

# GREAT LAKES DREDGE & DOCK COMPANY, LLC

## BENEFICIAL REUSE OF DREDGE MATERIAL

MARCH 2021

Dredging Worldwide Since 1890.



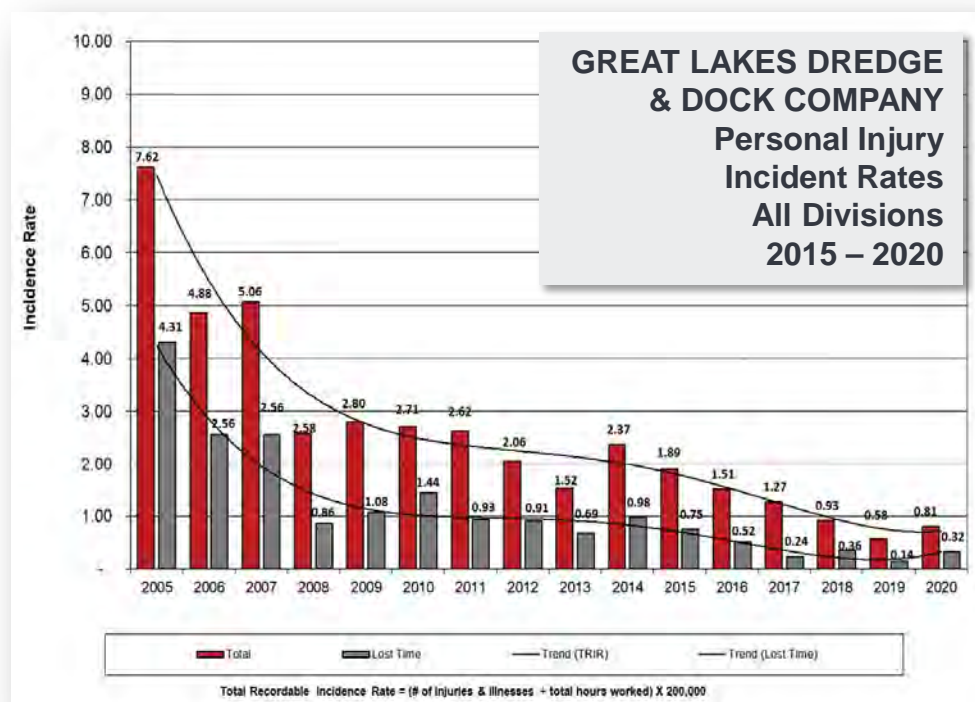
# GLDD SAFETY An Uncompromising Commitment

GLDD's commitment to staying safe and focused on the job is a point of pride and strength that runs across our entire industry.

## SAFETY WEEK 2021 May 3-7

- ✓ Honor GLDD's safety commitment
- ✓ Bring awareness to the importance of **holistic safety** in the workplace
- ✓ Focus on creating a **physically and mentally safe** environment
- ✓ Make all aspects of everyone's well-being part of our safety culture and programs

**JOIN US** as we celebrate our promise to each other to be present, focused and safe every day.



# GLDD SAFETY Celebrate

## GLDD's safety milestones in 2020.

### DREDGE OHIO

An incredible 10 years without a lost time incident.



### CAPE GIRARDEAU

Yard Crew achieved an amazing accomplishment of 4 years Incident- and Injury-Free.



# GLDD Beneficial Reuse of Dredge Material

## IT ALL STARTS WITH DREDGING®

- ✓ BENEFICIAL REUSE
- ✓ RESILIENT INFRASTRUCTURE

- Many of us have been involved with such discussions even if we didn't use these terms.
- My first dredging project over 38 years ago involved rebuilding an island using dredged material.



# GLDD Beneficial Reuse of Dredge Material

## IT ALL STARTS WITH DREDGING®

### ADVANTAGES

- Beach Restoration / Nourishment
- Storm Surge and Hurricane Buffer
- Flood Damage Reduction
- Erosion / Sediment Loss Reduction
- Water Quality Improvements
- Fish and Wildlife Habitat
- Coastal Community Resiliency
- Increased Land Values
- Water Quality and Security

Natural or “nature-based” infrastructure projects,

“...rely on services produced by ecosystems, often utilizing natural landscapes to minimize flood damages, purify and store water, and reduce urban storm water runoff.”

