

Regular Workshop – October 20, 2014  
Agenda Item 8

Agenda Item: Beach Update

Presenter: Town Manager;  
Dr. Albert E. Browder, PE; Olsen Associates, Inc.

Summary: At the January 21, 2014 Regular Workshop Meeting, Olsen Associates Inc. (OAI) provided to the Town Commission an overview of the condition of the beach based upon 2013 shoreline survey data. In August 2014, we completed the annual monitoring and survey of the Town's entire shoreline.

At the October 20, 2014 Regular Workshop Meeting, Dr. Albert E. Browder, P.E. of OAI will present and discuss the current condition of the beach and provide a report on project status and planning efforts to date.

Attachments: 10-13-14 Memo, Public Works Director to Manager;  
PowerPoint Presentation.

Recommended  
Action: Pending discussion; provide direction to Manager.

## M E M O R A N D U M

Date: October 13, 2014

**TO:** Dave Bullock, Town Manager  
**FROM:** Juan J Florensa, Public Works Director  
**SUBJECT:** 2014 Beach Update

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At the October 20, 2014 Regular Workshop Meeting, Dr. Albert E. Browder, P.E. of OAI will present and discuss the current condition of the beach and provide a report on project status and planning efforts to date.

The attached PowerPoint presentation discusses the following main items:

- Current Conditions
  - Ø Shoreline changes
  - Ø Status of beach relative to design conditions
  - Ø Update of sand volume needs
  
- Project Status & Planning
  - Ø Scenario of projects
  - Ø Current status of projects
  - Ø Suggested project timelines
  
- Next Steps

This item is placed on the October 20, 2014 Regular Workshop Meeting for Commission review and consideration.

Attachment: PowerPoint Presentation

# Town of Longboat Key, FL

## Beach Project Update

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Town Commission Meeting  
20 October 2014 - Longboat Key, FL



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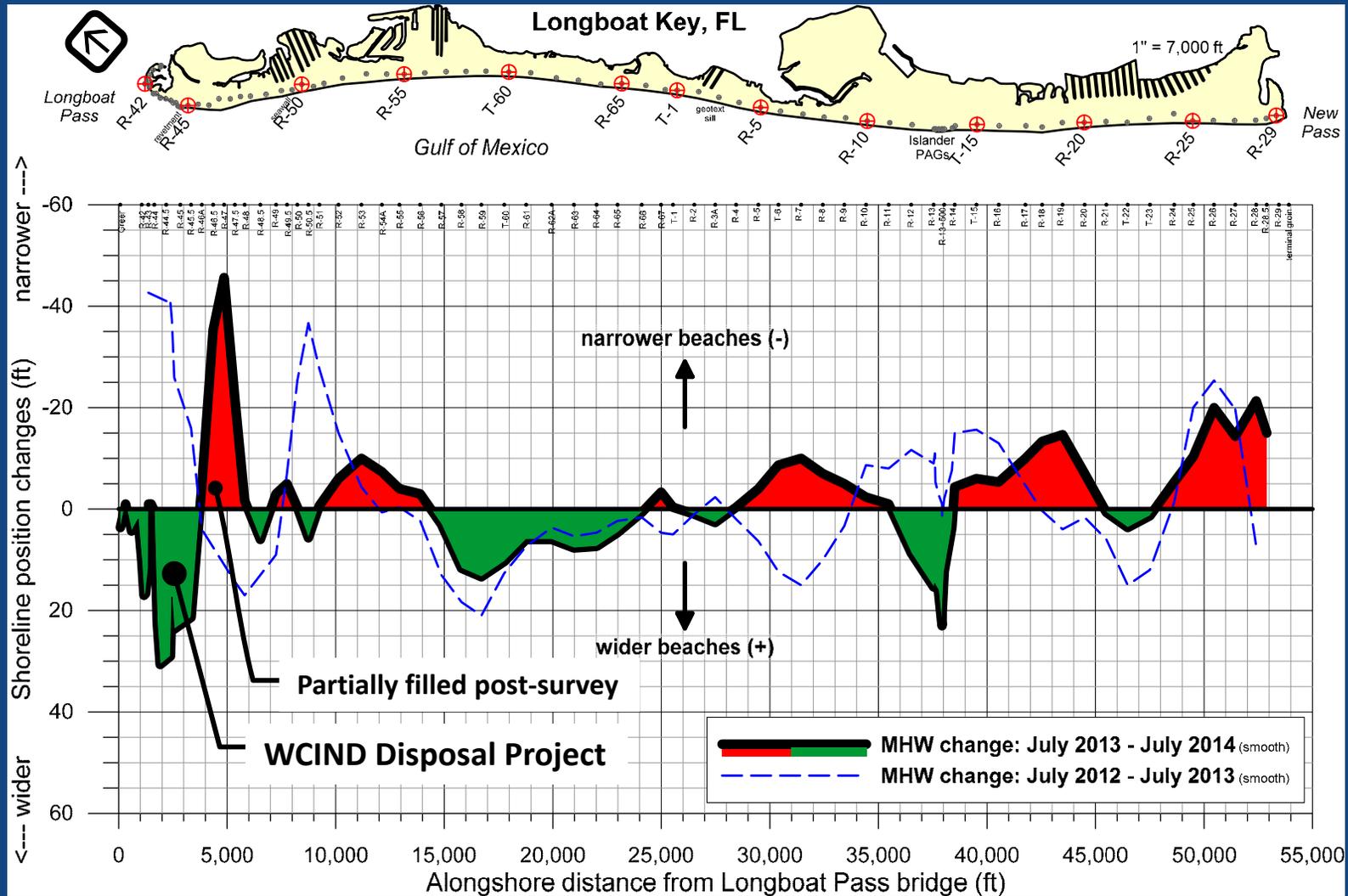
Dr. Albert E. Browder, P.E., D.CE.  
2618 Herschel St.  
Jacksonville, FL 32204  
904.387.6114  
[www.olsen-associates.com](http://www.olsen-associates.com)

