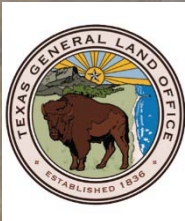


Closure of Rollover Pass, Galveston Co. Texas:

- ✓ *Reduce GIWW Dredging Requirements*
- ✓ *Reduce Gulf Coast Beach Erosion*
- ✓ *Restore Pre-Pass Salinity to East Bay*

**David L. Stites, Ph.D., Michael P. Whelan,
P.E., D.CE. Michael Trudnak, P.E. , E. Ray
Newby, P.G., and Chris Ellis**

***Engineering With Nature: Designing Navigation
Infrastructure for Greater Environmental Sustainability
USACE Workshop, Charleston, SC September 2011***



Rollover Pass, Galveston County



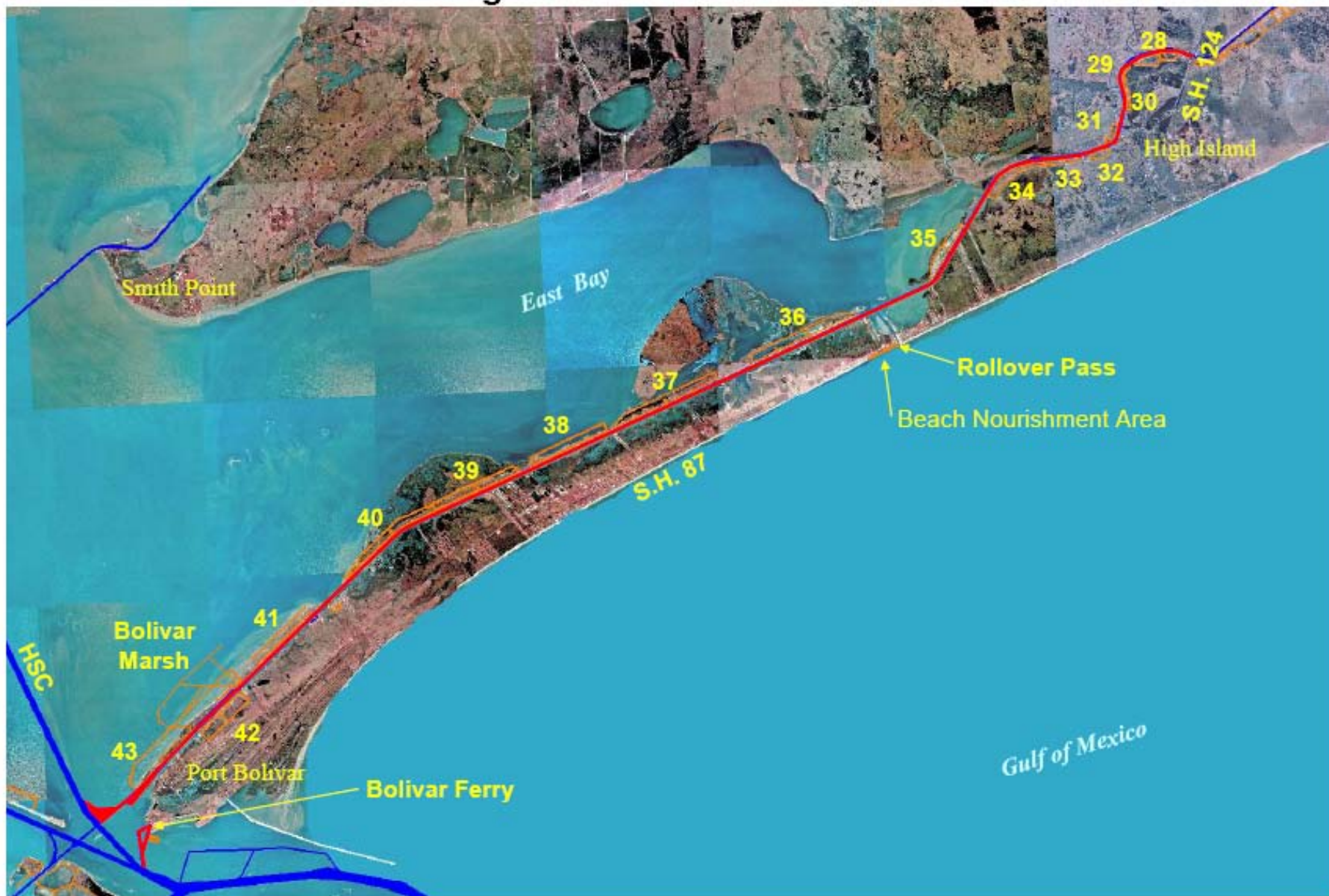
Image courtesy of the U.S. Geological Survey