***-Resources for the Future***



# GLDD Beneficial Reuse of Dredge Material

## IT ALL STARTS WITH DREDGING®



### MANGROVE FORESTS

- Storm surge and wave buffer
- Shoreline erosion prevention
- Wildlife sanctuaries enhancement



### BEACH RESTORATION / NOURISHMENT

- Habitat Creation
- Storm and hurricane buffer
- Recreational use enhancement



### NATURAL WETLANDS

- Water supply and flood prevention
- Upstream water filtration
- Sediment reduction
- Wildlife habitat enhancement



# GLDD Beneficial Reuse of Dredge Material

## BARRIER ISLANDS & WETLANDS

GLDD → Active supporter of natural infrastructure and beneficial use of dredged material on all projects to create environmental features including,

- ✓ Shallow water habitat
- ✓ Marsh creation and wetlands
- ✓ Beach nourishment (commonly known as turtle and plover habitat creation)

Most GLDD Projects → US ARMY CORPS OF ENGINEERS

- ✓ Focus on collaboration with Corp and Stakeholders
- ✓ Consistent awareness of GLDD capabilities
- ✓ Keep thought processes fresh on on-going and new projects



# GLDD Beneficial Reuse of Dredge Material

## BEACH NOURISHMENT

GLDD has restored more eroded recreational and commercial waterfronts than any other dredging company, making it the leader in this important field.



# GLDD Beneficial Reuse of Dredge Material

## RESERVOIRS / LAKES / RIVERS



### SAN JACINTO RIVER FLOOD CONTROL PROJECT

- USACE, Galveston District
- 1,920,700 CY
- Portable Electric CSD
- Pump Distance 34,000 lf to 50,000 lf

*Dredged material to be reused for resale in the Houston sand market.*



### JOHN REDMOND RESERVOIR

- Kansas Water Office
- 3,000,000 CY
- Portable Electric CSD
- Pump Distance 30,000 lf to 35,000 lf

*Dredged material reused for farmland augmentation, grass land development, and habitat use.*

# GLDD Beneficial Reuse of Dredge Material

## THE NATURAL INFRASTRUCTURE INITIATIVE

The Natural Infrastructure Initiative (NII) is a group of companies and organizations working to promote the use of natural infrastructure projects that advance economic vitality, environmental health and security in our communities.



- ✓ GLDD has partnered with Caterpillar's NII.
- ✓ With Caterpillar's leadership, and collaboration with other team members (see below), discussions around the inclusion of natural infrastructure have gone to new places.

**CATERPILLAR**

The Nature Conservancy 

**AECOM**



**Brown & Root**



**DAWSON & ASSOCIATES**



# GLDD Beneficial Reuse of Dredge Material OPPORTUNITY IN THE U.S.

## USACE NAVIGATION PROGRAM

- 12,000 miles of shallow-draft waterways (9-14')
- 13,000 miles of deep draft waterways (14'+)
- 400 ports, harbors, and turning stations

## NON-USACE DREDGING PROGRAMS

- Annual dredging ~200M yds. of sediment
- ~50M yd<sup>3</sup> beneficially reused
- ~150M yd<sup>3</sup> of opportunity



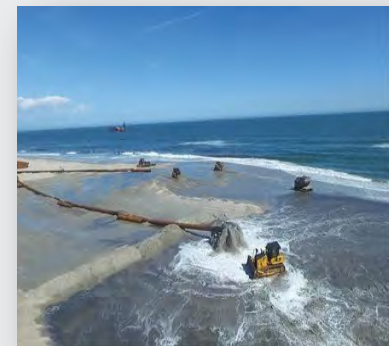
THE PENTAGON  
6.6M sq. feet  
Buried 625' deep  
annually

STANDARD  
FOOTBALL FIELD  
120 x 53 yds.  
Buried 60,000'  
deep annually

HAULED BY CAT 797B  
314 yd. capacity  
Loaded every 2.5 minutes  
19,904 hrs. (2.27 years running 24x7)



If Used for  
**New Land Creation**  
Deposited 6' deep  
15,495 acres  
(24 sq. miles) / year  
42 acres / day



*Inland utilization opportunity  
is also significant.*

# GLDD Beneficial Reuse of Dredge Material

## STRATEGIC IMPERATIVES



### **GROW INVESTMENTS**

& embed NII influence into active projects.



### **DEVELOP & PROMOTE**

new tools, processes & capabilities.



**ADVOCATE for POLICY & LEGISLATION** to accelerate the number & velocity of water-based NI projects.



### **CREATE AWARENESS**

by supporting the uses & benefits of NI

### **OBJECTIVES**

- ✓ Increasing the flow of public and private capital funds to NI projects
- ✓ Improving Alternative Delivery Models including Public/Private Partnerships
- ✓ Identifying and implementing long-term funding models
- ✓ Identifying and advocating for improvements to policy, regulatory and legislative mechanisms
- ✓ Encouraging increased beneficial reuse of dredged material
- ✓ Encouraging large public projects to be reviewed for P3 opportunities
- ✓ Developing/implementing pilot projects to demonstrate NII success/potential



# GLDD Beneficial Reuse of Dredge Material

## GLOBAL INFRASTRUCTURE NEEDS & NATURAL INFRASTRUCTURE'S POTENTIAL ROLE

- ✓ Ecological processes and the “built environment” are increasingly at-risk.
- ✓ Infrastructure improvements are not keeping pace with needs.

