

An aerial photograph of a coastal town, likely in Pinellas County, Florida. The image shows a mix of residential and commercial buildings, green spaces, and a prominent beach area. The ocean is visible on the right side, with waves breaking onto the shore. The sky is clear and blue.

Challenges of Beach Nourishment in Pinellas County

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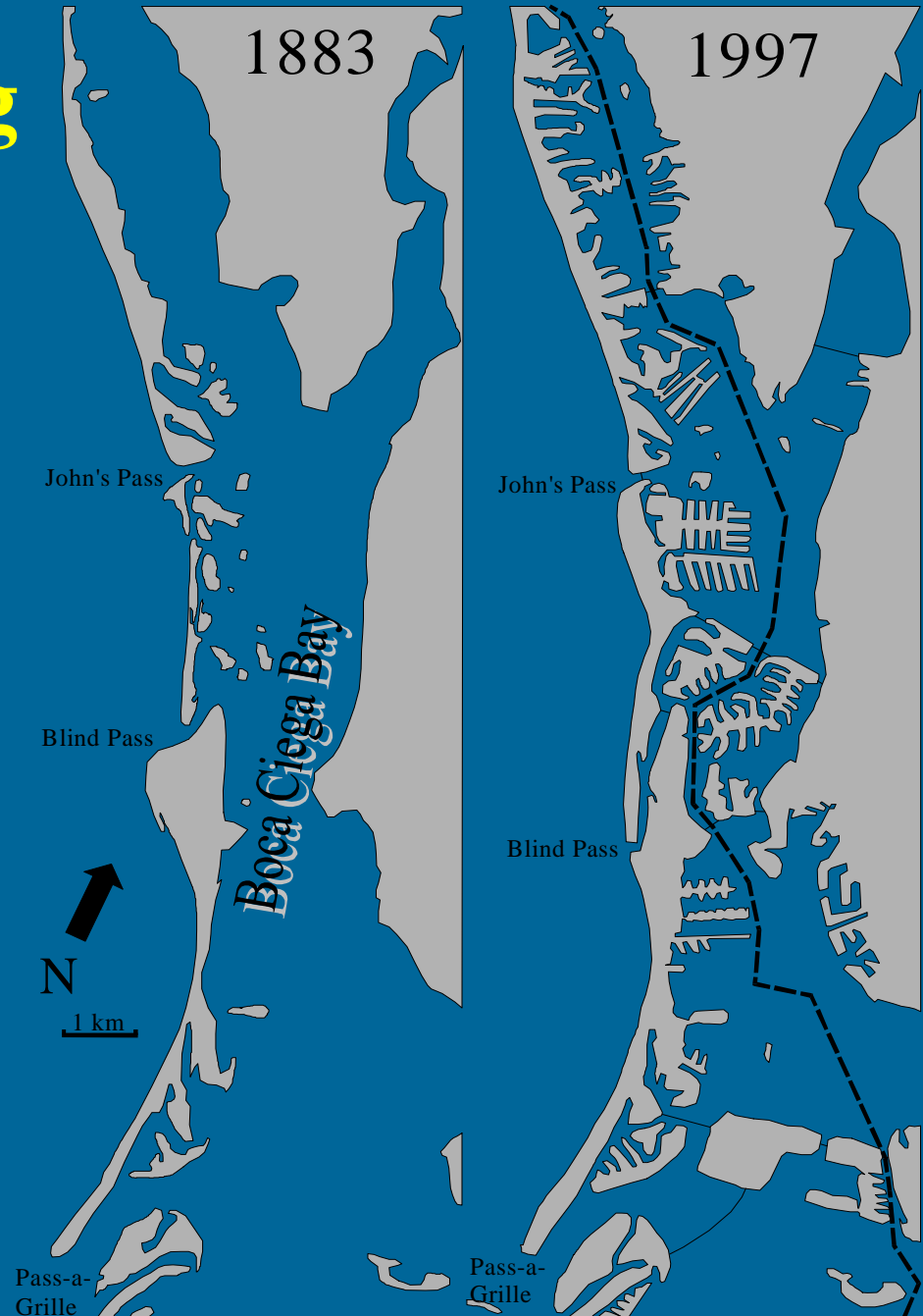
October 29, 2003

Dredging for Beach-quality Sand

- **Introduction: A brief history of dredging in Pinellas County.**
- **Present Borrow Areas:**
 - John's Pass
 - Blind Pass
 - Pass-a-Grille Channel
 - Egmont Channel Shoals
- **Future Borrow Areas**
- **Environmental Benefits and Impacts**
- **Summary**

