Packery Channel Monitoring Program
Pre- and Post-Dredge Status

Presented to:
City of Corpus Christi City Council

August 14, 2012

Deidre D. Williams
Coastal Research Scientist

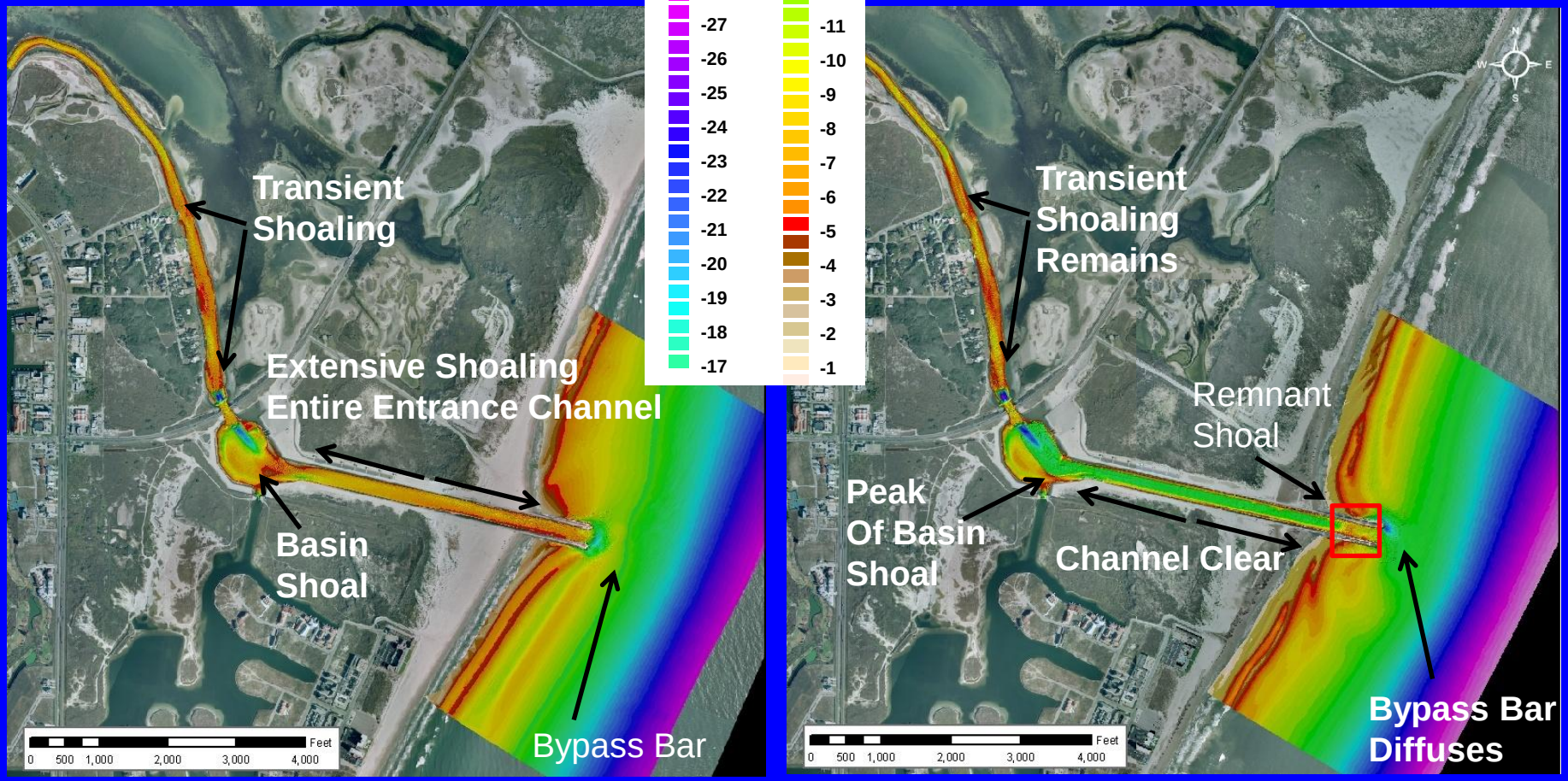
Conrad Blucher Institute for Surveying and Science
Texas A&M University-Corpus Christi

Program Sponsored by:
The City of Corpus Christi

Contributing Historic Sponsors:
U.S. Army Engineer District-Galveston
Engineering Research and Development Center
Coastal Inlets Research Program