km | 5 | 10 | 15
mi | 4 | 8



US Army Corps
of Engineers®
Galveston District

GIWW – Gulf Intracoastal Waterway High Island to Port Bolivar



Gulf Intracoastal Waterway

East Galveston Bay

Constructed – 1955, for Recreational Fishing

Gilchrist, Texas

*Rollover Pass
Ebb Tide*

**Ongoing Shoaling, Gulf Intracoastal Waterway
Ongoing Erosion, Gulf Beach
Salinity Changes, East Galveston Bay**

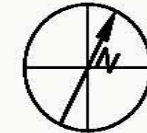


Gulf of Mexico

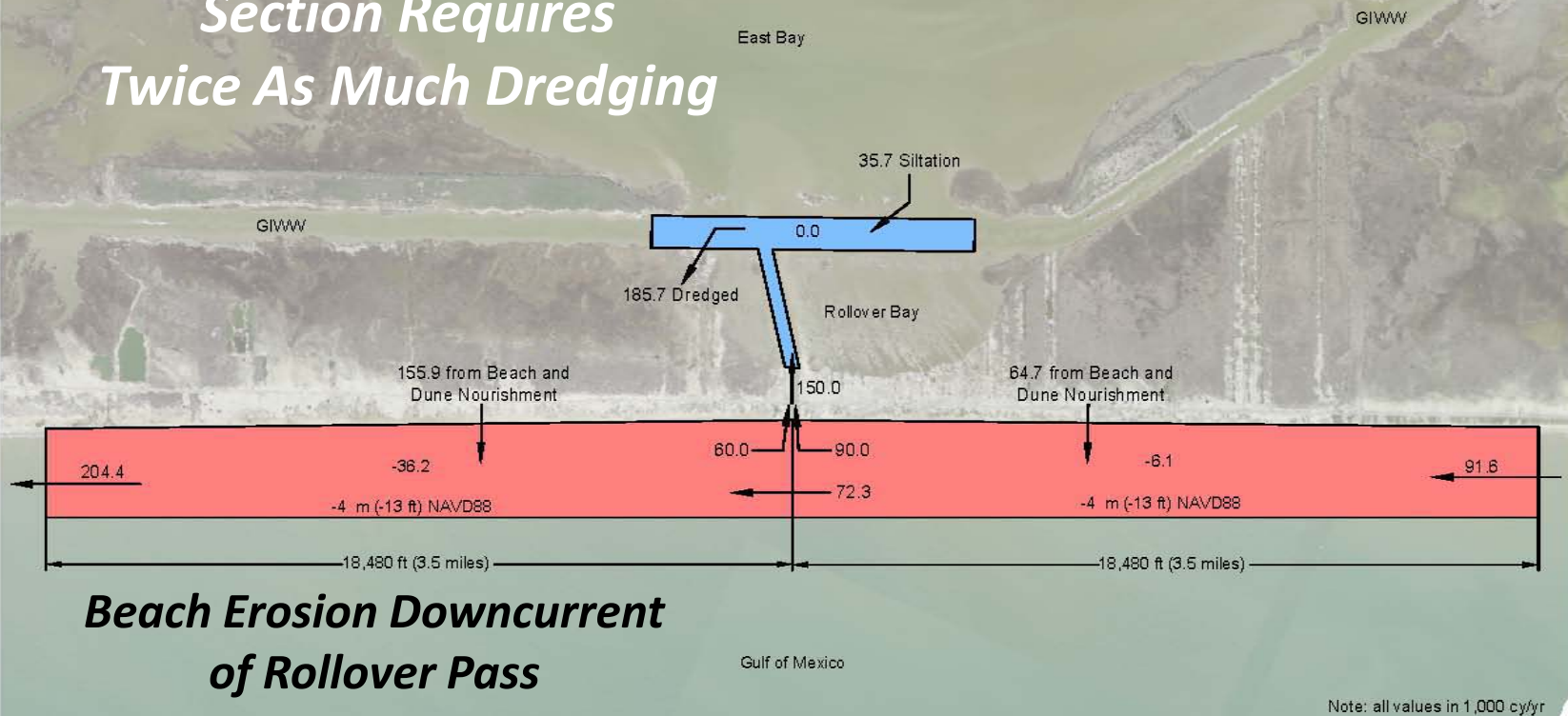


Sediment Budget, Rollover Pass

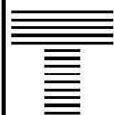
*GIWW Rollover Pass
Section Requires
Twice As Much Dredging*



0 4,000' 8,000'
SCALE: 1" = 4,000'



**Beach Erosion Downcurrent
of Rollover Pass**



TAYLOR ENGINEERING INC.

