Miami Harbor Improvements

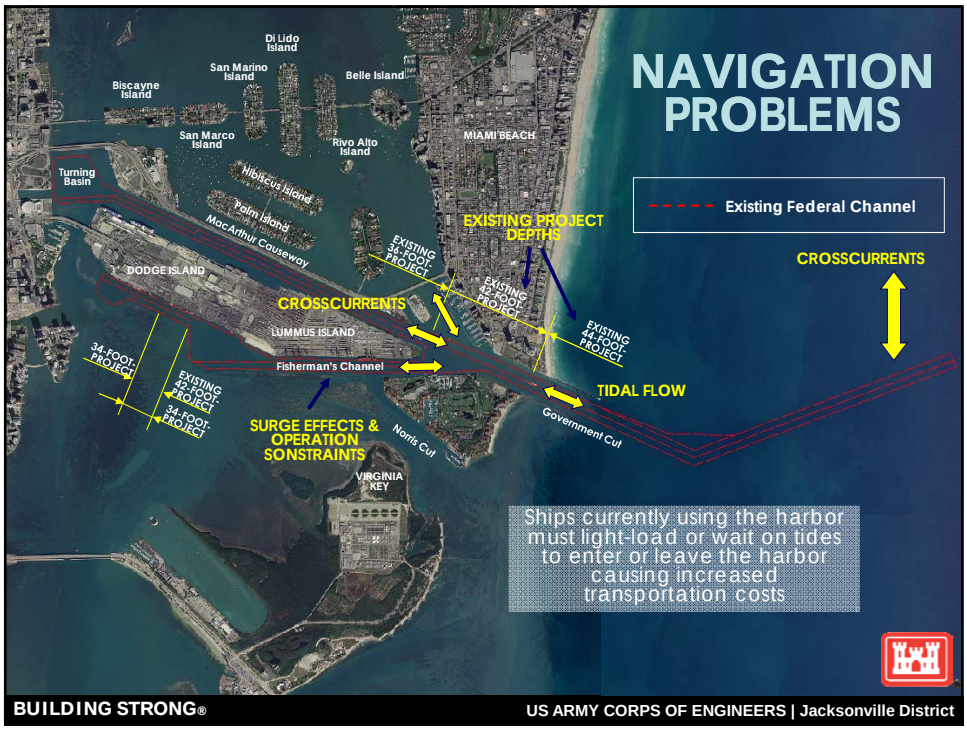
WEDA CONFERENCE 2011

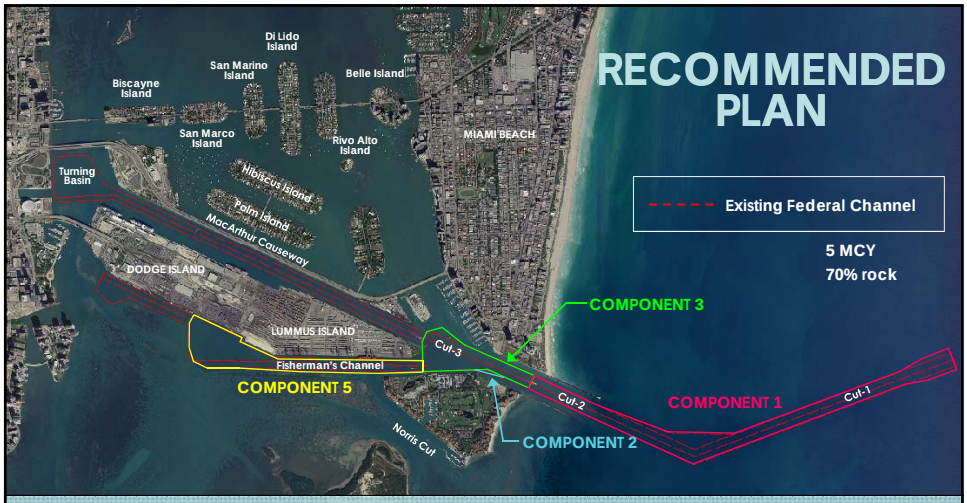
Presented by
U.S. Army Corps of Engineers
Jacksonville District
October 13, 2011

Project History

- 1999 Study Authorization
- 2004 General Reevaluation Report Completed
- 2005 Chief's Report (Report Approved)
- 2006 Record Of Decision Signed
- 2007 WRDA Authorization
- 2009 Design Agreement Executed

