Dredging

By Rick Wilmot C/E
Port Engineer
Clamshell Division Weeks Marine
Topics of Discussion

- History of dredging
- Modern dredging
- Why we dredge
- Training
History
Designs By Leonardo Da Vinci
developed or improved

Oliver Evans’ Orukter Amphibolos
“Improved, Patented, Grapple Dredging Machine”
(from an American Dredging Company brochure of 1878).
Erie Canal
Modern Dredging

- Excavation
- Transportation
- Disposal or end-use of spoils
- Support equipment
- Training
Excavation
Mechanical Excavation
Mechanical Dredges

- Clamshell dredge
- Backhoe dredge
- Bucket ladder dredge
- Dipper dredge
- Dragline
Clamshell Bucket Dredge
Backhoe Dredge
Bucketladder Dredge
Hydraulic Excavation
Hydraulic Dredges

- Cutter suction
- Dustpan
- Plain suction
- Water injection dredge
- Hopper dredge
Cutter Suction Dredge
Water Injection Dredge
SD dredge “Beachbuilder.”

Dustpan Dredge
Trailing Arm Hopper Dredges
Transportation
Barge or Pipeline
Disposal of Spoils
Support Equipment

- Drill rig
- Survey boats
- Stifflegs
- Drag barges
- Boosters
Why Do We Dredge?

- Channel deepening and maintenance
- Reclamation of land
- Beach nourishment and restoration
- Mining for aggregates and minerals
Maintenance

Reclamation and Use
Beachbuilding and Mining

Beachbuilding

Aggregate Mining
Training

- Hopper personnel are Coast Guard licensed
- DSMP training
- On The Job
- Union Schools