

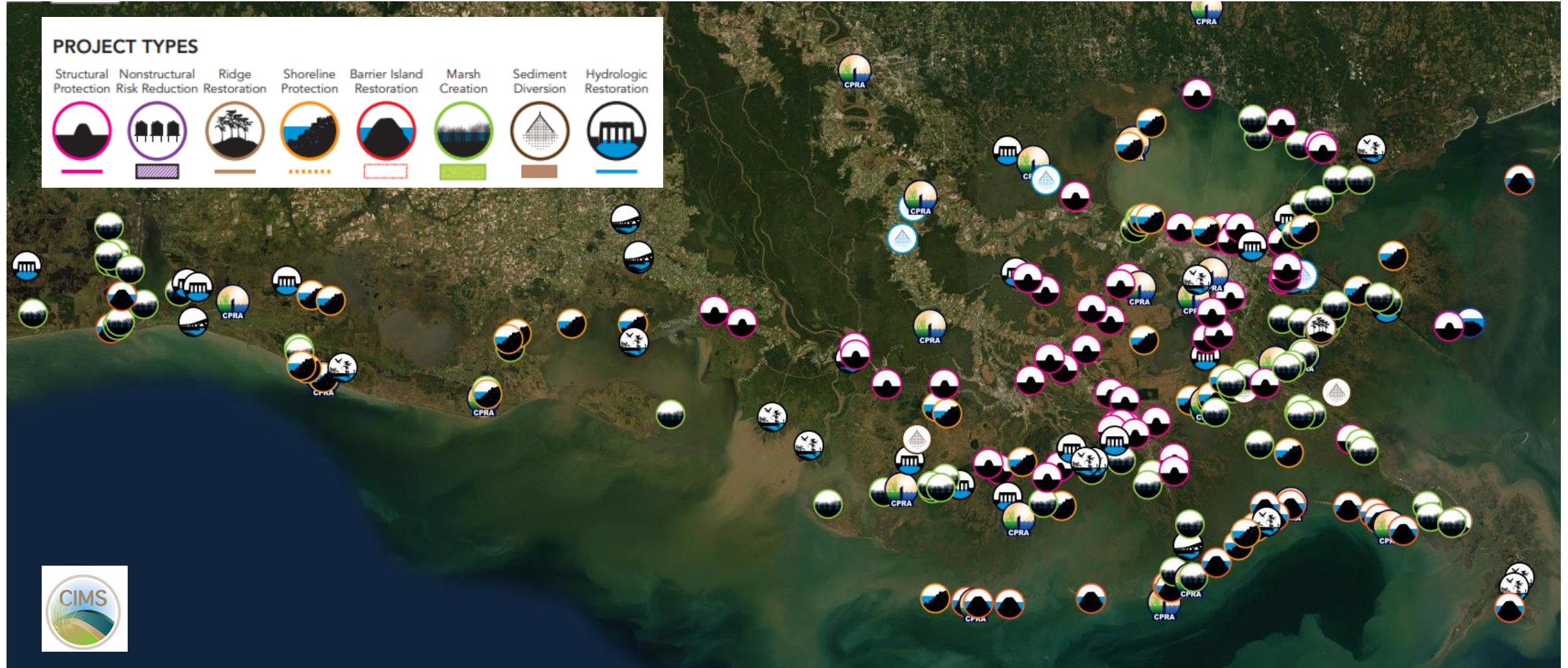
ASSESSMENT OF EQUIPMENT ACCESS AND LOGISTICS FOR MARINE CONSTRUCTION

DYLAN OHLSEN, P.E.



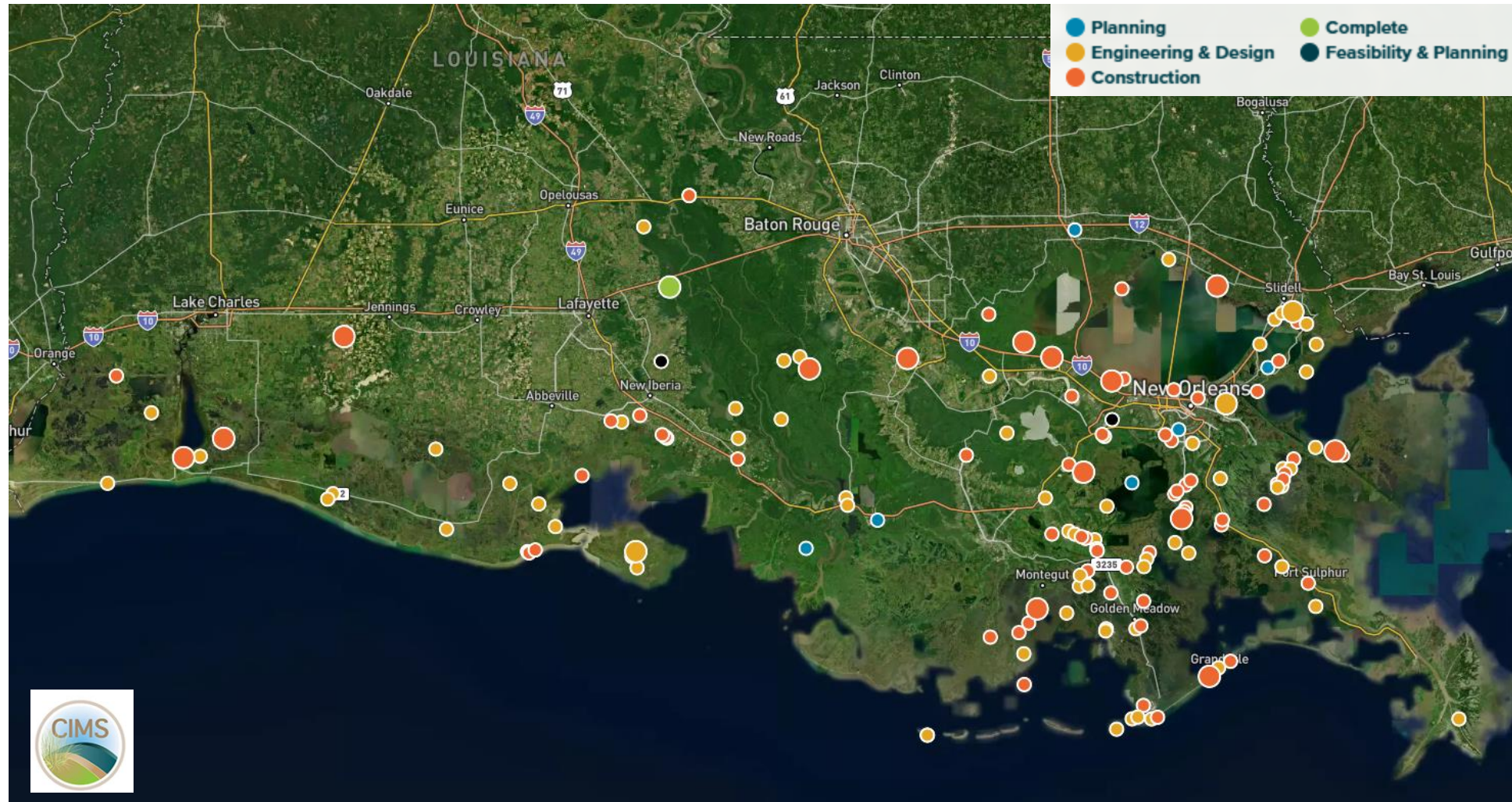
INTRODUCTION/BACKGROUND

Types of Projects in Coastal Louisiana



INTRODUCTION/BACKGROUND

Active Marsh Creation Projects



ASSESSMENT OF EQUIPMENT ACCESS AND LOGISTICS FOR MARINE CONSTRUCTION

Presentation Outline

- Marine Equipment
- Equipment Access Corridors
- Potential Impacts
 - Cultural Resources
 - Oil and Gas Infrastructure
 - Landowner Agreements
 - Oyster Resources

Marsh Creation Marine Equipment

The background of the slide features a faded, grayscale photograph of a coastal landscape. In the foreground, there is a rocky shoreline with numerous large, light-colored boulders. Beyond the rocks, a body of water stretches towards the horizon. In the distance, a line of trees or vegetation is visible on the opposite shore under a pale sky.