EXISTING PROJECT
Existing Federal Channel
Di Lido Island
San Marino Island
Biscayne Island
Belle Island
San Marco Island
Rivo Alto Island
MIAMI BEACH
Turning Basin
Hibiscus Island
Palm Island
MacArthur Causeway
DODGE ISLAND
EXISTING 34-FOOT-PROJECT
EXISTING 42-FOOT-PROJECT
LUMMUS ISLAND
Cut-3
Fisherman's Channel
34-FOOT-PROJECT
EXISTING 42-FOOT-PROJECT
34-FOOT-PROJECT
Cut-2
Government Cut
Cut-1
Norris Cut
VIRGINIA KEY
BUILDING STRONG®
US ARMY CORPS OF ENGINEERS | Jacksonville District


NAVIGATION PROBLEMS
Existing Federal Channel
Di Lido Island
San Marino Island
Biscayne Island
Belle Island
San Marco Island
Rivo Alto Island
MIAMI BEACH
Turning Basin
Hibiscus Island
Palm Island
MacArthur Causeway
DODGE ISLAND
EXISTING PROJECT DEPTHS
CROSSCURRENTS
EXISTING 34-FOOT-PROJECT
EXISTING 42-FOOT-PROJECT
EXISTING 44-FOOT-PROJECT
CROSSCURRENTS
LUMMUS ISLAND
Fisherman's Channel
34-FOOT-PROJECT
EXISTING 42-FOOT-PROJECT
34-FOOT-PROJECT
TIDAL FLOW
SURGE EFFECTS & OPERATION SONSTRAINTS
Government Cut
Norris Cut
VIRGINIA KEY
Ships currently using the harbor must light-load or wait on tides to enter or leave the harbor causing increased transportation costs
BUILDING STRONG®
US ARMY CORPS OF ENGINEERS | Jacksonville District



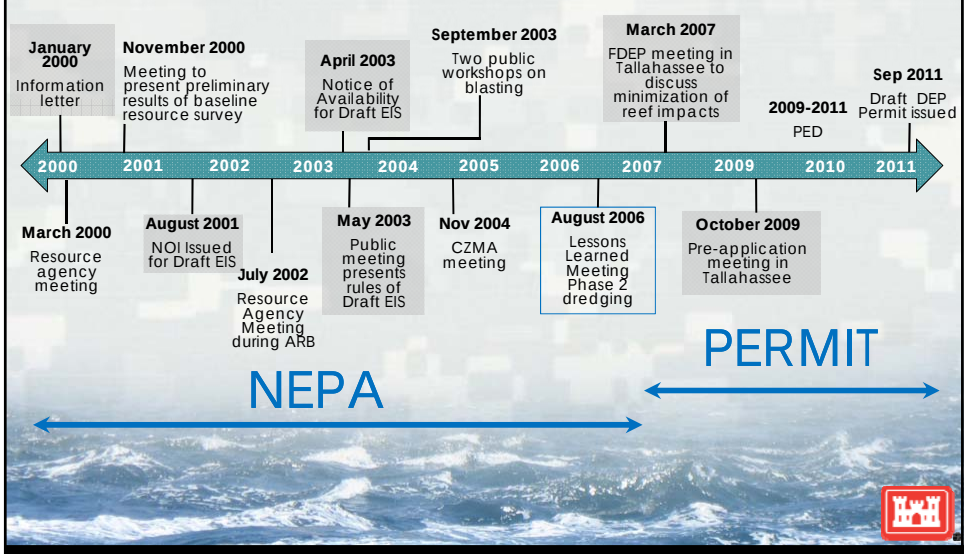
Component 1:	Component 2:	Component 3:	Component 5:
Widen seaward portion of Cut-1 from 500 to 800 feet; deepen Cut-1 and Cut-2 from 44 to 52 feet	Add turn widener at the southern intersection of Cut-3 with Fisherman's Channel and deepen to 50 feet	Increase Fisher Island turning basin from 1200 to 1500 feet; truncate NE section of the turning basin to minimize seagrass impacts; deepen from 42 to 50 feet	Expand berthing area by 60 feet and widen southern edge of Fisherman's Channel 40 ft; reduce Lummus Island turning basin to a 1500 ft dia.; deepen from 42 to 50 ft

