Ports and Waterways Safety Assessment

Workshop Report

Lake Charles, Louisiana

4 – 5 June 2025

Providing Navigation Safety Information
for America's Waterways Users

Released By:
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Executive Summary

Coast Guard Marine Safety Unit (MSU) Lake Charles sponsored a Ports and Waterways Safety Assessment (PAWSA) workshop in Lake Charles, Louisiana, from June 4, 2025, to June 5, 2025. Thirty-two participants and observers representing a range of waterway users, stakeholders, federal, state, local regulatory and public safety authorities met and collaboratively assessed navigational safety on the waterways intersecting and surrounding Lake Charles. This report provides a visual depiction of the study area and contains the full list of workshop participants and their associated organizations. The first day of the workshop included discussions about port and waterway attributes and vessel traffic in relation to the sixteen Waterway Risk Factors (WRFs) in the PAWSA Waterway Risk Model, which is described in more detail in this report. The Risk Characterization for each WRF was established based on participants' survey responses. Risk Characterization assesses the potential consequence, risk trend, risk tolerance, and effectiveness of existing mitigation strategies for a specific WRF. The metrics from the Risk Characterization quantitatively prioritize WRFs to inform discussions during the next phase of the workshop. During the second day, participants reviewed and validated the aggregated survey ranking of the WRFs and conducted follow-on discussions to identify and develop risk mitigation strategies. The five numerically highest WRFs ranked by participants are documented in the table below with their associated Waterway Risk Condition. This report contains a full list of prioritized WRFs with additional details.

Waterway Risk Condition	WRF
Vessel Quality & Operation	Commercial Fishing Vessels
Vessel Quality & Operation	Recreational Vessels
Navigation	Winds
Traffic	Congestion
Navigation	Visibility Restrictions

The recommended mitigation strategies and participant observations documented in this report will meaningfully facilitate continued collaboration between the Coast Guard and waterway stakeholders to improve safe and efficient navigation within the Marine Transportation System (MTS). The Director of Marine Transportation Systems (CG-5PW), the Coast Guard's Navigation Center (CG NAVCEN), and MSU Lake Charles extend their sincere appreciation to participants for their contributions to the Lake Charles PAWSA workshop.

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CHAPTER 1. GENERAL

A. Background and Purpose

1. The Director of Marine Transportation Systems (CG-5PW) is responsible for developing and implementing policies and procedures that facilitate commerce, improve safety and efficiency, and maximize the commercial viability of the MTS. In the late 1990s, the Coast Guard convened a national dialogue group (NDG) comprised of maritime stakeholders to identify the needs of waterway users with respect to Vessel Traffic Management (VTM) and Vessel Traffic Service (VTS) systems. A major outcome of the NDG was the development of the PAWSA process, which the Coast Guard established as the formal model for facilitating stakeholder discussion to identify VTM improvements and determine candidate VTS waterways. The PAWSA methodology has been modernized several times by the CG NAVCEN and Office of Waterways & Ocean Policy (CG-WWM) since its original inception for purposes of creating a more adaptable tool available to Sector Commanders to engage the maritime community to monitor and improve the health of the MTS within their area of responsibility. The most recent PAWSA process update occurred in 2025.

2. The current PAWSA process involves convening a select group of waterway users and stakeholders to facilitate a structured workshop agenda to meet pre-identified risk assessment objectives. A successful workshop involves the participation of professional waterway users with local expertise in navigation, waterway conditions, and port safety. Stakeholder involvement is central to ensuring that important environmental, public safety, and economic consequences receive appropriate attention as risk interventions are identified and evaluated. The workshop culminates in a written report that includes proposed risk mitigations developed by participants and is publicly available on the CG NAVCEN's website, https://www.navcen.uscg.gov/ports-and-waterways-safety-assessment-final-reports.

3. The PAWSA process strives to achieve the following objectives:

    a. Gather stakeholder input to identify major waterway trends, safety hazards, and potential mitigation strategies.

    b. Bolster public-private partnership and enhance cooperation across the MTS.

    c. Generate a stakeholder driven report that captures data gathered from the PAWSA to prioritize future projects impacting the MTS.

B. Methodology

1. Waterway Risk Conditions and Waterway Risk Factors. The PAWSA process is designed to convert qualitative experience, observations, and opinions of participants into quantitative assessments. This method utilizes numerical comparison among sixteen WRFs to facilitate consensus among participants to better inform conversations regarding risk mitigation strategies within an identified study area. The Waterway Risk Condition categories and associated WRFs are listed in Table 1 and further defined in Appendix B.

Navigation	Vessel Quality & Operation	Traffic	Waterway
Winds	Large Commercial Vessels	Volume of Commercial Traffic	Dimensions
Currents and Tides	Small Commercial Vessels	Volume of Recreational Traffic	Obstructions
Visibility Restrictions	Commercial Fishing Vessels	Waterway Use	Visibility Impediments
Bottom Type	Recreational Vessels	Congestion	Configuration

Table 1 - The four Waterway Risk Condition categories and sixteen WRFs.

2. PAWSA Workshop Structure. The PAWSA workshop is a two-day facilitated process. The following sections provide more detail regarding the structure and goals for each day of a workshop. A maximum of 30 stakeholders divided into 15 two-person teams may participate.

   a. PAWSA Workshop - Day 1.