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



Marine Construction Equipment

- Mechanical Dredges – Marsh Buggy
- Tracked marine equipment that excavates places adjacent to borrow source.

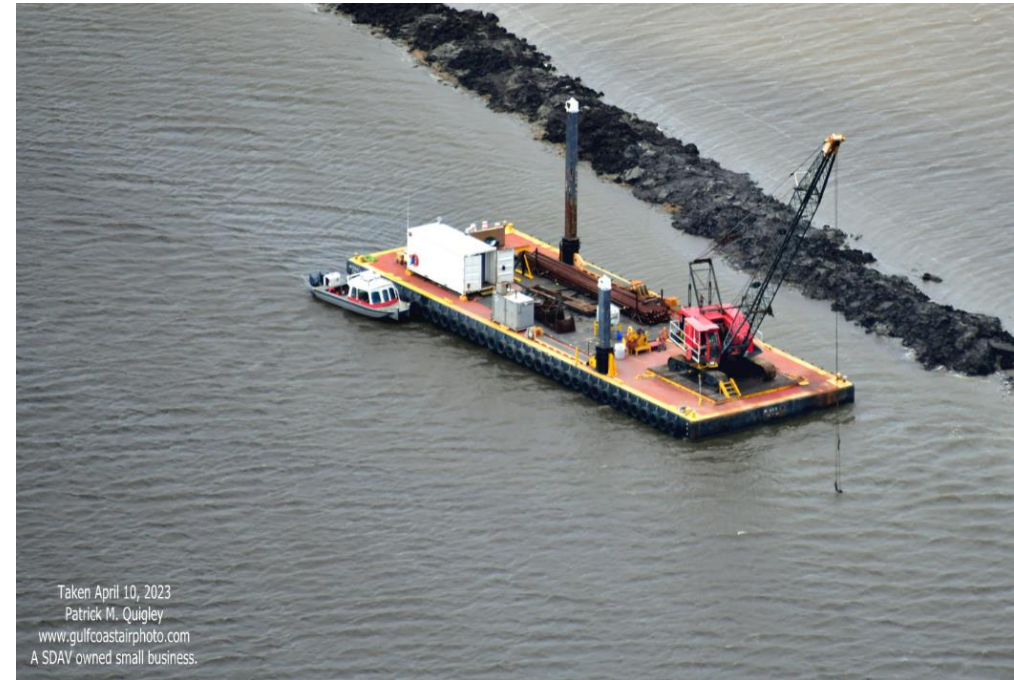


Taken April 10, 2023
Patrick M. Quigley
www.gulfcoastairphoto.com
A SDAV owned small business.

INTRODUCTION/BACKGROUND

Marine Construction Equipment

- Mechanical Dredges – Clamshell/Bucket Dredge
- Equipment mounted on barge that excavates places adjacent to borrow source.



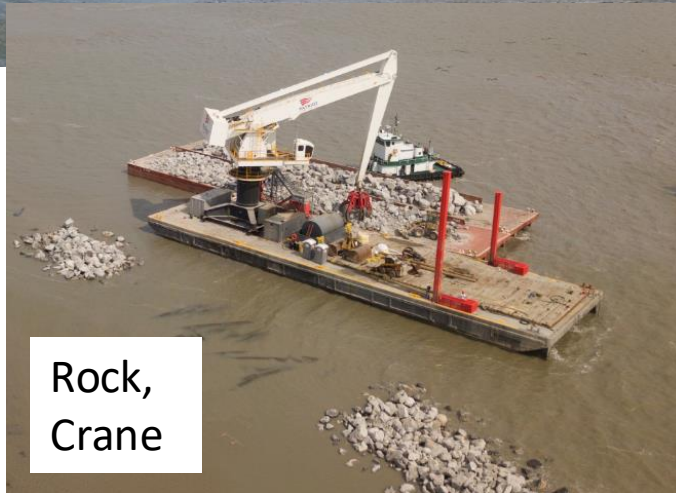
INTRODUCTION/BACKGROUND

Marine Construction Equipment

- Misc. Materials and Equipment



Rock



Rock,
Crane



Dozers



ACMs,
Crane

Equipment Access Corridors



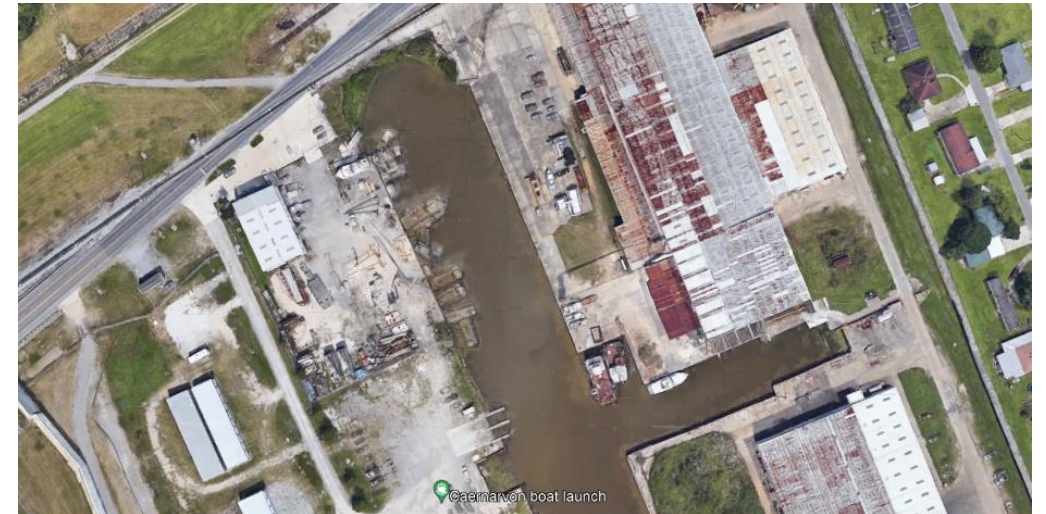
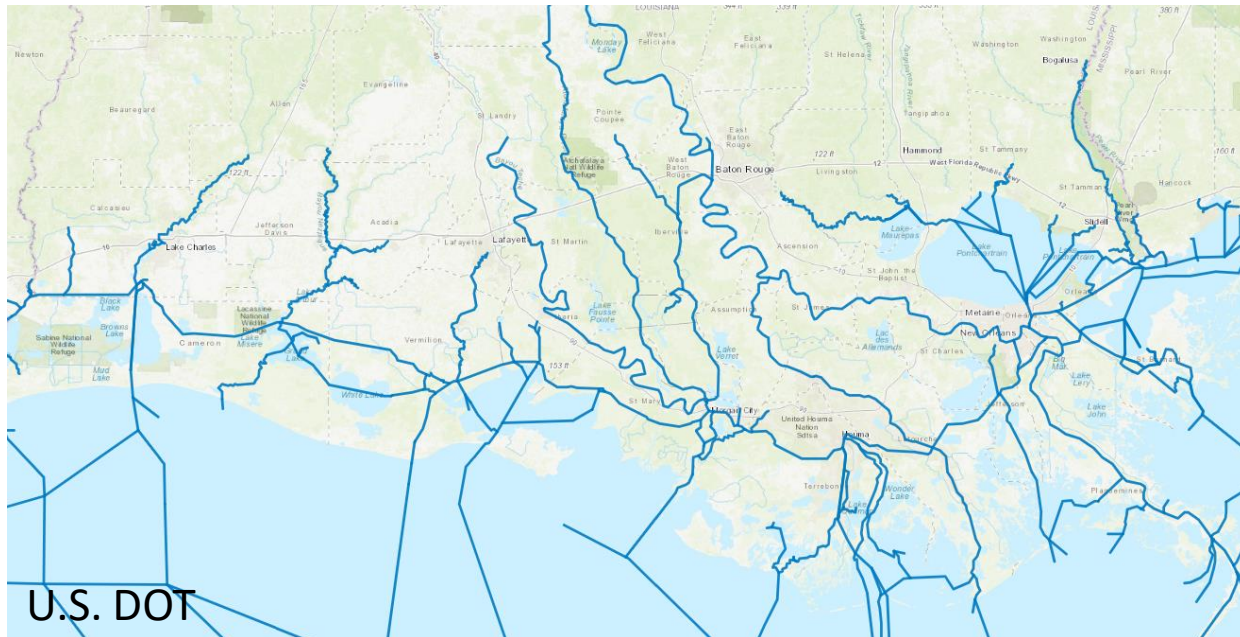
EQUIPMENT ACCESS CORRIDORS