BUILDING STRONG®

US ARMY CORPS OF ENGINEERS | Jacksonville District

6

Project Timeline

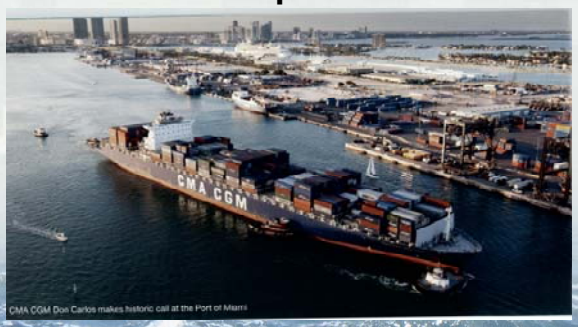


BUILDING STRONG®

US ARMY CORPS OF ENGINEERS | Jacksonville District

Economic Justification

- Annual Benefit = $14,740,000*
- Average Annual Net Benefit = $4,090,000*
- Supports 176,000 jobs directly/indirectly
- Accommodation of Post-panamax vessels



CMA CGM Don Carlos makes historic call at the Port of Miami

- * Based on October 2004 price levels

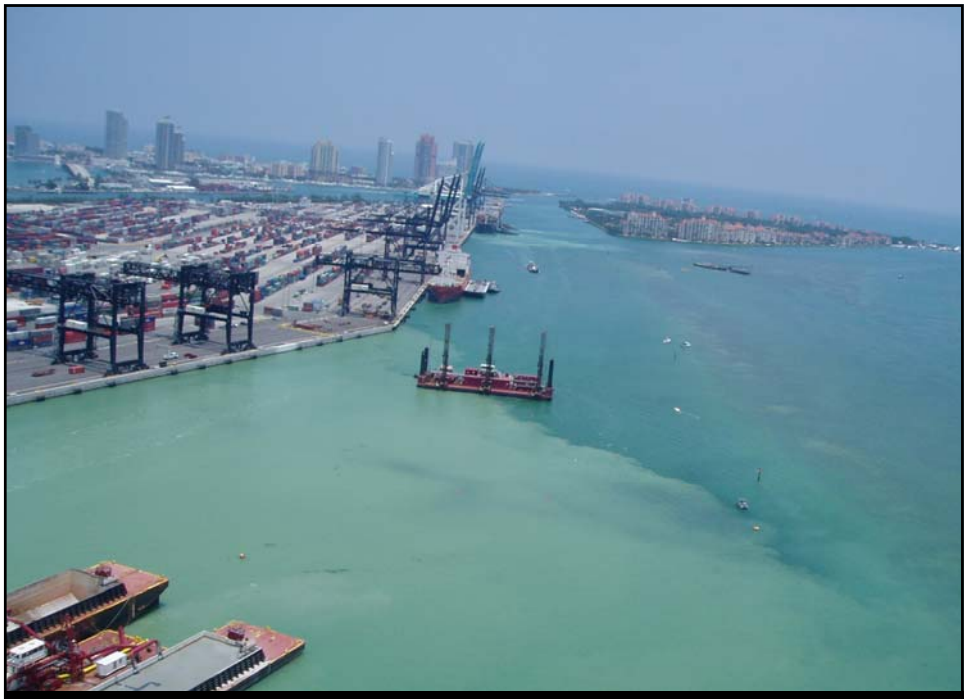
Project Challenges and Opportunities

Public perceptions and opinions

Environmental Impacts, Mitigation, and Monitoring

Dredging Techniques (blasting and mitigation site construction)

Funding and Schedule



Public Perception Challenges

"…snook, tarpon and sea turtles belly-up from underwater blasting; streams of silt and sediment smothering reefs and seagrass beds; tourists and fisherman grousing over murky water and declining catches."

"I don't really have a lot of trust in this project necessarily going as smoothly as they'd like it to go,"

"The real consequences of the Port of Miami's deep dredge project are that we blast the bottom out of the bay and saturate its clear waters with sediment. "

"Environmentalists fear a dredging mess déjà vu – but wider and more damaging than previous projects." ***"It's going to be another boondoggle,"***

"…Biscayne Bay's future health after what may prove to be the final nail in the Bay's coffin."

"we're going to be changing Biscayne Bay forever."

"…environmentalists say (the project) will cause more damage to rare coral and seagrass than the project is worth."