### OPPORTUNITY / MEGA TRENDS

- **\$69T** 19 year capital need
- **\$3.7T** annual need
- **How much could / should be NI?**

### ANNUAL GLOBAL INFRASTRUCTURE SPEND

- **\$2.5T vs. \$3.7T** potential need
- **Can NI help close a \$1.2T annual gap?**

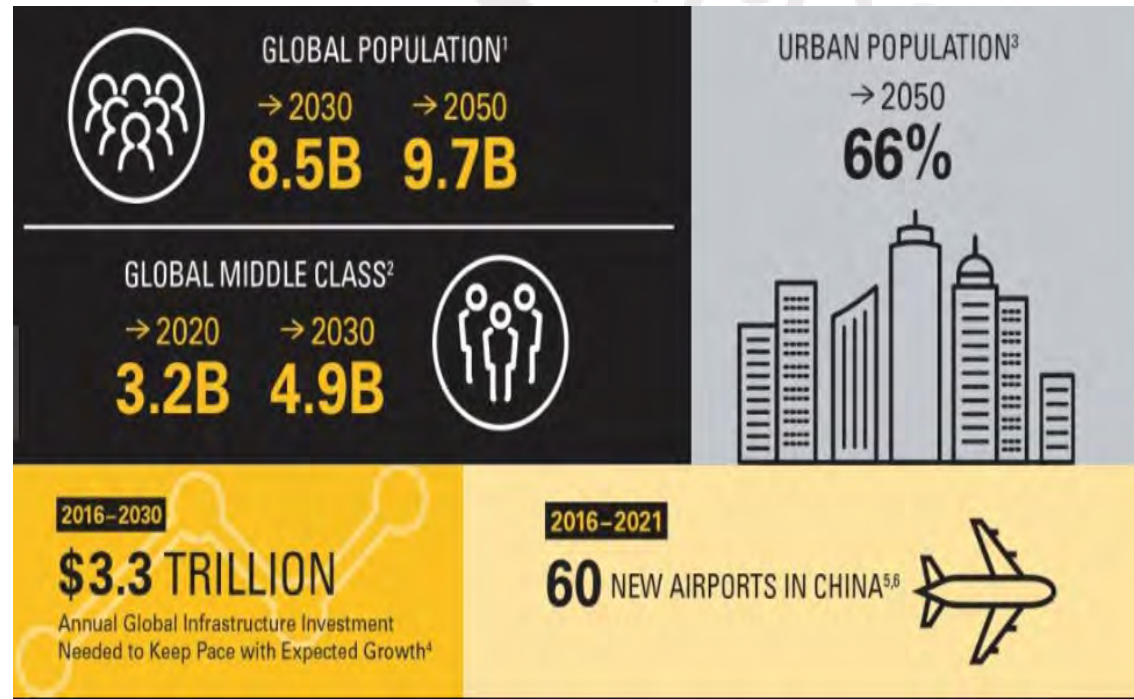


# GLDD Beneficial Reuse of Dredge Material

## GLOBAL INFRASTRUCTURE NEEDS & NATURAL INFRASTRUCTURE'S POTENTIAL ROLE

### KEY INDUSTRIES CAPITAL NEEDS

- ✓ POWER - **\$20.2T**
- ✓ ROADS - **\$18.0T**
- ✓ WATER & PORTS - **\$10.7T**
- ✓ TELECOM - **\$10.4T**
- ✓ RAIL - **\$7.9T**
- ✓ AIRPORTS – **\$2.1T**



# GLDD Beneficial Reuse of Dredge Material

## PARTNERS

### GLDD...

- ✓ Is working with the Corps and stakeholders like AAPA, WCI, NWC, ASBPA & NII to identify and promote projects that deserve consideration.
- ✓ Notes that we don't necessarily think beneficial use of dredged material has to cost more money and we want to challenge old thought that it does.
- ✓ Has examples *around the country* where beneficial use, in tandem with collaborative efforts, has *saved money*. Not always done in a few months, but if given time, we can accomplish good things.
- ✓ Has been involved with Louisiana for many years on Coastal Restoration. The Coastal Protection and Restoration Authority Master Plan has served as a blueprint to other "master plans" that have been developed in the Northeast, Southeast, Gulf, and the Great Lakes.

**GLDD can, *and has*, developed new equipment and techniques to accomplish difficult projects. For those of us who are engineers and dredgers, it is often a simple question of steel and horsepower. The earlier we can get involved in a potential project, the more ideas we can offer.**



GREAT LAKES DREDGE & DOCK COMPANY, LLC  
INFO@GLDD.COM | GLDD.COM