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

Equipment Access Corridors

Equipment access is a vital logistical component of all coastal projects.

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

Potential routes typically begin through a Navigable Waterways.

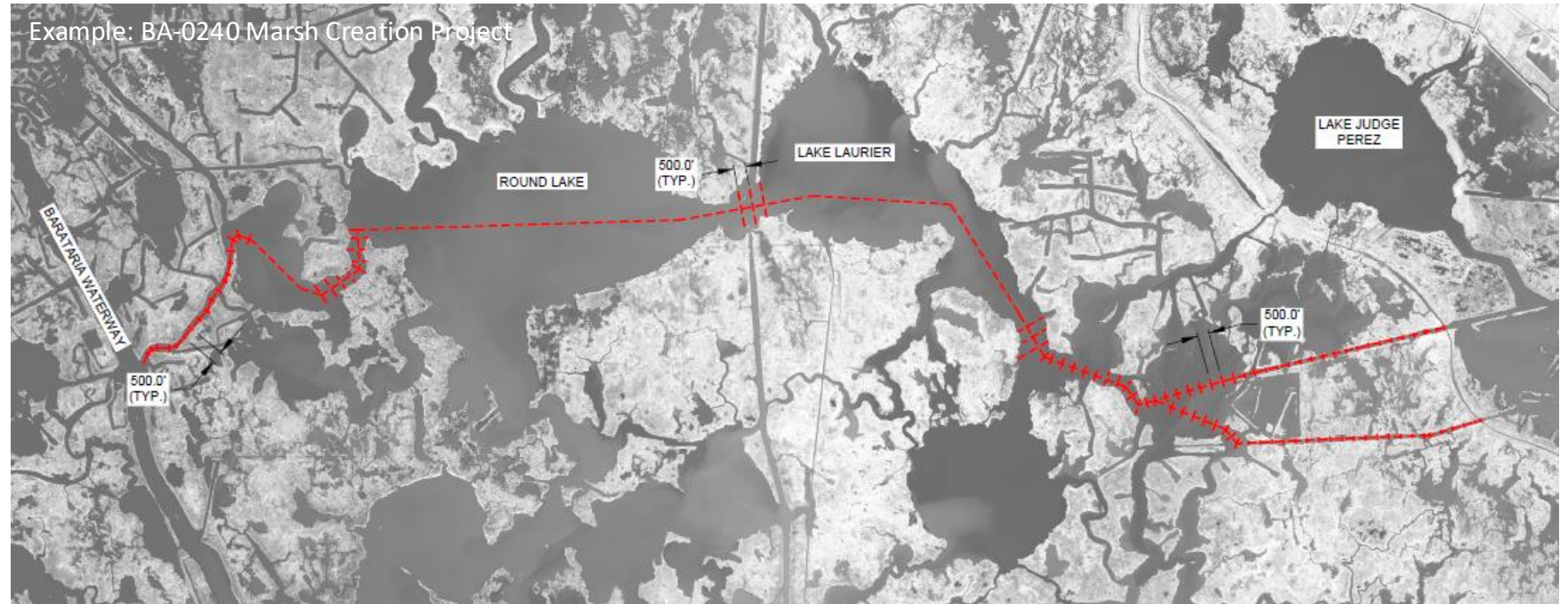
Nautical charts can also give us estimated depths in some waterways.



EQUIPMENT ACCESS CORRIDORS

Bathymetric/Topographic Surveys

- CPRA's **Marsh Creation Design Guidelines (2017)** includes guidance on delineating equipment access route.



EQUIPMENT ACCESS CORRIDORS

Access Corridor Requirements

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

Width: Typically **50-70 feet** depending on equipment type.

We use past project experience and coordination with contractors to help determine what type of equipment may be used for a project.

Larger access corridors allow for more types of equipment to do the job, and potentially more bids on projects.

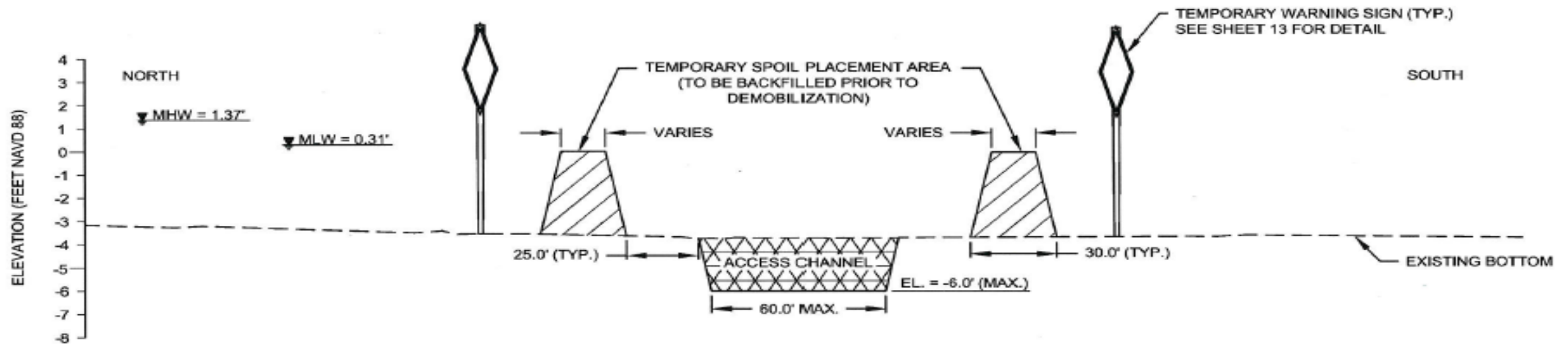
EQUIPMENT ACCESS CORRIDORS

Access Dredging

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 (Impacts?)