# Discussion Items

- Current Beach Conditions - June 2014
  - Shoreline and beach sand volume conditions
  - Status of beach relative to design condition
  - Update of sand volume needs
- Project Status and Planning
  - Scenario of Projects
  - Current status of projects
- Next Steps

# Recent Shoreline Changes

July 2013 - June 2014



# 2014 Beach Conditions



Gulfside Rd.  
9 July 2014



South End  
9 July 2014

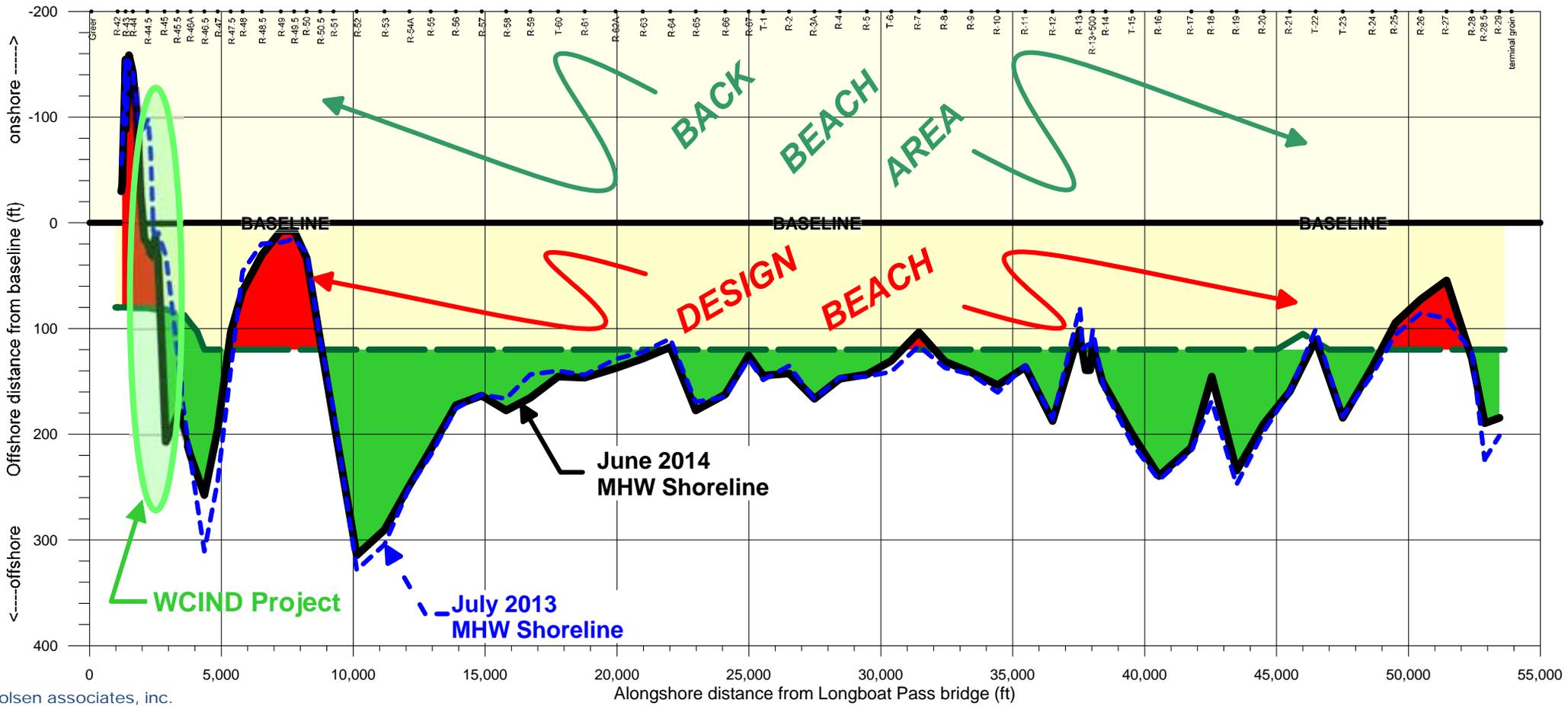


WCIND Project  
9 July 2014

- Surveyed June 2014

# Current Shoreline Position

(June 2014)