17 May 2012 Courtesy of Dr. Richard Watson

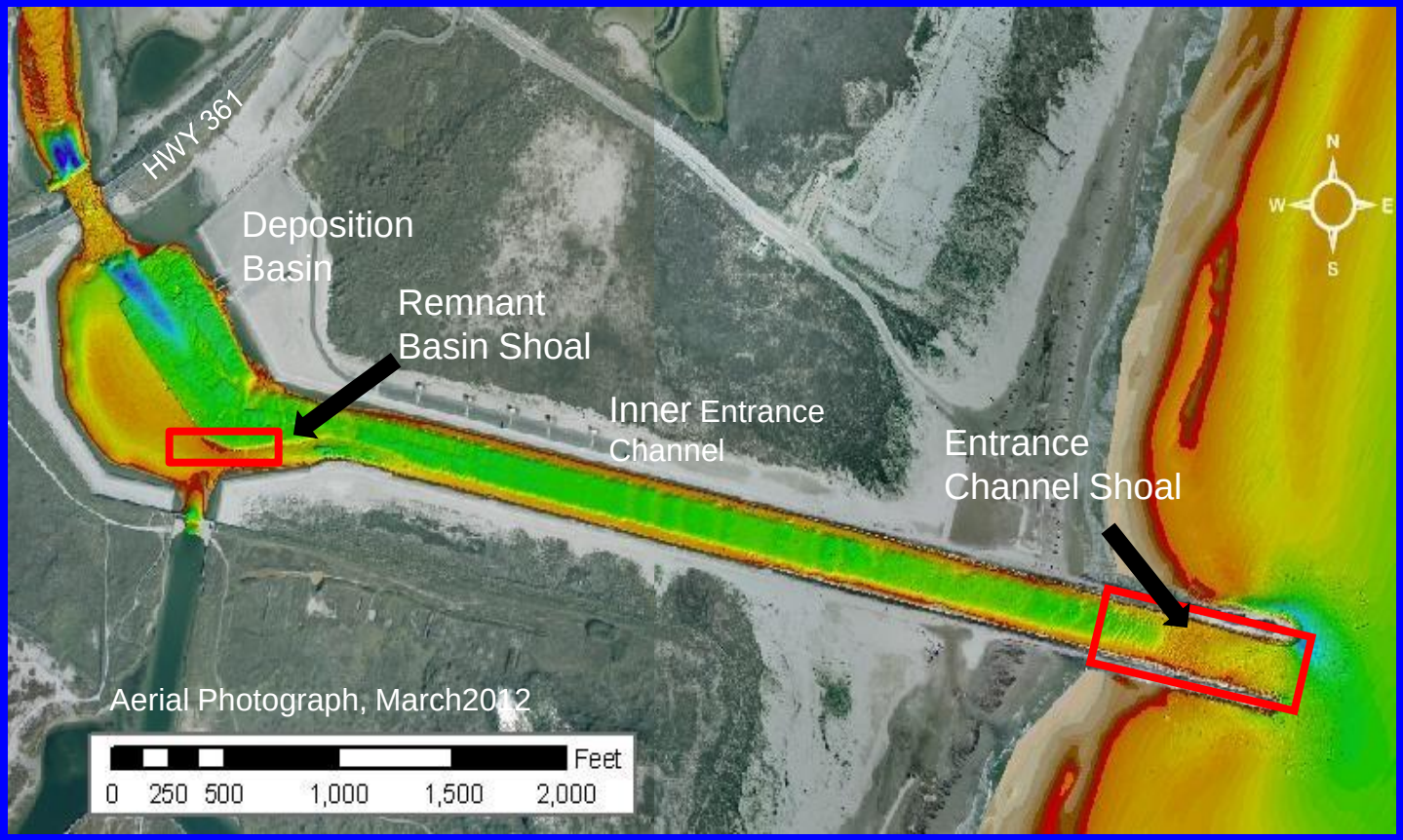
Pre- and Post- Dredge Shoaling



Pre-Dredge Sep 2011
(Peak Summer)

Post-Dredge Mar 2012
(Winter Influence)

Location of Post-Dredge Shoals
23 Mar 2012



Basin Shoal:

- Linear Feature: 160-ft long, 30-ft wide
- Potential: Navigation limitation
  Min. depth ≈ -4 to -5 ft (NAVD88)
- Sand Volume: ≈ 3,000 cu yd (23 Mar 2012)