10151 Deerwood Park Blvd., Bldg. 300, Suite 300
Jacksonville, Florida 32256

CERTIFICATE OF AUTHORIZATION # 4815

Figure 6
Sediment Budget Alternative 2

PROJECT C2009-063

DRAWN BY JCH

DATE NOV 2009

Downdrift Erosion with Annual Beach Nourishment



2008

Pass conditions prior to Hurricane Ike

***Pass in poor condition; failing sheetpile walls,
Beach erosion ongoing; accelerating?
USACE interested in dredging cost sharing, pass
closure alternatives***







Hurricanes are a fact of life on Bolivar Peninsula



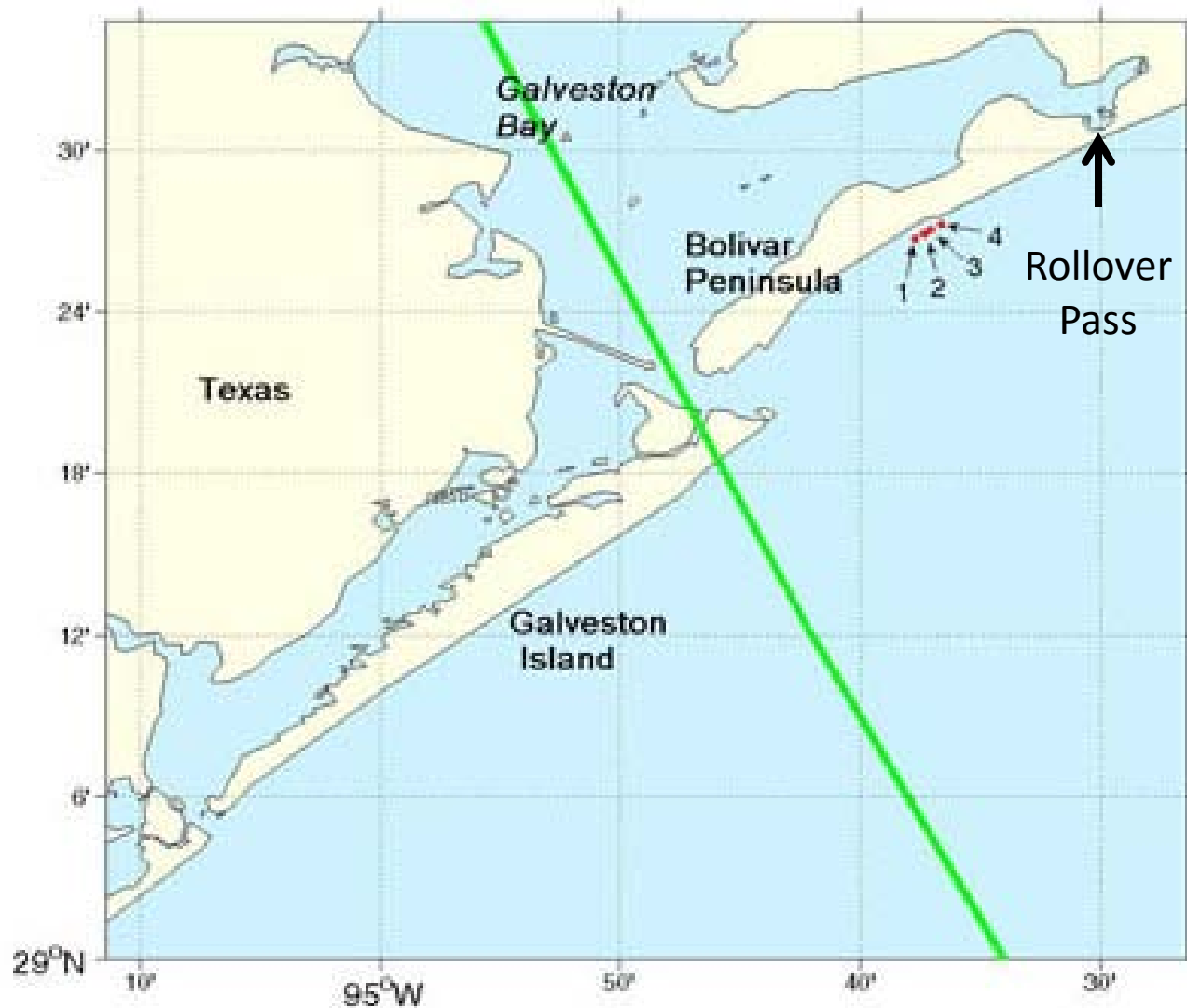
BEACH FRONT PROPERTY AFTER SEPTEMBER 14, 1961