      (1) WRF Discussion. During the first day of a PAWSA, participants gain a comprehensive understanding of the workshop study area and facilitators lead participants through individual discussions for each WRF identified in Table 1. The purpose of these discussions is to provide a collaborative forum for stakeholders to generate a list of specific challenges unique to their respective port as related to each WRF. The identified issues serve as the starting point for the Day 2 discussions to develop risk mitigations. At the conclusion of Day 1, stakeholders complete a survey that establishes the Risk Characterization for each WRF.

(2) Risk Characterization Survey. Risk Characterization is a combined qualitative measure of the risk tolerance, risk trend, and effectiveness of existing mitigation strategies for a specific WRF. Surveys are completed at the end of Day 1 by the established two-person teams. The survey asks teams to evaluate the Current Risk Level, Current Risk Trend and Current Risk Mitigations to characterize the risk associated with each WRF. Participants select from a pre-populated set of qualitative descriptors that have numeric values assigned to each answer. Table 2 provides the available selections for each Risk Characterization question.

	Available Selections
Current Risk Level	We could accept more risk
	Balanced
	Unacceptable
Current Risk Trend	Decreasing
	Steady
	Increasing
Current Risk Mitigations	Acceptable
	Acceptable, but tenuous
	Unacceptable *(*If unacceptable select all that apply*)
	Not Effective
	Too costly
	Slow operations
	Causes other issues

Table 2 - WRF Survey, Risk Characterization categories.

After each team completes the Risk Characterization survey, their assessment of the Waterway Risk Factors is compiled into a Characterization Count. The Characterization Count is crucial because it reflects how each team perceives risk for each WRF. The selected values from the survey generate a color-coded classification that informs the overall WRF Risk Characterization for each team. The results from each team survey are aggregated together to determine the Characterization Rating for each WRF that represents the consensus of the stakeholder group. The Characterization Rating informs the prioritization of WRFs to guide mitigation development discussions during Day 2 of the workshop.

(3) Characterization Count Color Designations. Individual team Characterization Count for a WRF is designated as red, orange, yellow, or green. For this scale, red represents high risk, orange and yellow are intermediate risks, and green represents low risk. The following subsections outline the thresholds for each color-coded Risk Characterization designation for team Characterization Count.

(a) A WRF is designated with a red Risk Characterization when an individual team determines the WRF Current Risk Level is "unacceptable," or the Current Risk Mitigations are "unacceptable."

(b) A WRF is designated with an orange Risk Characterization when an individual team determines the Current Risk Trend is "increasing" and the Current Risk Mitigations are "acceptable, but tenuous."

(c) A WRF is designated with a yellow Risk Characterization when an individual team determines the Current Risk Trend is "steady" and Current Risk Mitigations are "acceptable, but tenuous."

(d) A WRF is designated with a green Risk Characterization when all other combinations of answers do not meet the threshold for red, orange, or yellow.

(4) Characterization Rating Color Designations. When the teams complete the Risk Characterization survey, their assessments are combined to calculate and assign the overall Characterization Rating for each WRF, as shown as an example in Figure 1.

WRC	WRF	Characterization	Red	Orange	Yellow	Green
Navigational	Winds	Unknown	8			7
Traffic	Congestion	Unknown	5	2		8
Vessel	Large	Unknown	6	1		8
Traffic	Commercial	Red	11	2		2
Vessel	Rec	Red	11	2		2
Navigational	Bottom	Green	5			10
Navigational	Tides	Green	4	2		9
Navigational	Vis	Green	5			10
Traffic	Rec	Green	3	2		10
Traffic	Usage	Green	3	2		10
Vessel	Fishing	Green	4			11
Vessel	Small	Green	3	1		11
Waterway	Config	Green	3	1		11
Waterway	Dims	Green	4			11
Waterway	Obstr	Green	3	2		10
Waterway	Vis	Green	1	1		13

Characterization Count - Individual Team
Red. The Risk Level is Unacceptable OR the Mitigations are Unacceptable.
Orange. The Risk Trend is Increasing AND the Mitigations are Tenuous.
Yellow. The Risk Trend is Steady and the Mitigations are Tenuous.
Green. All others.

Characterization Rating - Overall
Red. 60% or more teams rated as Red.
Orange. 60% or more teams rated as Orange OR 80% or more teams rated Yellow or higher.
Yellow. 60% or more teams rated as Yellow.
Green. 60% or more teams rated as Green.
Unknown. No clear characterization pattern.

Figure 1 - Example Risk Characterization survey results.

Characterization Rating for a WRF is designated as red, orange, yellow, green or unknown. The color-coded scale for the Characterization Rating is the same as Characterization Count, but the thresholds for attributing the color designation are different. In Figure 1, the numbers below each of the header columns labeled red, orange, yellow, and green represent the number of individual teams that attributed a certain risk level to that specific WRF. The Characterization Rating for a WRF is determined by plurality. For some WRFs, the determination is "unknown" because there is no strong majority for a particular Characterization Rating. If a WRF is classified with an "unknown" Characterization Rating, participants are encouraged to discuss why the WRF received that designation. The following subsections outline the thresholds for each color-coded Risk Characterization Rating designation.

(a) A WRF is designated with a red, yellow, or green Characterization Rating if 60% or more of teams select that specific rating.

(b) A WRF is designated with an orange Characterization Rating if either 60% or more of teams had an orange rating or 80% or more of teams had a yellow, orange, or red rating.