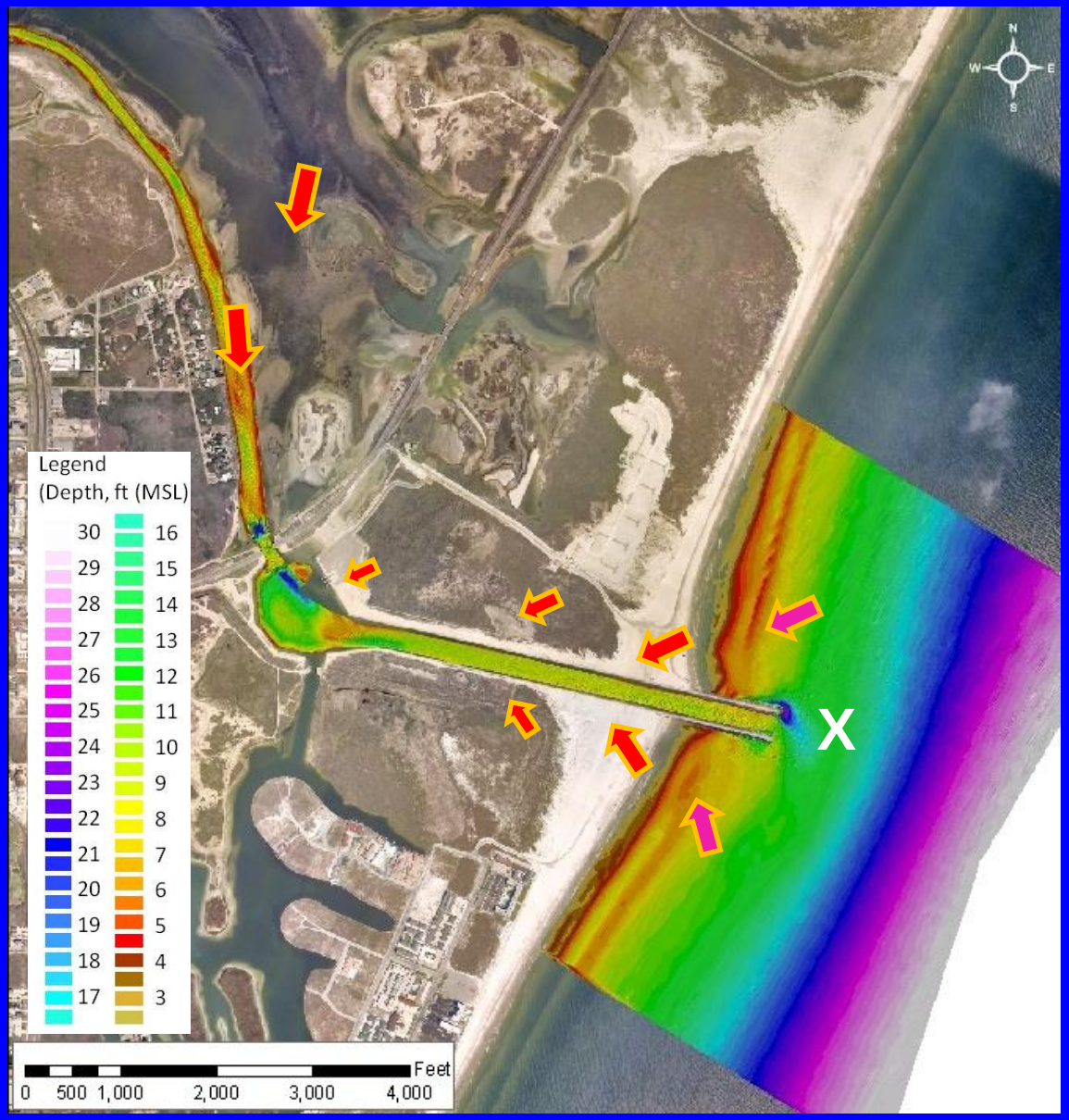
Entrance Channel Shoal:

- Variable Feature**:** 500-ft long, 200-ft wide
- Potential: Navigation limitation
  Min depth ≈ -5 to -7 ft (NAVD88)
- Sand Volume ≈ 24,000 cu yd (23 Mar 2012)

How Does Sand Enter the Channel?

