GOMCarb

Partnership for Offshore Carbon Storage Resources and Technology Development in the Gulf of Mexico
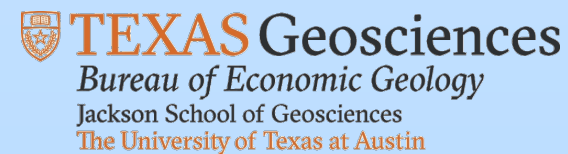
DE-FE0031558

Susan Hovorka, Tip Meckel

and Ramon Treviño

Gulf Coast Carbon Center, Bureau of Economic Geology

Jackson School of Geosciences The University of Texas at Austin

Regional Carbon Management Application Workshops
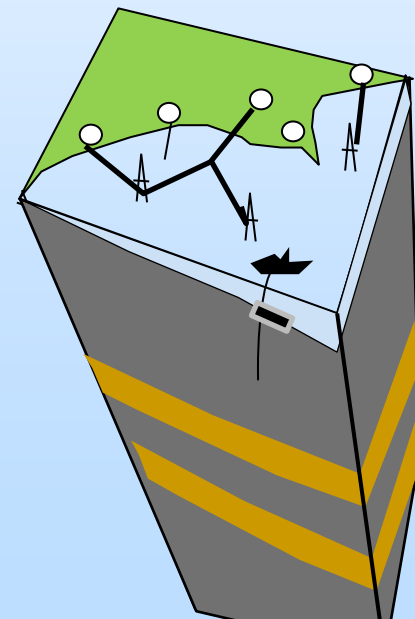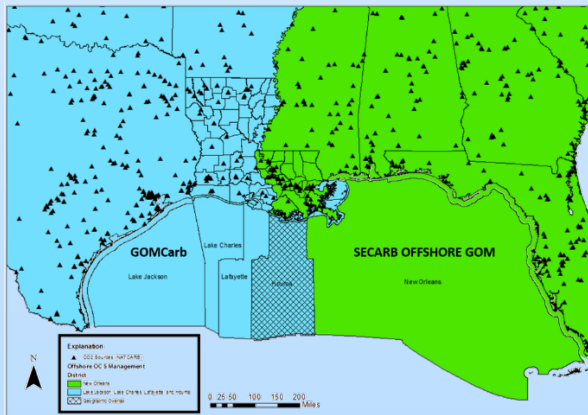
Kenner LA