Potential Impacts



INTRODUCTION/BACKGROUND

Potential Impacts

- Cultural resources
- Oil and gas infrastructure
- Landowners
- Oyster Resources



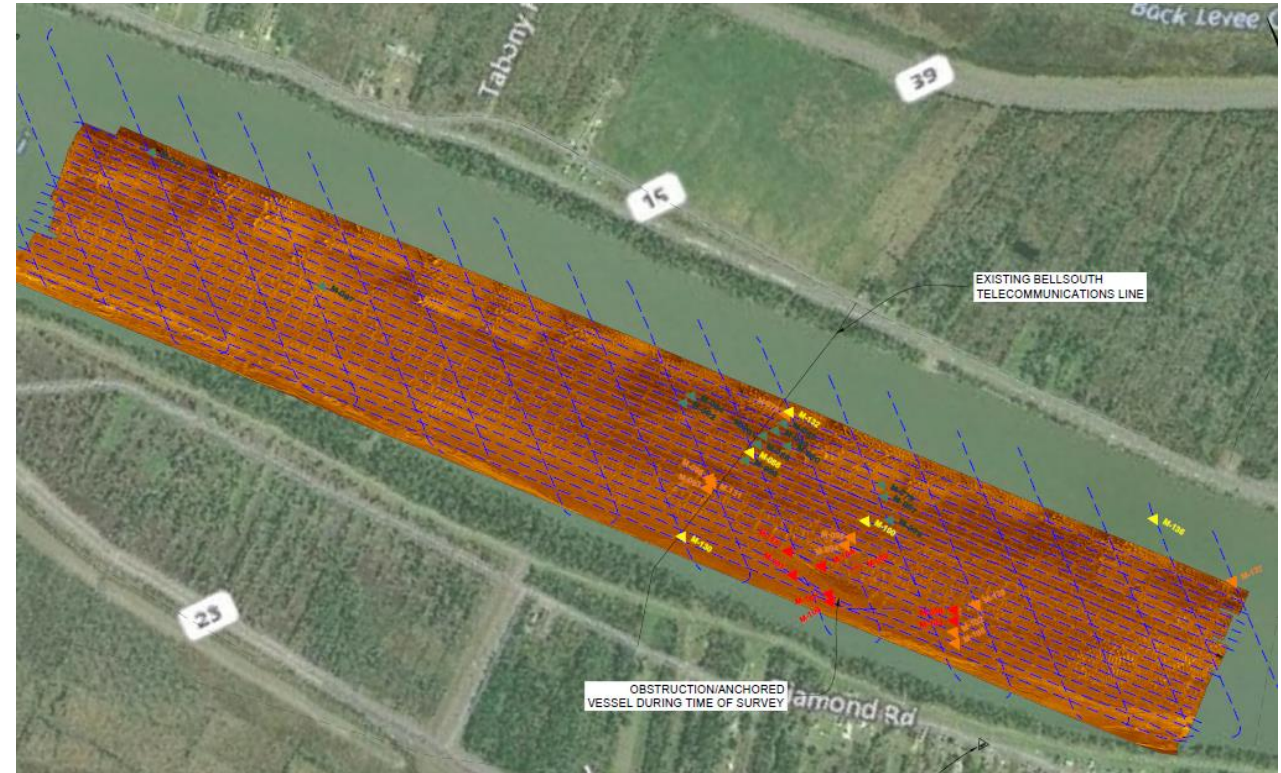
Cultural Resources



Cultural Resources

When and where are Cultural Resource Investigations Required?

- May be required for any ground disturbing activities, including marsh creation areas, borrow areas, and access routes.
- Some previously disturbed areas, like man-made canals, may not require an investigation.
- Coordinate with a Registered Professional Archeologist (RPA) and the State Historic Preservation Offices (SHPO) for requirements.

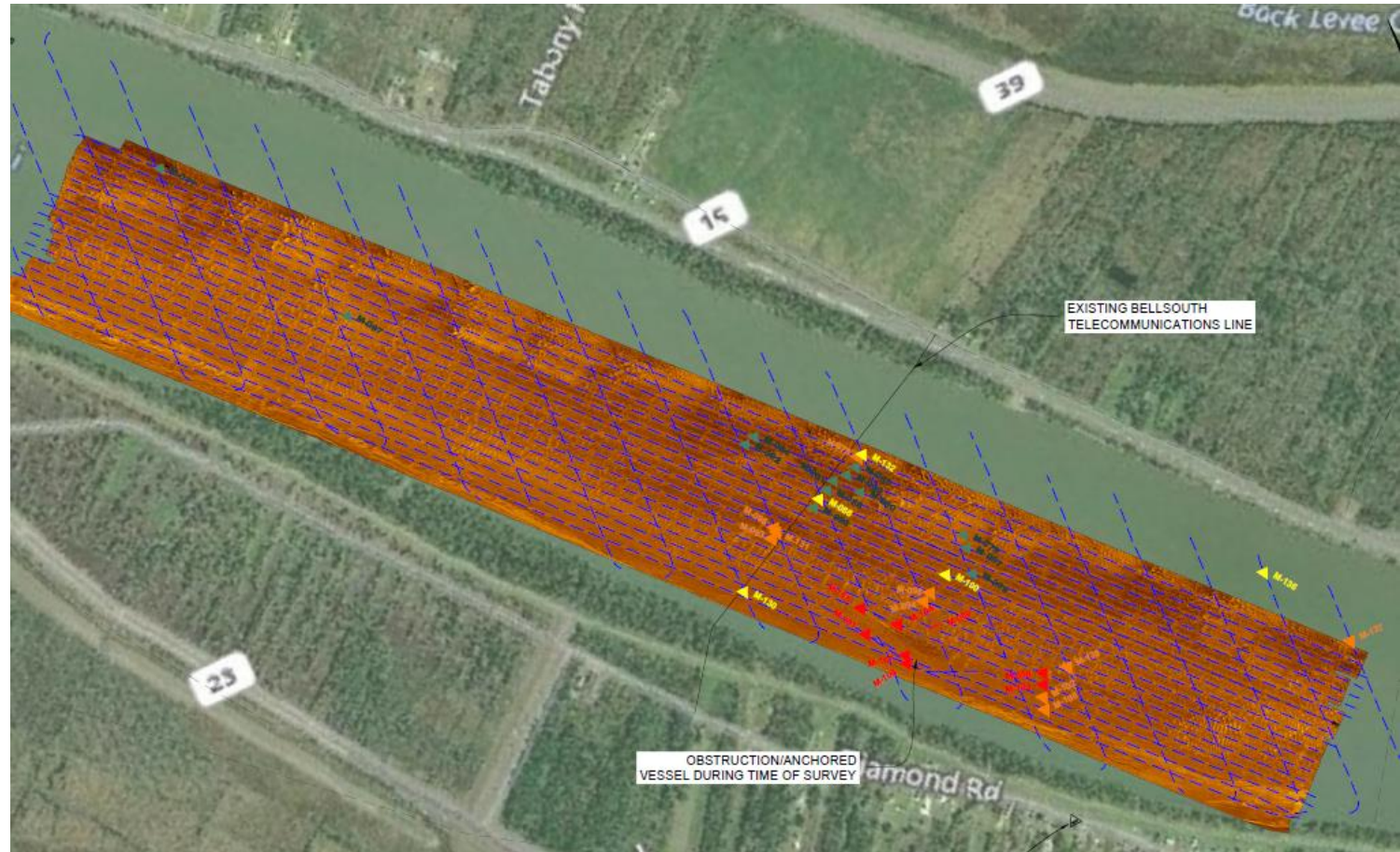


Geophysical Survey

Cultural Resource Investigations

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)
- SHPO Clearance is required to permit projects



