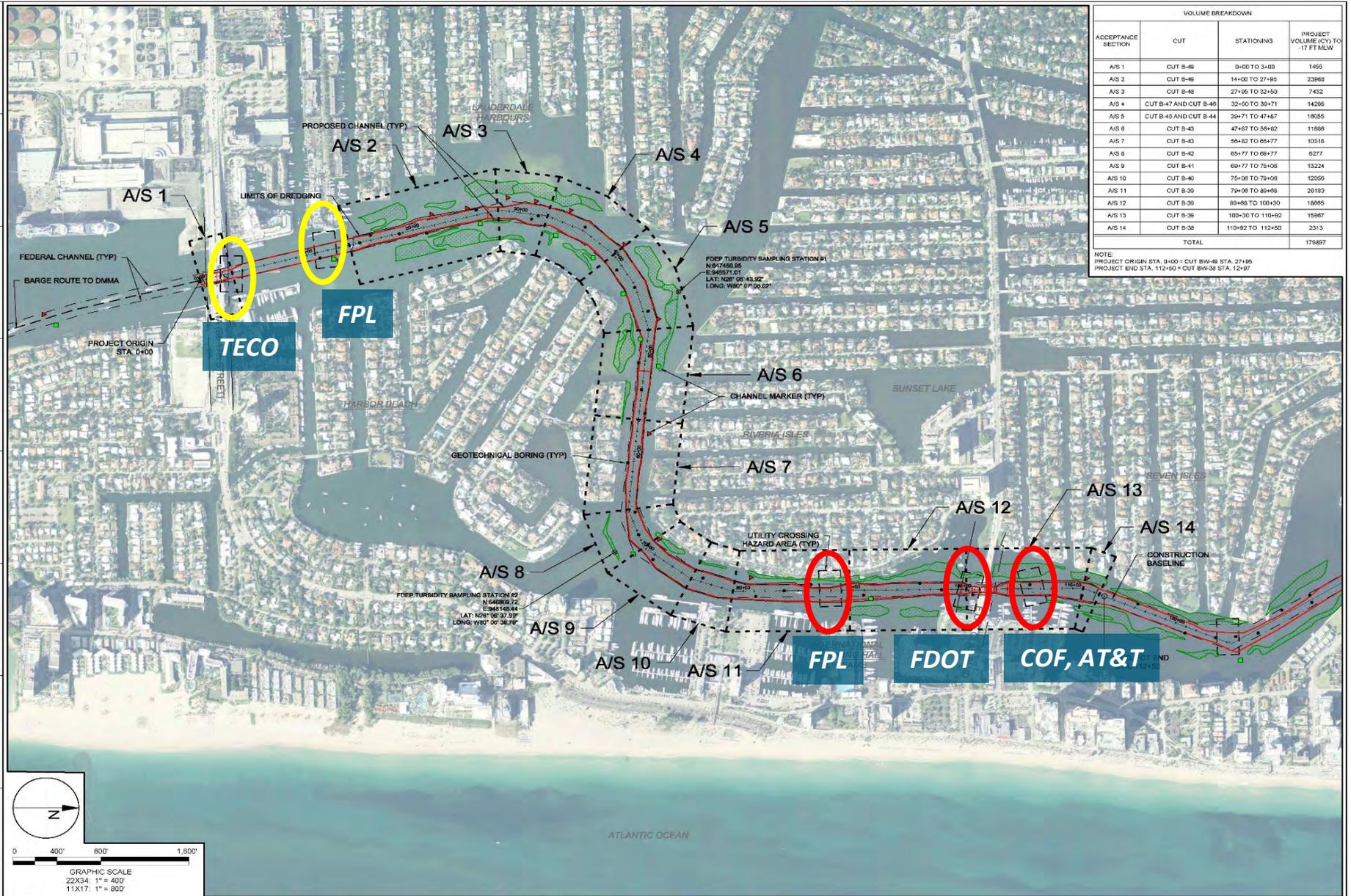
October 2016

October 2016

June 2017

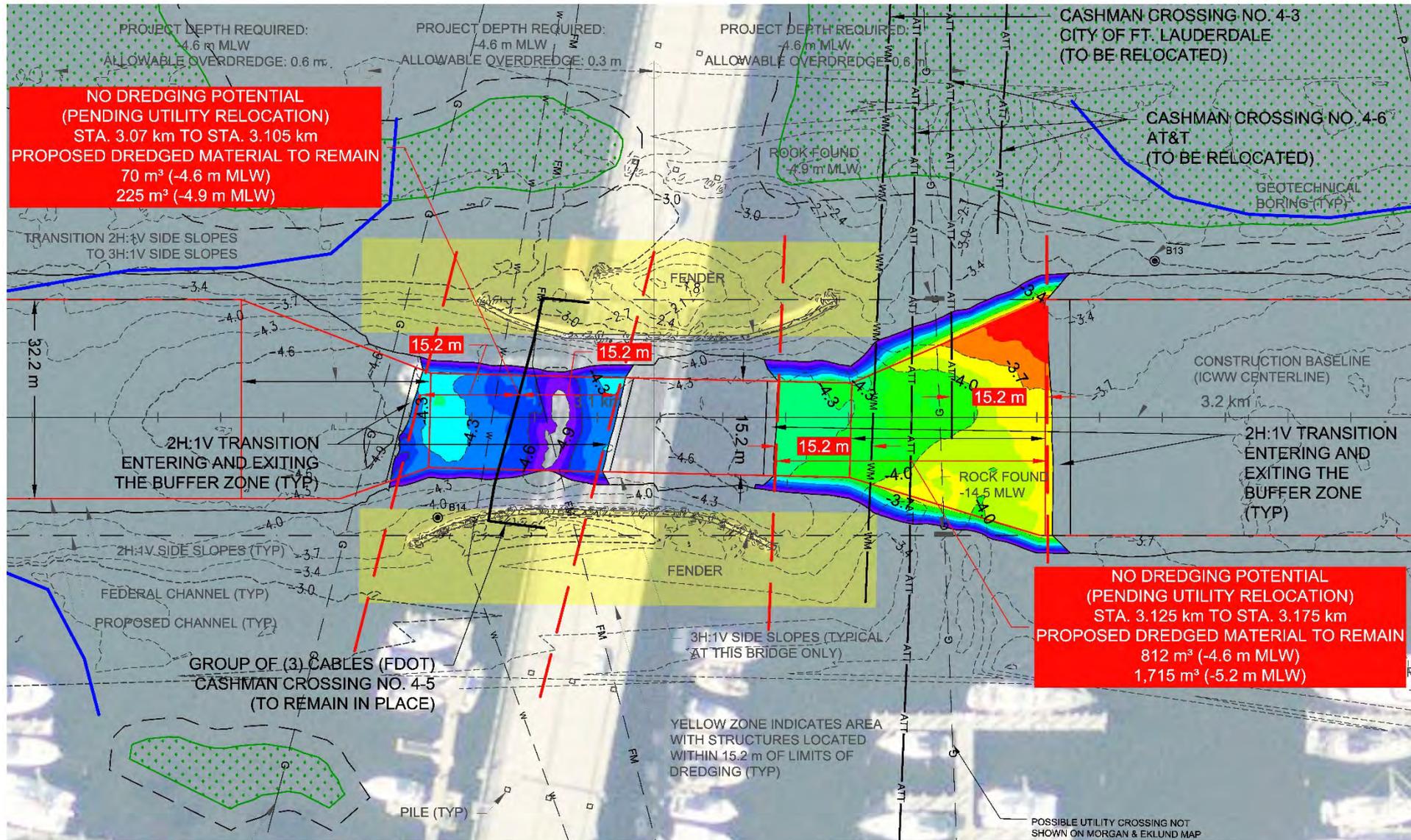


# Components – Utility Crossings





# Components – Utility Crossings



**NO DREDGING POTENTIAL  
(PENDING UTILITY RELOCATION)  
STA. 3.07 km TO STA. 3.105 km  
PROPOSED DREDGED MATERIAL TO REMAIN  
70 m<sup>3</sup> (-4.6 m MLW)  
225 m<sup>3</sup> (-4.9 m MLW)**