(c) A WRF is designated with an unknown Characterization Rating if there is less than 60% consensus for any single rating.

b. PAWSA Workshop – Day 2. During the second day of the workshop, PAWSA facilitators present the Risk Characterization survey results and facilitate discussion among participants to determine prioritization of WRF for mitigation development. Stakeholders collaboratively determine the top five WRFs to focus dialogue for mitigation development during the remainder of the workshop. The development of mitigation strategies is guided by facilitators who extract key issues identified during discussions from Day 1. These issues are used as the starting point for participants to collaboratively brainstorm mitigations to address concerns.

CHAPTER 2. LAKE CHARLES PAWSA WORKSHOP

A. PAWSA Study Area

1. The geographical area for the Lake Charles PAWSA included portions of the Gulf Intracoastal Waterway (GIWW) that cross the Calcasieu Lake and Calcasieu River as depicted in Figure 2. The coordinates bounding the Lake Charles study area were: 30.244°N, 093.422°W and 29.671°N, 093.148°W. Graphic representations of this study area were used to facilitate discussion with participants. Additionally, geographically referenced comments were collected during the workshop and are documented as chartlets in Appendix D.

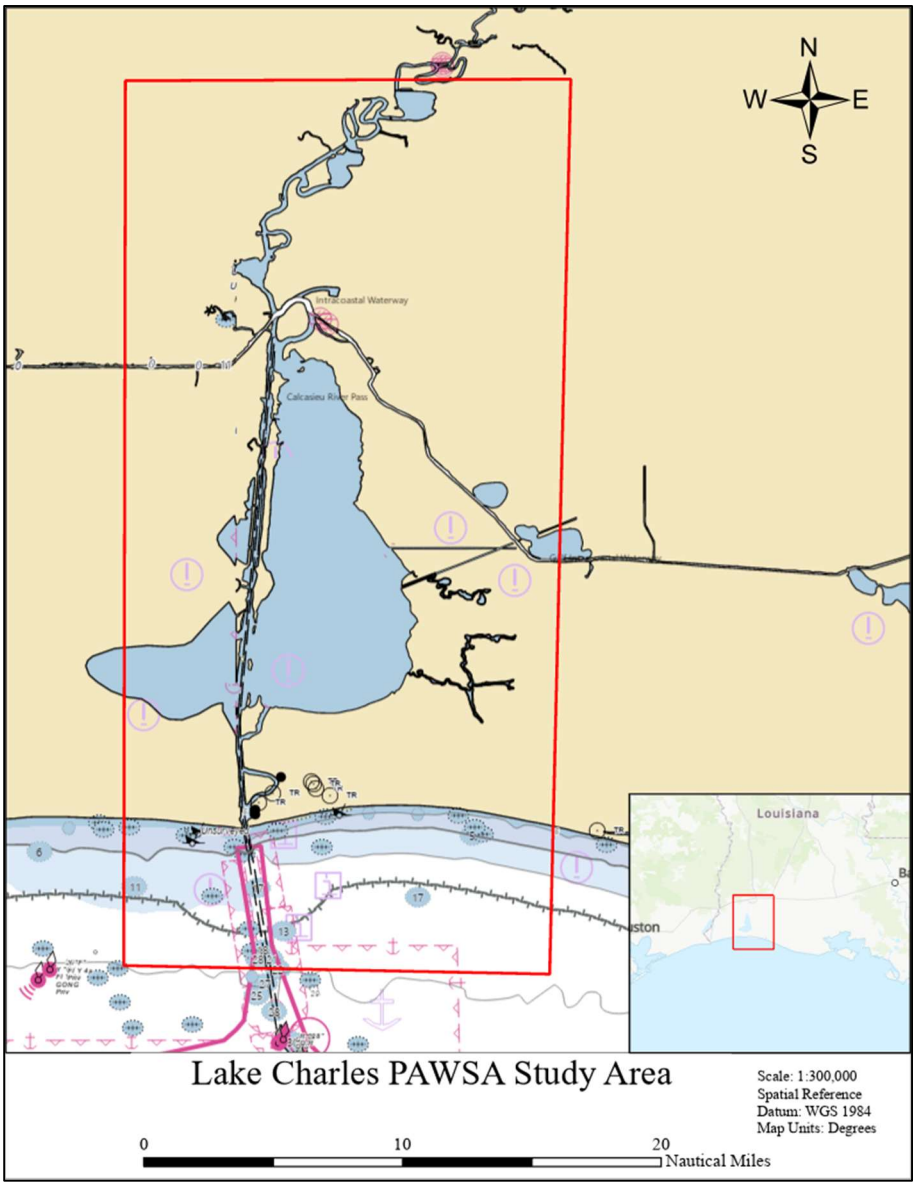

Figure 2 - Lake Charles PAWSA workshop study area.

B. Participant Validation of WRF Prioritization.

1. The Risk Characterization survey results are depicted below in Figure 3. The results are grouped by Risk Characterization. These results were presented to participants to validate the prioritization order of WRFs for mitigation strategy dialogue and development.

2. The Risk Characterization results indicated a generally low level of existing risk within the Lake Charles PAWSA study area, with most WRFs categorized as Green. This favorable risk profile appears to stem from the strong working relationships and proactive communication channels established among stakeholders within the port, preventing many emerging issues from escalating into significant safety concerns. Based on participant dialogue during Day 1 of the workshop, the sole red Characterization Rating for the Recreational Vessel WRF is likely attributed to the lack of recreational boater representation on the Harbor Safety Committee (HSC). Projected growth and increased vitality of the port present potential challenges that warrant proactive mitigation strategies to maintain a safe and efficient waterway environment.