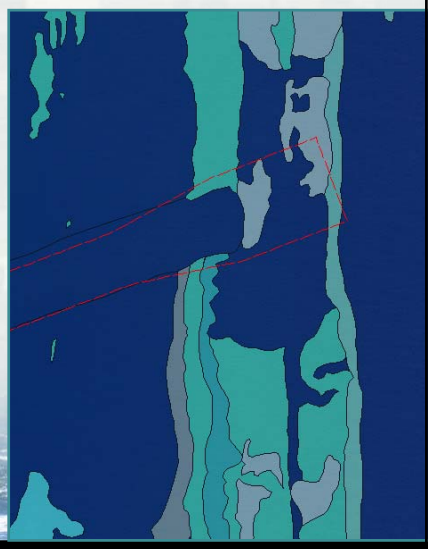
"The biggest issue here is water quality. If you have a cloud of sediment, that's going to have major impacts on grass beds, reefs and fish stocks."

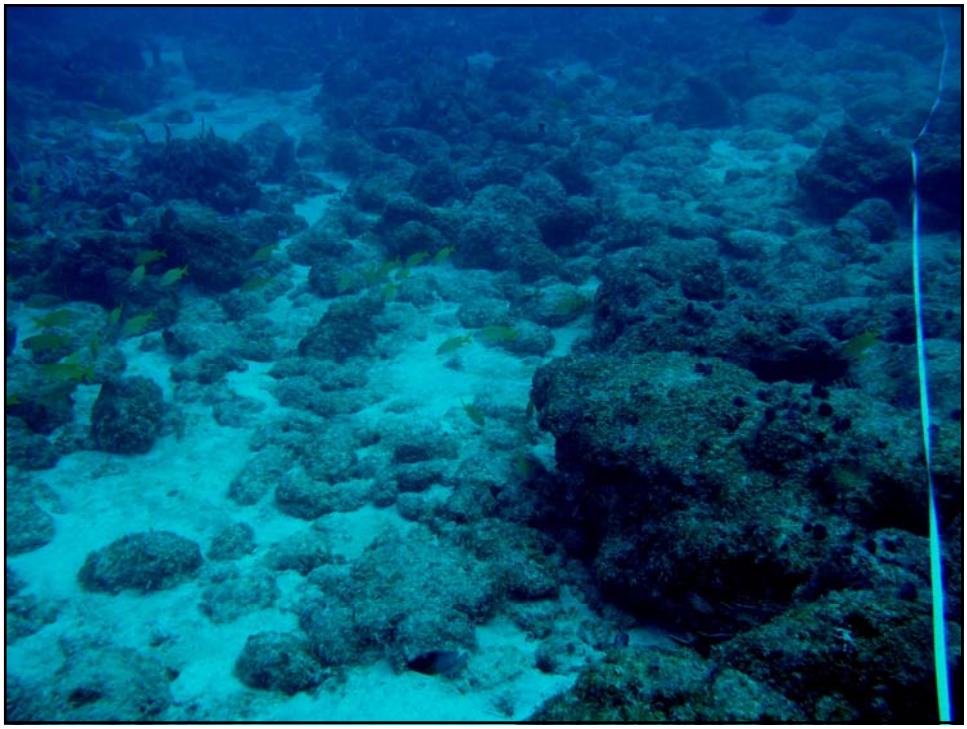
Environmental

- Mitigation Site Creation
- Monitoring for Impacts During Construction
- Turbidity violations, exceedences and corresponding impacts
- Public perception of turbidity, blasting, and secondary impacts,

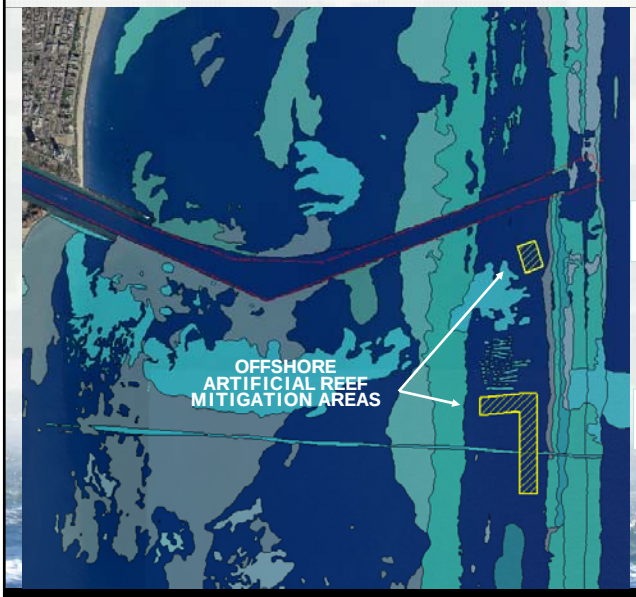
Mitigation Site Creation

- Hardbottom Habitat Creation
  - (8 to 25 acres)
  - Varying reliefs required to mimic the impact area
  - Coral transplantation out of impact zone prior to dredging
  - Inter-pile spacing requirements





