

Dredged Material Management Areas Improving the Confined Disposal Alternative

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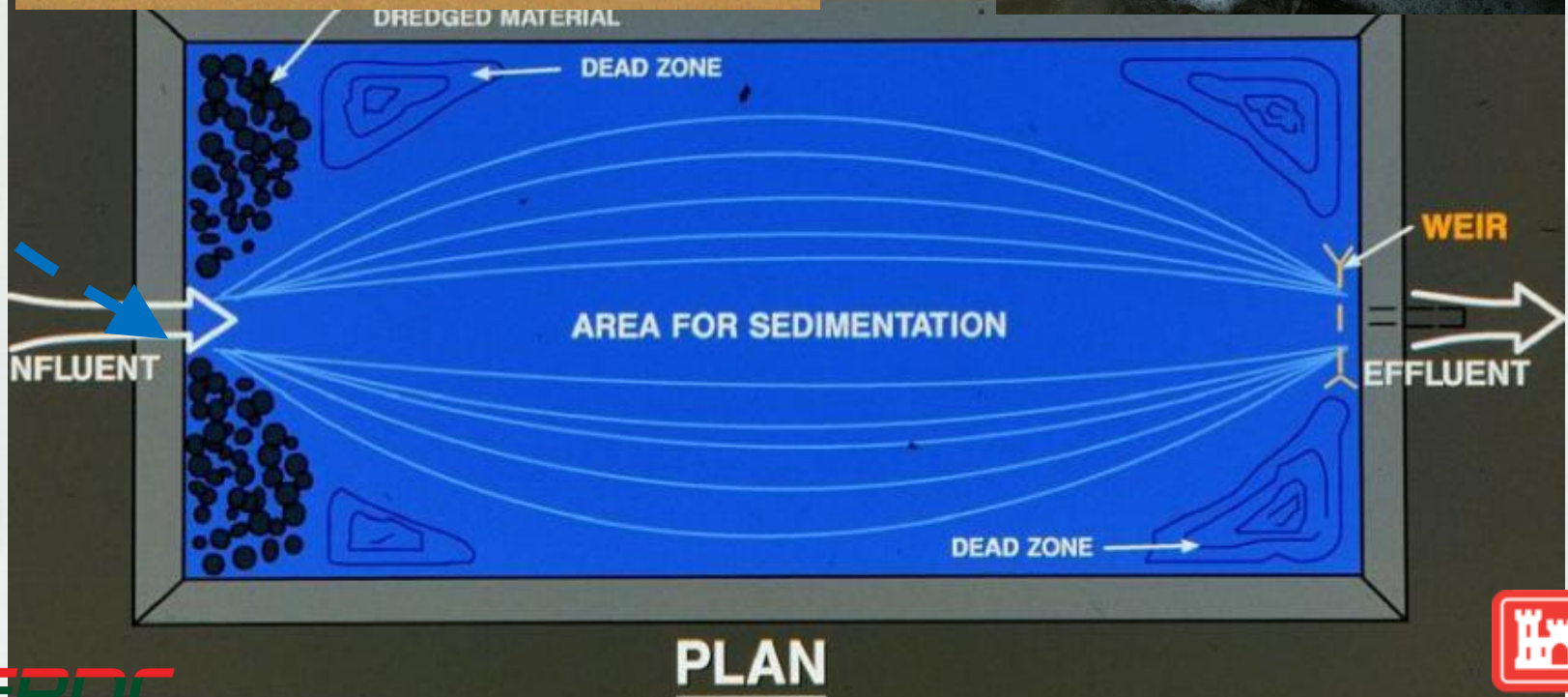


Agenda

- **Background – upland placement**
- **20 year navigation project planning**
- **Traditional methods**
 - **Pump & dump vs. strategic**
 - **BMP's**
- **Shift to sustainability**
 - **SAM “The Rules of 3”**
 - **Murray and McGillivray method – beach building**
 - **Permanent DMMA's infrastructure**
 - **Shoreline and engineering protocols**
 - **SAJ weir design standard**
 - **Complete composite weir system**



