

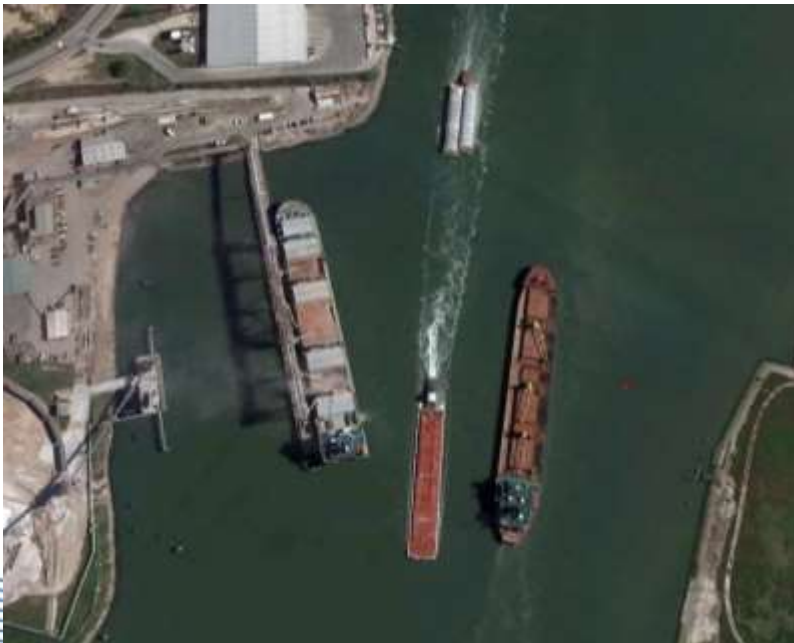
HSC Expansion Study

Federal Channel Navigation Study


- 3x3x3 w/recon
- Waiver--\$10M, 4 years
- “Mega-study”



Study Drivers



NFS Observations: “3x3x3”


- Start, momentum, scope/risk
 - Cost share and WIK
 - Corps resources and teaming
 - “Mega-study” implications
 - Competing for resources
 - Study challenges—industry rush to improve
 - Policy and congressional intent
 - Overall assessment
- 

Stakeholder Engagement And Delivery

6 Steps for Stakeholder Engagement

1. Solicit input early
2. Explain the process
3. Provide the content but not the conclusion
4. Include economic impact
5. Assess risks and be transparent about available resources
6. Doing greater good

Issues Regarding Delivery

- 1. Solicit input early:** *408 permits*
 - 2. Explanations needed:** *Real Estate processes*
 - 3. Provide content, not conclusion:** *Placement area special use process development*
 - 4. Economic impact consideration:** *401c process*
 - 5. Assess risks and be transparent about available resources:** *Navigation Servitude use*
 - 6. Consideration of the “greater good”:** *assessment of fees at “market rates”*
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Houston Ship Channel



Houston's Channels



PORT OF HOUSTON AUTHORITY

Houston—the Busiest U.S. Channel

Houston:
22,000 ship moves
200,000 barge moves



Deep Draft Ship Calls

Marine Terminal Improvements



Industry expansion impacts the dredged material disposal process

Confined Placement Areas for Dredge Material

- Intended for channel maintenance dredging
- PHA proposes terminals use clay from construction to raise dikes, reserving capacity
- Expensive to construct and maintain

