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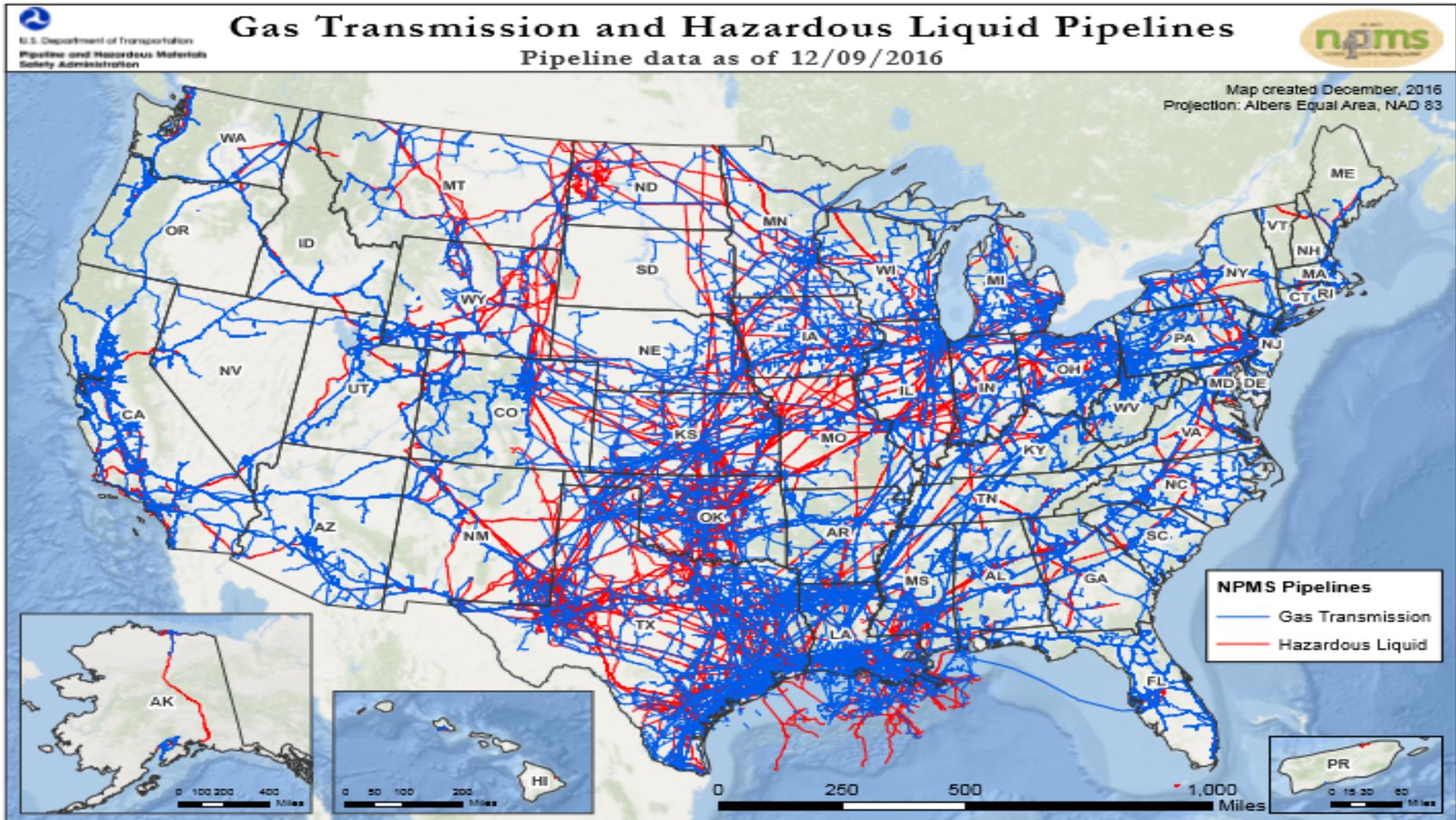


# C.A.M.O. - Coastal, And Marine Operators

## Joint Pipeline Industry Initiative

- **Who is CAMO? – Formed in 2009 as an inclusive pipeline stakeholder group with over 20 pipeline companies participating. We encourage non-industry groups with marine safety and environmental interest to join our initiative.**
- **Mission – Ensure Public/ Mariner Safety and Env. Protection by preventing pipeline spills and releases in ALL marine areas.**
- **Our Actions - Design and Support “Innovative Drivers” and provide awareness which enhance the protection of pipeline infrastructure through marine stakeholder, public, industry, NGO and agency collaboration, while demonstrating continuous improvement.**
- **Goal – “0 Marine Incidents” by implementing effective marine solutions to reduce 3<sup>rd</sup> party damage, enhance safety, asset integrity, environmental protection and preserve our right to operate.**