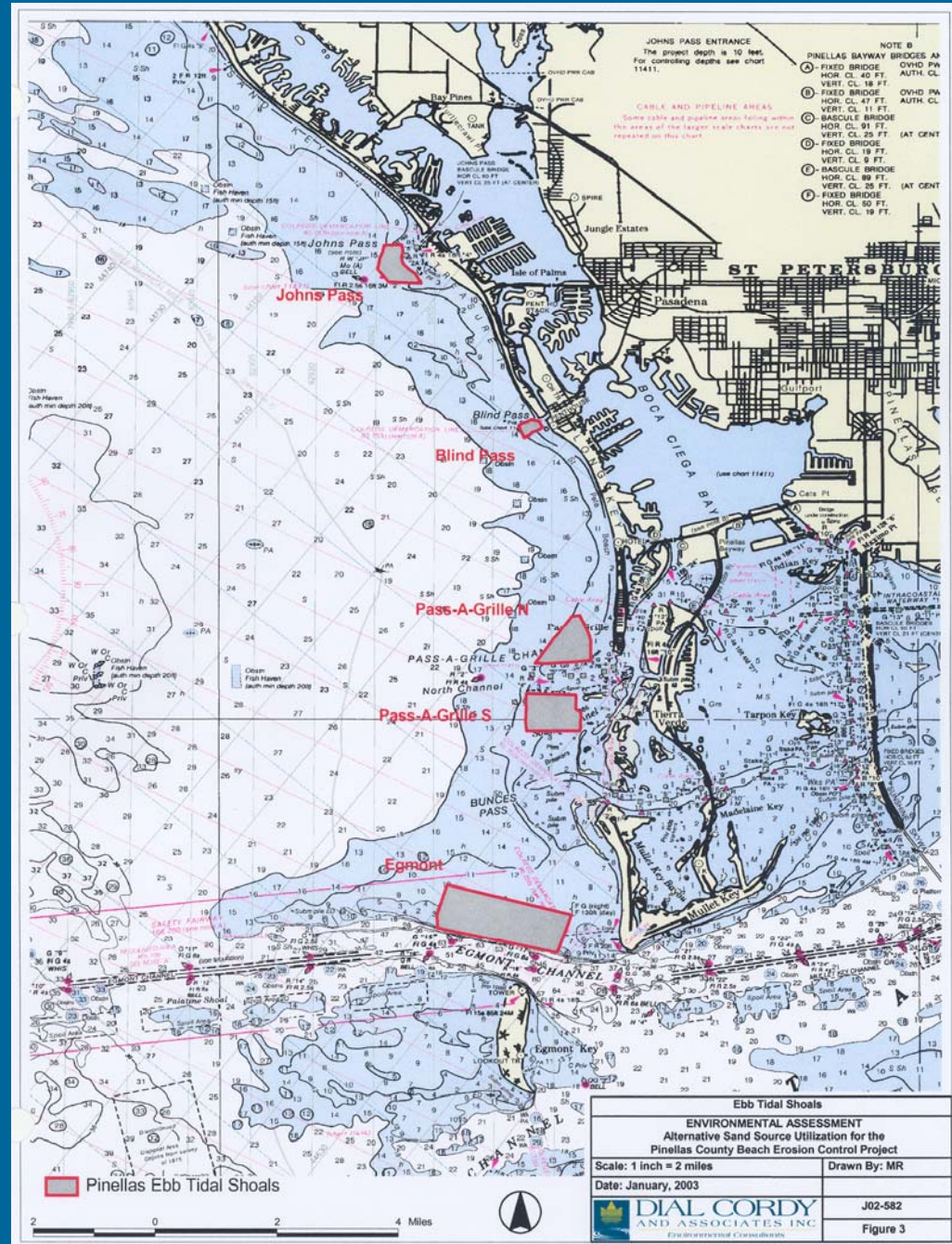
A History of Dredging in Pinellas County

- 1926-1960s: Causeway Construction
- 1950-60s: Dredge-and-fill construction in back-barrier bays.
- 1962-68: ICW dredged from Tampa Bay to Anclote River.
- Impacts to tidal inlets.



Present Borrow Areas

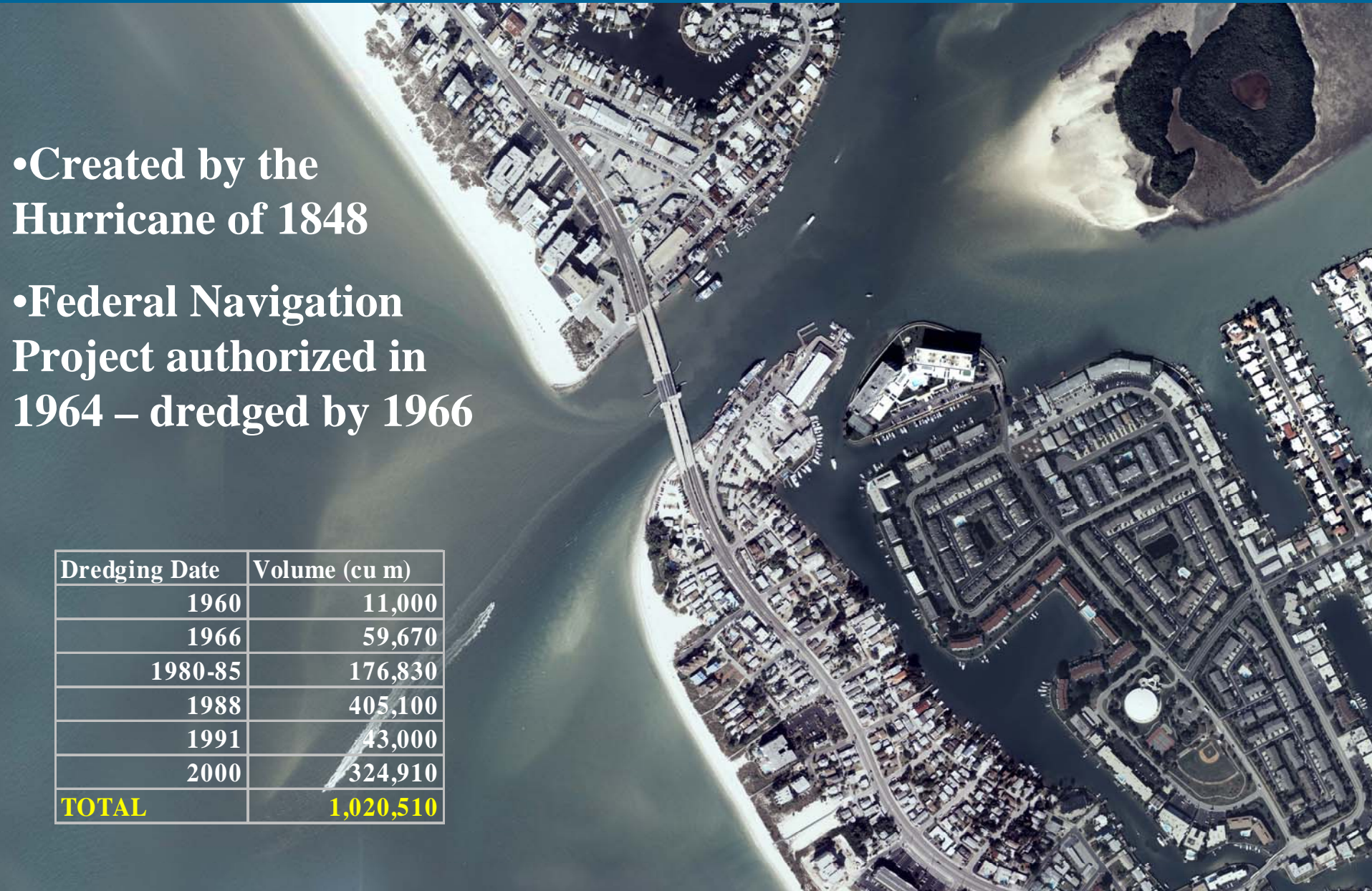
- Inlets: John's Pass, Blind Pass, and Pass-a-Grille Channel.
- Coupled projects
- Regional Management
- Egmont Channel Shoal
- Designated borrow area
- >20 miles from Sand Key