WRC	WRF	Characterization	Red	Orange	Yellow	Green
Navigational	Winds	Unknown	4	2		7
Vessel	Fishing	Unknown	6			7
Vessel	Rec	Red	11	1		1
Navigational	Bottom	Green	1			12
Navigational	Tides	Green	3	1		9
Navigational	Vis	Green	4			9
Traffic	Commercial	Green		4		9
Traffic	Congestion	Green	2	1		10
Traffic	Rec	Green	2	3		8
Traffic	Usage	Green		3		10
Vessel	Large	Green		4		9
Vessel	Small	Green	2	1		10
Waterway	Config	Green	2	2		9
Waterway	Dims	Green	3	1		9
Waterway	Obstr	Green	1	1		11
Waterway	Vis	Green	1	1		11

Characterization Count - Individual Team
Red. The Risk Level is Unacceptable OR the Mitigations are Unacceptable.
Orange. The Risk Trend is Increasing AND the Mitigations are Tenuous.
Yellow. The Risk Trend is Steady and the Mitigations are Tenuous.
Green. All others.

Characterization Rating - Overall
Red. 60% or more teams rated as Red.
Orange. 60% or more teams rated as Orange OR 80% or more teams rated Yellow or higher.
Yellow. 60% or more teams rated as Yellow.
Green. 60% or more teams rated as Green.
Unknown. No clear characterization pattern.

Figure 3 - Risk Characterization survey results for all WRFs.

Following subjective evaluation, participants selected Commercial Fishing Vessels, Recreational Vessels, Winds, Congestion and Visibility Restriction as the most significant WRFs that contributed to potential incidents in the Lake Charles PAWSA study area. A consensus vote amongst participants determined the ranking of WRFs according to their level of concern. While Bottom Type and Tides additionally ranked highly in the Risk Characterization Survey, participants collectively determined that Congestion and Visibility Restrictions were higher priority WRFs to mitigate. This was due to high vessel

congestions in the vicinity of Devil's Elbow and Calcasieu Point Landing and the lack of real time data sensors to alert mariners of changes in visibility conditions. Table 3 presents WRFs in descending priority order from high to low. Mitigation strategies were discussed and developed in this order.

Waterway Risk Category	WRF
Vessel Quality & Operation	Commercial Fishing Vessels
Vessel Quality & Operation	Recreational Vessels
Navigation	Winds
Traffic	Congestion
Navigation	Visibility Restrictions

Table 3 - Validated and prioritized WRFs listed from top to bottom.

C. Risk Mitigation Strategies

1. The validated list of WRFs was used to prioritize discussion and development of risk mitigation strategies. Facilitators directed participants to capture potential mitigation strategies on sticky notes, which were then consolidated and grouped to identify major themes. From this bank of action items, participants were encouraged to create specific, measurable, actionable, realistic, and timebound (SMART) goals as well as general goals. Both types of mitigation strategies developed by participants are represented in this report. Recommended mitigation strategies documented in this section received consensus among workshop participants. Mitigation strategies are documented in order of significance to participants.

2. Participant comments are listed in Appendix C of this report and are referenced throughout this subsection to provide support of documented developed mitigation strategies.

3. <u>WRF – Commercial Fishing Vessels.</u>

    a. Participants observed an increased frequency of inadequate radio responses and communications from commercial fishing vessel operators. This problem is significantly exacerbated by a combination of federal and state regulations. At the federal level, 47 CFR 80.1001 exempts vessels under 20 meters from radio requirements in the Bridge-to-Bridge Act, even when actively engaged in commercial fishing as defined in 46 CFR 28.50. Furthermore, per 46 CFR 28.200 and 46 CFR 28.245, VHF radiotelephones are only mandated on vessels operating beyond the boundary line, carrying more than 16 passengers, or functioning as fish tenders in the

Aleutian trade. The practical consequence, observed by those familiar with the area, is that many Louisiana crab and crawfish boats, which are frequently under 20 meters in length, below the tonnage requirement for federal documentation and operating inside the boundary line, either lack radios or do not respond to radio calls. For these vessels, the state maintains jurisdiction for dictating radio requirements. Critically, Louisiana state law currently does not mandate radios on state-registered fishing boats. This creates a situation where a substantial portion of the Louisiana fishing fleet is unable to receive urgent safety warnings or effectively call for assistance during emergencies. Radios are only listed as a recommendation from the Louisiana Department of Wildlife and Fisheries on state registered vessels. Participants recommended the following mitigation strategies:

(1) Petition Louisiana state representatives to amend state statute to require all state-registered commercial fishing vessels to carry functioning radios, regardless of length or tonnage. Implementation of this requirement would establish a fundamental safety standard and dramatically improve communication in the Louisiana MTS.