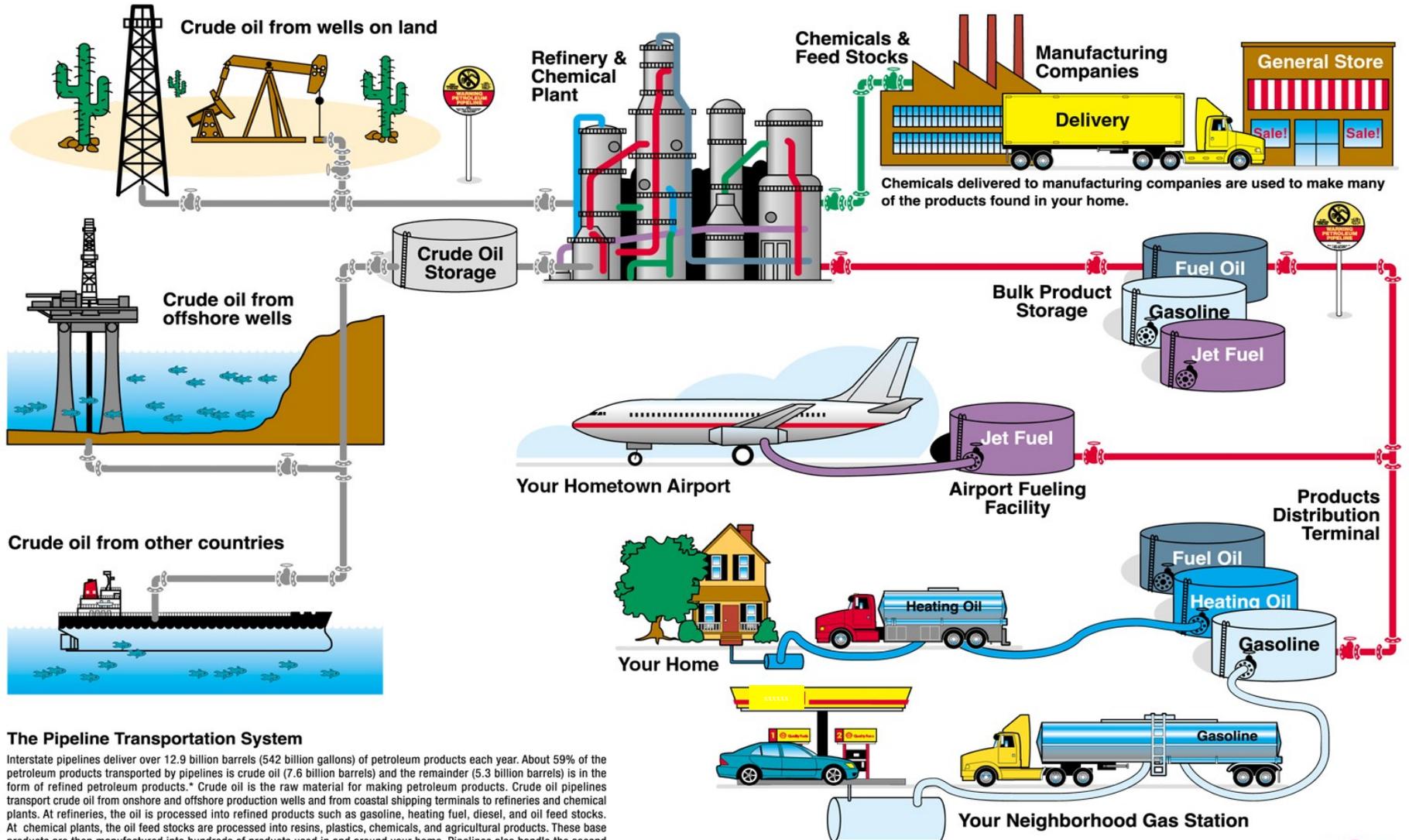
# Protecting US Pipeline Infrastructure from downtime, releases and spills is critical to our Economic and Energy Security – “In Marine and Coastal Areas”





Pipelines run through many marine environments via right of ways.