Dredging With Upland Placement Operation

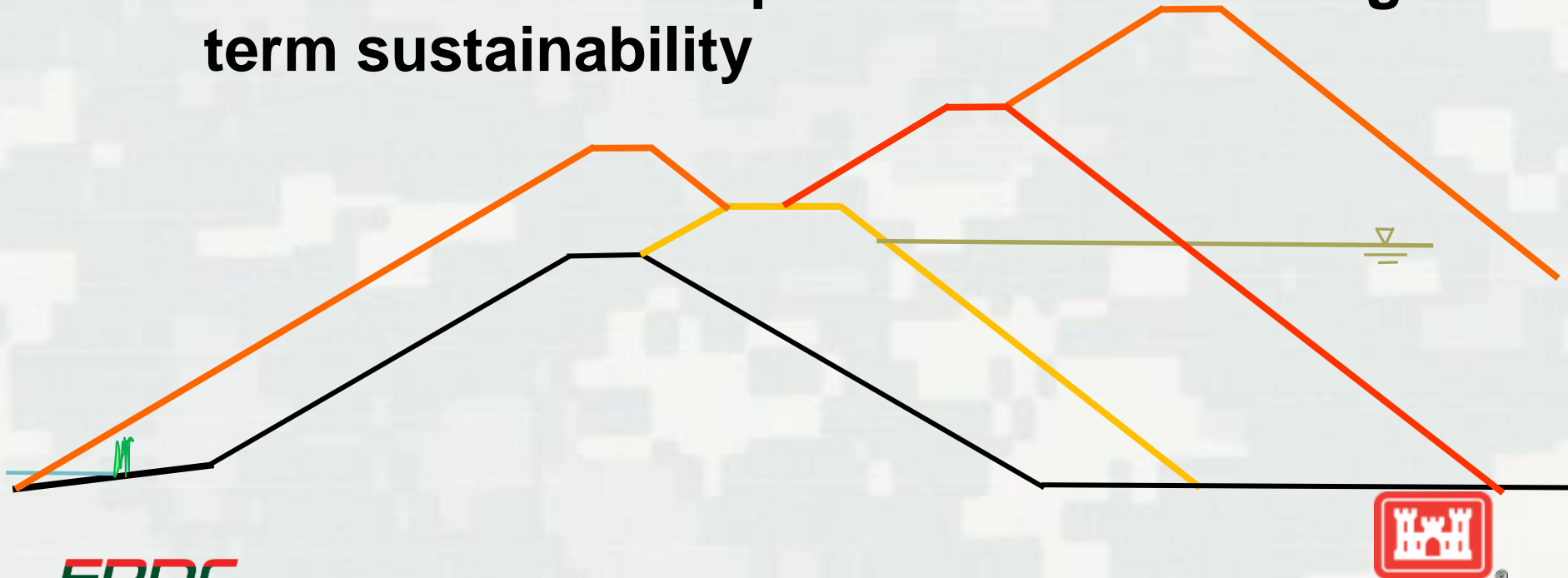


Dredging With Upland Placement Operation



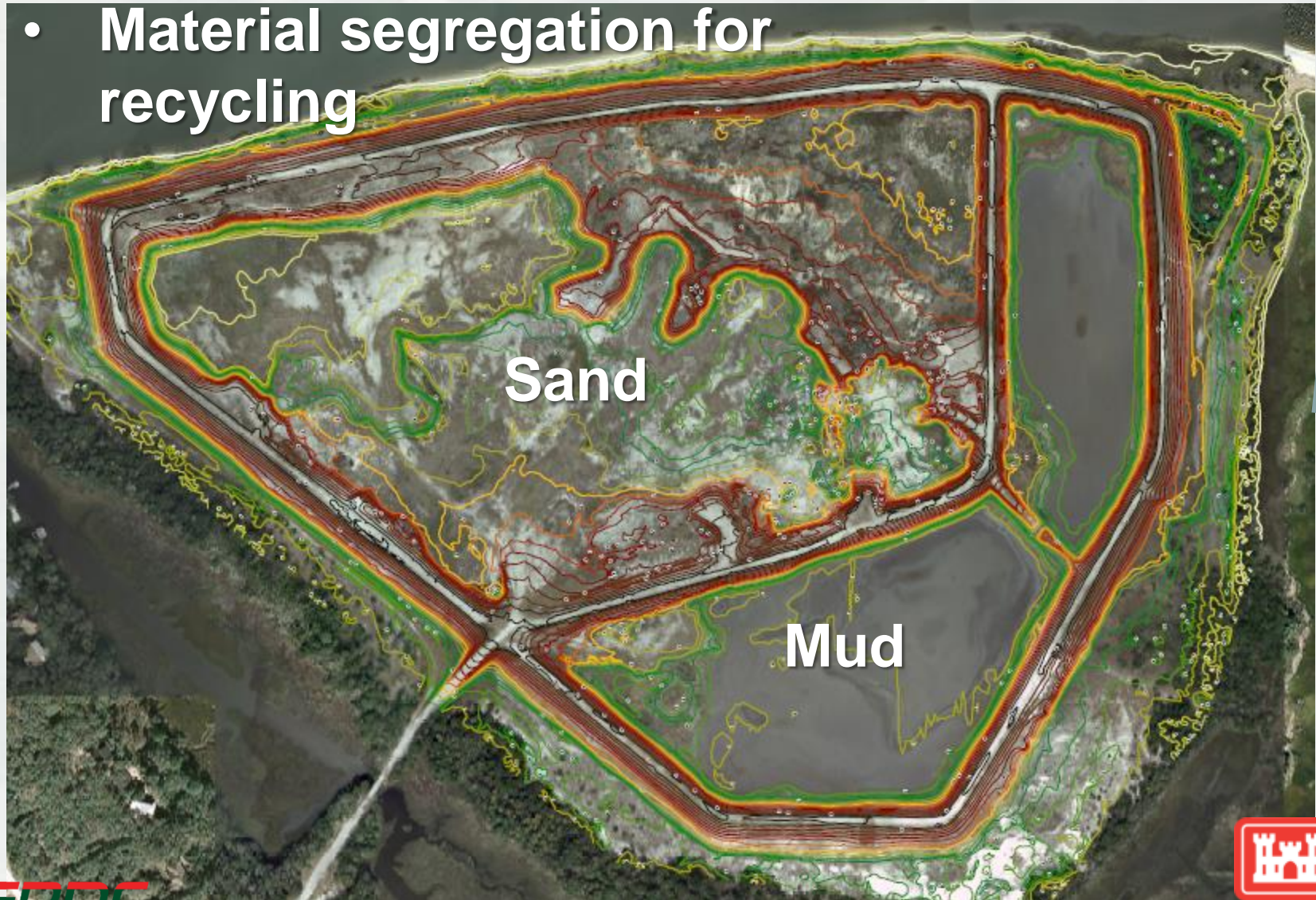
Navigation Planning – 20 Year Horizon

- Dredged Material Management Plan (DMMP)
- Provide placement capacity for Federal and Sponsor use for +20 years
- USACE PDT and Sponsor to look at longer term sustainability