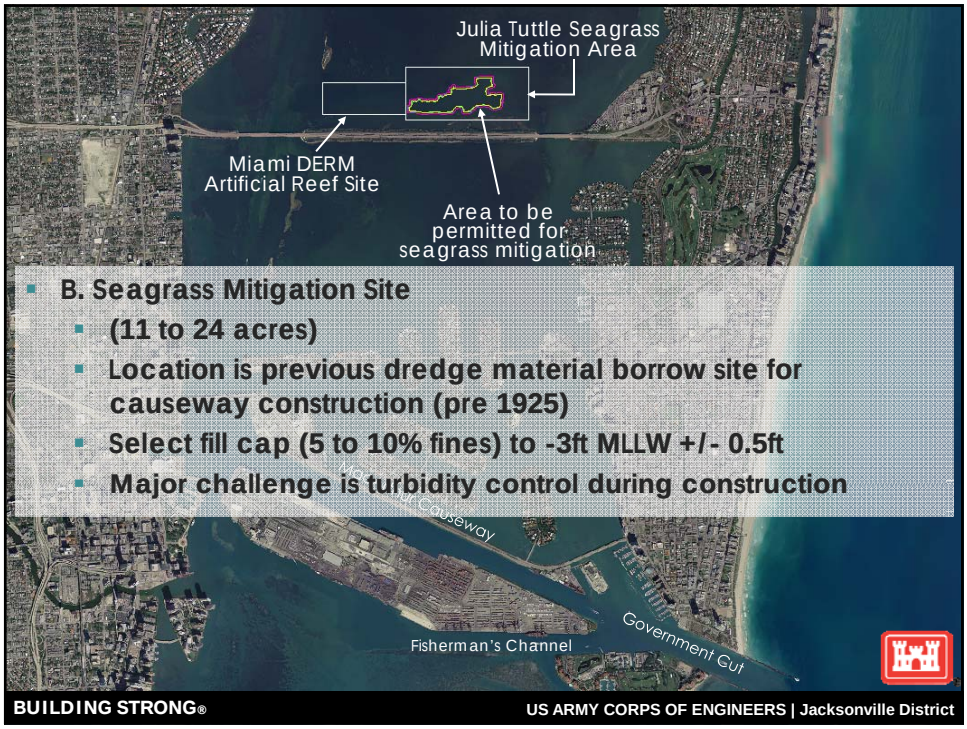
Mitigation Site Creation



Approximately 6.1 acres available including 20% inter-pile space and buffer

Approximately 34 acres available including 20% inter-pile space and buffer

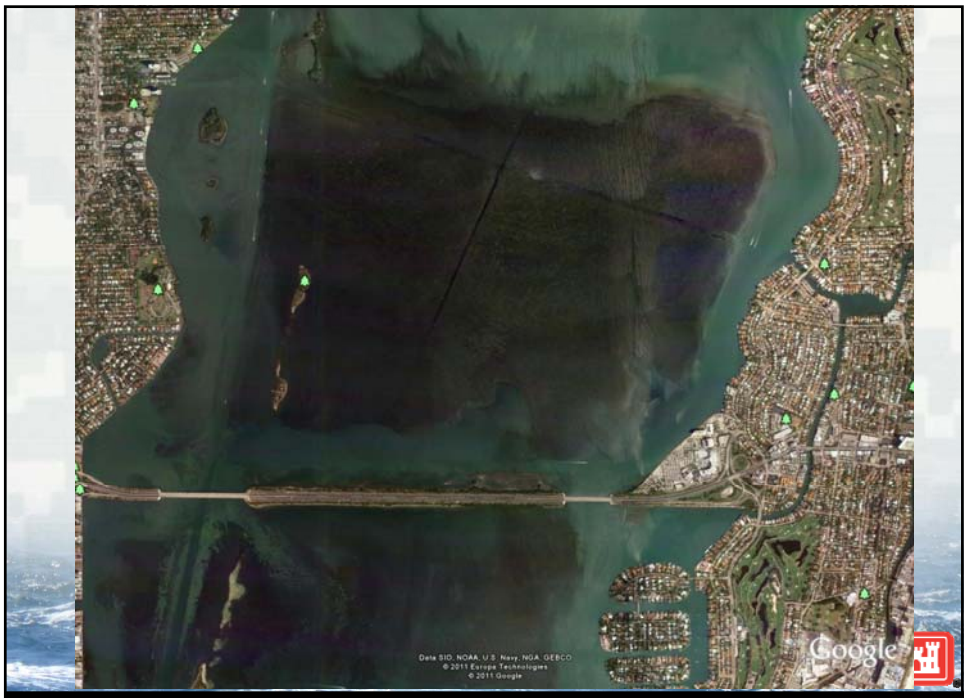
Mitigation Site Creation



- B. Seagrass Mitigation Site
  - (11 to 24 acres)
  - Location is previous dredge material borrow site for causeway construction (pre 1925)
  - Select fill cap (5 to 10% fines) to -3ft MLLW +/- 0.5ft
  - Major challenge is turbidity control during construction

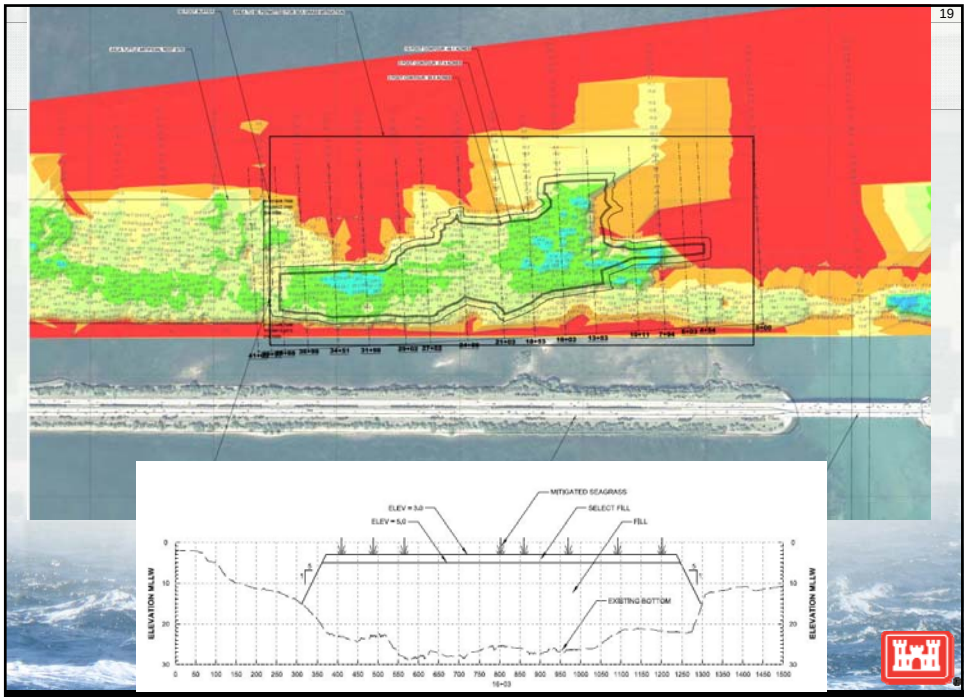
BUILDING STRONG®

US ARMY CORPS OF ENGINEERS | Jacksonville District



BUILDING STRONG®

US ARMY CORPS OF ENGINEERS | Jacksonville District



Construction Techniques

Blasting Specs

- Utilize standard manatee protection protocols
- Full-time environmental manager
- Utilize safety zones to protect animals from effects of blasting
- Observers on vessels and in the air
- Blast 2 or 3 times a day, only during daylight
- Stagger pattern– lessen pressure waves
- Utilize confined blasting – up to 90% less impact as compared to unconfined blast

Funding and Schedule

November 2011	Environmental Permits
December 2011	Funding Agreement
January 2012	Advertise contract RFP
30-45 days	Bid Opening, Proposals
March 2012	Evaluate Proposals
April 2012	Award Contract
May 2012	Issue NTP
Summer 2012	Construction Start
Summer 2014	Construction Completion
2014-2019	Post-Construction monitoring

23
BUILDING STRONG®
US ARMY CORPS OF ENGINEERS | Jacksonville District