April 18 , 2022

Project Scope

Task 2: Offshore Storage Resource Assessment

Task 3: Risk Assessment, Simulation & Modeling

Task 4: Monitoring, Verification & Assessment

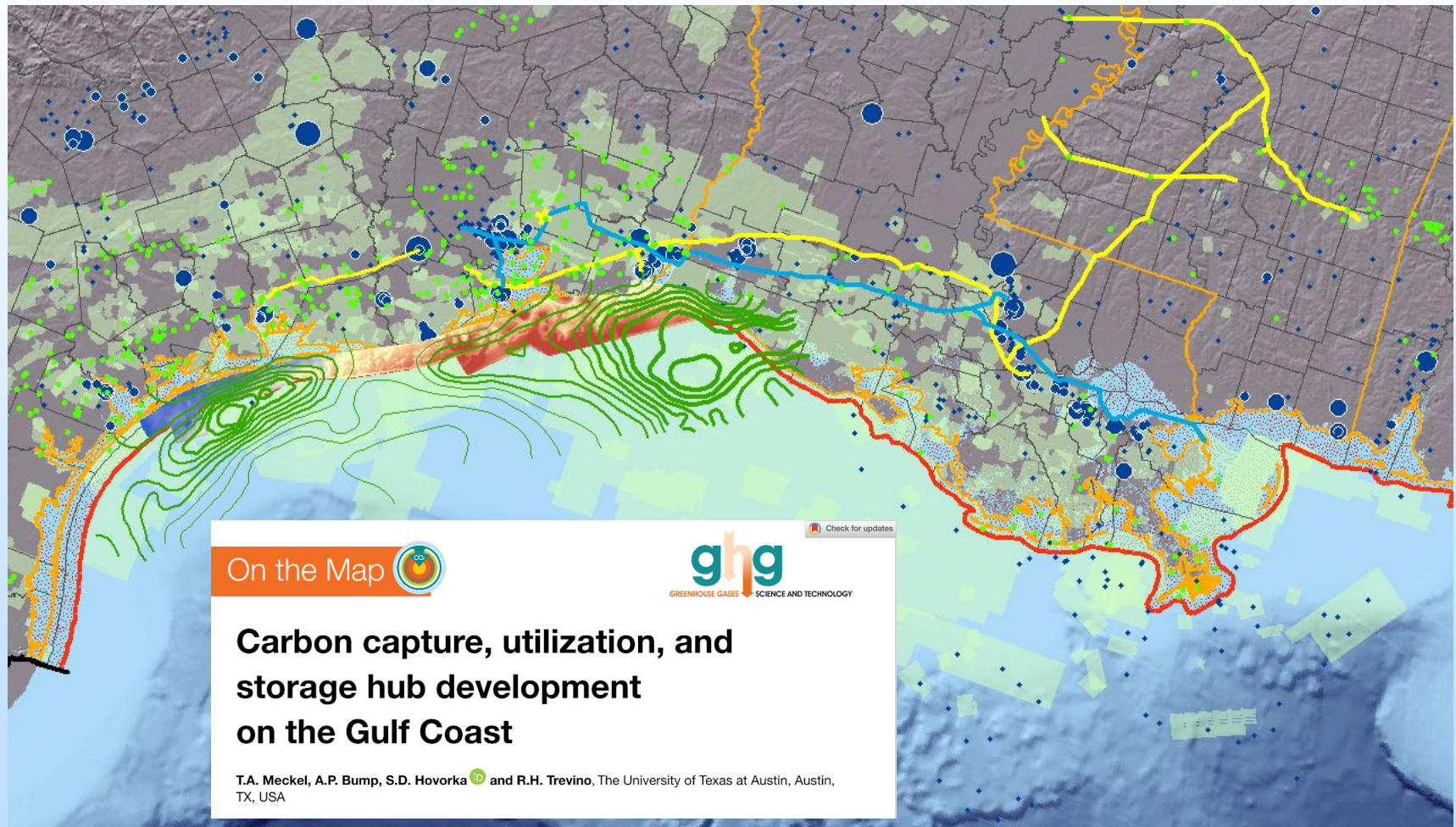**Task 5: Infrastructure, Operations & Permitting**
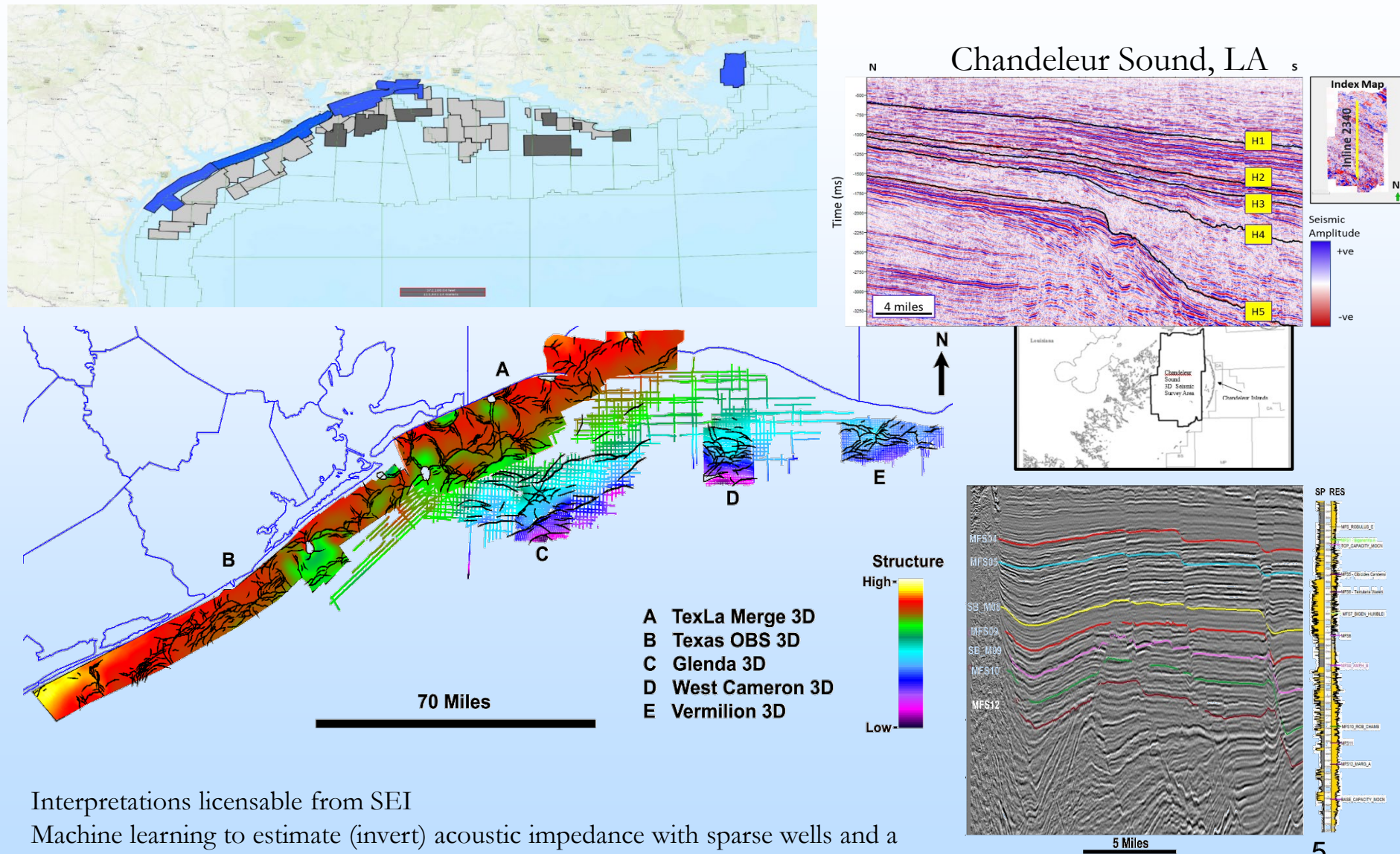
Task 6: Knowledge Dissemination