John's Pass

- Created by the Hurricane of 1848
- Federal Navigation Project authorized in 1964 – dredged by 1966

Dredging Date	Volume (cu m)
1960	11,000
1966	59,670
1980-85	176,830
1988	405,100
1991	43,000
2000	324,910
TOTAL	1,020,510





Initial Federal Dredging



O'Brien's Lagoon



1971



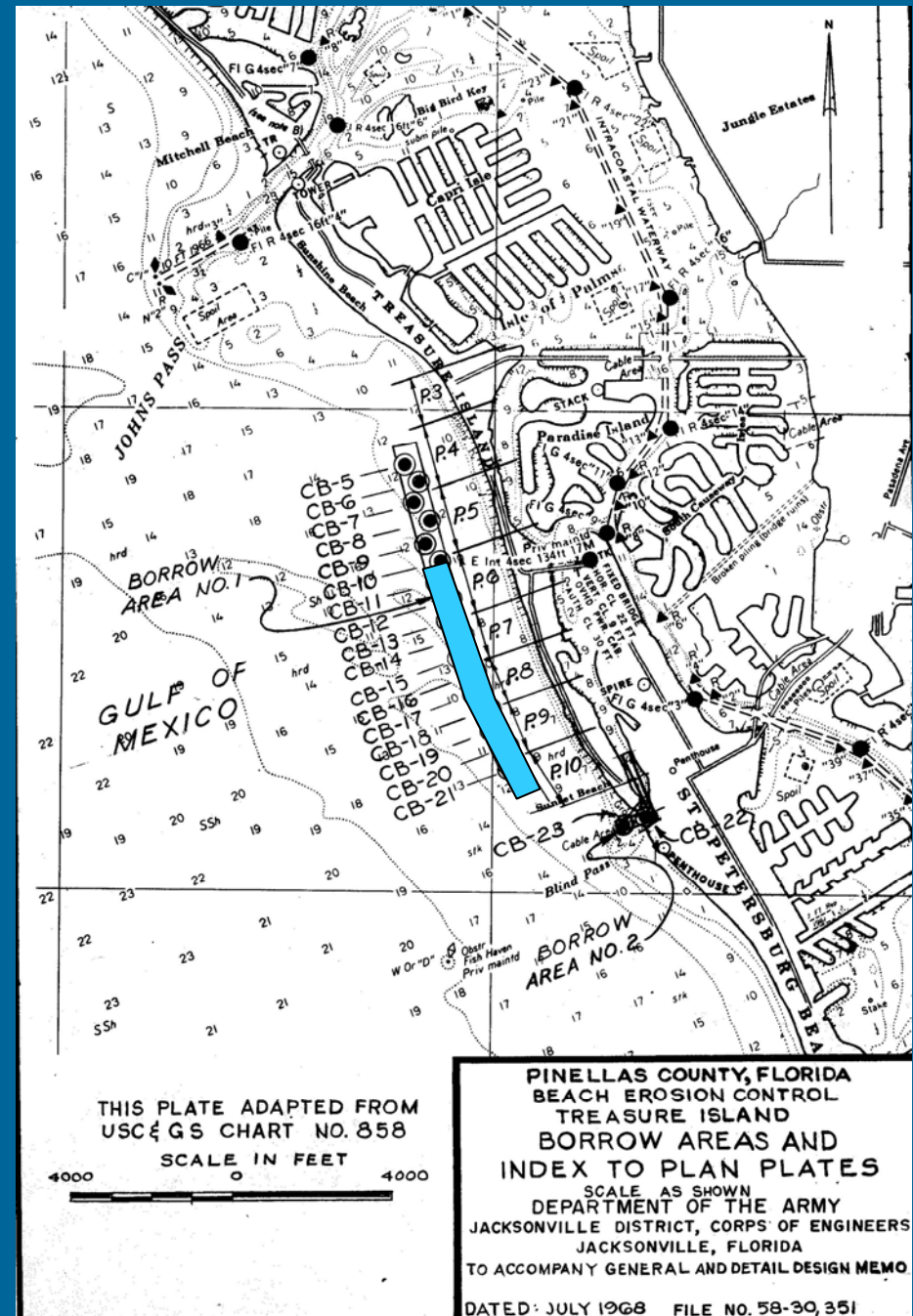
1975

Dredging Date	Vol (cu m)
1971	57,000

The Borrow Pit

Dredging Date	Vol (cu m)
1969	605,000
1972	115,000
1976	290,000
Total	1,010,000

- First Federal Nourishment Project in Pinellas County (Treasure Island).
- 1970 Study: accretion rate in pit slowing, but should fill within a few years.
- In 2000, the pit was about 5.5 m deep and 1.5 km long.