Traditional Upland Site Management

- Material segregation for recycling



Strategic Upland Placement

- Dredged material pumped and dumped



Strategic Upland Placement

- Dredged material pumped and dumped



Strategic Upland Placement

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Strategic Upland Placement

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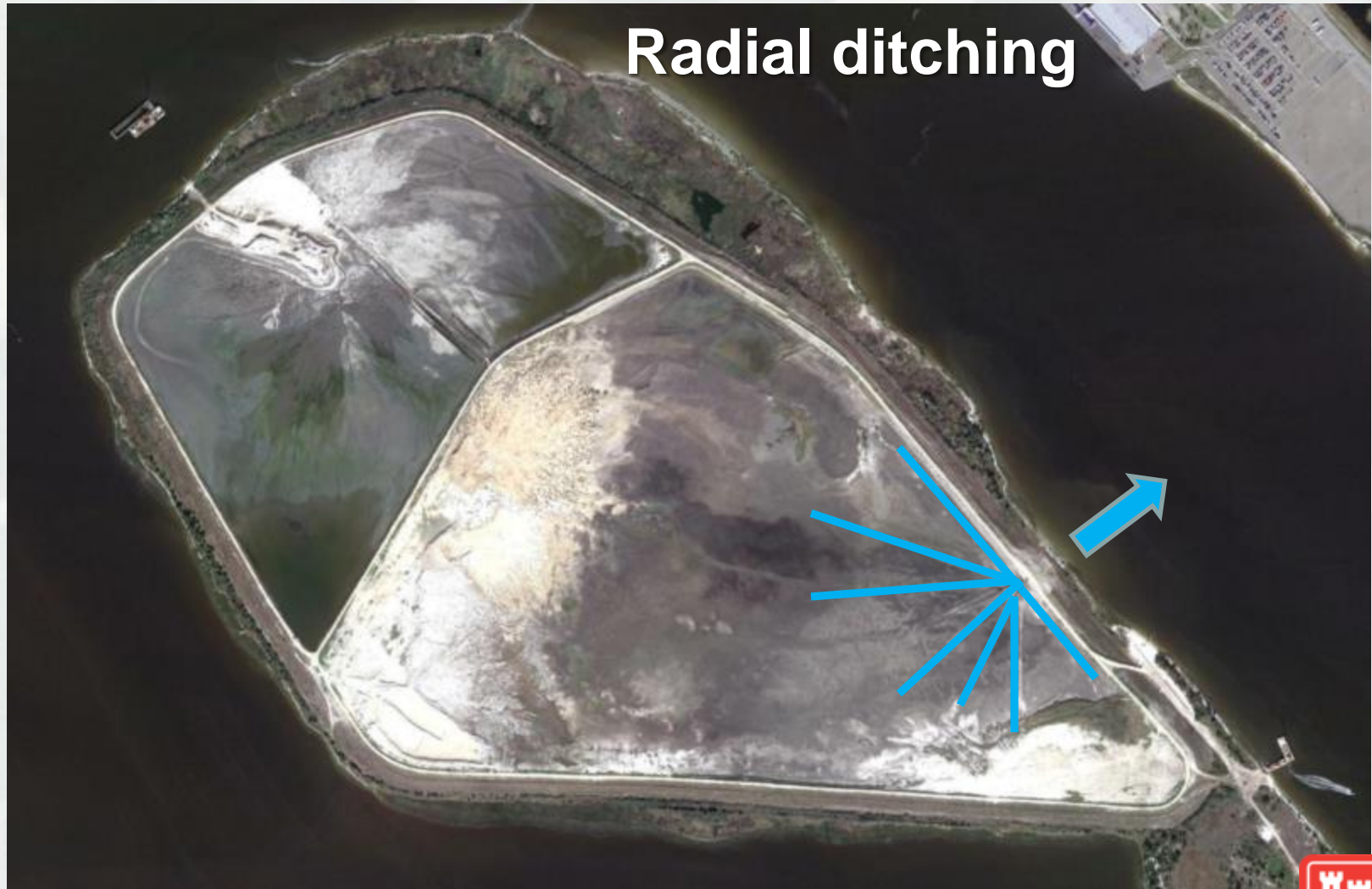


Discharge

2009



Traditional Upland Site Management



Non-Strategic Upland Placement

- Dredged material pumped and dumped
 - Does not reinforce dikes
 - Domino effect



