Access and Logistics for Marine Construction in the Coastal Zone
Presentation Outline

• Introduction and Background

• Equipment Access Corridors

• Permitting

• Cultural Resources

• Oil and Gas Infrastructure

• Landowner Agreements

• Oyster Resources
Introduction and Background
INTRODUCTION/BACKGROUND

Types of Projects in Coastal Louisiana
INTRODUCTION/BACKGROUND

Types of Projects in Coastal Louisiana
INTRODUCTION/BACKGROUND

Marsh Creation

Dredges material from borrow source to marsh creation area
INTRODUCTION/BACKGROUND

Marsh Creation Design Guidelines

Aids in the engineering and design of marsh creation projects.

Includes guidance on some of the logistical concerns we run into:

• Delineating equipment access routes
• Cultural resources
• Oil and gas infrastructure
• Land rights
• Oyster resources
INTRODUCTION/BACKGROUND

Marine Construction Equipment

Hydraulic Dredge

Excavates and moves material from borrow source to fill area via dredge pipe
INTRODUCTION/BACKGROUND

Marine Construction Equipment

Dredge Pipe

Placed along dredge pipeline corridor from borrow area to marsh creation area
INTRODUCTION/BACKGROUND

Marine Construction Equipment

Booster Pump

Helps facilitate pumping to fill area
INTRODUCTION/BACKGROUND

Marine Construction Equipment

Mechanical Dredges – Marsh Buggy

Tracked marine equipment that excavates places adjacent to borrow source.
INTRODUCTION/BACKGROUND

Marine Construction Equipment

Mechanical Dredges – Clamshell/Bucket Dredge

Equipment mounted on barge that excavates places adjacent to borrow source.
INTRODUCTION/BACKGROUND

Marine Construction Equipment

Misc. Materials and Equipment

Rock

ACMs, Crane

Rock, Crane

Dozers
Potential Impacts

Louisiana’s Working Coast

- Water bottoms
- Cultural resources
- Oil and gas infrastructure
- Landowners
- Oyster Resources
Equipment Access Corridors
Equipment access is a vital logistical component of all coastal projects.
EQUIPMENT ACCESS CORRIDORS

We want to present the contractor with a constructible project which includes feasible access.

Contractor may propose alternate equipment access corridor(s), but potential impacts and proper coordination and agreements explained throughout this presentation become the responsibility of the contractor.
EQUIPMENT ACCESS CORRIDORS
EQUIPMENT ACCESS CORRIDORS

Identifying Navigable Waterways

Identify potential routes through rivers, lakes, bayous, creeks to the project site using

- Maps/satellite imagery (Google Earth/ArcGIS)
- Nautical charts – give estimated depths in some waterways
EQUIPMENT ACCESS CORRIDORS

Identifying Navigable Waterways

Some smaller equipment may launch from a boat launch.

Most equipment will need to come through a major waterway to the equipment access corridor:

- Calcasieu Ship Channel, Gulf Intracoastal Waterway, Houma Navigation Channel, etc.
EQUIPMENT ACCESS CORRIDORS

Bathymetric/Topographic Surveys
EQUIPMENT ACCESS CORRIDORS

Required Water Depth

Depends on the type/size of equipment.

- General, smaller equipment (marsh buggies, clamshells, cranes, small hydraulic dredges and booster pumps) → Less than 3 to 6 feet
- Heavy, major equipment (large hydraulic dredges and booster pumps, rock barges) → 6 to 8 feet

We use past project experience and coordination with contractors to help determine what type of equipment may be used for a project.
Access dredging may be necessary if a navigable route cannot be found.

The following must also be considered if equipment access dredging proposed:

- Cost of work
- Spoil placement
- Permitting
- Cultural resources
EQUIPMENT ACCESS CORRIDORS

Cost of Access Dredging

Equipment access dredging typically has its own (lump sum) bid item.

Cost of this work must be included in Engineer’s Estimate of Probable Cost.

Use past project bid data to estimate cost.
Spoil Placement

- Spoil placement either temporary or permanent
- Gapping of spoil placement typically included
- Must install warning signs as required by the USCG
Permitting is required for all project features, including access dredging.

Information required for the permit includes:

- Drawings of proposed features
- Cut and fill volumes
- Maximum acres impacted
Cultural Resources
Cultural Resources

A cultural resources investigation determines if there are any items of prehistoric, historical, archeological, or cultural value within a proposed excavation area.