(2) Petition MSU Lake Charles to hire a dedicated Coast Guard commercial fishing vessel examiner. Currently, examiners are a shared resource between MSU Lake Charles and MSU Port Arthur. A dedicated examiner would enhance MSU Lake Charles's ability to conduct timely and consistent commercial fishing vessel safety exams, improve outreach and compliance efforts, and better support the local maritime industry. This mitigation strategy was also proposed to address the issue outlined in 3.b.

b. The absence of standardized inspection and licensing requirements for commercial fishing vessel operators has contributed to inconsistent safety practices and limited regulatory oversight. Participants also cited a growing number of derelict or sunken vessels due to fleet deterioration and maintenance neglect. Participants recommended the following mitigation strategies:

(1) Submit a request through MSU Lake Charles for the Coast Guard Office of Fishing Vessel Safety (CG-CVC-3) to conduct an analysis to identify regulatory gaps and discrepancies between the existing commercial fishing vessel safety examination framework the goal of the standardized inspections for all commercial fishing vessels.

(2) Submit a request through MSU Lake Charles for the Coast Guard Office of Merchant Mariner Credentialing (CG-MMC) to assess the adequacy of current credentialing requirements for commercial fishing vessel operators.

4. WRF – Recreational Vessels.

a. Although recreational traffic is primarily seasonal, there is a persistent issue with recreational vessel operators demonstrating a lack of awareness and regard for commercial marine traffic. Recreational boaters frequently maneuver in close proximity to larger commercial vessels unaware of effects from vessel wake and surge. Additionally, the consistent presence of jet skis and boaters engaged in recreational activities (e.g., tubing, water skiing) on active waterways pose a risk to safe navigation. In general, participants observed that recreational boaters are often unaware of the potential consequences of their actions and the importance of safe operating practices on shared waterways. Participants recommended the following mitigation strategies:

(1) Establish a Lake Charles HSC subcommittee to coordinate outreach efforts aimed at the recreational boating community. Suggested actions include engaging local news outlets to highlight the maneuverability limitations of larger commercial vessels, developing targeted social media campaigns (e.g., TikTok, Instagram) to educate younger generations of boaters, and arrange for members of the Pilots Association or HSC to visit local marinas and yacht clubs to provide direct education to recreational mariners. Additional recommendations included increasing signage (e.g., “Beware of Passing Ships,” “Stay off the Banks”) along the channel and at known chokepoints, and leveraging available HSC and industry funding to support these public education initiatives.

(2) Petition Station Lake Charles to continue recreational boater education efforts by conducting site visits at fuel piers and boat ramps, and by partnering with local wildlife agencies to distribute safety flyers and pamphlets.

b. Station Lake Charles provides an important service regarding regulatory enforcement and recreational boater education. Participants noted that staffing at Station Lake Charles declined from 45 members in 2021 to 11 members in 2025. The reduction in personnel resulted in scaling back operations from 24 to 8 hours per day and directly impacted the resources available for Station Lake Charles to engage with the recreational boating community and enforce regulatory standards. Participants recommended the following mitigation strategies:

(1) Establish a Lake Charles HSC subcommittee to advocate federal legislators for increased funding to support adequate manning at Station Lake Charles for

purposes of increasing enforcement of new regulations and providing escorts for high-risk commercial vessels.

c. Recreational vessels frequently tie off to Aids to Navigation (AToN) structures and buoys, resulting in physical damage and, in some cases, causing buoys to become off-station. This misuse poses a significant risk to the maritime community, as displaced or damaged aids fail to accurately mark safe water, and lead to potential navigational hazards. Participants recommended the following mitigation strategy:

(1) Encourage active public reporting to the Coast Guard regarding recreational mariners who improperly secure vessels to federally maintained Aids to Navigation (AToN). Verified reports and supporting evidence will enable the Coast Guard to pursue enforcement actions, including civil penalties under 33 CFR § 70.05.

d. Louisiana currently mandates an online boating safety course for operators born after 1984. This requirement is viewed as insufficient to ensure safe navigation in waterways shared with deep-draft commercial vessels. There is a need to strengthen state regulations governing recreational mariner training and licensure. Participants recommended the following mitigation strategies:

(1) Establish state requirements for mandatory in-person boating safety instruction for all operators, regardless of age, with a standardized curriculum that emphasizes large vessel maneuverability limitations, collision avoidance, and compliance with navigational rules.

e. There is a general lack of local knowledge regarding the designated Alternative Oyster Culture (AOC) area. This area is reserved for oyster growth and farming. Generally, recreational operators are unaware of the purpose and boundaries of the AOC area. Activities in and around the AOC frequently result in disruptions and damage to the habitat, undermining both environmental sustainability and aquaculture operations. Participants recommended the following mitigation strategies:

(1) Request NOAA to include AOC boundaries on official nautical charts to promote maximum awareness of their locations to waterway users.

(2) Require federal and state regulatory authorities to install solar-powered lighting on AOC signage to ensure nighttime visibility and reduce navigational hazards.

(3) Task the HSC social media team to coordinate with local news outlets and social media platforms to conduct a sustained outreach campaign that highlights AOC site locations and educates mariners on the impacts of vessel wake.

5. <u>WRF – Winds.</u>

a. There are not enough operational NOAA real-time wind and current monitors in the study area. The only monitor is located at the Cameron Fishing Pier and it was intermittently operational over the past six months. The existing monitor is collectively funded by local industry stakeholders, with no single organization assuming responsibility for its maintenance and operation. This monitor provides the only source of real-time wind and current data for vessels transiting offshore, making its reliability critical to safe navigation and decision-making. Participants recommended the following mitigation strategy:

(1) Install additional NOAA current sensors on Cameron Fishing Pier. There is an existing project and plan, overseen by the Cameron Parish Police Jury, to demolish the pier. Stakeholders proposed that local pilots advocate the Cameron Police Jury to leave the pilings extending furthest away from shore to support expansion of sensor locations.