Non-Strategic Upland Placement



SAM “The Rule of 3” – Fine Grained Sediment

The Rules of

3

No more than 3 ft of dredge fill

No more than 3 ft per dike raising

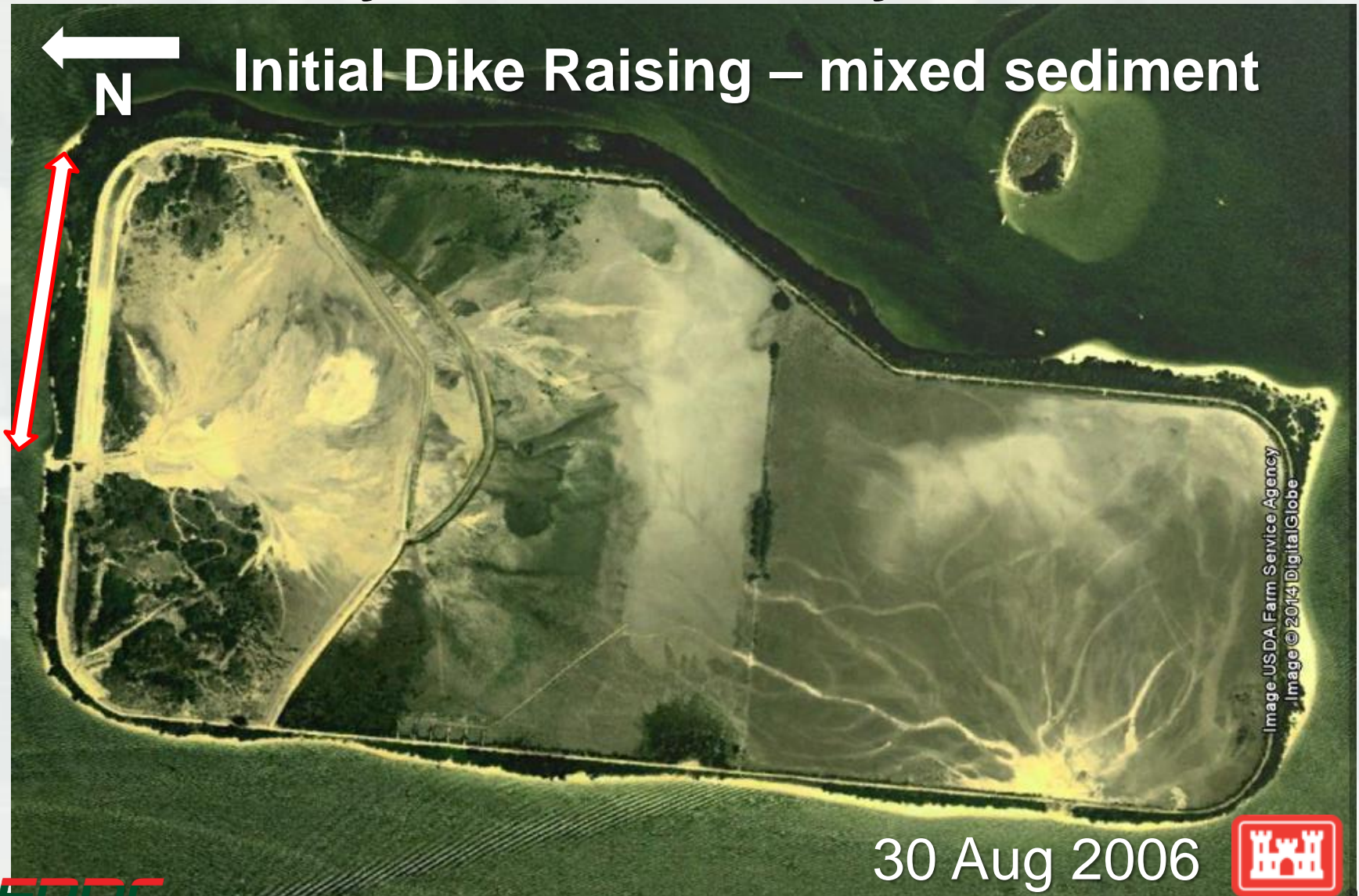
No more than 3 relays

No more than a 3 ft thick layer per relay

**Cyclic dredged material
beneficial reuse**



Murray and McGillivary Method



Murray and McGillivary Method

- **Building a beach inside a DMMA**
 - Longitudinal containment dikes
 - Extend pipeline periodically
 - Increases dike stability



Murray and McGillivary Method

- Hydraulically displaces poor foundation materials
- Construction grade materials within reach of dike
- Minimal additional dredging cost <\$0.5/cy
- Increased future placement capacity
- Cost for dike building >\$2.50/cy



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Murray and McGillivary Method



Murray and McGillivary Method



Murray and McGillivary Method



Permanent DMMA Infrastructure

- Toe drainage blanket
- Increased dike stability safety factors
- Decreases construction over site needs
- Increased geotechnical loading capabilities increases bid competition



01/10/2012



Permanent DMMA Infrastructure

- Shoreline Protection soft and hard structures
 - Wavebreak
 - Marsh planting
 - Revetment protecting toe drainage blanket



Permanent DMMA Infrastructure

- Shoreline Protection soft and hard structures
 - Wavebreak
 - Marsh planting 18 months later
 - Revetment protecting toe drainage blanket



SAJ New Standard Weir Design

- Always ready systems
 - Dual Box Risers on Slab
 - Floating Docks Access
 - HDPE Outfall Pipes
 - Emergency Shutoff Flap Gates
 - Composite Weir Boards
 - Increased Life-cycle
 - Lower Initial Cost
 - Safety
- Simplicity
- Flexibility
- Redundancy