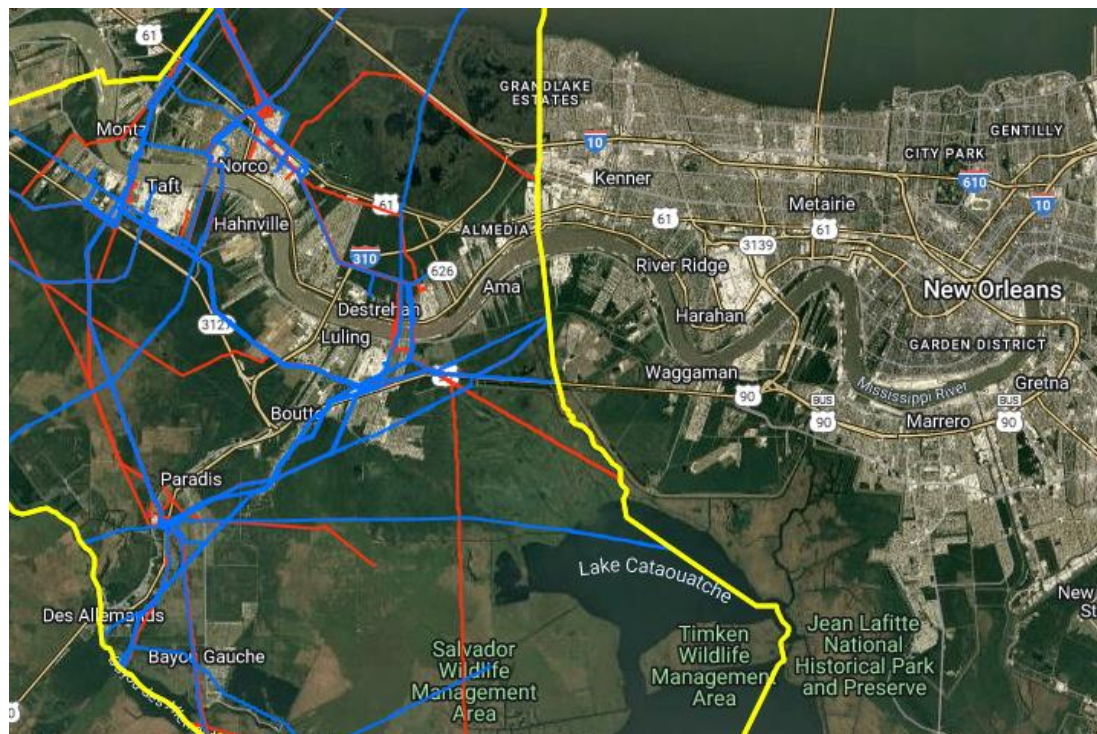
Geophysical Survey

Oil and Gas Infrastructure



OIL AND GAS INFRASTRUCTURE

Oil and Gas Industry in Louisiana



St. Charles Parish Pipelines and Flowlines
(National Pipeline Mapping System (NPMS)
Public Viewer Database)

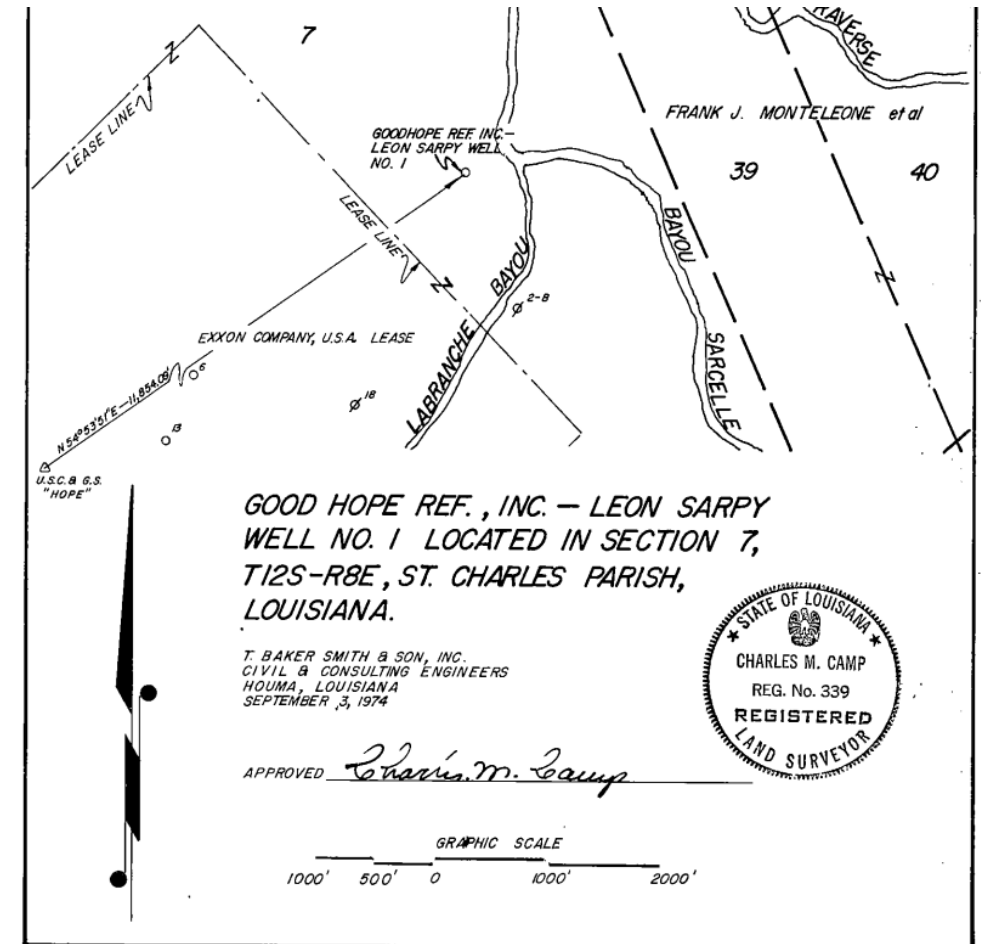
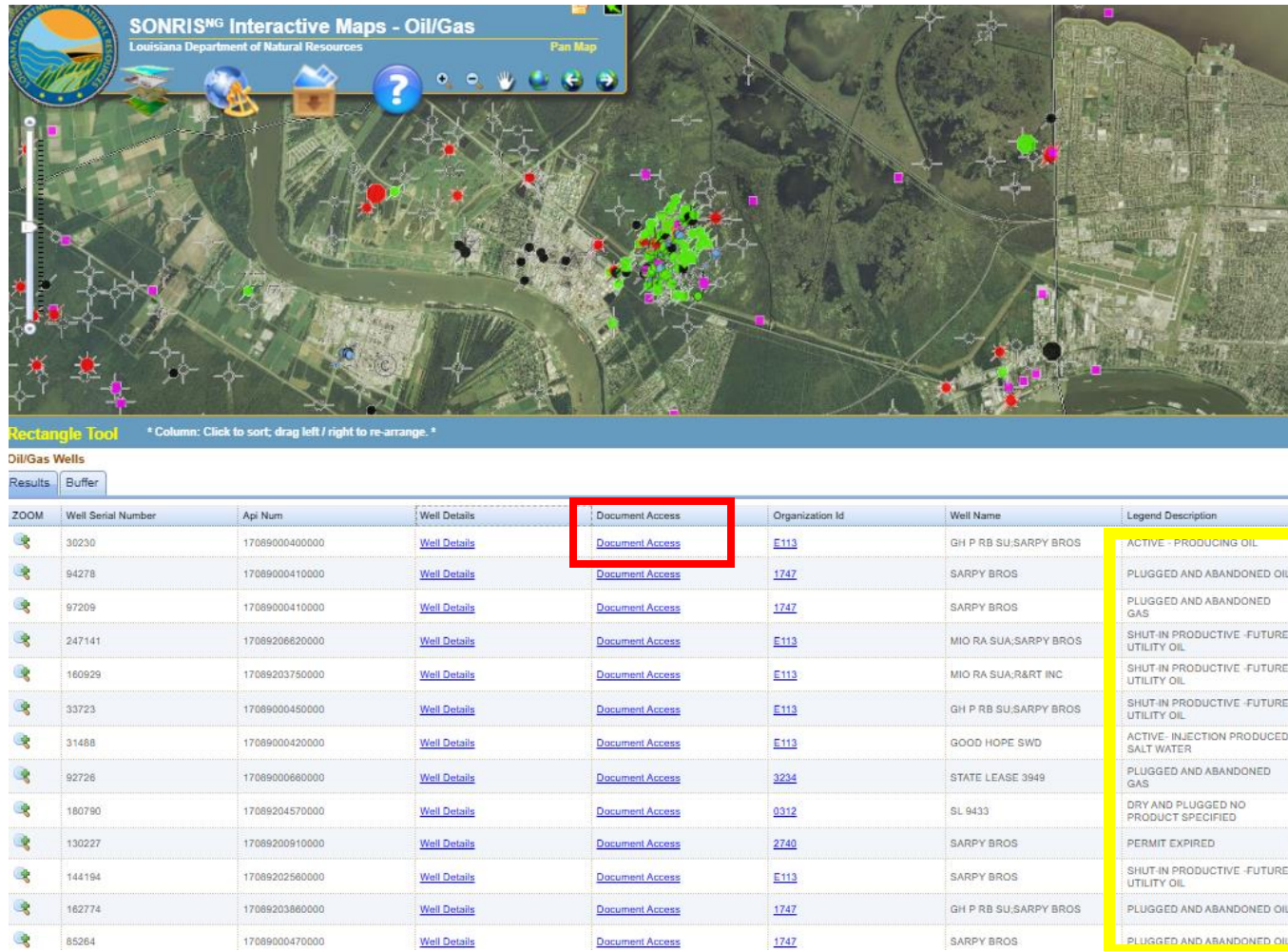