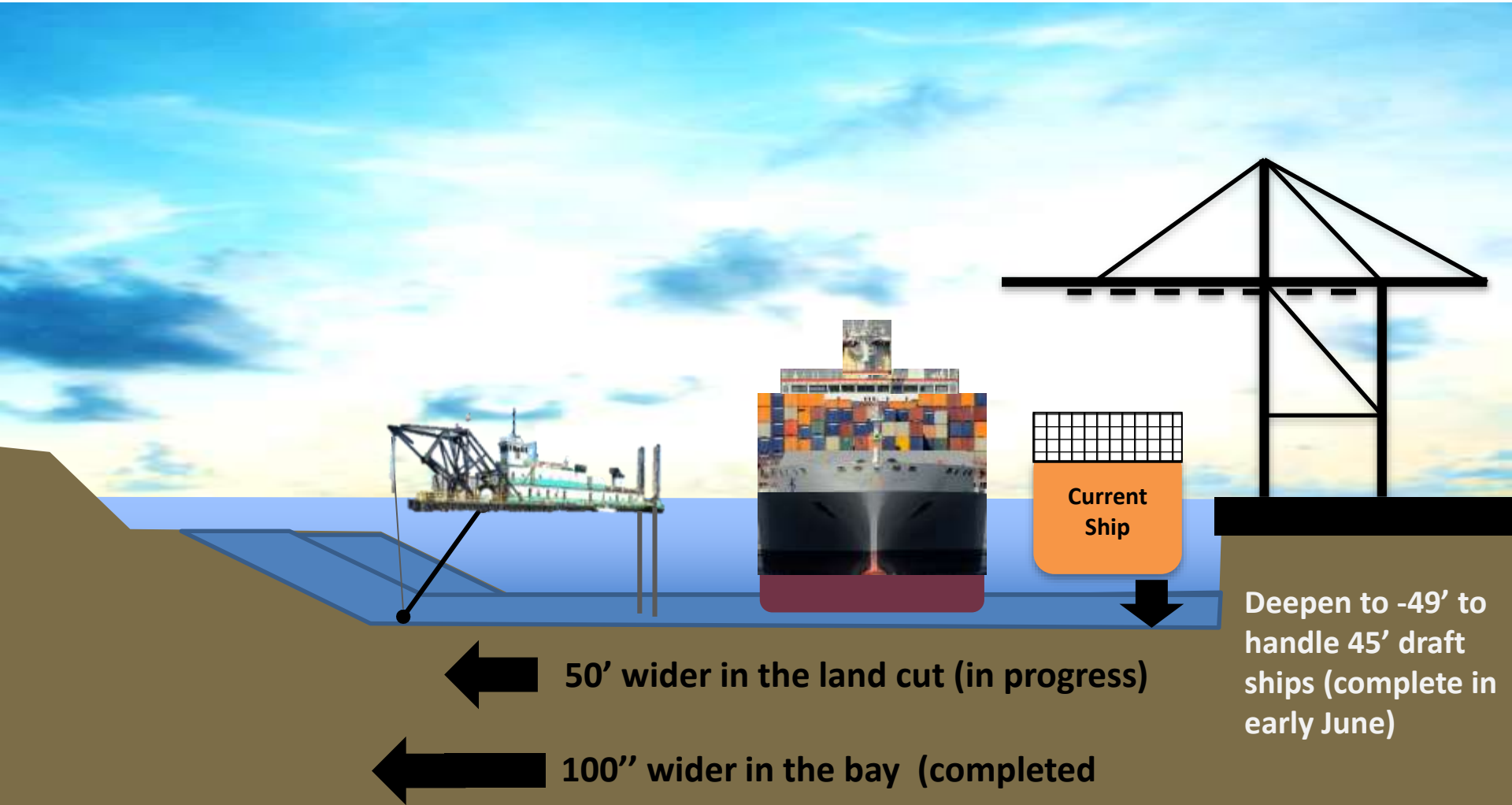


Channel Improvements--Bigger Ships

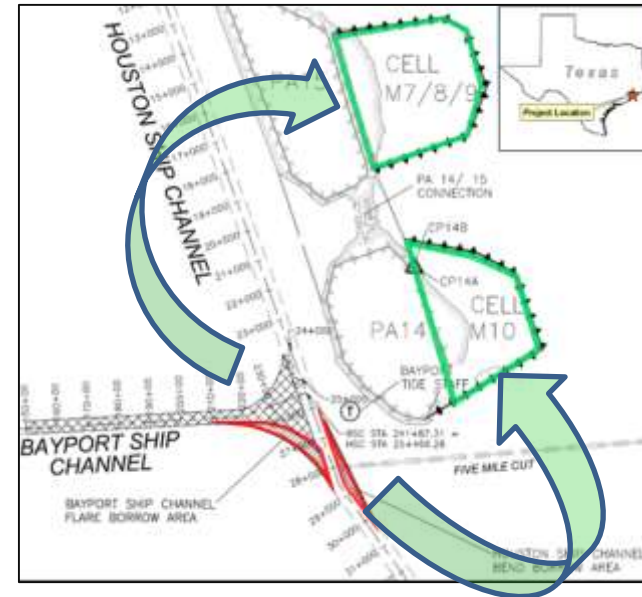


- Port Authority solution, 100% Non-federal cost
- Barbours Cut--
COMPLETE
- Bayport-finish in early November, 2016
- Houston is **READY** for neo-Panamax ships