# Sand Volume Requirements

\*To restore design in 2014-2016 and provide 8 years of advance nourishment

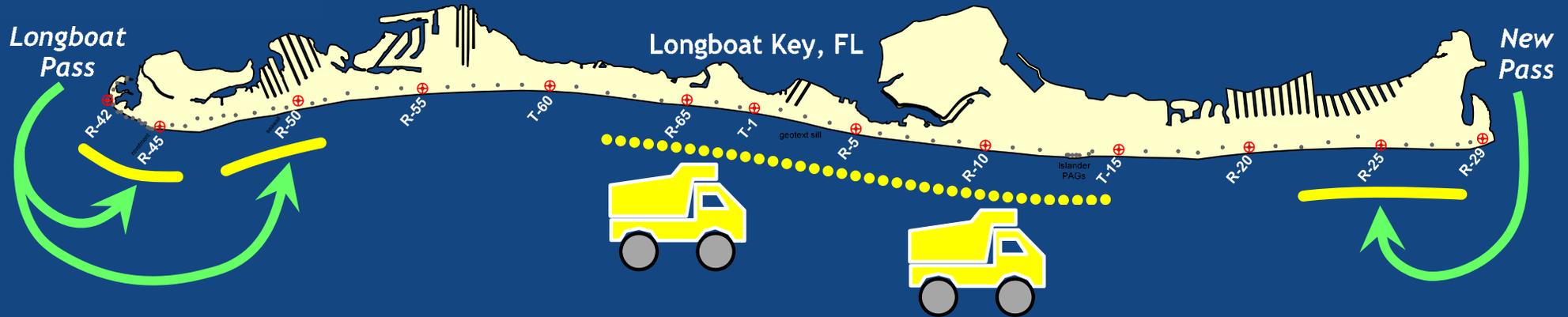


- |                                  |             |
|----------------------------------|-------------|
| ■ North end**:                   | 50,000 cy   |
| ■ 6633 GMD seawall/Gulfside Rd.: | 350,000 cy  |
| ■ Central island:                | 210,000 cy  |
| ■ South end @ New Pass:          | 315,000 cy  |
|                                  | <hr/>       |
|                                  | 925,000 cy* |

From the  
January 2014  
Discussion!

# Construction Scenario C

Longboat Pass, New Pass, and Truck Haul

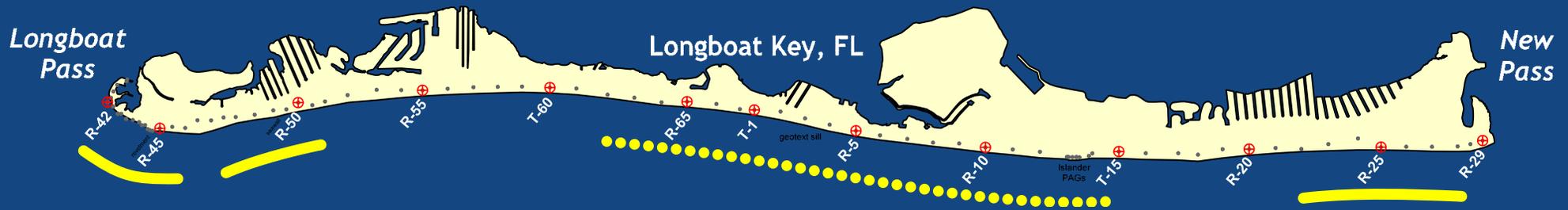


- Considerations relative to Scenario A:
  - Maximizes flexibility of timing and placement 😊
  - Significantly reduces sand quality concerns 😊
  - New Pass dredging permit/agreement required 😐
  - Requires trucking 😐
  - Lowest overall cost (34% to 38% less than A) 😊