- Wind (beach and dunes)
- Surge (over jetties)
- Scour (inland channel)
- Spillover (inland channel)
- No evidence of entry at mouth (Mar 2012)

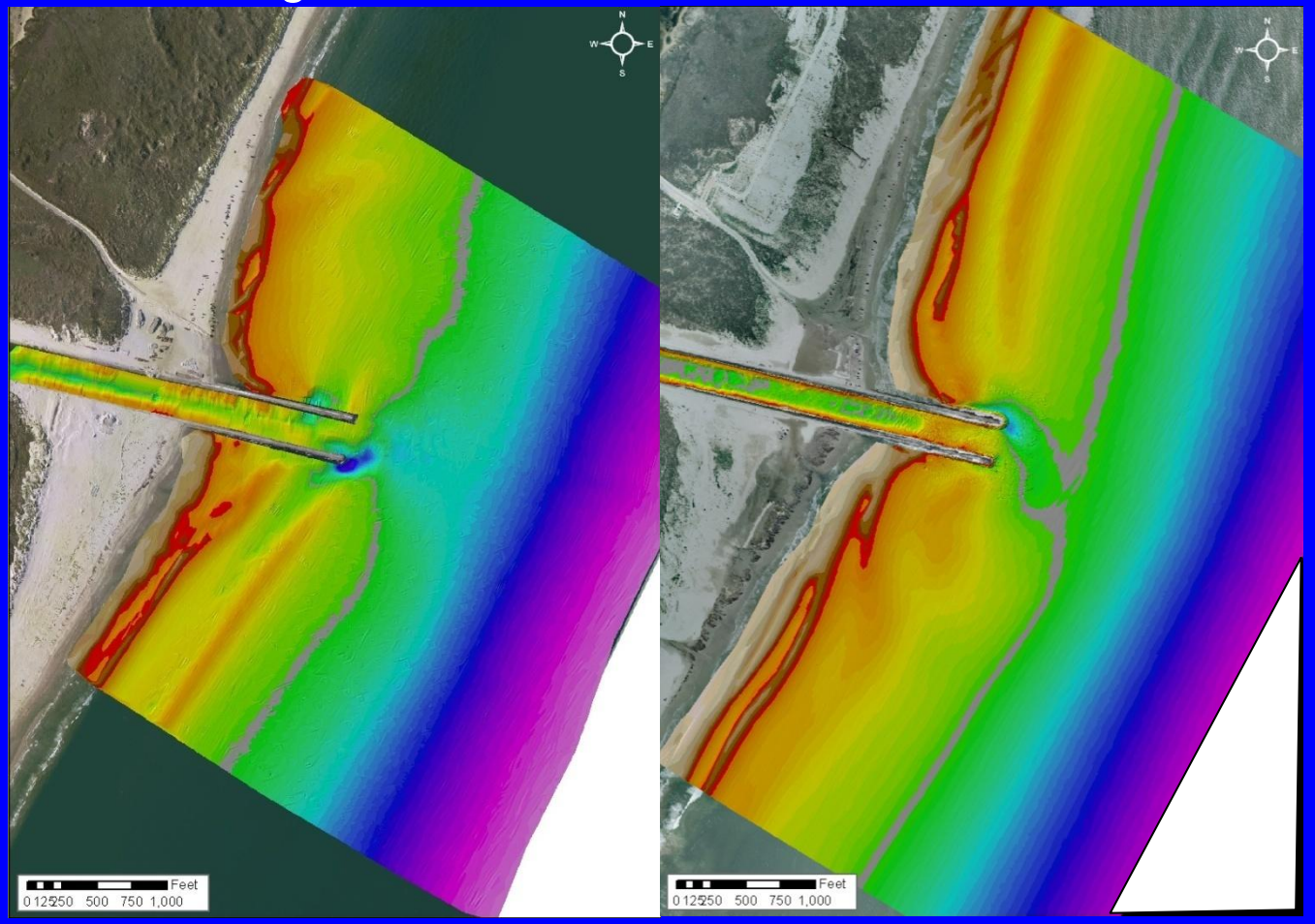