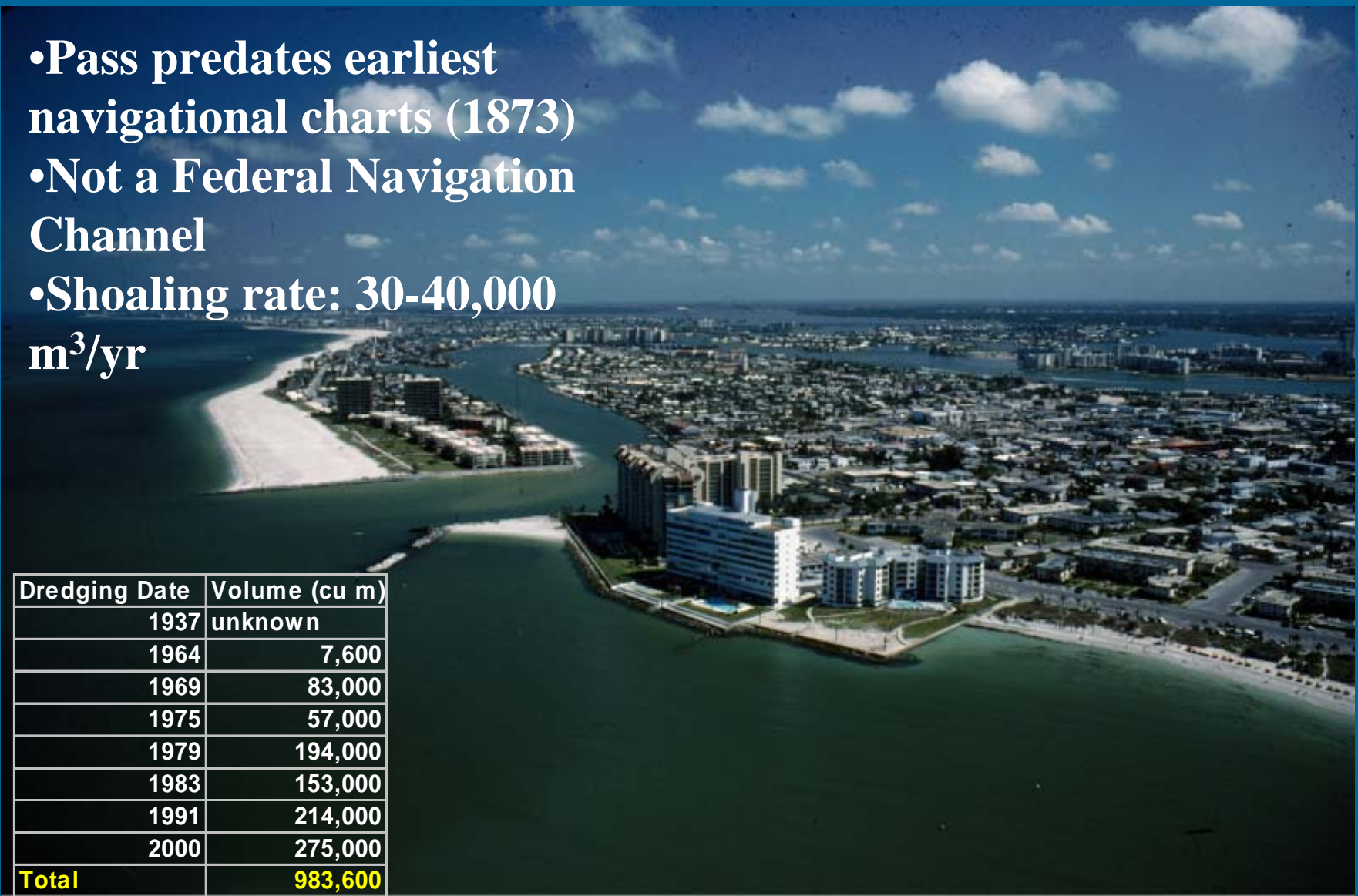
Treasure Island Nourishment: 2000

- John's Pass Borrow Area
- Summer 2000
- 325,000 m³ of sediment



Blind Pass

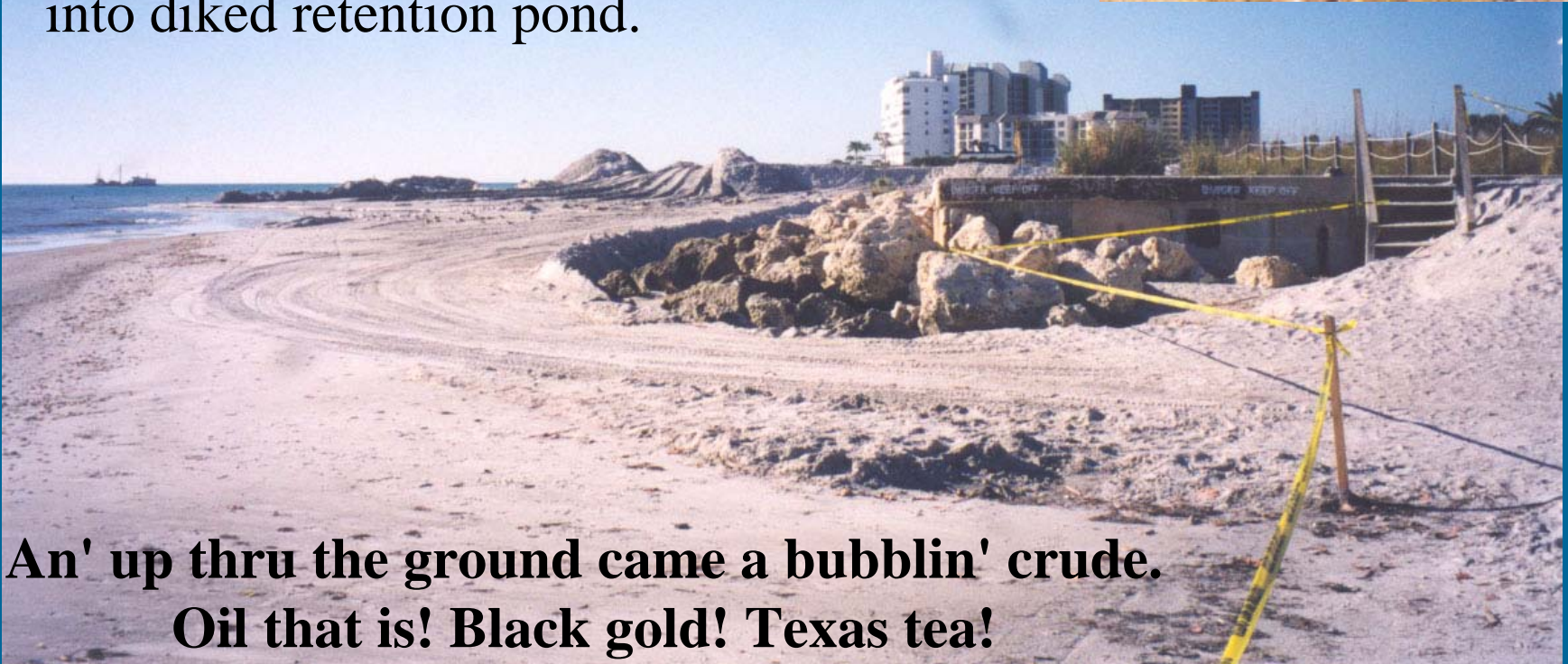
- Pass predates earliest navigational charts (1873)
- Not a Federal Navigation Channel
- Shoaling rate: 30-40,000 m³/yr

An aerial photograph showing a coastal urban area with a large body of water. A prominent white sandy beach runs along the left side of the water. In the foreground, there are several large, modern buildings, possibly hotels or residential complexes, situated near the water. The background shows a dense urban area with many smaller buildings and houses. The sky is blue with scattered white clouds.

Dredging Date	Volume (cu m)
1937	unknown
1964	7,600
1969	83,000
1975	57,000
1979	194,000
1983	153,000
1991	214,000
2000	275,000
Total	983,600

Upham Beach Nourishment: 2000

- January 6, 2000
- Blind Pass Borrow Area
- Cutterhead and pipeline
- USCG and US Corps cooperation.
- Oil-contaminated slurry pumped into diked retention pond.