**NO DREDGING POTENTIAL  
(PENDING UTILITY RELOCATION)  
STA. 3.125 km TO STA. 3.175 km  
PROPOSED DREDGED MATERIAL TO REMAIN  
812 m<sup>3</sup> (-4.6 m MLW)  
1,715 m<sup>3</sup> (-5.2 m MLW)**

- PROPOSED CHANNEL
- - - FEDERAL CHANNEL
- SEAGRASSES - OCT 2014
- 10-FT REQUIRED BUFFER



# Summary

## 1. Environmental:

- a) One turbidity exceedance

## 2. Contract Price:

- a) Base: \$16,923,550.00
- b) 11 Change Orders + Alternate Bid: \$19,523,066.35

DESCRIPTION	DESCRIPTION	CONTRACT AMOUNT	DATE
Base Amount	--	\$16,923,550.00	--
Alternate Bid (A1)	STA 100+50 - 105+00	\$200,000.00	9/26/2016
Change Order No. 1	Additional Utility Info	\$0.00	1/11/2016
Change Order No. 2	Haul Road	\$175,306.00	2/23/2016
Change Order No. 3	Haul Road Additional Mtl.	\$6,794.00	4/2/2016
Change Order No. 4	A/S 11A	\$0.00	8/15/2016
Change Order No. 5	17th Street Piles	\$36,948.00	9/12/2016
Change Order No. 6	Channel Wideners	\$489,366.00	10/28/2016
Change Order No. 7	A/S 3A & 8A	\$0.00	11/1/2016
Change Order No. 8	Hydraulic Dredging	\$203,106.00	12/7/2016
Change Order No. 9	Bid Item No. 0009	\$487,668.90	2/1/2017
Change Order No. 10	Bid Item No. 0009_Addition	\$996,447.20	2/19/2017
Change Order No. 11	Subaqueous Debris Removal	\$3,880.25	4/21/2017
<b>CONTRACT TOTAL</b>	Change Order No. 1 - 11	\$19,523,066.35	15% Over Base Bid

# Summary

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## FLORIDA INLAND NAVIGATION DISTRICT

### BROWARD DEEPENING BID OPENING, BROWARD COUNTY, FLORIDA

2 p.m. October 6, 2015

#### Bid List

<u>NAME OF FIRM</u>	<u>PROJECT BID</u>
<b>Great Lakes Dredge and Dock</b> 2122 York Rd Oak Brook IL 60523	<u>\$19,675,600</u> Alt: \$2,595,000
<b>Cashman Dredging</b> 549 South Street Quincy, MA 02169	<u>\$16,923,550</u> Alt: \$200,000
<b>Orion Marine Group</b> 5440 West Tyson Ave Tampa, FL 33611	<u>\$16,955,162.50</u> Alt: \$271,000

Engineer's Opinion of Probable Cost: \$21,407,906

Increased Net Income Range (2011): \$7.3 - \$187 Million

# Summary



**IDR**  
International Dredging Review

*IDR Cover, June 2017*

**ICWW**  
Deepening Complete

CASHMAN DREDGING

CAPTAIN A.J. FOUR  
BOSTON, MA

DREDGEMAG.COM

IDR JUNE 2017 | VOL 36 NO 3

**Product Focus:**  
Automation, Monitoring and Controls

**Port of Barranquilla:**  
Emergency Dredging

**WEDA Environmental Awards:**  
New Climate Change Category



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*Delivering Leading-Edge Solutions*

[www.taylorengineering.com](http://www.taylorengineering.com)



- FIND
- Cashman
- MIASF
- Port Everglades
- USACE
- FDEP
- Broward County
- City of Dania Beach
- City of Ft. Lauderdale



**THANK YOU**