Partnership Participants

Institution	Location	Expertise
University of Texas at Austin		Project Lead
Gulf Coast Carbon Center	Austin, TX	Geo-Sequestration
Gulf of Mexico Basin Synthesis (GBDS)	Austin, TX	GoM Basin Regional Geology
Petroleum & Geosystems Engineering	Austin, TX	Reservoir Simulation
Stan Richards School	Austin, TX	Public Relations
Aker Solutions	Houston, TX	Subsea Infrastructure
Fugro	Houston, TX	MVA Technologies
TDI-Brooks, Intl.	College Station, TX	MVA Technologies
Lamar University	Beaumont, TX	Risk Assessment; Outreach
Trimeric	Buda, TX	Engineering; Infrastructure & Operations
USGS	Reston, VA	Characterization & Capacity Assessment
Louisiana Geological Survey	Baton Rouge, LA	Database Development
Texas A&M (GERG)	College Station, TX	Ocean & Environmental Science
LBNL	Berkeley, CA	Risk Assessment; MVA Technologies
LLNL	Livermore, CA	Risk Assessment

An open access journal article published on **CCUS hub development in the Gulf Coast**.
https://onlinelibrary.wiley.com/doi/10.1002/ghg.2082

On the Map

ghg
GREENHOUSE GASES · SCIENCE AND TECHNOLOGY

Check for updates

Carbon capture, utilization, and storage hub development on the Gulf Coast

T.A. Meckel, A.P. Bump, S.D. Hovorka and R.H. Trevino, The University of Texas at Austin, Austin, TX, USA

4

Task 2: Offshore Storage Resource Assessment

Chandeleur Sound, LA

A **TexLa Merge 3D**
B **Texas OBS 3D**
C **Glenda 3D**
D **West Cameron 3D**
E **Vermilion 3D**

70 Miles

Structure
High
Low

Interpretations licensable from SEI
Machine learning to estimate (invert) acoustic impedance with sparse wells and a
large 3D seismic dataset