Coastal Permit lines (SONRIS Database)



OIL AND GAS INFRASTRUCTURE

SONRIS



SONRIS – Oil/Gas Wells

OIL AND GAS INFRASTRUCTURE

Pipeline Databases

Discrepancies often found between databases.



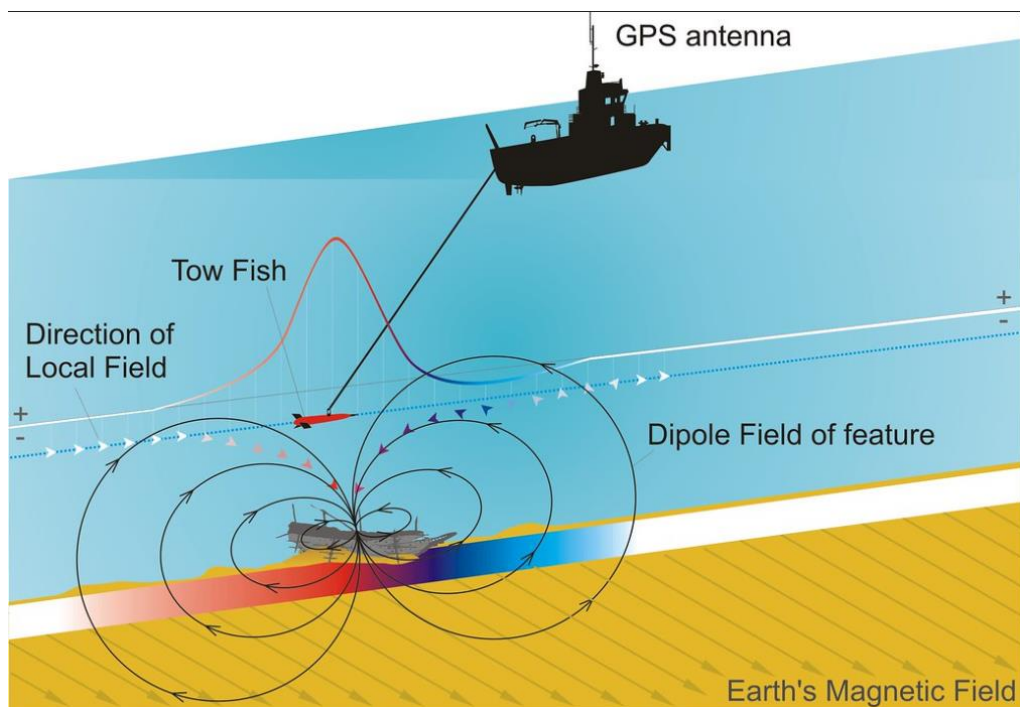
SONRIS – Permit Lines



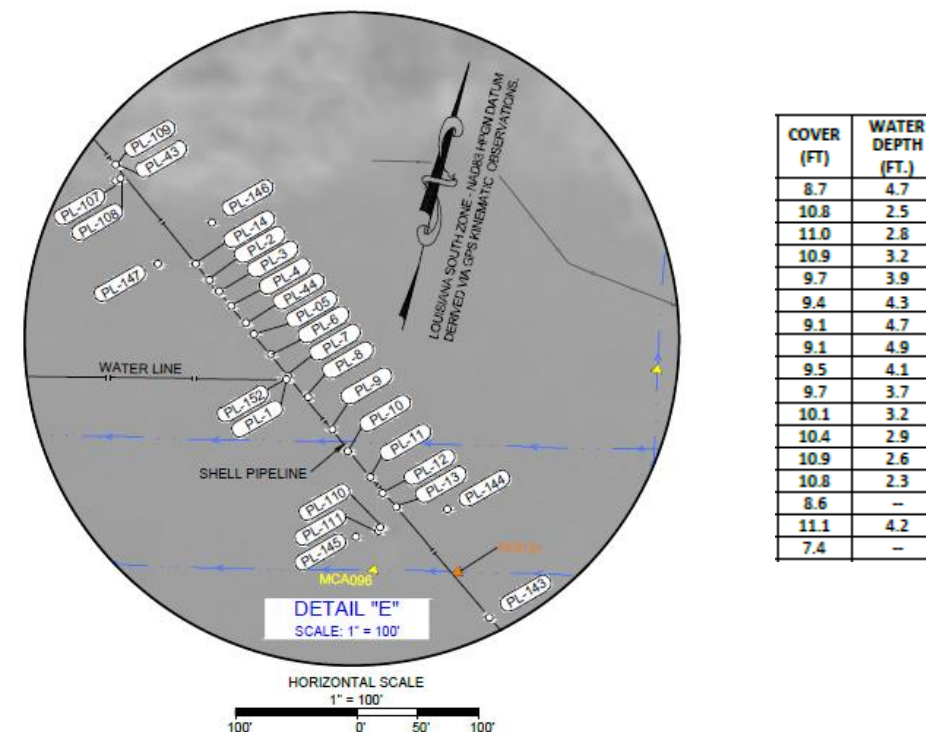
NPMS

OIL AND GAS INFRASTRUCTURE

Magnetometer Survey



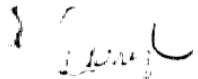
Marine magnetometer measures magnetic field strength