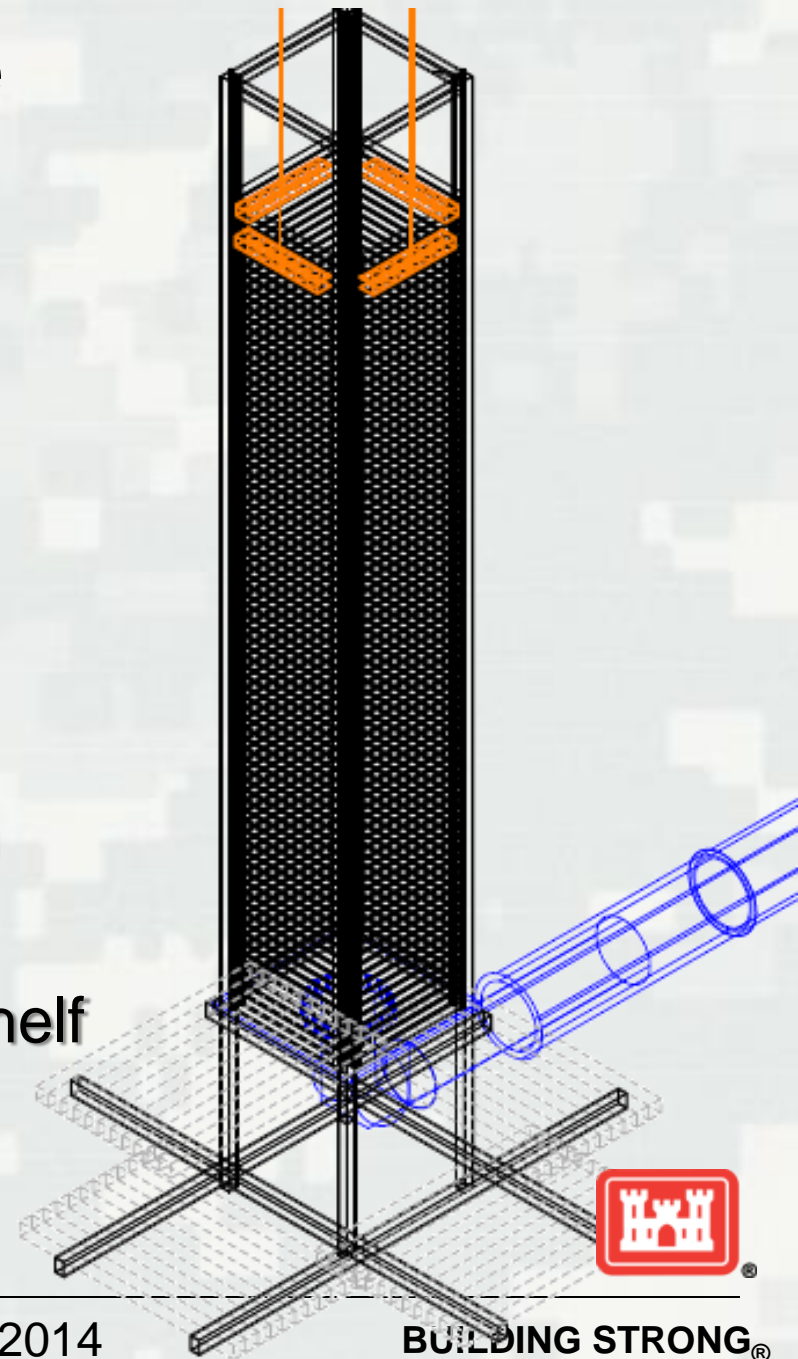


▪ Native vegetation

Complete Composite Weir System

Patent Pending

- Permanent system with 26 ft of vertical adjustability
- 4ft by 4ft (16 feet of crest)
- Fully composite superstructure
- Pre-fabricated and light weight
- Weir boards resist compression
- HDPE floor and outfall
- Nearly all components off the shelf
- Adjustable from top of structure



Summary

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 - BMP's
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 - Murray and McGillivray method – beach building
 - Permanent DMMA's infrastructure
 - Shoreline and engineering protocols
 - SAJ weir design standard
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Thank You!

Questions?



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