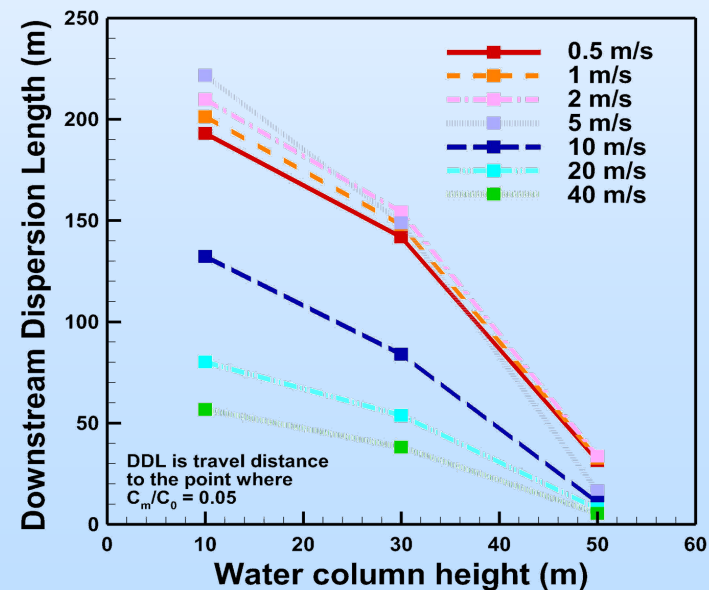# Task 3: Risk Assessment, Simulation & Modeling
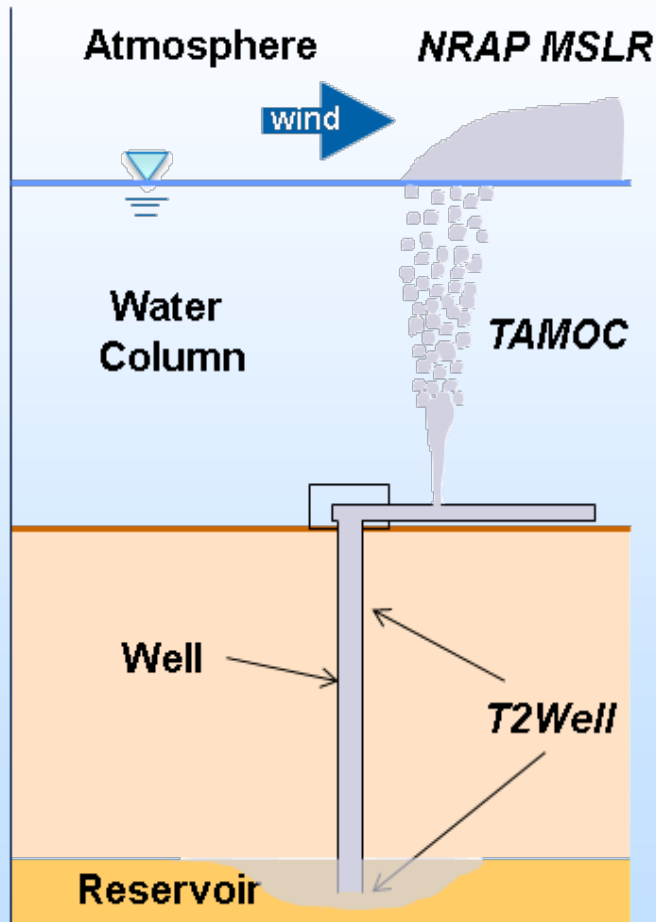
(Oldenburg and Pan, 2020)

Oldenberg, LBNL

Modeling of atmospheric dispersion of the CO2 that reaches the sea surface from the hypothetical large-scale blowout.

Applying the NRAP MSLR
(National Risk Assessment Partnership Multi-Source Leakage ROM)

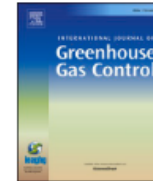# Task 4: Monitoring, Verification & Assessment

Efficient marine environmental characterisation to support monitoring of geological CO_2 storage

Jerry Blackford [a,*], Katherine Romanak [b], Veerle A.I. Huvenne [c], Anna Lichtschlag [c], James Asa Strong [c], Guttorm Alendal [d], Sigrid Eskeland Schütz [e], Anna Oleynik [d], Dorothy J. Dankel [f]

[a] Plymouth Marine Laboratory, Prospect Place Plymouth, PL1 3DH UK
[b] Bureau of Economic Geology, The University of Texas at Austin, University Station
[c] National Oceanography Centre, University of Southampton Waterfront Campus, Eu
[d] Department of Mathematics, University of Bergen, N-5020 Bergen, Norway
[e] Faculty of law, University of Bergen, Norway
[f] Department of Biological Sciences, University of Bergen, Norway

ARTICLE INFO

ABSTRACT

Carbon capture and
provide vast CO_2 sto
a loss of containme
monitoring at or ab
variability. Baseline
comprehensive base
operations and the
comprising an effic
many of these elem
project developmen
of the system rathe
Further, that conten
before and after con
and comparative stu
of the scales of hete

GERG (TX A&M)

- Information on variability in the GoM, currents, freshwater riverine input, hydrocarbon seeps, hurricanes and major hypoxia, large natural outliers.
- CO_2 in the seawater column is mostly controlled by biologic respiration and photosynthesis.
- Basis of monitoring approaches that use stoichiometric relationships to determine the origin of CO_2.