# Pipeline Transportation – Supporting The American Way Of Life



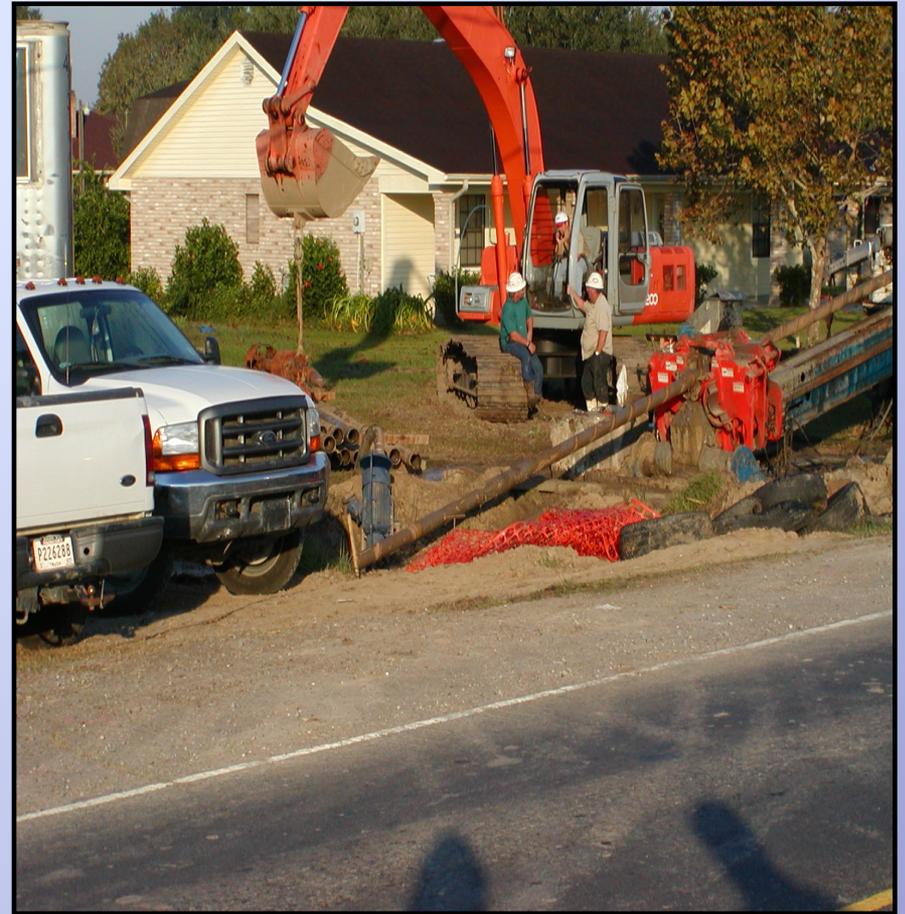
## The Pipeline Transportation System

Interstate pipelines deliver over 12.9 billion barrels (542 billion gallons) of petroleum products each year. About 59% of the petroleum products transported by pipelines is crude oil (7.6 billion barrels) and the remainder (5.3 billion barrels) is in the form of refined petroleum products.\* Crude oil is the raw material for making petroleum products. Crude oil pipelines transport crude oil from onshore and offshore production wells and from coastal shipping terminals to refineries and chemical plants. At refineries, the oil is processed into refined products such as gasoline, heating fuel, diesel, and oil feed stocks. At chemical plants, the oil feed stocks are processed into resins, plastics, chemicals, and agricultural products. These base products are then manufactured into hundreds of products used in and around your home. Pipelines also handle the second part of the transportation journey – transporting the refined products to regional and local distribution centers. At the

## Flow lines vs. Pipelines and Where is PHMSA's Regulatory Jurisdiction?

**General Marine Pipeline Safety is not Equally Understood.  
Unknown and 3<sup>rd</sup> party damage is a major source of the  
Pipeline Industry's largest spills.**

**Marine                      or                      On Land**



# Marine Pipeline Fatalities and Incidents DO Happen! So, what's is the Causes...



## Interactions between Marine Vessels and Pipelines (over 20 yrs.)

Source: NTSB, Coast Guard and PHMSA

Pipeline Strikes Reported 118

Fatalities 25

Personnel Injuries 17

Environmental Impact - Pipeline Spills  
100,000 bbls

**Spills in Costal/ Marine  
Environments can  
average over \$10,000  
a bbl. just to clean up**



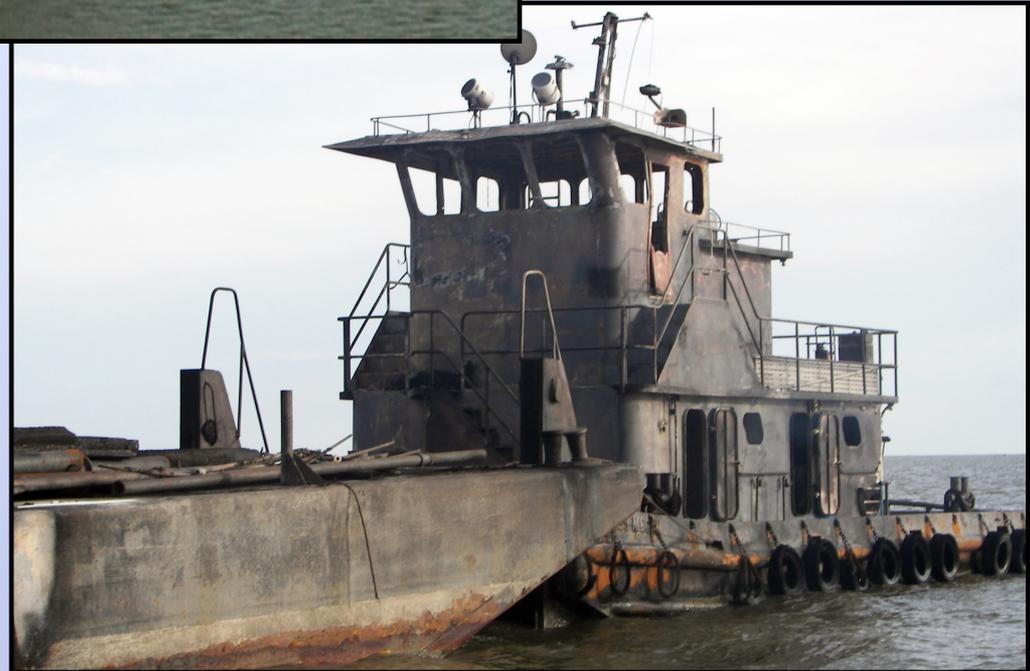


**Vessel interactions occur offshore, coastal, lakes and rivers –  
Yet Marine Damage Prevention Guidelines are lacking on all sides...**

