Closure of Rollover Pass, Galveston Co. Texas:

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


Engineering With Nature: Designing Navigation Infrastructure for Greater Environmental Sustainability
USACE Workshop, Charleston, SC September 2011
Constructed – 1955, for Recreational Fishing

Ongoing Shoaling, Gulf Intracoastal Waterway

Ongoing Erosion, Gulf Beach

Salinity Changes, East Galveston Bay

Gulf of Mexico

East Galveston Bay

Gilchrist, Texas

Rollover Pass

Ebb Tide
Sediment Budget, Rollover Pass

GIWW Rollover Pass Section Requires Twice As Much Dredging

Beach Erosion Downcurrent of Rollover Pass

Note: all values in 1,000 cubic yards (cy)
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

Rollover Pass after Sept 14, 1961 Hurricane
Gilchrist, Texas – 400+ permanent residences
Hurricane Ike, September 9, 2008
Gilchrist, Texas, Pre-Ike Condition
Hurricane Ike presented the Texas Legislature the opportunity to close Rollover Pass

1. Legislative Property Buyout and Closure Funding – 2008
3. Construction 2012
Private Sand Mine

Other Public Sand Storage

USACE DMPA

Sand Dredged From the GIWW Will Fill Rollover Pass
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?