Rice

- Feasiblity of use of existing DAS fiber networks

7

# Task 5: Infrastructure, Operations & Permitting

TRIMERIC

Assessment of existing infrastructure for re-use in CO_2 transport and storage applications

Screening of existing pipelines focused on abandoned lines and had other limiting search criteria.

- Diameter > 8"

- Maximum Operating Pressure > 1000 psig

- Age = No Restriction (Original Screening < 40 years)

- Service Status: Active (Original Screening = Not In Service)

- Pipeline Length: > 2 miles

- Water Depth: No Restriction (Original Screening < 100 feet)

46 key segments from screening
1200 and 1440 psi were most common

Pipeline Size Distribution - Active Lines
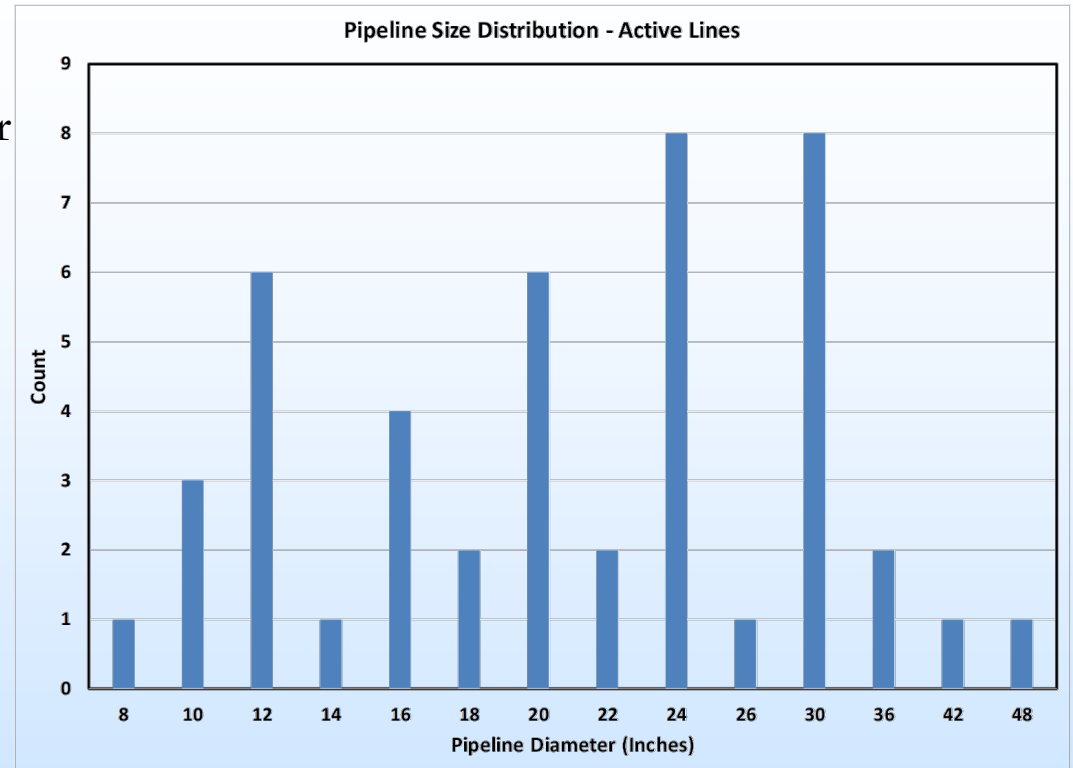
Task 6: Knowledge Dissemination

Providing information to many including:
Texas General Land Office
BOEM and BSEE
Louisiana DNR
Numerous property owners including ports
Technical publication and presentations
Public relations studies:

Check for updates

Understanding public support for carbon capture and storage policy: The roles of social capital, stakeholder perceptions, and perceived risk/benefit of technology

Won-Ki Moon [a,*], Lee Ann Kahlor [a], Hilary Clement Olson [b]

[a] Stan Richards School of Advertising and Public Relations, University of Texas at Austin, 300 W Dean Keeton Street, Austin, TX, 78712, United State
[b] Hildebrand Department of Petroleum and Geosystems Engineering, University of Texas at Austin, 301 E Dean Keeton St, Austin, TX, 78712, United S

ARTICLE INFO   ABSTRACT

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