# **Marine Gas Pipeline Struck by Vessel**



**West Cote Blanche  
Bay:  
Spud Barge Kills 6  
October 6, 2006**



## **3 Incidents in March 2013 involving vessels and marine pipeline infrastructure...**

**The example below resulted in a fatality... (prop hit the line)**



# Wheel Washing Vessel Damages 16" Natural Gas PL

**Worker Safety and Releases in marine environments can be very serious**



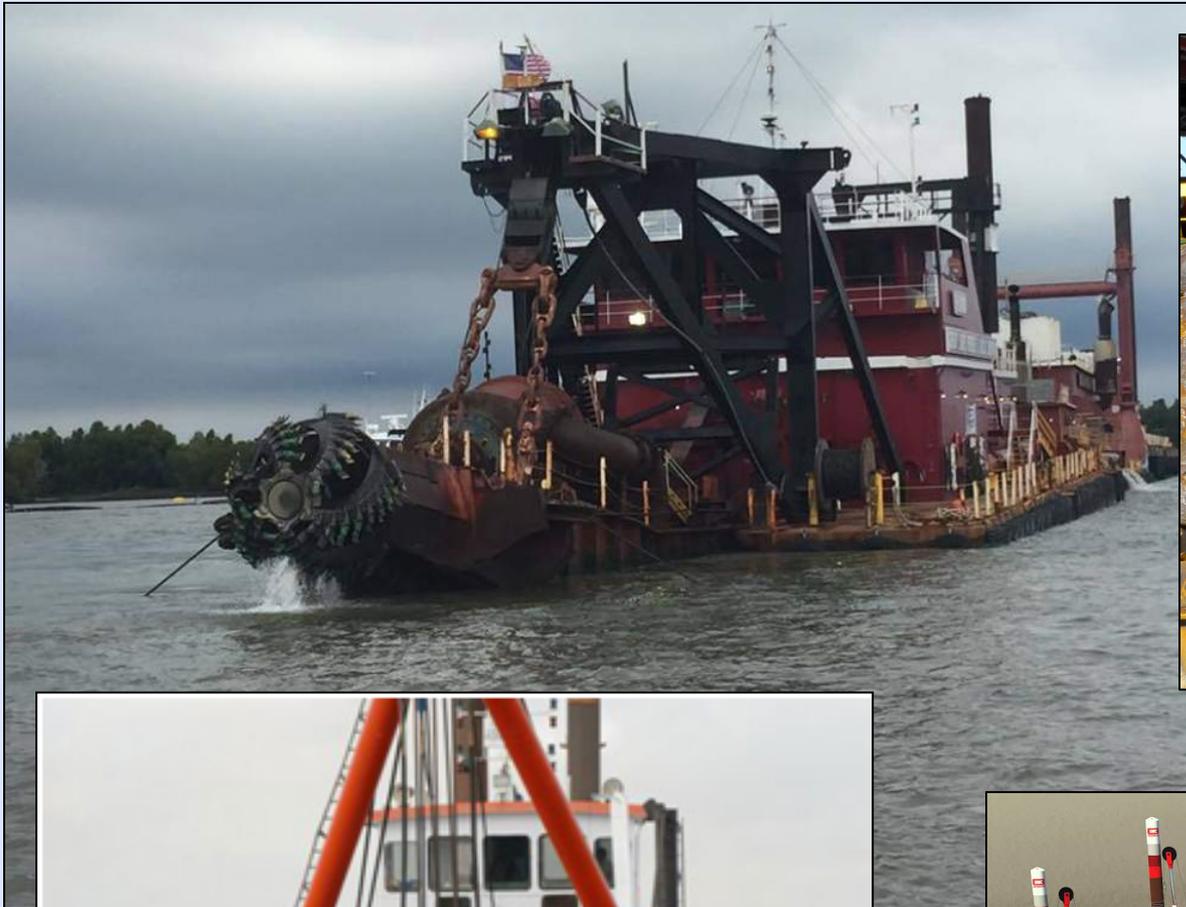
**Voyage Plans, plotting routes and marine staging areas are very important**



# Wheel wash Example: Vessel Prop Hits a Pipeline Causing Rupture



# CAMO Case Study: Dredging Activity and Damages



## Do Dredge's and Pipelines impact each other?

(CAMO Study shows some type of damage or strike - averages 1 per year)

### Dredger strikes subsea gas pipeline in Gulf of Mexico, El Paso ...

[gcaptain.com/dredger-strikes-subsea-pipeline/](http://gcaptain.com/dredger-strikes-subsea-pipeline/) ▼

Apr 1, 2011 - Incident Summary: At 2030 on 30 Mar, while conducting dredging operations

### Dredging ship cracks natural gas pipe in Delaware River

[www.dailylocal.com/article/DL/20140807/NEWS/140809829](http://www.dailylocal.com/article/DL/20140807/NEWS/140809829) ▼

Aug 7, 2014 - The breach occurred at about 9:15 p.m. when a dredging vessel contracted by the U.S. Army Corps of Engineers struck an 8-inch pipeline near ...

### Coast Guard responds after dredge strikes pipeline in Louisiana ...

[coastguardnews.com](http://coastguardnews.com) › Marine Environmental Protection ▼

Sep 5, 2016 - NEW ORLEANS – The Coast Guard and other agencies are responding to an oil discharge near Bay Long, Louisiana, Monday. Watchstanders ...