Suspected pipelines probed to determine **coordinates** and **depth of cover**

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


UNITED GAS PIPE LINE COMPANY
POST OFFICE BOX 60626 • NEW ORLEANS, LOUISIANA 70160
TELEPHONE 504-486-3800

September 15, 1982

Exxon Corporation
P.O. Box 60626
New Orleans, Louisiana 70160

Your Re: State Application
No. P821077
Public Notice dated
July 27, 1982

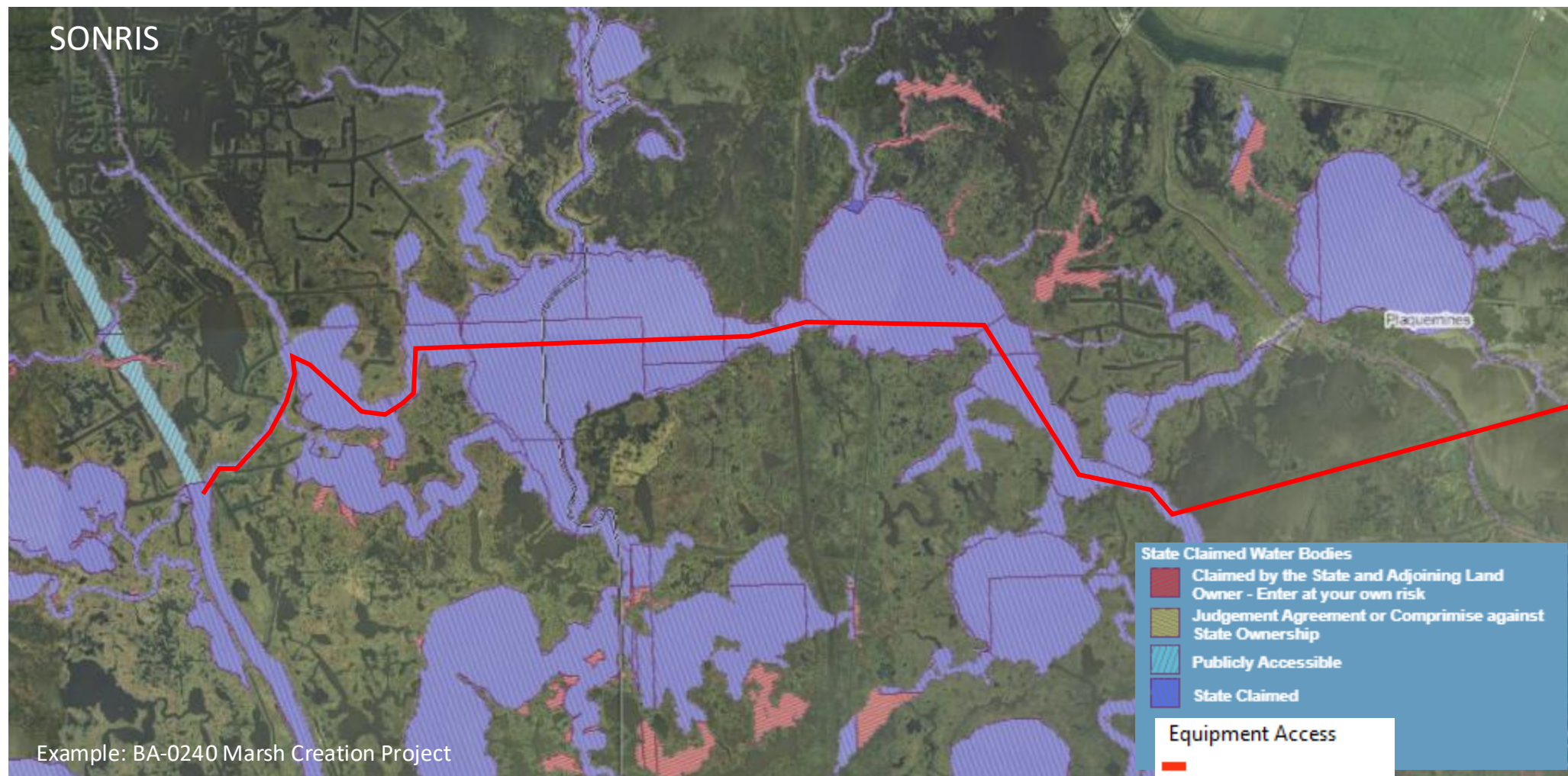
Our Re: 8" Lake Hermitage
Field Main Line, Index
293-4, Item 18, Station
400+00 to 440+00, Section
12, T-18-S, R-25-E,
Plaquemines Parish, La.

Landowner Agreements



LANDOWNER AGREEMENTS

Identifying State Water Bottoms for Access



LANDOWNER AGREEMENTS

Private Lands

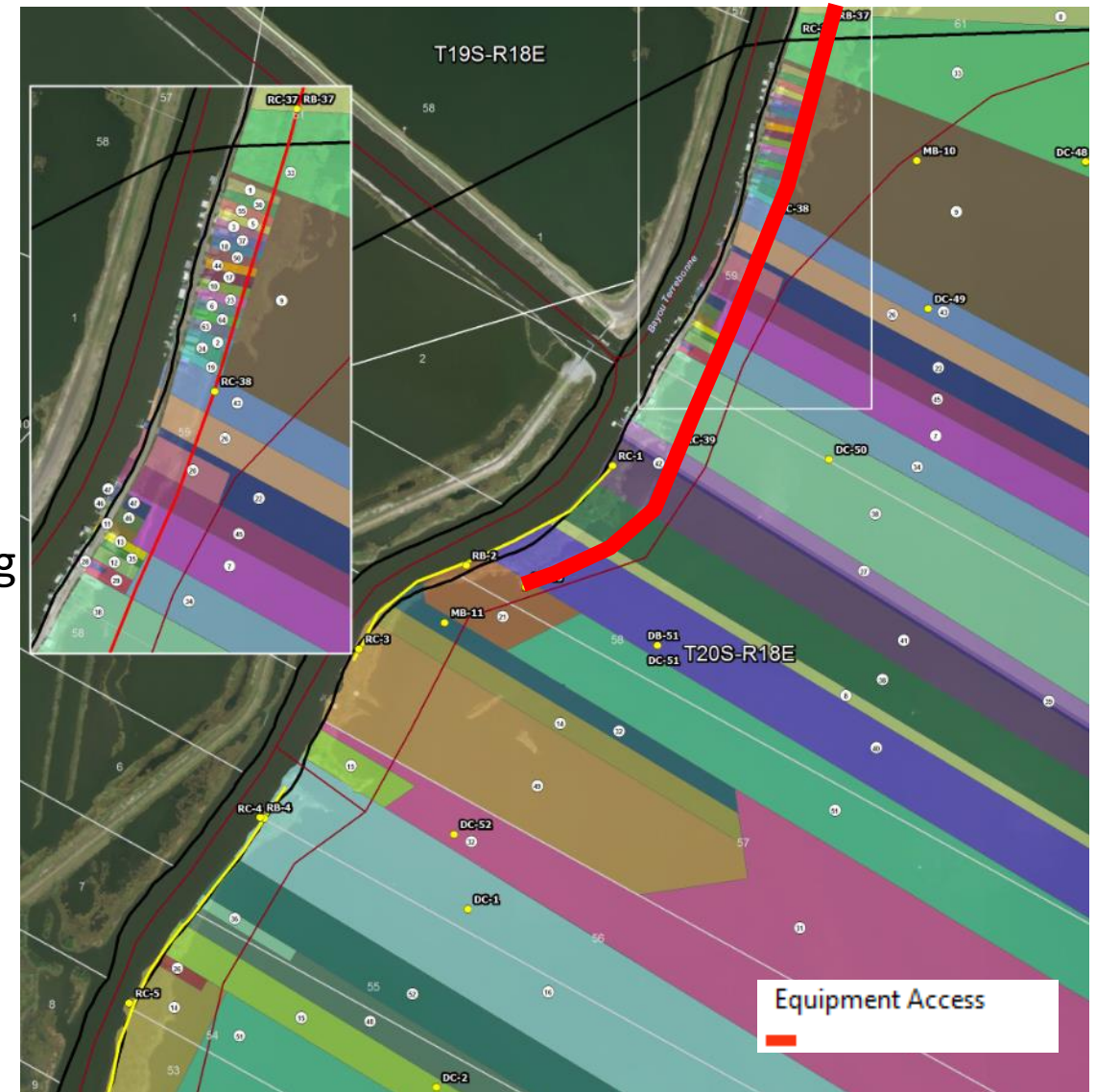
LA Coastal Zone is home to thousands of community residents

Proper coordination with landowners is required

Agreements are needed with landowners when crossing or impacting their property.

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.