Why? Deep Scour at Mouth



More Sand Available in Surrounding Nearshore

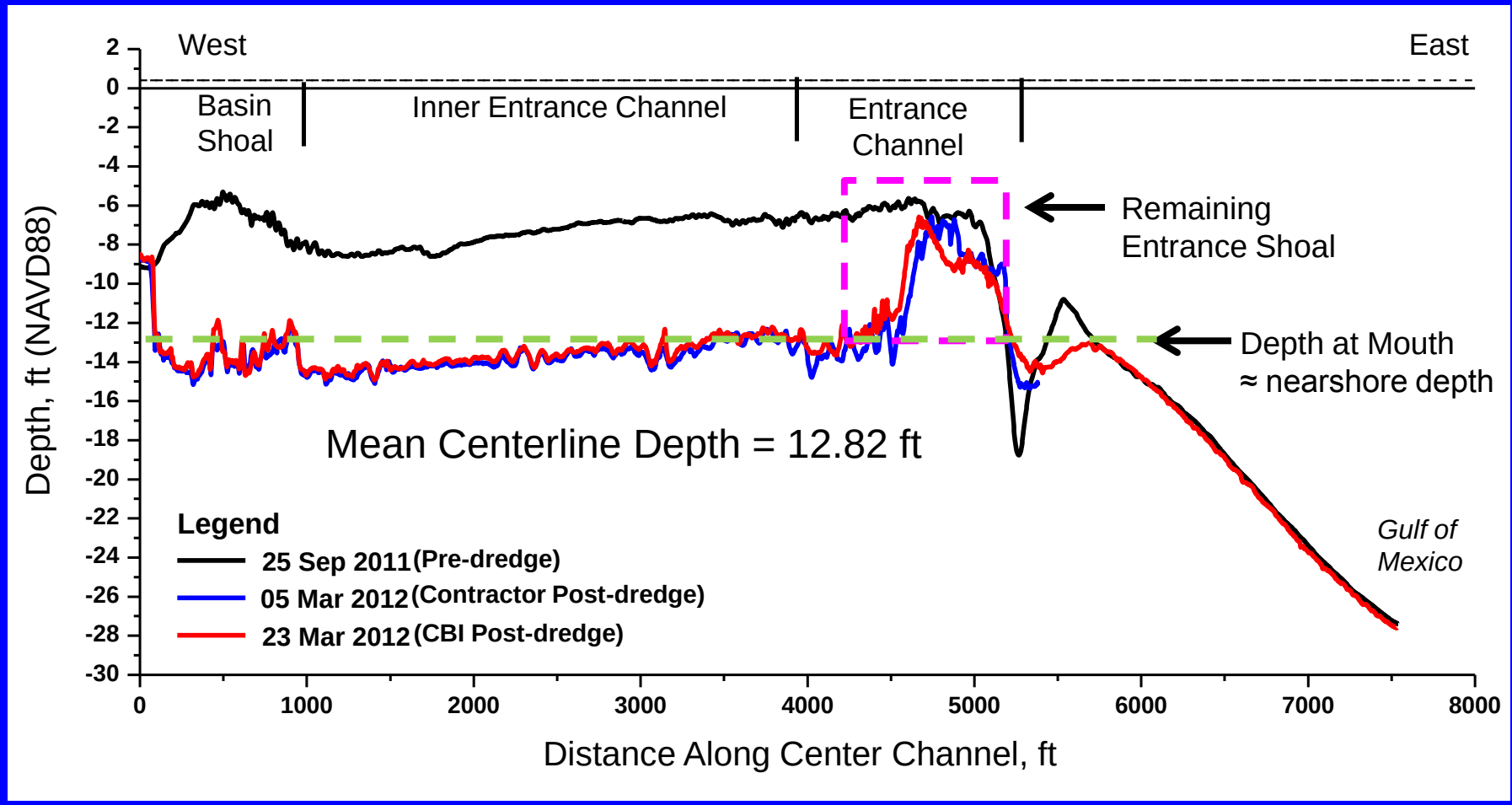
Post-Construction
Aug 2006

Post-Dredge