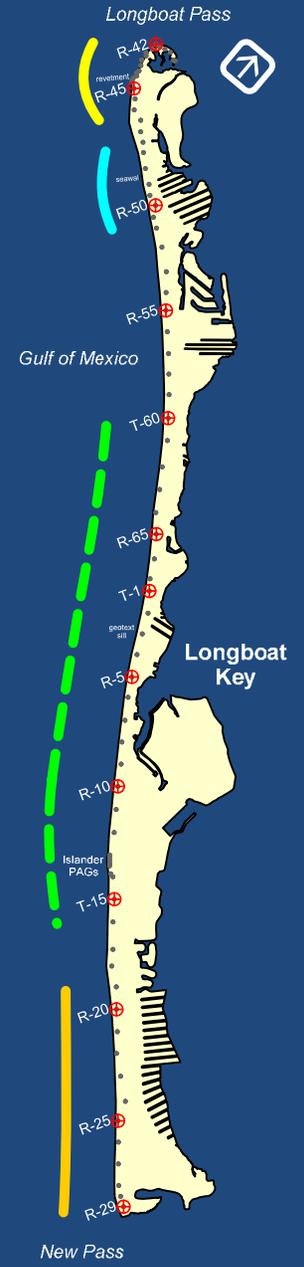
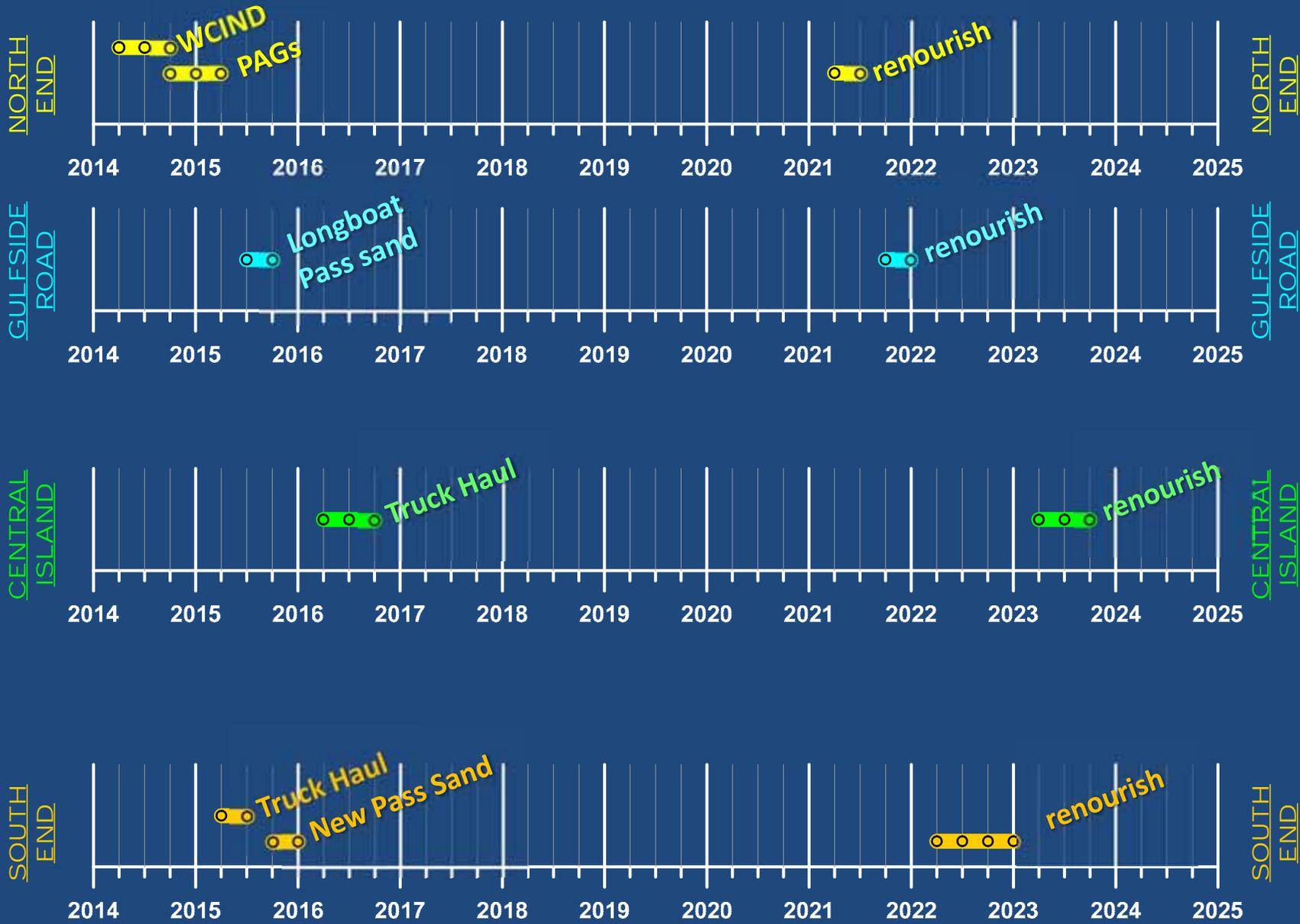
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# Since January 2014...



