

Shallow Draft Dredging Activities in the Wilmington District

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Wilmington District

South Atlantic Division

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US Army Corps of Engineers
BUILDING STRONG®



District Overview

- Meet and brainstorm ways to develop RSM improvements using shallowdraft dredging techniques.
- Analyze schedule requirements to best effect environmentally sound dredging on projects.
- Analyze nearshore disposal techniques
- Discuss pump-out potential



Shallow Draft Dredging Project

Manteo – Oregon Inlet

- **Location** – Manteo (Shallowbag) Bay, NC (Oregon Inlet)
- **Depth** – 14ft + 2ft east of bridge (bar) – 12ft + 2ft interior channels
- **Frequency/dredging cycle** – As needed
- **Environmental windows/restrictions** – Sidecast limited to inlet region; special purpose on all channels
- **Volume** - N/A
- **Sediment type** – Sand
- **Material placement location** – Special Purpose (Bridge/Nearshore); Sidecast (Least return - tidal)
- **Coordination/construction challenges** – Bridge crossing inlet with 120-ft mainspan, Constant change of shallow conditions, Excessive Currents, Heavy Boat Traffic, Adverse Weather Conditions, Heavy Surf on Outer Bar; most recently, Hurricane Irene developed two more inlets within 10-miles, changing current dynamics significantly



Oregon Inlet



Shallow Draft Dredging Project

Rollinson Channel

- **Location** - Rollinson Channel, NC (Hatteras Ferry Channel)
- **Depth** – Rollinson 12ft + 2ft – Hatteras Ferry Channel 10ft + 2ft
- **Frequency/dredging cycle** – As needed
- **Environmental windows/restrictions** – Sidecast discharge by emergency authorization only due to EFH SAV; special purpose no restriction.
- **Volume** – N/A
- **Sediment type** – Rollinson - Silty Sand; Hatteras - Sand
- **Material placement location** – Sidecast (Outside the channel limits); Special Purpose (Nearshore Ocracoke)
- **Coordination/construction challenges** – Excessive
Shoaling, Shallow water, Heavy Ferry Traffic, Long hauls to ocean dumping, emergency permitting.



Rollinson Channel



Hatteras

12

Cape Hatteras - Ocracoke

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Image USA/Farm Service Agency
lat: 35.208438° lon: -75.735305° elev: -3.0

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Eye alt: 27873.0

Image date: 5/12/2011

Shallow Draft Dredging Project

Silver Lake Harbor

- **Location** - Silver Lake Harbor, NC
- **Depth** – Ocracoke Inlet 18ft & Teaches Hole to Bigfoot Slough 12ft + 2ft
- **Frequency/dredging cycle** – As needed
- **Environmental windows/restrictions** – N/A
- **Volume** - N/A
- **Sediment type** – Sand
- **Material placement location** – Sidecast (outside of the channel limits); Hopper (Nearshore Disposal)
- **Coordination/construction challenges** – Excessive Shoaling, Heavy Ferry Traffic; Heavy Surf in disposal region



Silver Lake Harbor



Big Foot Slough

Teaches Hole

Shallow Draft Dredging Project

Bulkhead Channel

- **Location** – Beaufort Harbor - Bulkhead Channel, NC
- **Depth** - 15ft + 2ft
- **Frequency/dredging cycle** - Annually
- **Environmental windows/restrictions** – Special Purpose only; typically dump over Shipwreck Queen Ann's Revenge.
- **Volume** - N/A
- **Sediment type** - Sand
- **Material placement location** – Nearshore Disposal
- **Coordination/construction challenges** – Heavy Boat Traffic, Close proximity to the Radio Island Jetty, Potential Heavy Surf for the Hopper Dredge to/from the dumpsite