23 Mar 2012



Available Sand + Reduced Scour = Potential for Sand Entry from Gulf

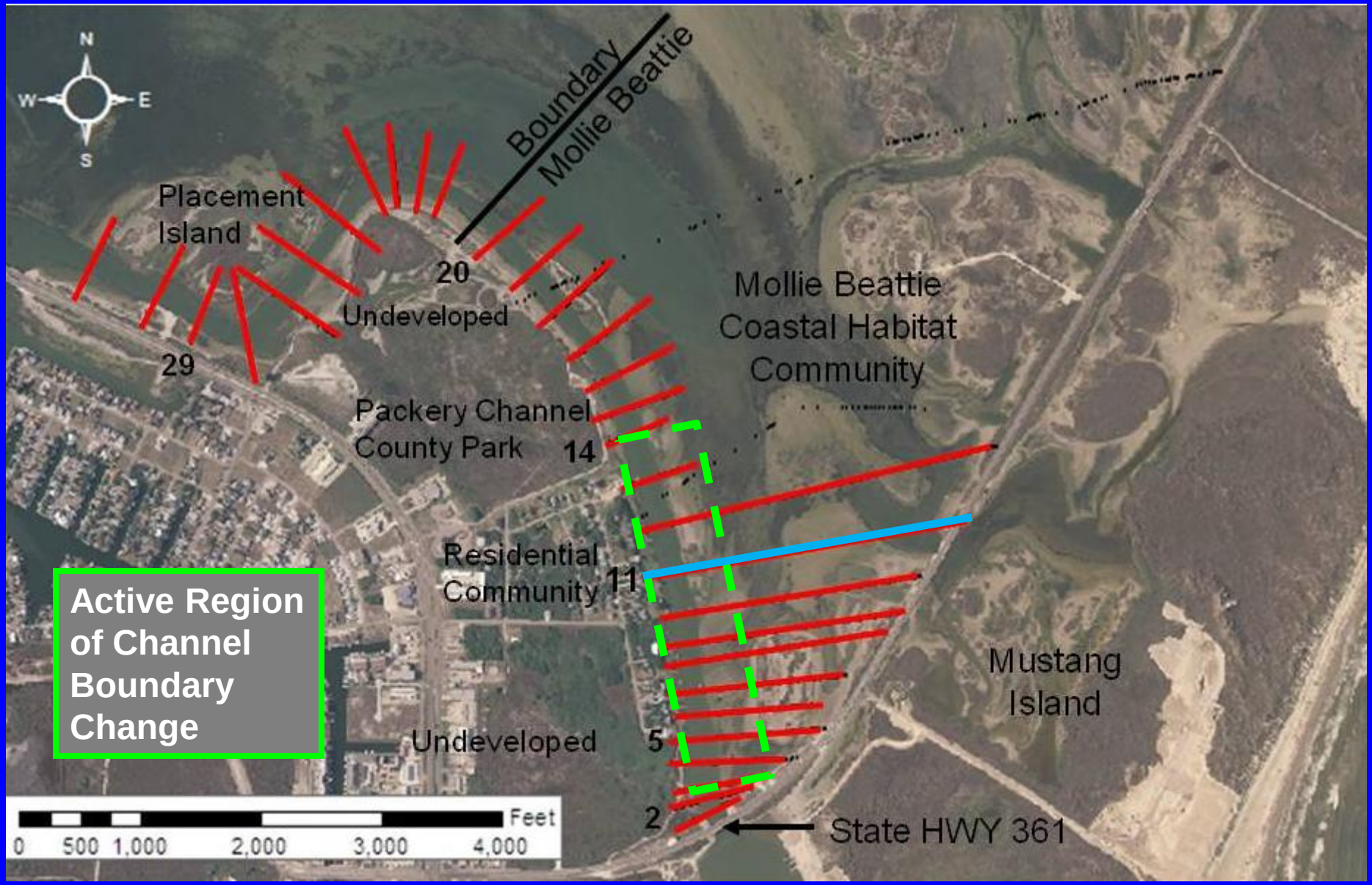
Eliminate Shoal and Channel Depth ≈ Nearshore Depth