Oil removal cleanup

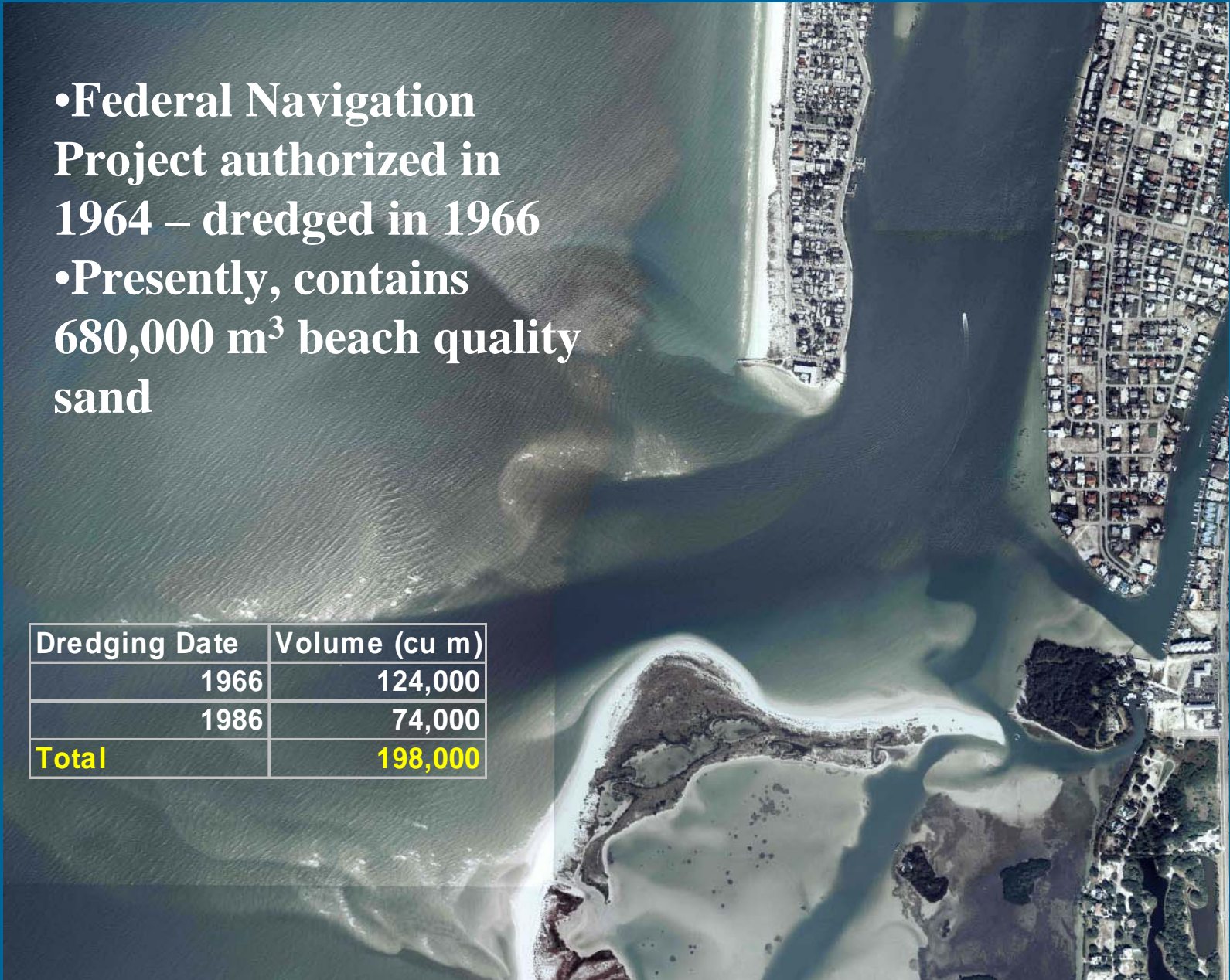
- Completed: June 21, 2000
- Doubled costs
- Over 3,000 m³ of silty sand removed from site.



Pass-a-Grille Channel

- Federal Navigation Project authorized in 1964 – dredged in 1966
- Presently, contains 680,000 m³ beach quality sand

Dredging Date	Volume (cu m)
1966	124,000
1986	74,000
Total	198,000



Egmont Channel

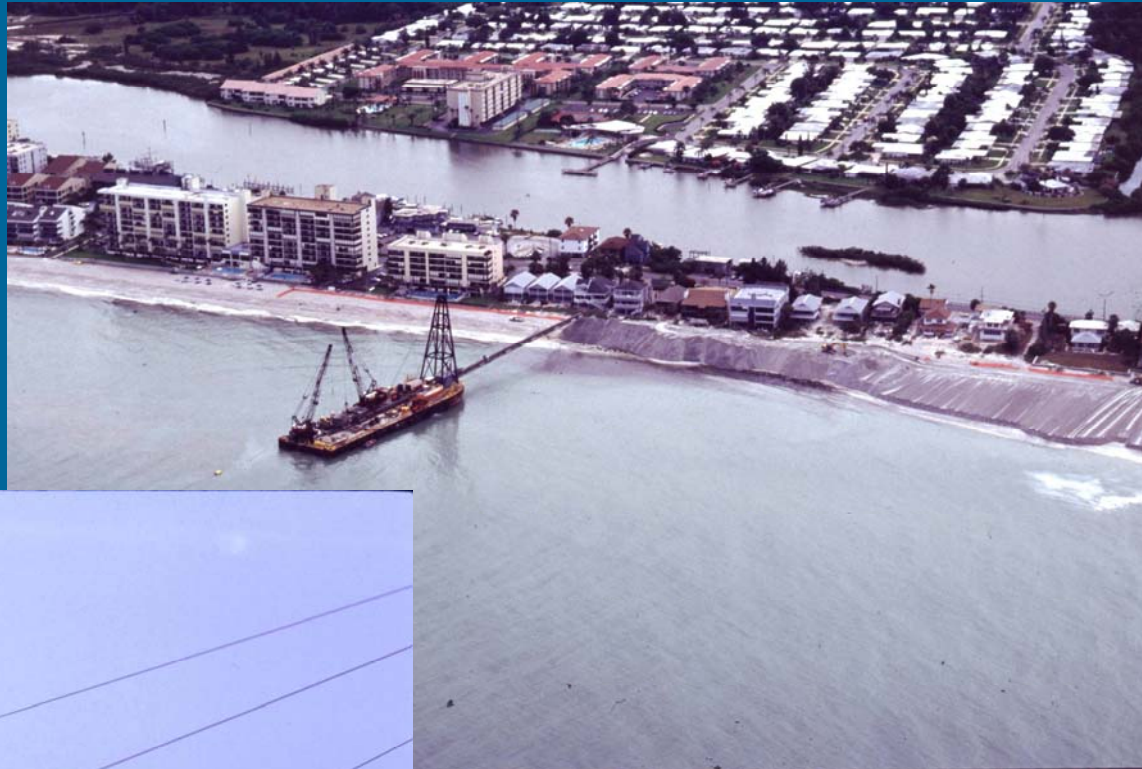
- Dredged from 1950-70 as Tampa Harbor Deepening Project.
- More than 15 million m³ of beach-quality sand remaining.