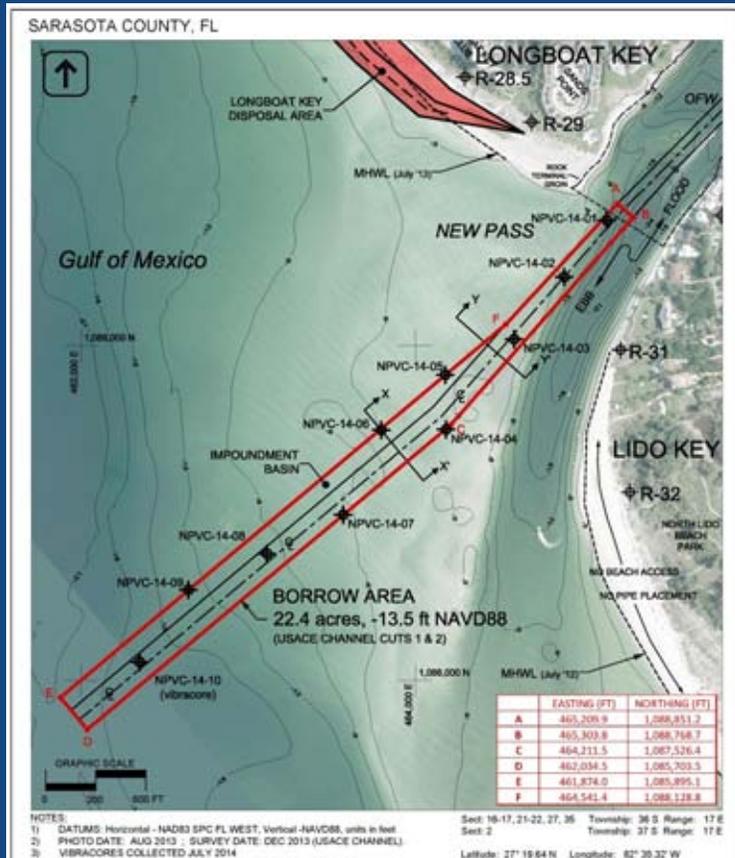
- Scenario C is essentially underway
  - Beach conditions updated in June 2014 (discussed above)
  - WCIND project constructed at North End (May-July 2014)
  - North End PAG project about to commence
  - Longboat Pass dredging permits have advanced
  - New Pass dredging permits have been applied for
  - Interim South End sand placement under development
- FDEP grant has been modified to follow this scenario

# Suggested Project Timeline



*Lots of truck hauling... dredging would be better...*

# Beach Disposal from New Pass



- Obtain sand from USACE channel
- Placement along south end
  - ~Beachplace to Sands Point
- Application submitted 1 August 2014
  - Inlet Management Plan required
    - Would not delay construction by Town
- Construction Anticipated 2015-2016
- Subsequent dredging by Lido Key
  - ~5-6 year cycle expected
- NOT FOR NAVIGATION PURPOSES

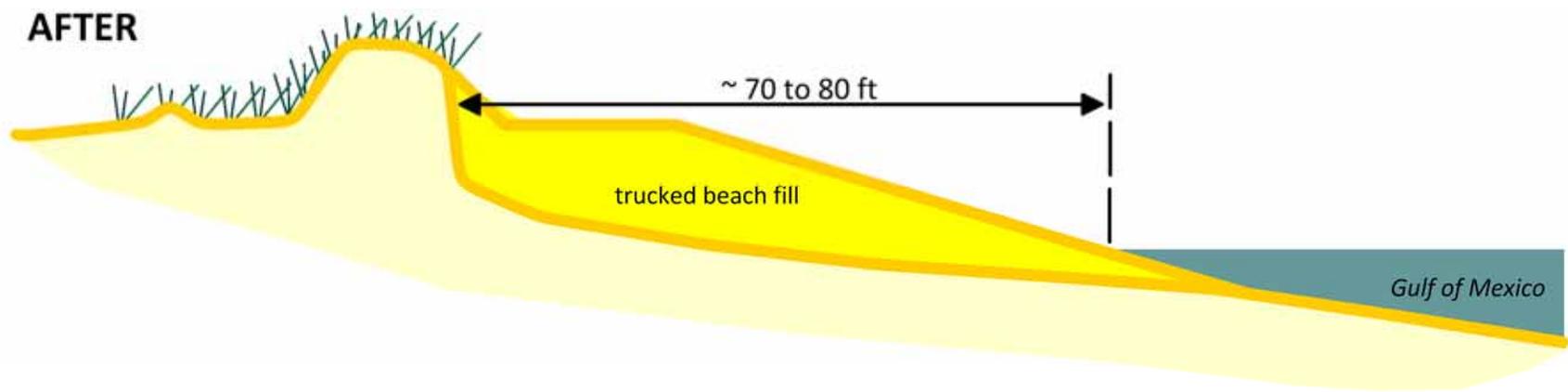
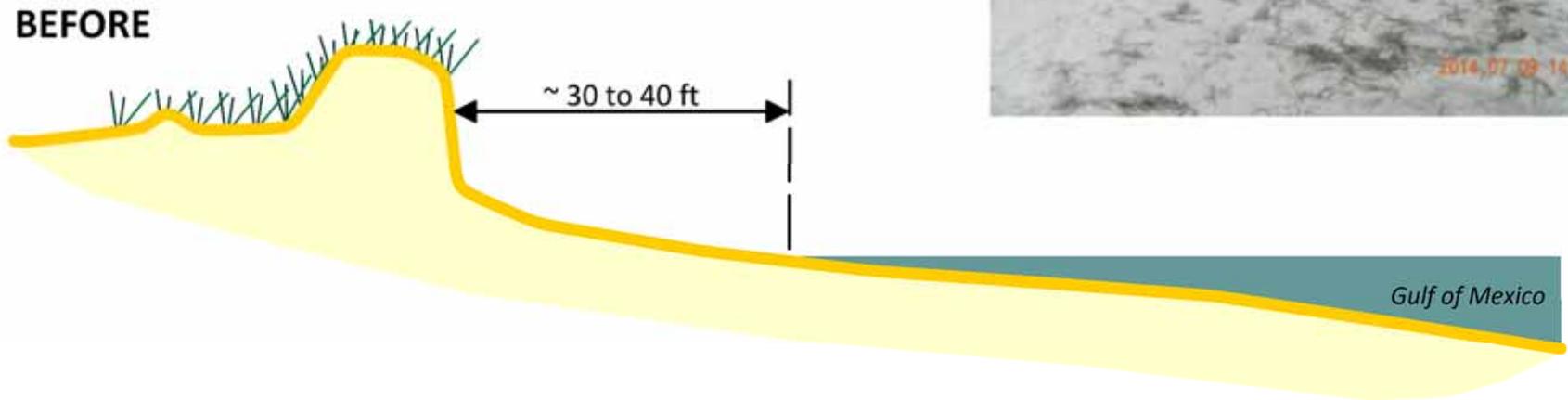