(2) Request NOAA attendance at HSC meetings to provide updates on existing monitoring equipment, share information on sensor locations, and engage in dialogue with stakeholders regarding additional sensor requests along the channel.

b. The configuration of the long and short guide walls at Calcasieu Locks present a navigational challenge for vessels approaching from the east. The long wall is located on the north side of the channel and the short wall is on the south side. The distance from the end of the guide wall to the adjacent bridge is approximately 1/2 mile. Due to this arrangement, the presence of strong northly winds increases navigational risk for marine traffic. Vessels and tows are more likely to get pinned between the bridge structure and the short south wall, which increases the likelihood of collisions or loss of control. Participants recommended the following mitigation strategy:

(1) Invite the U.S. Army Corps of Engineers (USACE) to participate in future HSC meetings to address concerns regarding existing lock walls. Stakeholders recommended that USACE evaluate the potential extension of the south wall as part of any future major maintenance or lock replacement projects.

6. <u>WRF – Congestion.</u>

a. The intersection of the Gulf Intracoastal Waterway and the Calcasieu River experiences heavy traffic congestion because it is a critical convergence point for both deep-draft and towing traffic. Additionally, participants indicated there is a coordinated effort to double maritime commerce in the port over the next five years.

Stakeholders identified that measures are needed to address current and forecasted congestion in the port. Participants recommended the following mitigation strategies:

(1) Increase proactive traffic management measures including expansion of pilot capacity, upgrades to traffic monitoring systems, and implementing requirements for new facilities to provide their own tug services.

(2) Require industries and facilities that benefit from future channel expansion to proportionally contribute to the dredging costs, ensuring sustainable development and maintaining navigational safety.

b. Delayed openings of the Black Bayou and Grand Lake swing/pontoon bridges contribute to congestion in the waterway. Additionally, the lockmaster at the Calcasieu Locks does not accept entry requests for east or westbound traffic until vessels cross the Calcasieu River or reach Grand Lake pontoon bridge respectively. This is the only lock system in the Gulf Intracoastal Waterway with this protocol, and it frequently results in severe congestion at the locks. Participants recommended the following mitigation strategies:

(1) Request for the HSC to coordinate and schedule a meeting with representatives from the towing vessel industry, USACE, and Coast Guard to review the Calcasieu Lock operational policy alignment with federal navigation safety and infrastructure management best practices.

(2) Request for USACE to evaluate the regulatory requirements and feasibility of installing federally maintained mooring buoys on the east and west approaches to the lock to provide safe mooring options for towing vessels awaiting transit.

(3) Request the Federal Highway Administration (FHWA) and Louisiana Department of Transportation and Development (LaDOTD) allocate funding to replace the Grand Lake and Black Bayou Pontoon Bridges with fixed bridge structures for purposes of mitigating traffic and safety impacts associated with recurring bridge opening/closing.

(4) Request MSU Lake Charles pursue advocacy and establishment of a Coast Guard Vessel Traffic Center (VTC) to provide marine traffic monitoring and navigational safety services for the Calcasieu Ship Channel and associated waterways in the MSU Lake Charles Area of Responsibility (AOR).

7. <u>WRF – Visibility Restrictions.</u>

a. There is no real-time visibility data available to mariners in the study area. Mariners primarily rely on reports from underway vessels in the river or offshore for information regarding local visibility conditions. Some stakeholders contract third-party services for fog predictions, but these paid forecasts are often unreliable.

Participants recommended the following mitigation strategies:

(1) Request the HSC Navigation Subcommittee to coordinate with NOAA to expand the Physical Oceanographic Real-Time System (PORTS) in the study area by integrating visibility sensors and cameras at strategic locations. Although PORTS funding is available for the installation of visibility sensors, current NOAA policy and technical limitations prevent co-location of cameras on PORTS infrastructure due to satellite bandwidth restrictions. Request NOAA and relevant federal partners to review regulatory and technical frameworks that limit PORTS camera integration.

(2) Establish and maintain continuous communication between the maritime community and NOAA regarding visibility restrictions and on-water observations. Encourage mariners to promptly notify NOAA when observed conditions differ from forecasted visibility to improve accuracy and enhance navigational safety.