### <sup>[PDF]</sup> Natural Gas Pipeline Rupture and Fire During Dredging of Tiger Pas...

[pstrust.org/docs/ntsb\\_doc19.pdf](http://pstrust.org/docs/ntsb_doc19.pdf) ▼

Oct 23, 1996 - The spud struck and ruptured a 12-inch-diameter submerged ... gas released from the pipeline enveloped the stern of the dredge and an ...

### Pipeline Fire - CNN iReport

[ireport.cnn.com/docs/DOC-413532](http://ireport.cnn.com/docs/DOC-413532)

Dredge hit a natural gas pipeline off  
apflood | Posted February 26, 2010 |

### Dredger Hits Natural Gas Pipeline and Catches Fire

<https://www.maritime-executive.com/article/dredger-hits-natural...>

By MarEx 2018-04-18 15:34:00 [Brief] On Tuesday evening, the cutter suction dredger Jonathan King Boyd hit a gas pipeline during dredging operations in Matagorda Bay, Texas, sparking a fire.

# National Estuary Spill – Federal Coastal Restoration Project Sept. 2016



## 200 birds oiled in Bay Long spill as cleanup continues

Marsh buggy rebuilding Chenier Ronquille Island as part of BP spill response cut pipeline on Monday, causing new 5,300-gallon oil spill

### Bay Long oil leak caused by federal Coastal Restoration Contractor

It's one of those ironies that Louisiana may have to get used to: the 5,250-gallon spill of crude oil discovered Monday in Bay Long, part of Barataria Bay, was caused by a contractor working on a project aimed at restoring the effects of the BP oil spill, federal officials confirmed Tuesday (Sept. 6).

An excavating marsh buggy accidentally cut through a pipeline, releasing the oil, while rebuilding Chenier Ronquille Island on the edge of Bay Long, part of the southern edge of Barataria Bay.



# What Happened?

- The PL company rep met with contractor months before the work
- A one call was made, but the ticket was expired when work began
- Contractor and PL rep did not meet when the job began for pre-job safety meeting
- The PL was not well prior to work starting
- Coastal Project managers did not accurately account for the exact PL location and Depth
- If it were a Gas line hit – good chance a fatality would have occurred

## Discussion Questions:

- **What could have been done better?**
- **Who, How, When and What needs to be communicated in these projects?**
- **What do both sides need to know?**



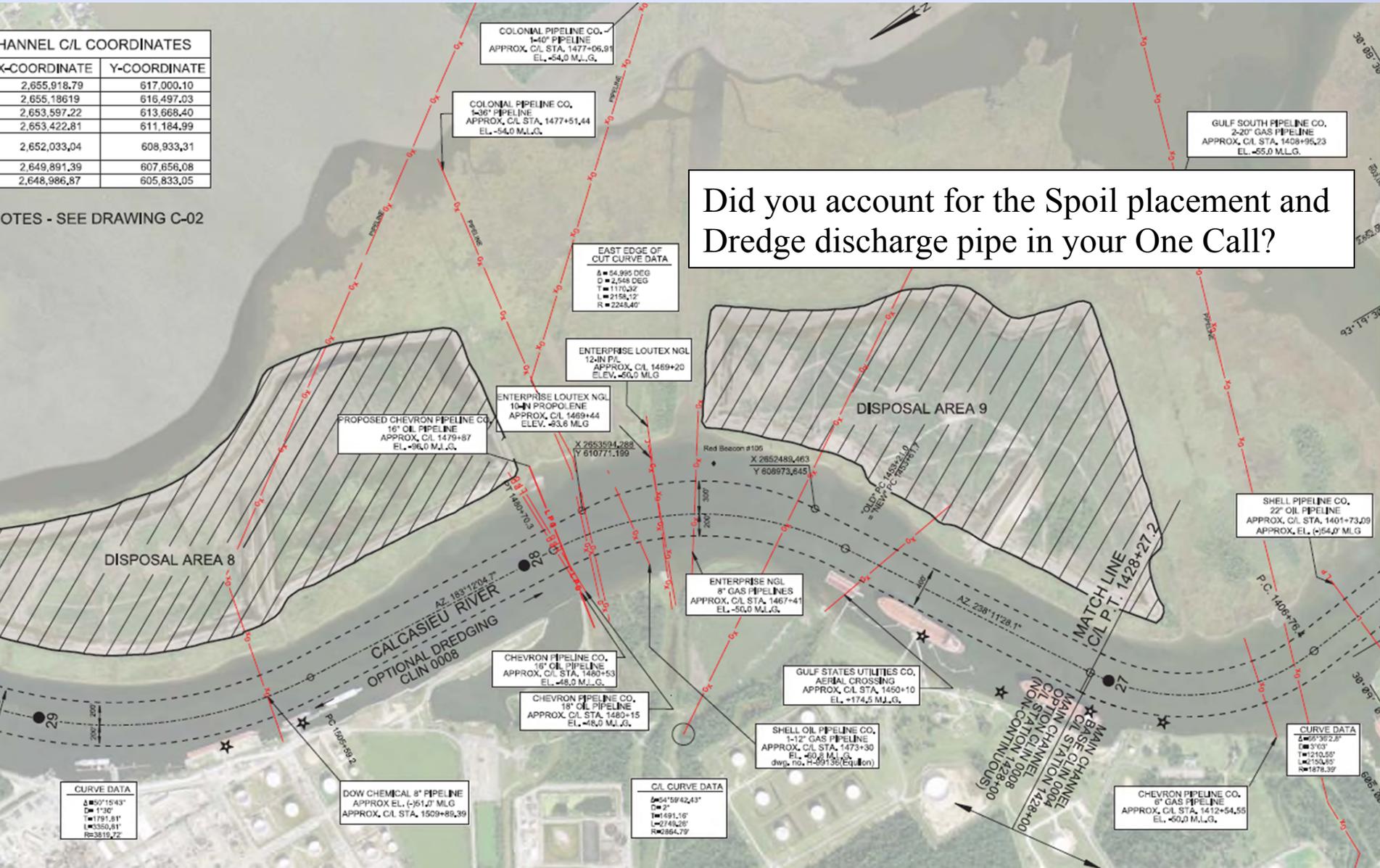
**Example: Third Party Coastal Pipeline Damage**