Dredging Date	Volume (cu m)
Dec-90	1,000,000
Dec-92	1,007,000
Jun-96	39,200
Jun-96	172,000
Oct-98	990,900
Oct-99	1,007,400
Total	4,216,500

Sand Key Phase III

- Indian Shores, 1992
- Dragline, barged to site
- Conveyor belt transfer to beach.



Sand Key Phase IV



- 14 km of Sand Key nourished in 1998-99.
- Cutterhead suction dredge pumped onto barges.
- Sediment pumped hydraulically to beach.



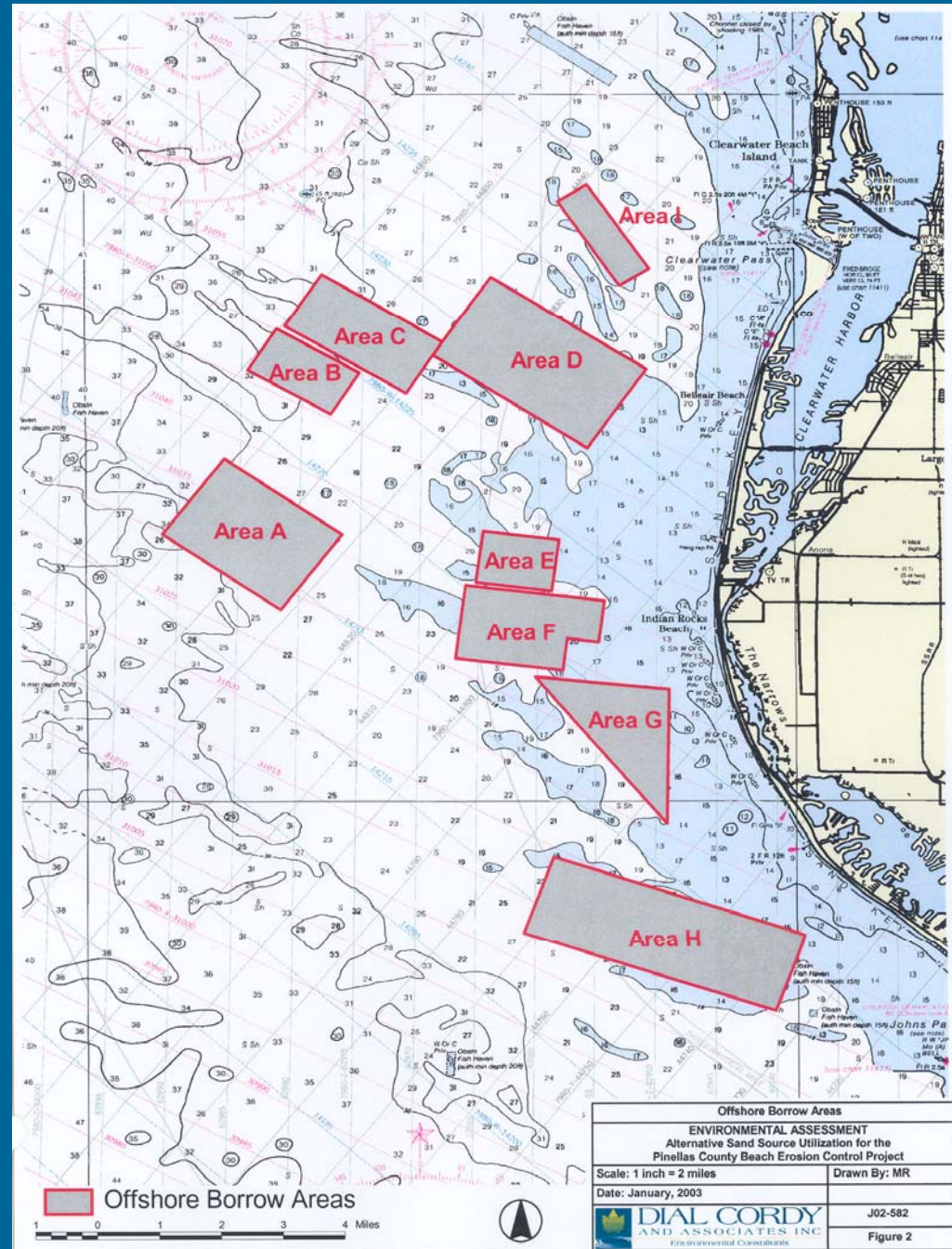
Rock Removal

- Approx. 450 m³ of rock removed annually since 1999.
- Tilling to a depth of 1 m, prior to turtle nesting season.



Future Borrow Areas

- Nine new offshore areas
- 6-9 m water depth
- Contain >11 million m³ of beach-quality sand.
- Dredge areas with shallow sloping sides (no pits) to aid in recolonization.
- Hardbottom resources: 60-m buffer zones.
- Source for 2006 Sand Key Renourishment.