Appendix A. Workshop Participants

Participant	Organization
1. Eric Ezendu	Alcoa Corporation
2. Carlos Campbell	Cameron Liquid Natural Gas
3. Kim Montie	Cameron Parish Port, Harbor, and Terminal
4. Ravi Khanna	Citgo Petroleum
5. Hans Verswijver	Commonwealth Liquid Natural Gas
6. Clayton Istre	Customs and Border Protection
7. Tracy Cheramie	Florida Marine Transporters
8. Paul Dittman	Gulf Intracoastal Canal Association
9. John Buchanan	Harbor Docking and Towing
10. Sal Litrico	Lake Charles Methanol
11. Brett Plamer	Lake Charles Pilots
12. Beau Istre	Louisiana Department of Transportation and Development
13. Jonathan Brazzell	National Oceanic and Atmospheric Administration
14. Marti Calhoun	National Weather Service
15. Mike Nevils	Phillips 66
16. Timothy Atkins	Port of Lake Charles
17. Channing Hayden	Port of Lake Charles
18. Gloria Ramirez	Port of Lake Charles
19. Rustin Menard	Southern Devall
20. Brady John Stelly	Southern Devall
21. Giovanni Colon	USCG Station Lake Charles
22. Dru Sistrunk	USCG Aids to Navigation Team Sabine
23. Kimberly Gates	USCG Marine Safety Unit Port Arthur
24. Darin Mathis	USCG Marine Safety Unit Port Arthur
25. Nathan Souza	USCG Marine Safety Unit Port Arthur
26. Sean Yanez	USCG Marine Safety Unit Port Arthur
27. Elizabeth Newton	USCG Marine Safety Unit Lake Charles
28. Christopher Payne	USCG Marine Safety Unit Lake Charles
29. Leigh Sowers	USCG Marine Safety Unit Lake Charles
30. William Olive	U.S. Fish and Wildlife Service
31. Randall Hebert	Venture Global Liquid Natural Gas
32. Gabreil Heath Stine	Venture Global Liquid Natural Gas

Appendix B. Waterway Risk Model Terms and Definitions

A. Waterway Risk Conditions and WRF Definitions. The Ports and Waterway Safety Assessment (PAWSA) Waterway Risk Model utilizes sixteen WRFs categorized under four Waterway Risk Conditions. Definitions for each Waterway Risk Condition and their associated WRF are defined in this section.

1. Waterway Risk Condition - Navigation. The environmental conditions that affect vessel navigation, such as wind, currents, and weather.

    a. WRF -Winds. The difficulty in maneuvering vessels resulting from increased and unpredictable winds, particularly if the wind is from abeam.

    b. WRF - Tides and Currents. The difficulty in maneuvering vessels caused by water movement flow and speed, often affected by seasonal variations and sustained winds. Tide rips and whirlpools can be created by strong currents and affect the maneuverability of smaller vessels. The frequency of occurrence and the location of the strongest currents in the waterway are critical considerations (e.g., if current speed can exceed vessel speed, timing is critical when transiting the area).

    c. WRF - Visibility Restrictions. The natural conditions that may prevent a mariner from seeing other vessels, aids to navigation, or landmarks, such as fog, severe rain squalls, etc.

    d. WRF - Bottom Type. The material on the waterway bottom or just outside the channel, such as hard rock, mud, coral, etc.

2. Waterway Risk Condition - Vessel Quality and Operations. The quality of vessels and their crews that operate on a waterway. Each waterway has what are considered high risk vessels, such as old vessels, vessels with poor safety records, vessels registered in certain foreign countries, vessels belonging to financially strapped owners, vessels with inexperienced crews and operators, etc. When assessing risk, the following items should be considered (as appropriate) for each risk factor: maintenance, age, flag, class society, ownership, inspection record, casualty history, language barriers, fatigue related issues, and local area knowledge.

    a. WRF - Large Commercial Vessels. The quality of the large commercial vessel itself and the proficiency and quality of the crew. Large vessels are those ocean-going vessels, often in international trade, that usually are constrained by their draft to use dredged channels where such channels exist. Large vessels include such things as: oil tankers, container ships, break bulk cargo ships, and cruise liners.

    b. WRF - Small Commercial Vessels. The quality of the small commercial vessel itself and the proficiency and quality of the crew. Small vessels include all other commercial craft EXCEPT commercial fishing vessels. Examples

include tugs and towboats, offshore supply vessels, charter fishing boats, and small passenger vessels (inspected under 46 CFR Subchapters T and K), such as dinner cruises and ferries.

c. WRF - Commercial Fishing Vessels. The quality of the commercial fishing vessel itself and the proficiency and quality of the crew. These vessels are included because they are not required to undergo annual vessel inspections nor are the crewmembers required to hold USCG licenses; therefore, there may be a greater potential for increased incidents involving commercial fishing vessels.

d. WRF - Recreational Vessels. The quality of the recreational vessel itself and the proficiency and operating knowledge of the individuals who operate them. Recreational vessels include all boats used for noncommercial purposes (e.g., pleasure craft or craft used by indigenous people for transportation or subsistence fishing). They can be powered by an engine, the wind, or human exertion. Examples include yachts, personal watercraft (a.k.a., jet skis), and kayaks.

3. Waterway Risk Condition - Traffic Conditions. The number of vessels that use a waterway and their interactions.

a. WRF - Volume of Commercial Traffic. The amount of commercial vessel traffic using the waterway (i.e., the more vessels there are on the water, the more likely that there will be a marine casualty). Deep draft and shallow draft commercial vessels as well as commercial fishing vessels are included in this risk factor. Shoreside infrastructure is also addressed in this risk factor (i.e., can it handle the volume of commercial traffic within the waterway).

b. WRF - Volume of Recreational Traffic. The amount of non-commercial vessel traffic using the waterway. The volume may vary depending on the time of day, the day of the week, the season of the year, or during a major marine event.

c. WRF - Waterway Use. The interaction between vessels or boats of different sizes using the same waterway and their maneuvering characteristics. Conflicts occur as risk increases with each type of vessel's maneuvering characteristics and actions that are often different and unpredictable (e.g. commercial mariners and recreational mariners using deep draft vessels and shallow draft vessels within the same waterway).

d. WRF - Congestion. The ability of the waterway to handle the volume and density of traffic. Risk increases when a large number of vessels uses a small geographic area for an extended period of time. Risk also increases substantially when you get a larger than normal number of vessels together for a short time (e.g., fishing tournament or short season commercial fishery).