# Dredger Reported Activity to CAMO for Help

## CHANNEL C/L COORDINATES

X-COORDINATE	Y-COORDINATE
2,655,918.79	617,000.10
2,655,196.19	616,497.03
2,653,597.22	613,668.40
2,653,422.81	611,184.99
2,652,033.04	608,933.31
2,649,891.39	607,656.08
2,648,986.87	605,833.05

NOTES - SEE DRAWING C-02



Did you account for the Spoil placement and Dredge discharge pipe in your One Call?

## Waterways and Rivers are always being Dredged.

- Are “Do Not Anchor or Dredge” signs effective? (night, fog, alignment issues?)
- Do you have the proper stakeholders ID'd in your work plan or program?
- Do PL companies have a marine protection program?



Barges moored over   
Pipelines in front of Sign

# **Marine Excavation - Legal Rulings and Mitigations**

- **The 5<sup>th</sup> circuit court questioned the La. One call Law “definition of Excavation” and ruled against the PL company, siding with the Dredge Operator.**
- **There was no One Call made by the Dredge company. The pipeline released over 100bbls of crude oil. The state police issued a citation for damage without a One Call.**
- **Court ruled the action was not “for the purpose of Excavation” eventhough over 100 cu yds was moved.**
- **The Dredge ladder that hit the PL was 600 tons, the PL was buried 7 ft deep in 22 ft of water.**
- **CAMO and La. One Call worked to change the Law, the new law passed in 2016. It adds clarity to the “definition of excavation”**
- **Know the Law in your state and follow industry best practices.**

# CAMO Guidelines for Underwater PL Damage Prevention

**(CAMO proactively educates stakeholders through Mass Mail, F2F Engagements, Produce Awareness Material and many other means)**

State Waters: including Rivers, Lakes, Bayous and Bays

- Activities: Dredging, Spud Barges, Jack-up boats, Tug Boats and Barges, Heavy Anchoring, Seafloor contact of commercial fishing gear, Large Vessels, Site Clearance, Pile Driving, Boring, Wheel Washing, Installation and Removal of marine structures etc.

- Inland or coastal waters **activity within a 250 ft. of a pipeline needs to be reported** and planned directly with the pipeline company to get a safe to work acknowledgment or crossing agreement

Gulf of Mexico: Federal waters outside of state boundaries

- Activity: anchoring of all types, jack-up boats, spud and lay barges, ships, site clearance, seafloor exploration activities, seafloor contact of commercial fishing gear, platform installations, abandonments etc.

- Any offshore **activity within 1500 ft. of a pipeline needs to be reported** and planned at least 1 weeks prior, this will lessen your liability if an incident occurs

**NOTE: Electric, Fiber-Optic, Water, Phone, Cable, Gas lines, also run underwater and the same guidelines to prevent marine damage should apply**

# On Land or Marine?

Many **LAKES, RIVERS, BAYS, GULF and OCEAN** stakeholders don't understand **811 and call before you dig laws.**