# South End Interim Sand Placement

- Purpose:
  - Dune protection
  - Maintain beach width
- Interim measure until New Pass disposal
- Tentative Construction:
  - Spring 2015



# Schematic



~25,000 cy along 3,800 ft: 6-7 cy/ft

# Upland Sand Mines

Orlando

Davenport

multiple sites

Tampa

LAKE MALES RIDGE

Sebring

LONGBOAT KEY



120 miles\*



100 to 120 miles\*



\* on-road distances - specific routes not determined

# Truck Haul Beach Construction



# Truck-Haul Sand Placement (1 of 2)

- For 25,000 cy: roughly 1,500 truckloads
- 1,000 cy/day up to 1,500 cy/day
  - production from Central Florida
  - 90 trucks/day -----> 9 trucks per hour
  - One truck every 6 minutes
- 16 to 25 construction days (6 days a week)
- Cost opinion: ~ \$1.4 million
  - \$40 to \$45 per cubic yard in place



# Truck Haul Sand Placement (2 of 2)

- Additional issues
  - Access corridor(s)
  - Road/bridge restrictions under review
- Regulatory agencies contacted for Notice-to-Proceed
- Investigating “alternative” delivery methods
  - Sand source remains Central Florida mines



# Next Steps (1 of 3)

- North end
  - Implement North end structural stabilization project
  - Assess initial shoreline response from PAGs
  - Observe & support Longboat Pass maintenance permitting
  
- 6633 GMD seawall / Gulfside Rd.
  - Observe & support Longboat Pass maintenance permitting
  - Develop plan for sand placement