Potential for Development of Sediment Transport Pathway

INTO Channel from Gulf

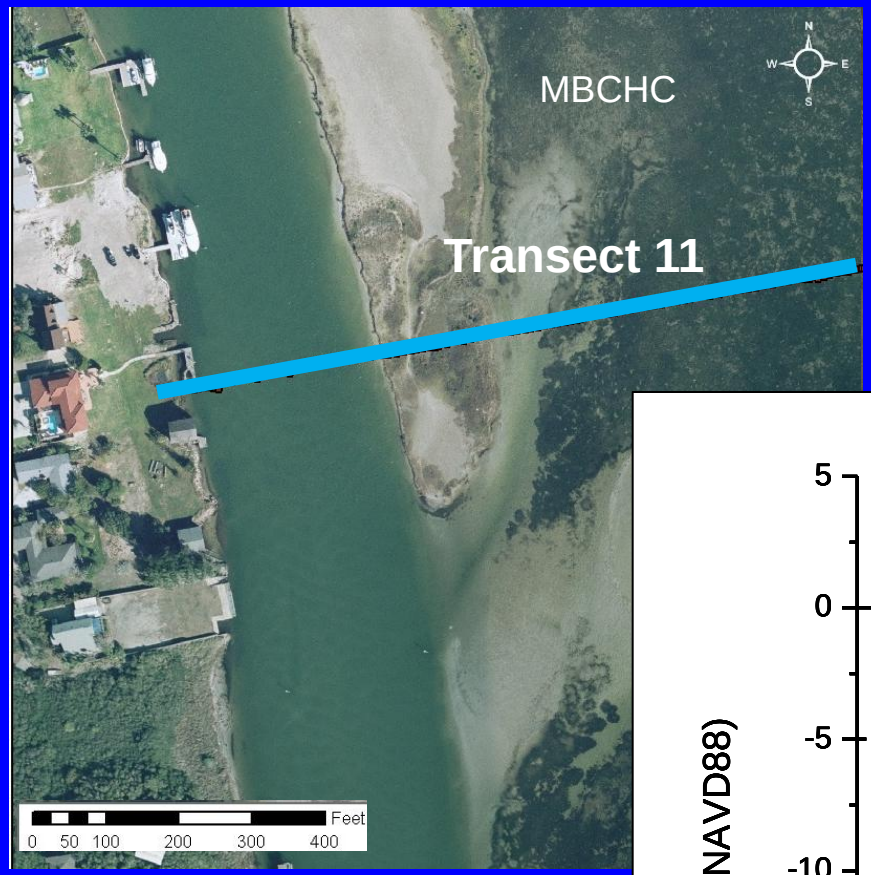
Inland Channel Segment

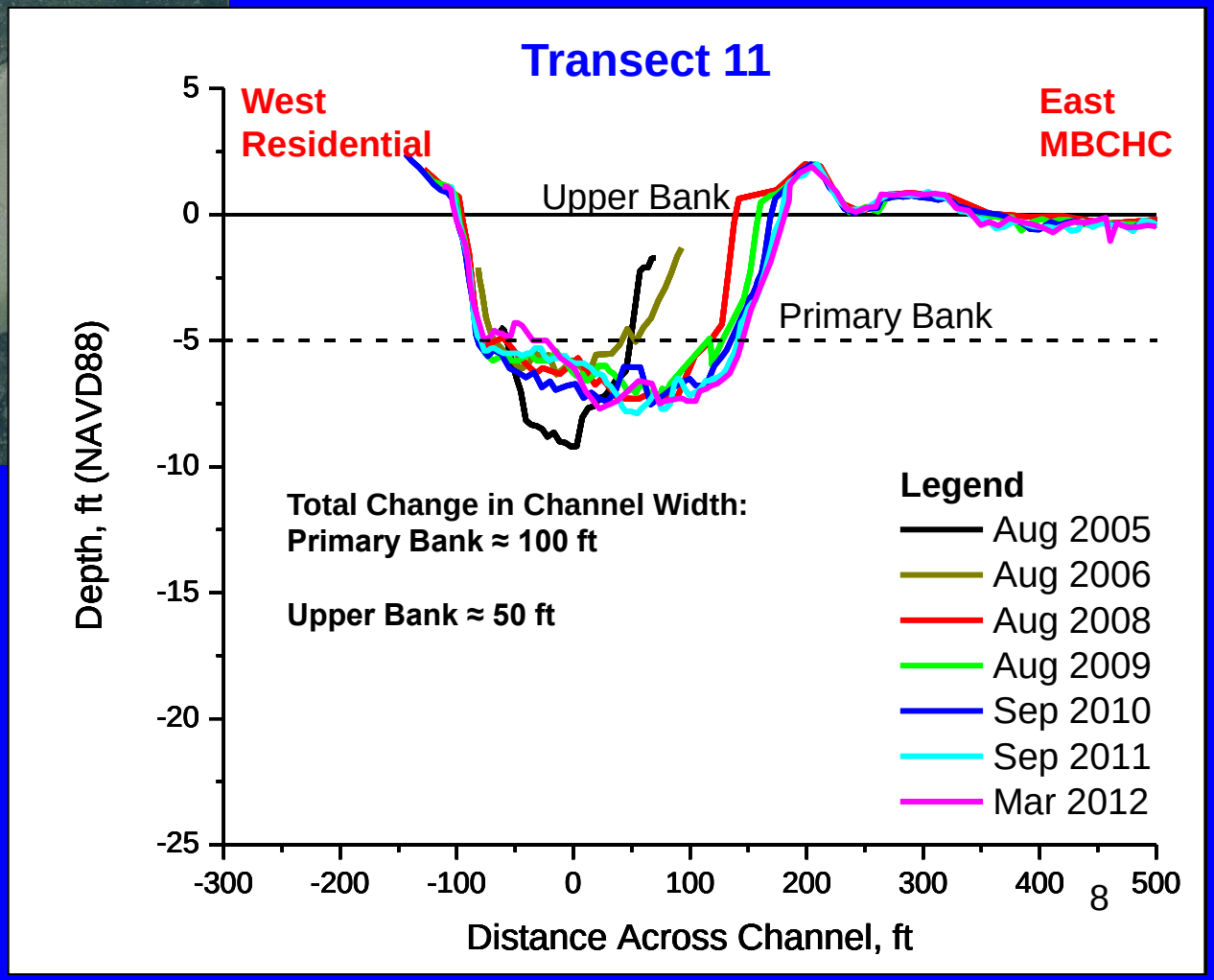


Channel Expansion

Greatest on East Side

Greatest Change from 2005-2008

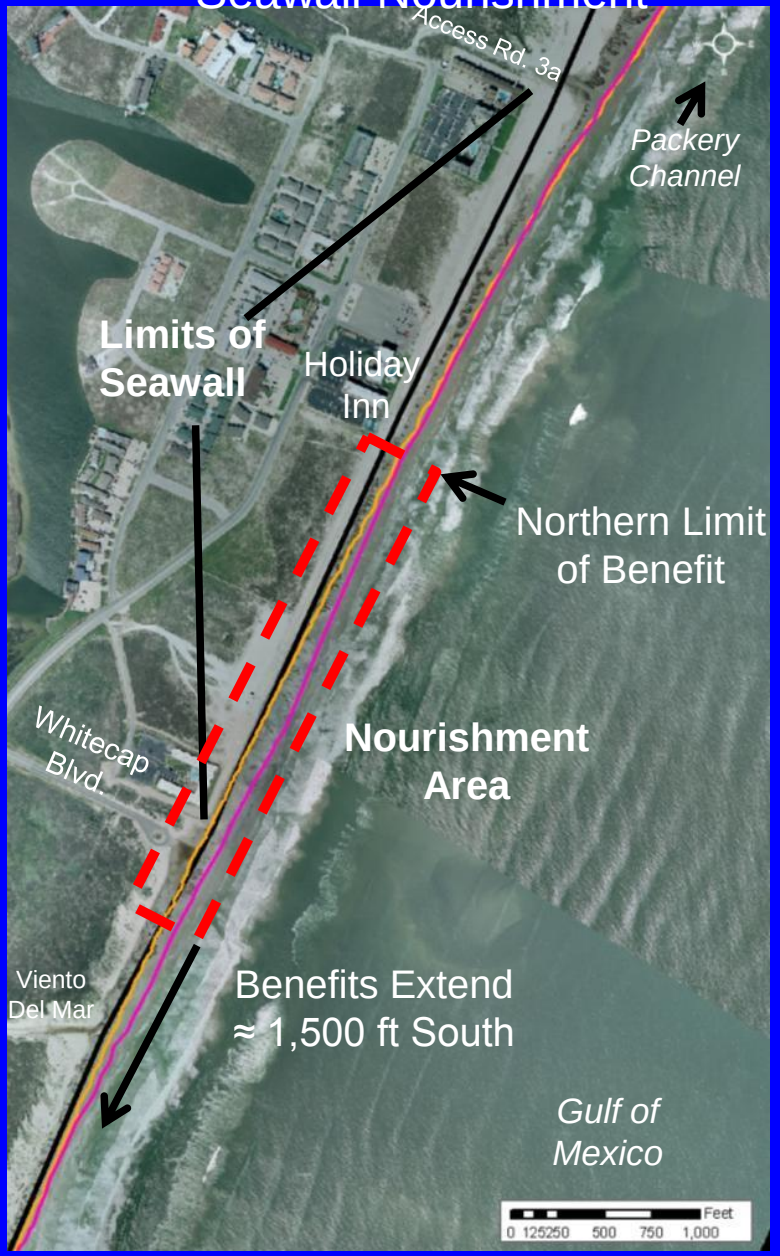




Shoreline Change

Zone of Influence

Seawall Nourishment



Packery Channel Monitoring Program
Focus 2012-2013

- Where are Shoals Developing? (Navigation Safety) (Dredge Planning)
- How Fast are Shoals Developing? (Navigation Safety) (Dredge Planning)
- Where is the Sand Coming From? (System Management)
- How Fast is Beach Eroding? (Nourishment Evaluation) (FEMA Reimbursement)
- Is Inland Channel Expanding? (Habitat Protection) (Dredge Planning)