**Know what's below.  
Call before you dig.**

**Not all state laws require 811 in  
“marine” areas.**

# “Call Before You Dig”

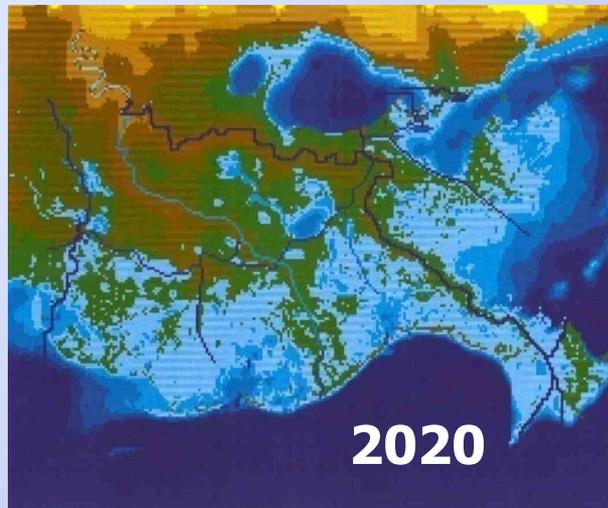
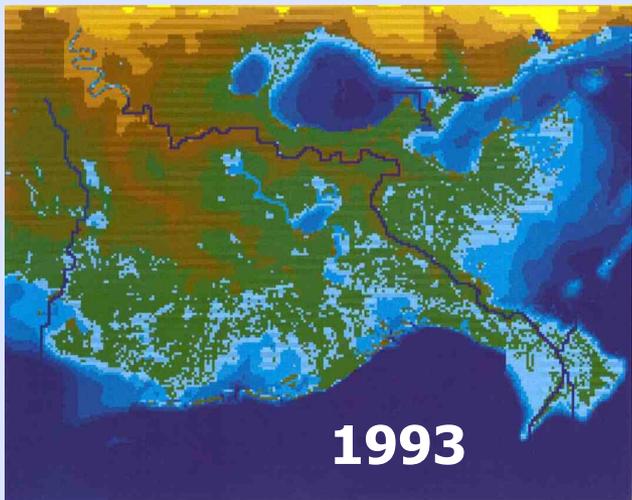
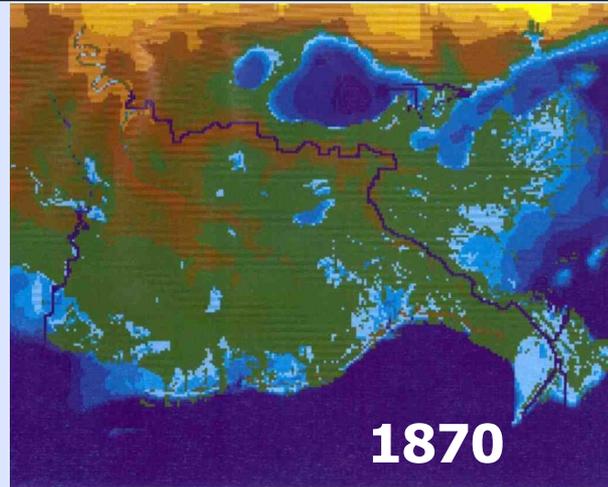
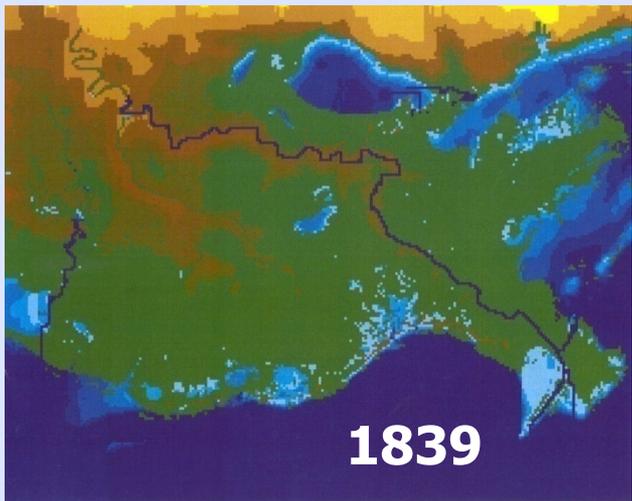
## Laws Vary in Different States

- Notification time is 2 business days before the work begins and the ticket is good for 20 days
- Definition of “Digging” is any movement or removal of Earth – on land **or submerged??**

### Other considerations -

- \* Reduce your liability - follow the law “Call Before You Dig”
- \* Ask the Pipeline Company to send a rep when crossing a line

# LAND LOSS impacts on Oil and Gas Pipeline Integrity?



- Pipelines are required to be installed at 3ft or 4ft depth of cover
- Marking Pipelines in coastal and marine areas is a challenge
- Dredging can help provide additional depth of cover over pipelines, but crossing agreements have to be in place
- Early planning is key!

# Coastal Estuaries: Hurricanes, Land Loss and Coastal Erosion Effects on Pipelines...



**Shallows pipelines which  
were previously buried -  
Leaving them open to 3<sup>rd</sup>  
party damage...**

# New Technology: AIS Monitoring

## Pipeline Corridors

What is....

### Automatic Identification System (AIS)

- Collision avoidance between vessels
- Signal transmitted via VHF with range of 20 to 40 miles

- **Title 33, Code of Federal Regulations**

164.01 Applicability & § 164.46 - vessels of **65 feet or more** in length, other than passenger and fishing vessels, **Towing** vessels of **26 feet or more** in length and **more than 600 horsepower**, **Passenger vessels, of 150 gross tonnage or more, more than 150 passengers-for-hire, Tankers**, regardless of tonnage

# AIS Monitoring Vessels in Pipeline Corridors

**portvision**

Search  Region

Enter Vessel, Call Sign, IMO number, Terminal, or POI

My Alerts  
My Fleets  
My Terminal/POI Lists

> Reports and Analytics  
> Dashboard  
> Preferences  
> Welcome | User Guide

Current User [my account](#) [logout](#)

portvision  
home region: Port of New Orleans,  
Louisiana

Full Screen | Map Legend | Show Waterway Alerts | Filters | Weather | Map | Satellite | Chart

2.1 3.9 2.1 4.2 1.5 2.7 4.2 3 4.5 2.1 4.2 2.4 2.7 4.8 5 4.8 2.1 2.7 0.6 29.157596, -90.230284 200 m Terms of Use