# Next Steps (2 of 3)

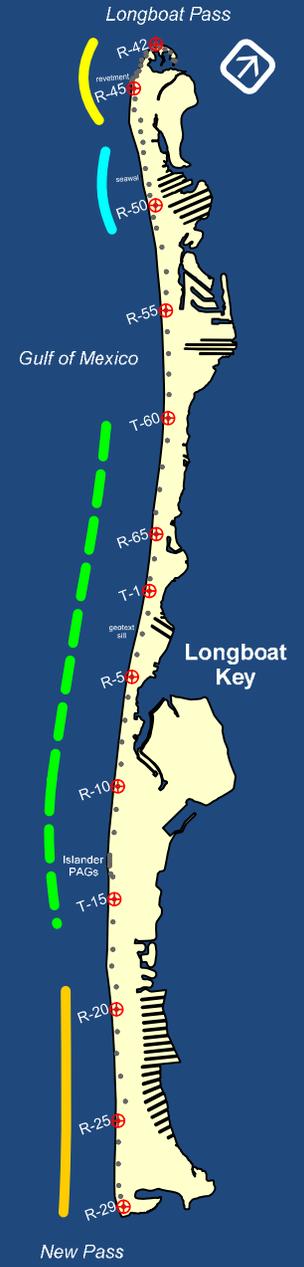
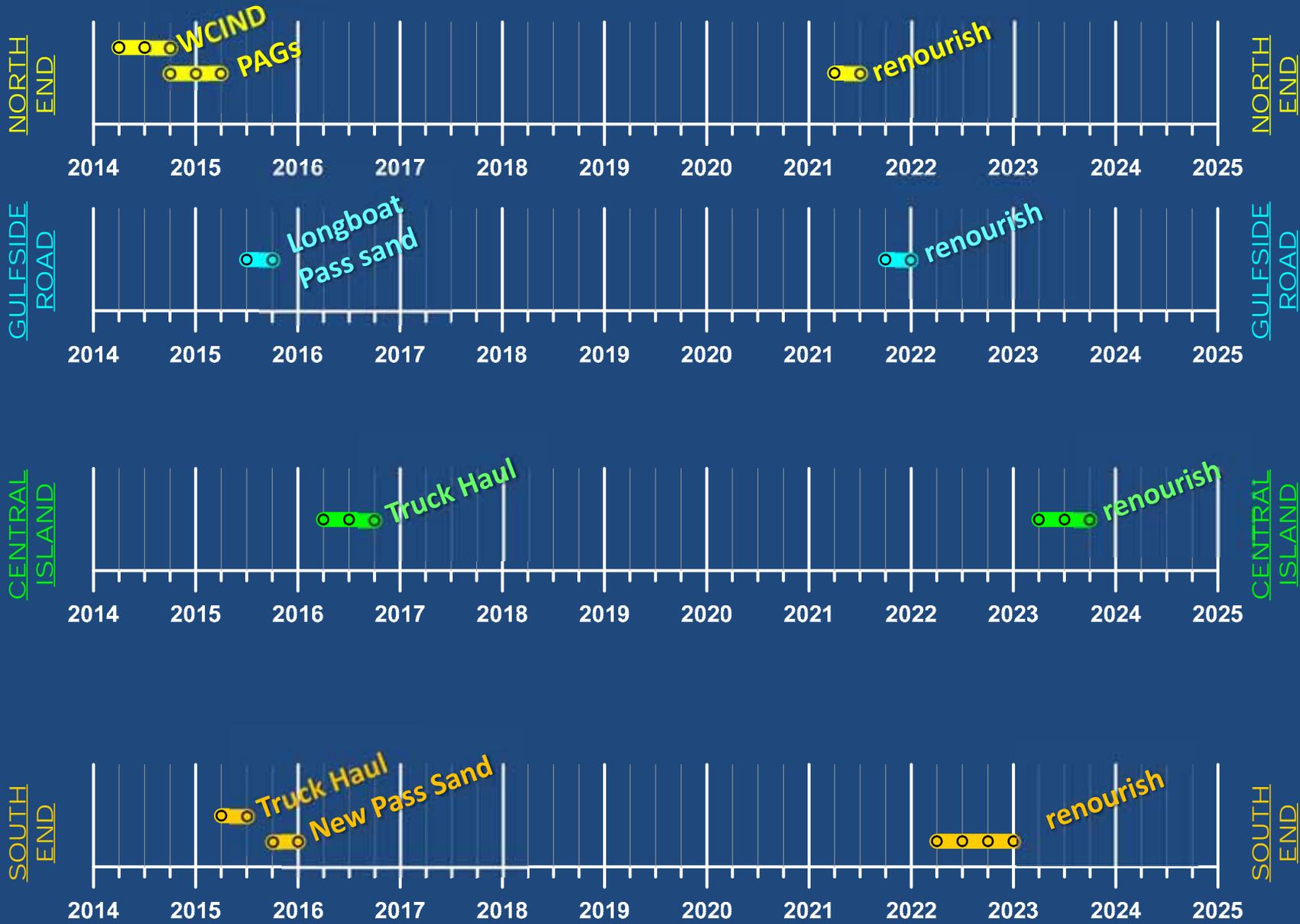
- Central island
  - Consider renourishment via truck haul from Central FL
  - Develop plan for selective sand placement
    - 4795 Gulf of Mexico Dr. to Islander Club/Villa de Lancia
    - Currently permitted for this activity
  
- South end
  - Complete the revised New Pass sand sharing agreement
  - Complete New Pass beach disposal permitting
  - Develop plan for sand placement

# Next Steps (3 of 3)

- Update Beach Management Plan
  - Last updated in 2008
    - Codify revised beach segments
    - Incorporate recent shoreline conditions
      - North end erosion
      - Coastal structures implementation
  - Evaluate design condition relative to storm vulnerability
  - Set future expectations and objectives
- Seek additional offshore sand sources
  - Conduct geotechnical sand search for new sources
  - Refine (reduce) existing sites to address constructability
  - Evaluate long-term viability of inlet/truck haul sources