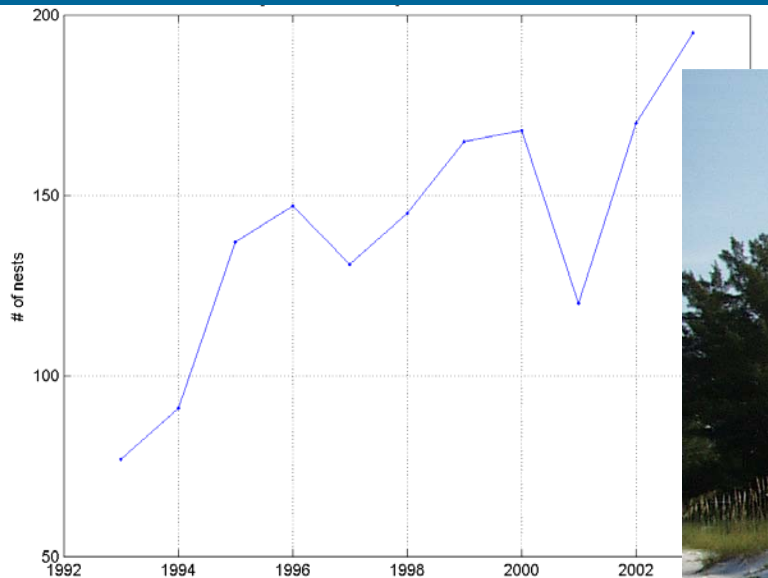
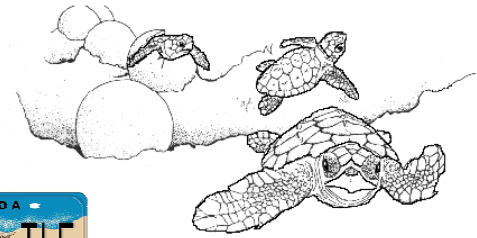


Environmental Benefits and Impacts



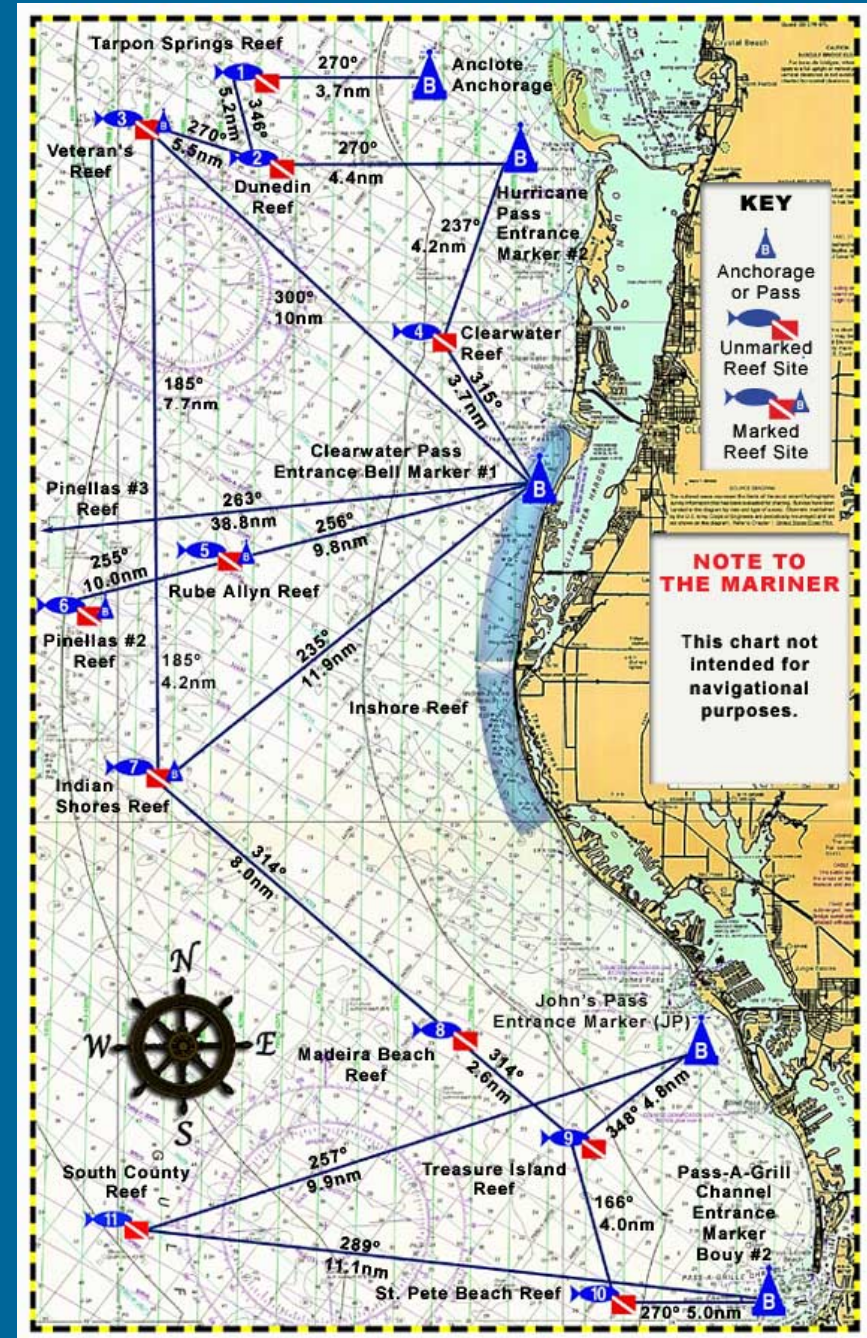


Sea Turtle Nesting on Pinellas County Nourished Beaches



Pinellas County Artificial Reefs

- Sand Key Nourishment permit condition
- Two acres mitigation for every 1 impacted
- Installed 16 new reefs, 1.5 m relief.
- 120-250 m offshore, 5-6 m deep
- Concrete rubble



Pinellas County Dredging: Summary

- **Moved from offshore disposal and borrow pits to Regional Management (channel maintenance dredging and beach nourishment coupled).**
- **Problems (rocks, oil, hardbottom impacts) mitigated.**
- **Benefits include increased habitat, navigational improvements, storm protection, and a healthy tourist industry (12.3 million visitors in 2001).**
- **Future Borrow Areas will decrease costs and provide beach-quality sand well into the future.**