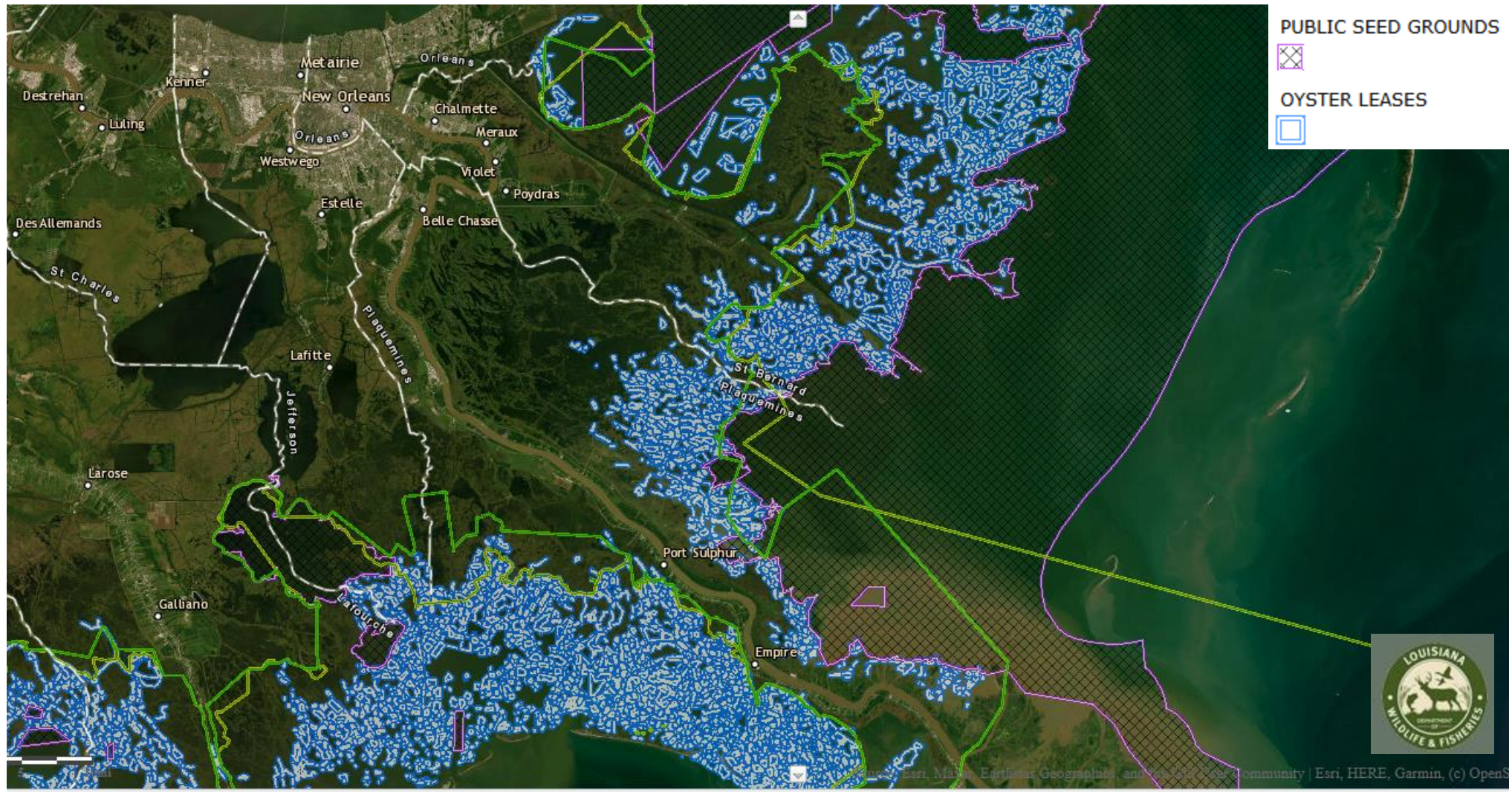


Oysters Resources



OYSTER RESOURCES

Oyster Leases and Seed Grounds



OYSTERS RESOURCES

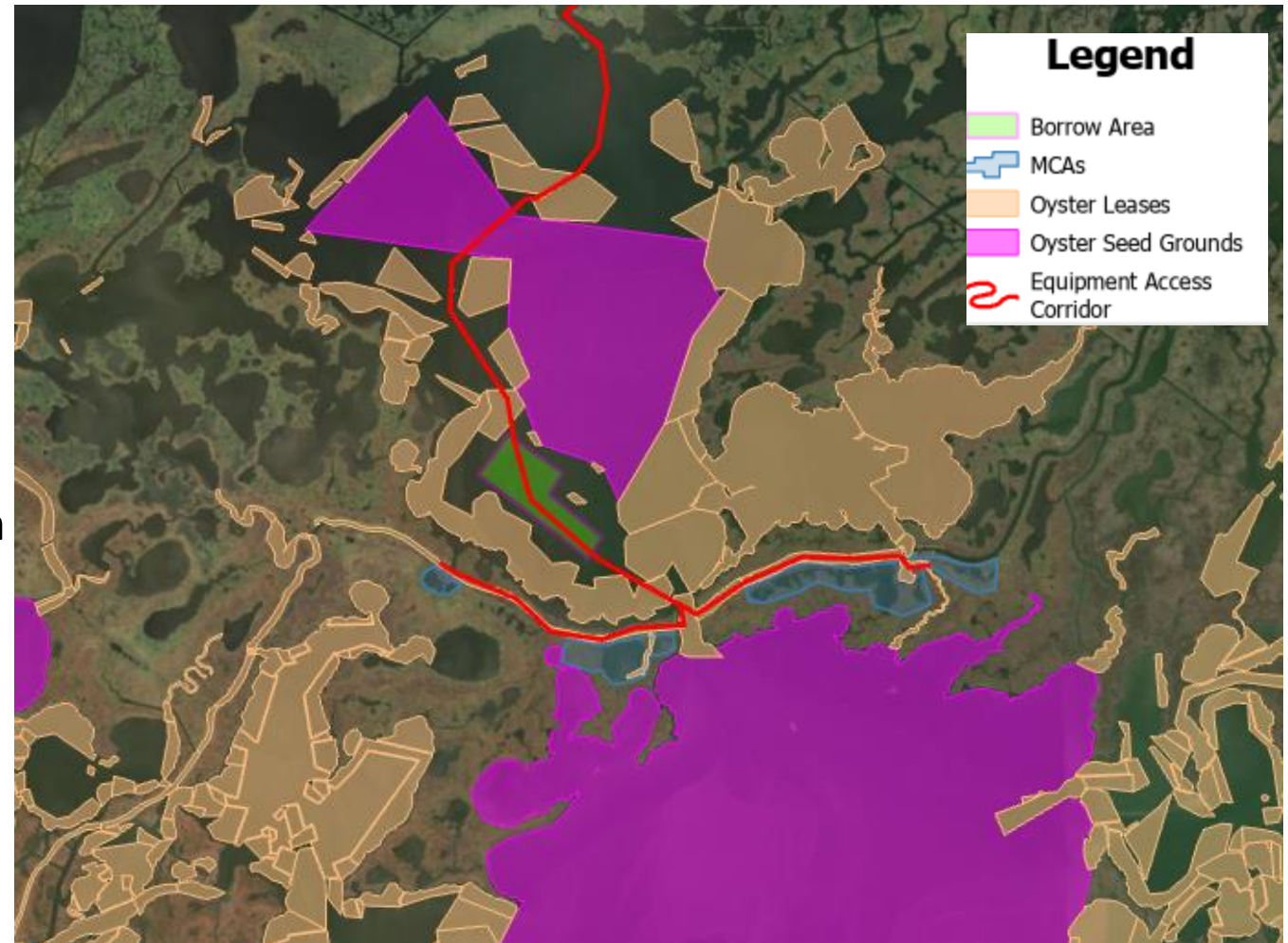
Oyster Resources

Avoiding oyster seed grounds and leases may be difficult when designing projects.

Oyster Biological Assessments are required for seed grounds or leases adjacent to access corridors and other project features.

A Louisiana Department of Wildlife and Fisheries Permit will be required for project in Seed grounds.

Early coordination is vital to identify limitations or mitigation required.



Example: TE-0170 Bayou Dularge Marsh Creation Project (Terrebonne Parish, LA)



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www.coastal.la.gov