### Pipeline Corridor 2 Bayou LaFourche North

**Details**

Type: CAMO Alert Location

Contact: None

Phone: None

Email: None

# of Vessels: 0

Notes: None

View: Vessel Details

**Events**

Departure: CHRIS D	2015-08-05 03:14 CDT
Arrival: CHRIS D	2015-08-04 23:41 CDT
Departure: ROMAN ELIE	2015-08-04 18:33 CDT
Arrival: ROMAN ELIE	2015-08-04 03:25 CDT
Departure: MISS ANGIE	2016-07-31 21:14 CDT
Arrival: MISS ANGIE	2015-07-31 21:03 CDT

View More

**Actions**

- View Details
- Create Alert
- Add Observation
- Start Distance Calculator
- Terminal/POI Lists

# AIS Pipeline Near-Miss Case Study

- Pipeline operator **received an alert** regarding a vessel over a pipeline segment that looked suspicious.
- Field **inspector sent to investigate** and **confirmed vessel was stopped** in pipeline corridor.
- Inspector **notified Field Supervisor and Control Center.**
- Field inspector **contacted vessel owner**, provided vessel captains phone number.
- Captain was asked for an **ALL STOP** until further notice to do his proximity to pipeline.
- **Confirmed vessel was grounded**, notifications were made to all pipeline stakeholders.
- Vessel **held fast to high tide**, so not to be a threat to the pipeline.

# Example: Vessel Track Over Pipeline

**portvision**

Search: Search Here | Region: ALL

My Alerts | My Vessels | My Terminal/POI Lists

Reports and Analytics | Dashboard | Preferences | Welcome | User Guide

Current User: **DLAS0240** | **good**  
CPL Control Center (cplcontrol@miss.com)  
home region: Port of Venice, Louisiana

**MISS CHRISTY**

**Details**

Type: Vessel  
Call Sign: WDD6371  
IMO: 514057000  
Flag: United States  
Last Report: 159 days 18 hours ago  
2014-06-17 19:17:40 CDT  
Heading: Unknown  
Speed: 0 knots  
Location: Lat 29.40, Lng -89.51  
AIS | USCG | OBB

**Actions**

View Position History  
View Event History  
Hide Vessel Track  
Start Distance Calculator

**Events**

Departed N ShoreFSA	2014-06-17 04:09 CDT
Arrived N ShoreFSA	2014-06-16 11:29 CDT
Departed Port: Port of Venice, Louisiana	2014-06-16 15:38 CDT
Passed Sapate Colette	2014-06-16 15:44 CDT
Passed Upper Venice Anchorage, LA	2014-06-16 15:29 CDT
Departed USCG Station	2014-06-16 15:01 CDT
Moving Venice, LA - 0090	15:01 CDT

29 486628 -89 517353 | 100 m | Terms of Use

Advance 1 minute(s) | 2014-06-17 19:18 CDT

**Tug Strikes Pipeline while wheel washing:  
Resulted in a fatality.**



# CAMO - AIS Active Monitoring Example

portvision



Search

Region

Search Here

ALL



Enter Vessel, Call Sign, IMO number, Terminal, or POI

My Alerts  
My Fleets  
My Terminal/POI Lists

> Reports and Analytics  
> Dashboard  
> Preferences  
> Welcome | User Guide

Current User

my\_account logout

portvision  
home region: Fourchon, Louisiana

Playback



Real Time - Tug Boat and Barge track just before the pipeline strike, fire and fatality occurred

Active Submerged Pipeline

SHANON E SETTOON

Details

Type:	Tug
Call Sign:	WDD4758
IMO#:	1239
Flag:	United States
Last Report:	218 days 21 hours ago 2013-03-12 17:37:22 CDT
Heading:	Unknown
Speed:	0 knots
Location:	Lat: 29.63, Lng: -90.17

AIS | USCG | Q88

Actions

- View Position History
- View Event History
- Hide Vessel Track
- Start Distance Calculator

Events

Passed GIWW MM 20 W	2013-03-12 16:33 CDT
Passed GIWW MM 30 W	2013-03-12 05:48 CDT
Passed GIWW MM 40 W	2013-03-12 03:23 CDT
Arrived at Port: New Orleans, Louisiana	2013-03-12 03:20 CDT
Passed GIWW MM 50 W	2013-03-12 02:09 CDT
Departed Port: Houma, Louisiana	2013-03-12 02:06 CDT

Advance 0.5 minute(s)



2013-03-12 17:37 CDT



# Why?



- We all need to collaborate better!
- To protect the safety of workforce, community and the environment.
- Enhance Coastal Areas
- Protect the US oil and gas Energy Supplies



# **Coastal and Marine Pipeline Dialog**

## **Stakeholder Topics:**

- **What would you like to know about coastal or marine pipelines?**
- **How can we help you succeed with your Coastal Construction Activities?**
- **Are pipeline or oil/ gas company requests unreasonable?**
- **What other Concerns do you have?**

## **Pipeline Companies:**

- **Want to be involved with the lead Agency during engineering, design, permitting and planning.**
- **Want a One Call to be made prior to work.**
- **Want to be on site when ANY Work or Crossing is within 100ft.**
- **Want safe coastal construction and helps protect PL assets....**

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