# Suggested Project Timeline



*Lots of truck hauling... dredging would be better...*



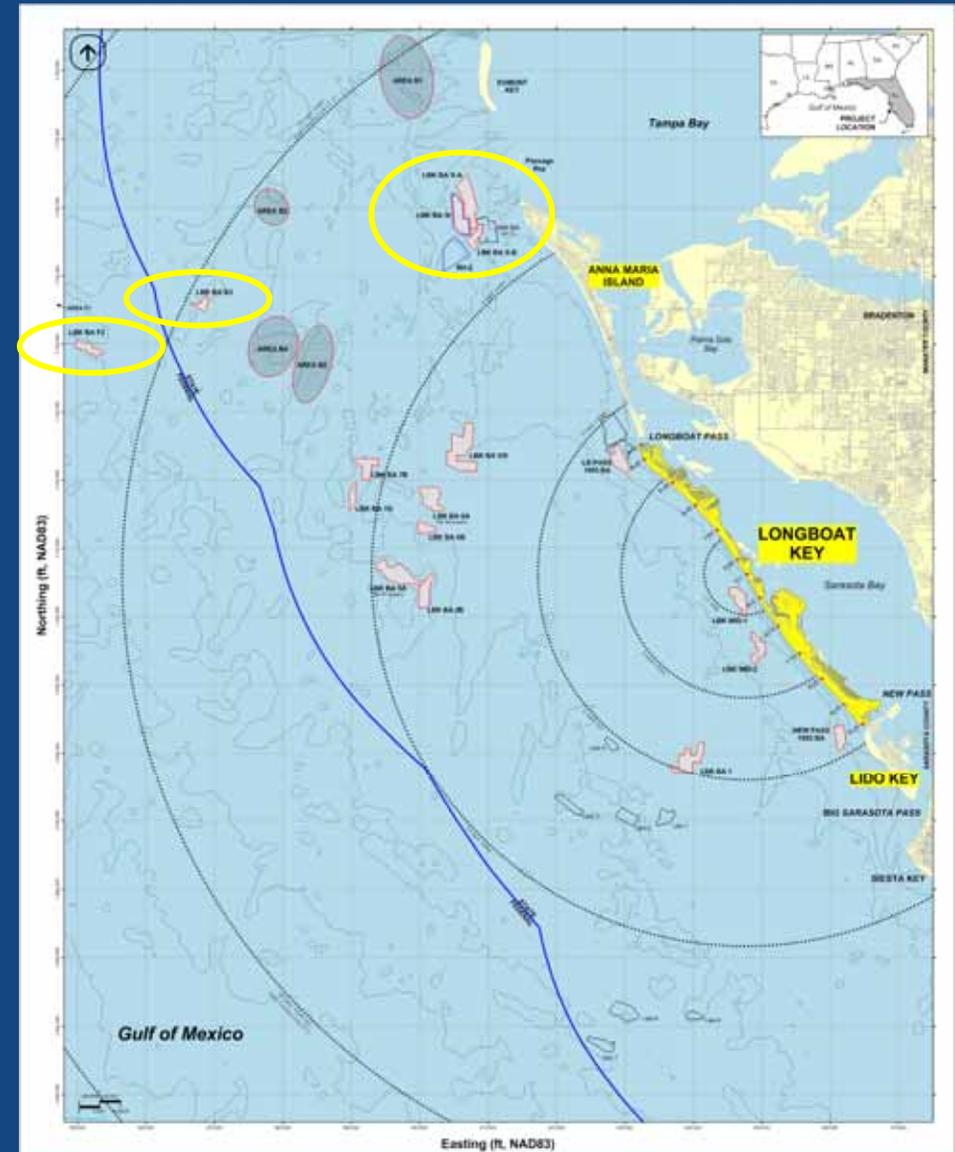
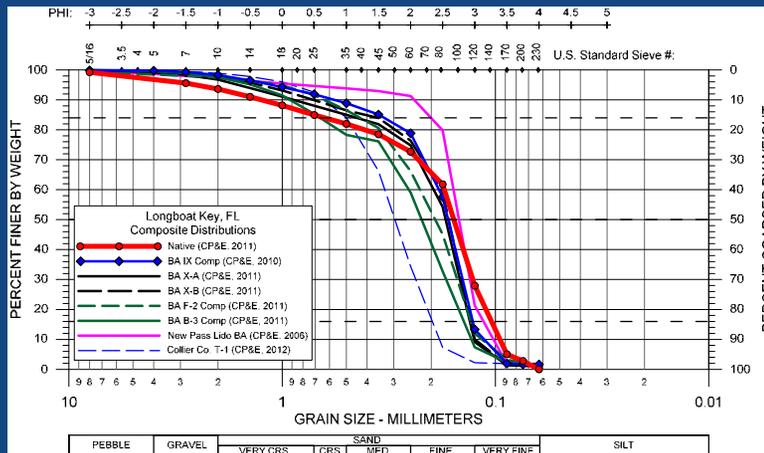
# Inlet sand sources

- New Pass Channel
  - Permitting underway
  - Shared with Lido Key
- Longboat Pass Channel
  - Permitting underway
  - Shared with Anna Maria Isl.
- Longboat Pass flood shoals
  - Smaller volumes potentially available
- All are considered supplemental sources
  - Shared sources, slow regeneration



# Existing Offshore Sand Resources

- Sand quality concerns
  - Grain size/compatibility
  - Shell/carbonate content
  - Variability within sites
  - Color



*Thank You*



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1973 – New Pass (FDEP photo)



**End of Agenda Item**