Rollover Pass after Sept 14, 1961 Hurricane



Gilchrist, Texas – 400+
permanent residences





Locations index for photo pairs of Bolivar Peninsula, TX.
Green line represents the storm track of Hurricane Ike.




Hurricane Ike, September 9, 2008



Gilchrist, Texas, Pre-Ike Condition



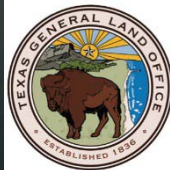


Gilchrist, Texas
September 14, 2008



Hurricane Ike presented the Texas Legislature the opportunity to close Rollover Pass

1. Legislative Property Buyout and Closure Funding – 2008
2. Pass Closure Feasibility Study, Permitting (US Army Dredge and Fill Permit), Design: 2009 – 2011
3. Construction 2012



Project Costs and Benefits

Project Costs:

Design, Permitting, Construction: \$6 million

Lost Recreational Benefits Mitigation: \$3 Million

Sustainability Benefits

- ✓ Reduces Rollover Bay-GIWW dredging costs by 50%
- ✓ Reduces dredging-related air pollution by 50%
- ✓ Uses GIWW dredged material for fill
- ✓ Uses old Pass materials for closure construction
- ✓ Eliminates pass-related beach erosion
- ✓ Creates additional turtle nesting beach (Kemp's ridley turtle)
- ✓ Returns the salinity of Rollover Bay / East Bay to pre-pass estuarine conditions (oysters, juvenile fish nursery)





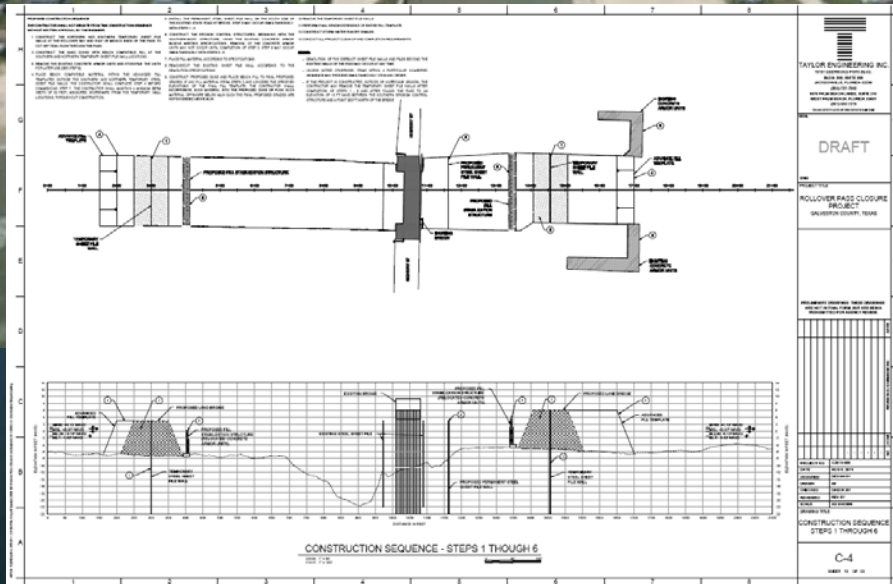
Sustained Benefits:

- Reduced Environmental Impacts
- Reduced Environmental Risks
- Reduced Physical Changes from Dredging

Community Costs:

- Regional Recreation Benefit and Related Income Eliminated
- Mitigation will provide pedestrian fishing access





THANK YOU!
Questions?