Bulkhead Channel



Near Shore Disposal
site used for material
placement

Shallow Draft Dredging Project

Bogue Inlet

- **Location** - Bogue Inlet, NC
- **Depth** – 8ft + 2ft (Bar) & 6ft + 2ft (Interior)
- **Frequency/dredging cycle** - Quarterly
- **Environmental windows/restrictions** – Sidecast authorized from bar to interior (designated line), then Special Purpose to AIWW.
- **Volume** – 131,220
- **Sediment type** - Sand
- **Material placement location** – Special Purpose (Nearshore); Sidecast (Outside of the Channel)
- **Coordination/construction challenges** – Wrecks, Constantly shifting channels, Small Boat Traffic, Excessive Shoaling, Potential for Heavy Surf



Bogue Inlet



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lat: 34.656572° lon: -77.112720° elev: 0 ft

Eye alt: 30571 ft

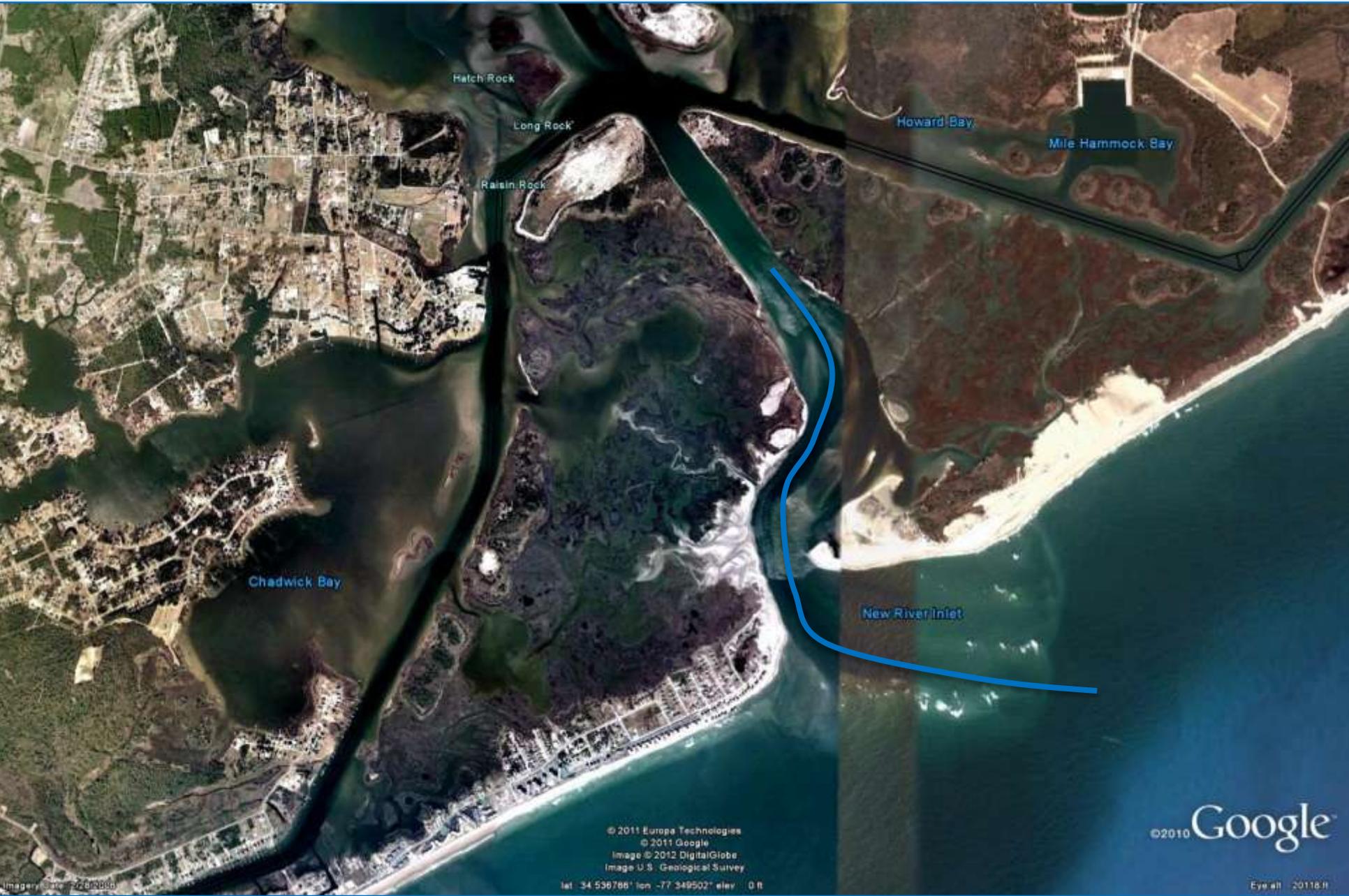
Shallow Draft Dredging Project

New River Inlet

- **Location** - New River Inlet, NC
- **Depth** – 6ft + 2ft (Inlet) & 12ft + 2ft (New River & AIWW)
- **Frequency/dredging cycle** - Quarterly
- **Environmental windows/restrictions** – Sidecast (Inlet to AIWW);
Special Purpose Dredge (River)
- **Volume** - 266,965
- **Sediment type** - Sand
- **Material placement location** – Special Purpose (nearshore);
Sidecast (Best flow tidal)
- **Coordination/construction challenges** - Constantly
shifting channels, Small boat traffic, Excessive shoaling,
Potential for heavy surf on the Bar; light load production due to
limited authorized depth and greater draft restriction



New River Inlet



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lat: 34.538786° lon: -77.349502° elev: 0 ft