Bayport Improvements



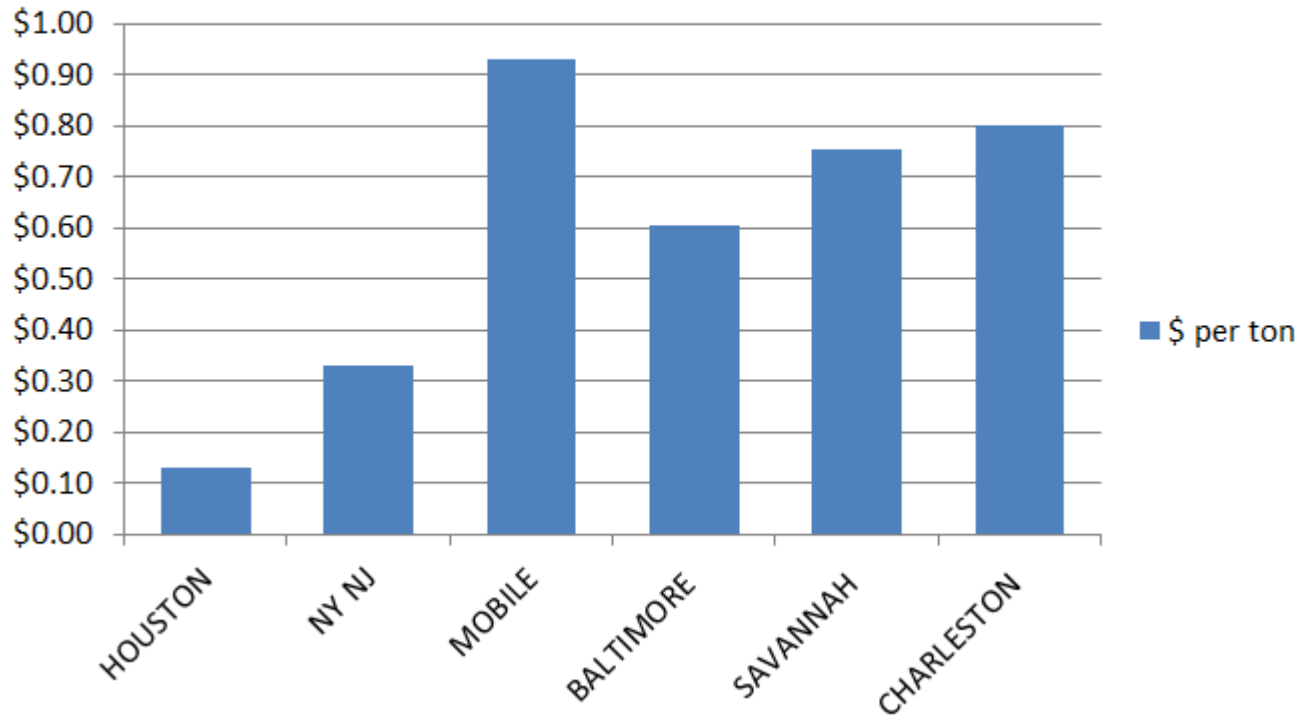
More Marsh Yields Better Navigation



Construction of bay marshes uses clay from the Bayport “flare” — which improves navigation in the channel system

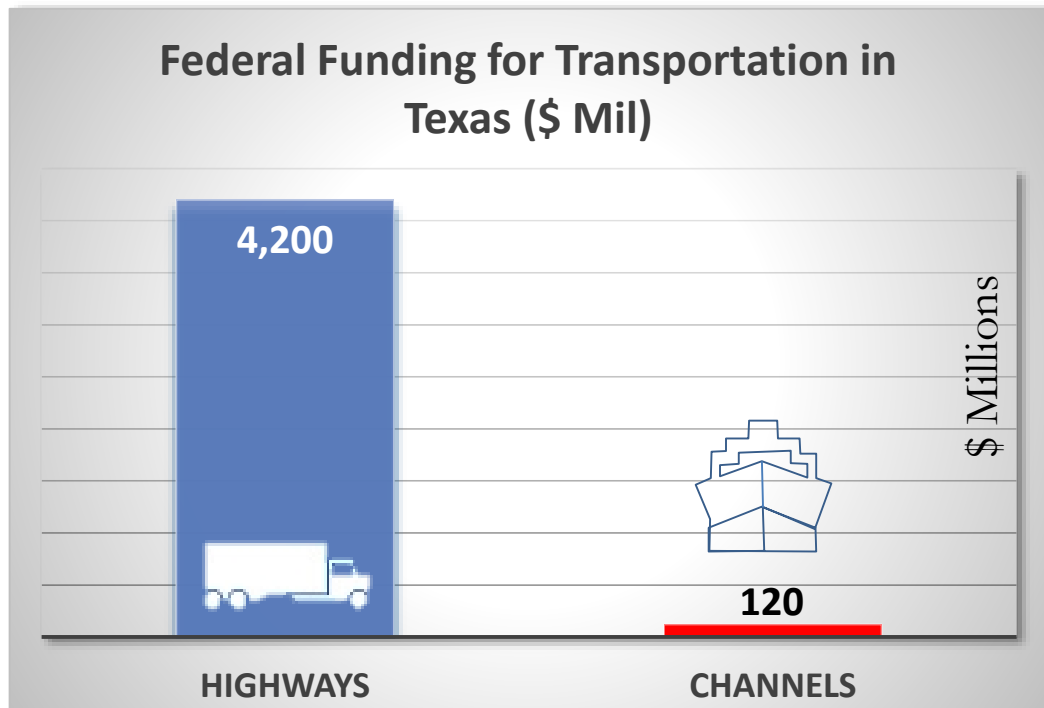
Houston Ship Channels: Bang for the O&M Buck

Dredging cost per ton of cargo moved



FY 14 Appropriation, CY 2013 total tonnage

Annual Federal Funding for “Highways”



\$4.2 billion annually to keep cars and trucks moving

\$120 million for the “maritime highways” to 28 Texas ports and the GIWW