Cultural resources investigations are done on borrow areas, equipment access dredging templates, and marsh areas.
Cultural Resources

Investigation process includes:

- Geophysical survey (side scan sonar and sub-bottom profile) or shovel tests
- Cultural resources report
- Coordination with a Registered Professional Archeologist (RPA) and the State Historic Preservation Offices (SHPO)
Oil and Gas Infrastructure
OIL AND GAS INFRASTRUCTURE

Oil and Gas Industry in Louisiana

Wells (Active, Inactive, Exploration; from SONRIS Database)

Pipelines and Flowlines (Active, Inactive, Proposed from NPMS Database)
Oil and Gas Industry in Louisiana

If there are pipelines within the project area, including the equipment access corridor, proper identification and coordination with pipeline operators is important to ensure safety during construction.
OIL AND GAS INFRASTRUCTURE

Information Needed

• Exact location (coordinates)
• Depth of cover
• Pipeline operator
• Status
• Product/contents
• Size (diameter)
How do we get this information?

- Pipeline databases
- Existing surveys
- Parish Clerk of Court records
- Magnetometer surveys
OIL AND GAS INFRASTRUCTURE

Pipeline Databases

National Pipeline Mapping System (NPMS)

Strategic Online Natural Resources Information System (SONRIS)
OIL AND GAS INFRASTRUCTURE

Pipeline Databases

SONRIS

NPMS
Magnetometer Survey

Marine magnetometer measures magnetic field strength

Suspected pipelines probed to determine coordinates and depth of cover
OIL AND GAS INFRASTRUCTURE

Issues with Pipeline Identification

- Database contains pipelines not found in magnetometer survey
- Pipeline picked up in magnetometer survey but not in any database
- Operator no longer exists or responsible party cannot be determined
OIL AND GAS INFRASTRUCTURE

Coordination with Pipeline Operators

- Buffer zones for dredging activities
- Operator monitoring during construction
- Pipeline lowering
Access routes may need to be eliminated or altered if access dredging buffer zones or pipeline lowering is not feasible.
OIL AND GAS INFRASTRUCTURE

Abandoned Pipeline Removal
OIL AND GAS INFRASTRUCTURE

Pipeline Operator Agreements

- Notice of Construction sent to pipeline operators by CPRA
- Contractor to notify operators prior to commencement of construction activities
- Contractor to get agreements with pipeline operators if required
Additional Safety Precautions

- Pre-Construction Survey
- Louisiana 811 (One Call)
Landowner Agreements
LANDOWNER AGREEMENTS

Private Lands

LA Coastal Zone is home to thousands of community residents

Proper coordination with landowners is required
LANDOWNER AGREEMENTS

Identifying State Water Bottoms for Access
LANDOWNER AGREEMENTS

State Water Bottoms vs. Private in Access Routes

Due to liability, agreements are necessary for all privately owned access routes, including those commonly used by the public.

Agreements are even necessary for state water bottoms (Grant of Particular Use)
LANDOWNER AGREEMENTS

Landowner Agreement Process

1. Determine surface ownership in project area

2. Determine impact to surface owners
   • Helps determine which type of agreement to be used

3. Secure agreements with surface owners
   • State lands/water bottoms → Grant of Particular Use
   • Private landowners → Servitude (major activities) or right of passage (flotation access)
Some landowners may not agree to allow project features. This may include equipment access even if no access dredging is proposed.

Project features and access routes may have to be eliminated or altered to avoid these landowners.
Oyster Resources
OYSTERS RESOURCES

Oyster Leases
OYSTER RESOURCES

Oyster Leases

Potential equipment access route eliminated due to excessive amount of oyster leases
OYSTER RESOURCES

Oyster Lease Acquisition and Compensation Program (OLACCP)

Louisiana Revised Statutes 56:432.1

CPRA shall acquire and compensate the oyster leaseholder for any activities such as “dredging, direct placement of dredged materials, or other work of activities necessary for the construction or maintenance of a project for integrated coastal protection.”
OYSTER RESOURCES

OLACP Process

1. Identify any oyster lease within 1500 feet of project area and 500 feet of equipment access corridors

2. Biological oyster assessment by certified oyster biologist performed on those leases

3. Oyster lease appraised

4. Oyster leases within 150 feet of direct impact acquired and extinguished; leaseholder compensated
OYSTER RESOURCES

Oyster Seed Grounds
Final Design
Final Design

Final project features should be cleared of all logistical concerns presented throughout this presentation.
• Permitting
• Potential for equipment access dredging
• Cultural resources
• Oil and gas infrastructure
• Land rights
• Oyster resources

Potential impacts to various stakeholders should be reduced.