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Eye alt: 20118 ft

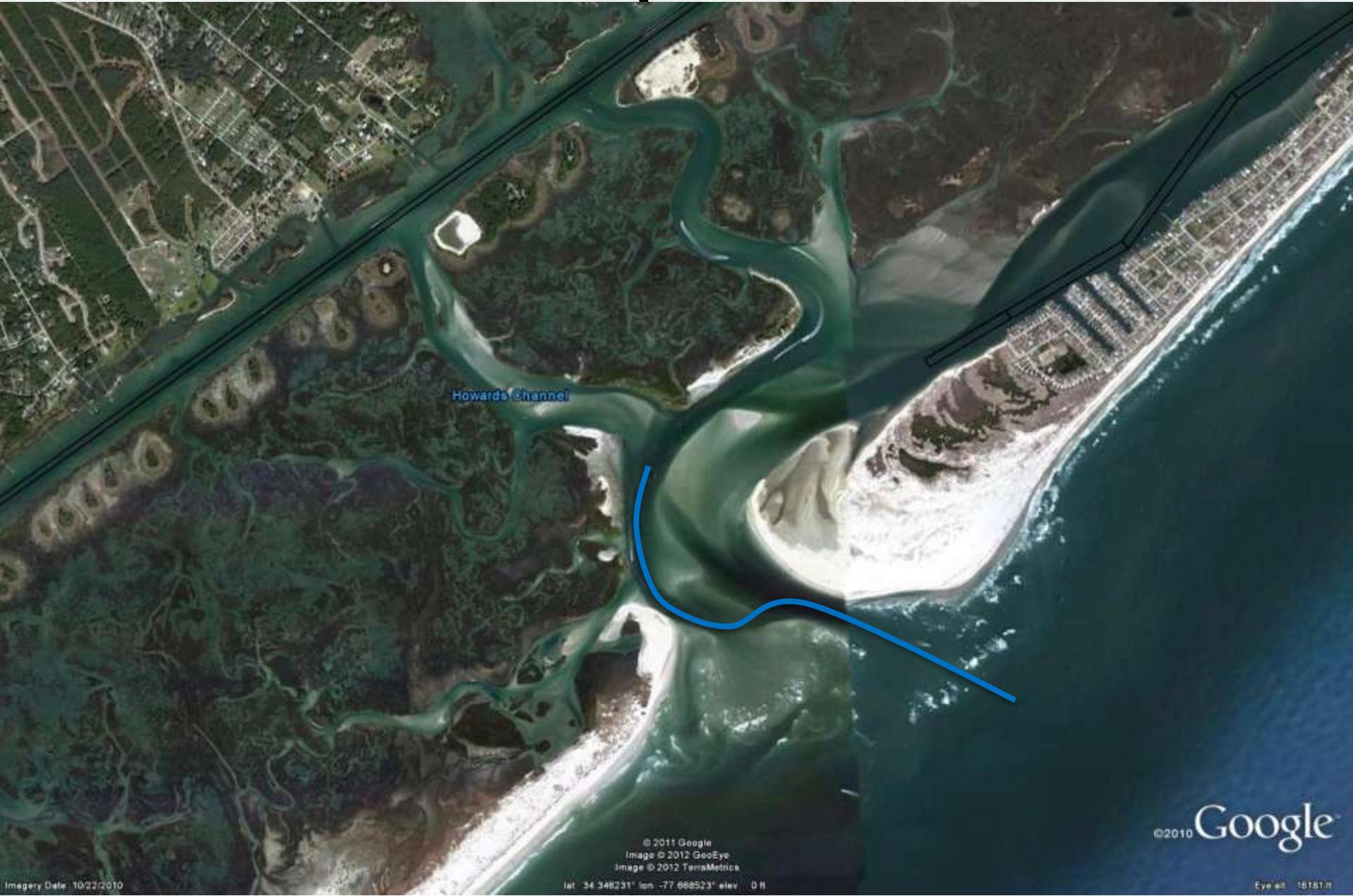
Shallow Draft Dredging Project

New Topsail Inlet

- **Location** - New Topsail Inlet, NC
- **Depth** – 8ft + 2ft (bar) & 7ft + 2ft (interior)
- **Frequency/dredging cycle** - Quarterly
- **Environmental windows/restrictions** – Sidecast restriction within Topsail Creek to AIWW during Flood tide
- **Volume** - 43,080
- **Sediment type** - Sand
- **Material placement location** – Special Purpose (Nearshore); Sidecast (Best flow tidal)
- **Coordination/construction challenges** - Constantly shifting channels, small boat traffic, excessive shoaling, heavy surf



New Topsail Inlet



Howards Channel

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lat 34.348231° lon -77.868523° elev 0 ft

Eye alt 16181 ft

Imagery Date 10/22/2010

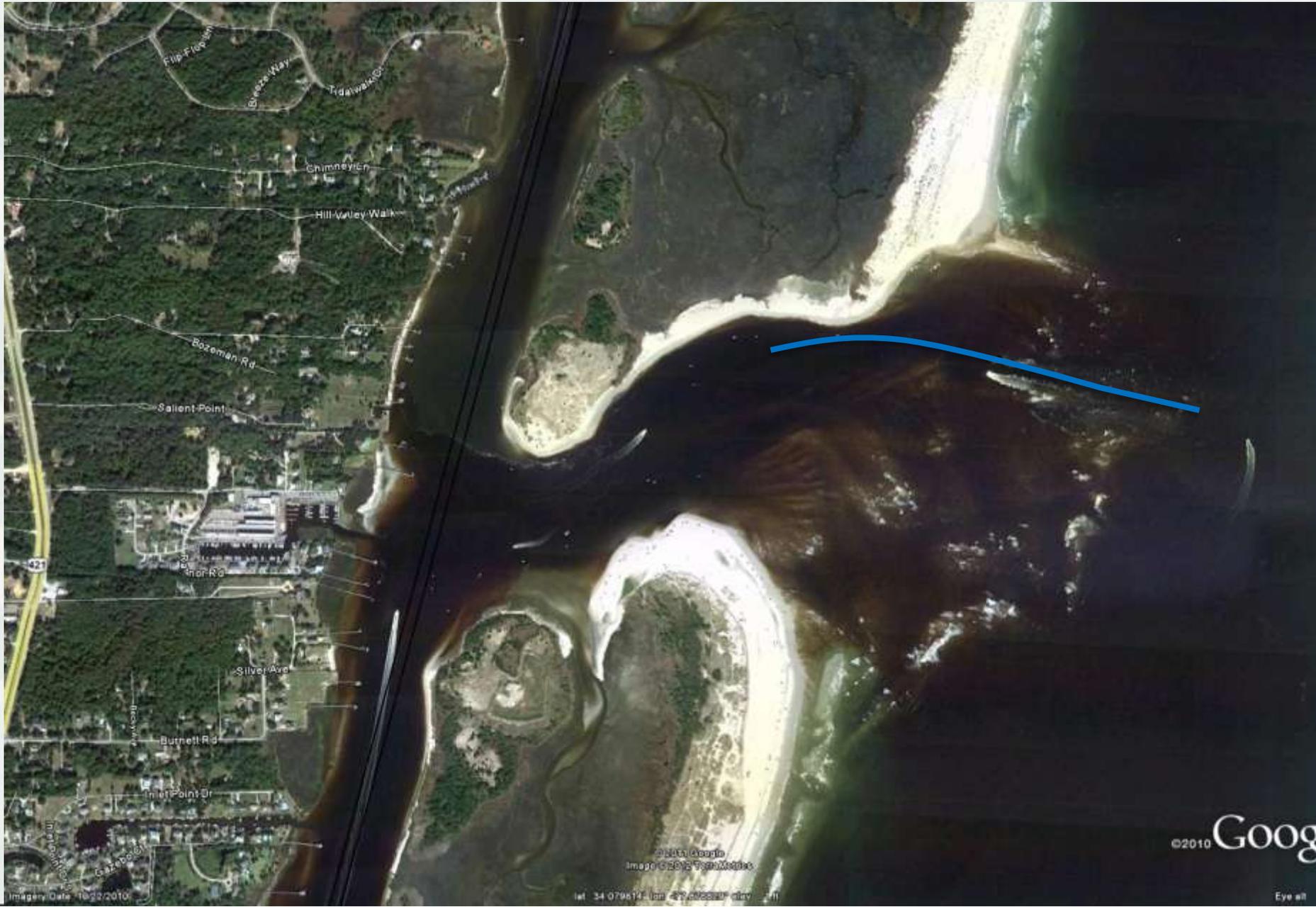
Shallow Draft Dredging Project

Carolina Beach Inlet

- **Location** - Carolina Beach Inlet, NC
- **Depth** – 8ft + 2ft
- **Frequency/dredging cycle** - Quarterly
- **Environmental windows/restrictions** - N/A
- **Volume** - 176,660
- **Sediment type** - Sand
- **Material placement location** – Special Purpose (nearshore); Sidecast (Best flow tidal)
- **Coordination/construction challenges** – Wrecks, Excessive Shoaling, Shifting Channels, Small Boat Traffic, Potential for heavy surf



Carolina Beach Inlet



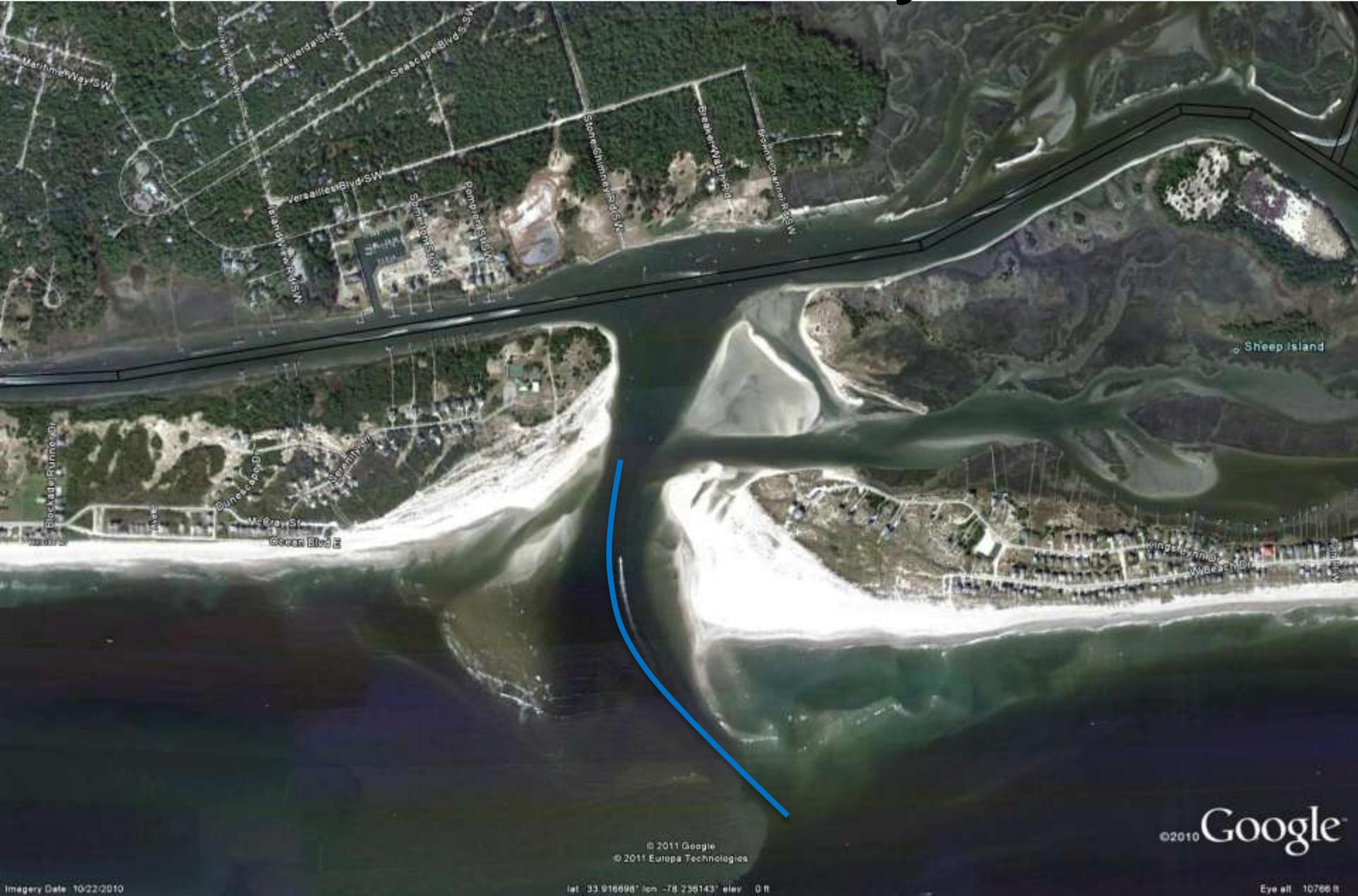
Shallow Draft Dredging Project

Lockwoods Folly Inlet

- **Location** - Lockwoods Folly Inlet, NC
- **Depth** – 8ft + 2ft
- **Frequency/dredging cycle** - Quarterly
- **Environmental windows/restrictions** – N/A
- **Volume** - 23,390
- **Sediment type** - Sand
- **Material placement location** – Special Purpose (Nearshore); Sidecast (Best flow tidal)
- **Coordination/construction challenges** – Exposed Civil War Shipwrecks, Excessive Shoaling, Greater range of Tide (5 ft), Potential for heavy surf



Lockwoods Folly Inlet



Shallow Draft Dredging Project Atlantic Intracoastal Waterway

- **Location** - AIWW, NC
- **Depth** – 12ft + 2ft
- **Frequency/dredging cycle** – As needed
- **Environmental windows/restrictions** – Sidecast limited range within direct vicinity of inlet crossing
- **Volume** - 23,390
- **Sediment type** – Sand, Silty Sand
- **Material placement location** – Special Purpose (Nearshore); Sidecast (Best Flow outside channel)
- **Coordination/construction challenges** – Commercial Traffic, Excessive Shoaling, Potential for heavy surf in nearshore



QUESTIONS



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