4. Waterway Risk Condition - Waterway Conditions. The physical properties of the waterway that affect vessel maneuverability.

    a. WRF - Visibility Impediments. The man-made objects (e.g., moored ships, condominiums, background lighting, etc.) or geographic formations (e.g., headlands, islands, etc.) that prevent a mariner from seeing aids to navigation or other vessels.

    b. WRF - Dimensions. The room available for two vessels to pass each other within the waterway.

    c. WRF - Obstructions. Floating objects in the water that impede safe navigation and could damage a vessel, such as ice, debris, fishing nets, etc. Fixed objects such as wrecks, pipelines, overhead wires, derelict piers, fixed bridges, and permanently moored vessels.

    d. WRF - Configuration. The arrangement of a waterway, including elements such as waterway bends, multiple and converging channels, and perpendicular traffic flow.

Appendix C. Participant Comments

A. Background.

1. This appendix documents participant observations and recommendations expressed during the workshop with respect to specific issues of concern within the study area. Discussion during the first day of z workshop was recorded and subsequently transcribed using professional services. Comments were compiled and categorized by most applicable Waterway Risk Condition and WRF.

B. Waterway Risk Condition - Navigation.

1. WRF - Tides and Currents.

a. There is a lack of operational NOAA tidal and current monitors within the Study Area. The only known monitor is located at the Cameron Fishing Pier; however, it has been functioning intermittently over the past six months. A contributing factor to its unreliability is the absence of a dedicated managing entity. Currently, the monitor is funded collectively by local industry stakeholders, with no single organization assuming responsibility for its maintenance and consistent operation. When operational, this monitor provides the only source of real-time wind and current data for vessels transiting offshore, making its reliability critical to safe navigation and decision-making.

2. WRF – Visibility Restrictions.

a. Occurrences of fog account for most visibility restrictions in the area. Fog in Cameron, LA is persistent and can take several days to fully dissipate. Smoke from marsh fires, either naturally ignited by lightning or intentionally set during controlled burns by the forestry department, further contribute to reduced visibility conditions.

3. WRF – Bottom Type.

a. The bottom composition throughout the study area is predominantly dense, thick mud. This bottom type impacts navigation for vessels entering from offshore. Thick, muddy water encountered upon approach reduces vessel speed, hinders maneuverability, and poses challenges to safe and efficient navigation.

b. Towing vessel and barge industry representatives noted that soft mud along the channel provides a suitable area for intentional grounding. However, this practice contributes to congestion in the Gulf Intracoastal Waterway, adversely impacting overall traffic flow and maneuverability.

C. Waterway Risk Condition - Vessel Quality and Operation.

1. WRF - Large Commercial Vessels.

a. Language barriers pose a significant risk to safe navigation. Pilots reported instances where vessel captains and crew did not fully understand or comprehend instructions but respond affirmatively ("yes") to give the impression of understanding.

b. Participants identified concerns regarding aging towing vessels. As ship sizes have increased, capabilities of towing vessels have not kept pace to meet operational demands. Deteriorating bitts and towing equipment on these vessels are not rated for higher safe working loads required to handle larger vessels, raising significant safety concerns regarding vessel ability to manage larger ship traffic effectively.

2. WRF - Small Commercial Vessels.

a. The implementation of the Towing Safety Management System (TSMS) has significantly improved the quality, safety, and operational standards of towing vessels. Participants noted that TSMS compliance has resulted in enhanced vessel maintenance, more proficient crews, and safer operations. Pilots commented that the professionalism and attentiveness of local towing vessel operators positively contributed to safe and efficient port operations.

b. Small commercial passenger vessels frequently transit near larger vessels without properly energized navigation lights. In many cases, these vessels display bright white or decorative "party" lighting that obscures or overpowers required navigation lights, making it difficult for other mariners to determine vessel heading or status. Additionally, there is a lack of understanding among some operators regarding navigation rules and basic boating safety.

c. Small commercial vessels transiting inland routes are not subject to the same regulatory and inspection requirements as larger ocean-going vessels. There are concerns regarding safety, reliability, and structural integrity of aging vessels operating inland routes in the port and surrounding waterways.

D. Waterway Risk Condition - Traffic.

1. WRF - Volume of Commercial Traffic.

a. Deep draft vessel traffic is projected to continue increasing over the next two decades.

b. The operating area is characterized by extremely shallow drafts, which present ongoing challenges to safe navigation and effective traffic management.

c. There is a lack of designated emergency anchorages and available assist tugs in the event of an incident or casualty. All LNG carriers transiting the waterway are required to have tug escorts; these tugs generally operate in a systematic manner and significantly reduce overall risk within the port. Expanding emergency anchorage

availability and ensuring the continued presence of assist tugs is critical to maintaining safe navigation and rapid response capabilities.

2. WRF - Volume of Recreational Traffic.

a. There is a need for more Coast Guard and law enforcement assets during marine events. Stakeholders emphasized the importance of holding non-compliant mariners accountable to deter unsafe behavior and ensure the safety of all waterway users.

b. Station Lake Charles provides an important role regarding regulatory enforcement and recreational boater education. Participants noted that staffing at Station Lake Charles declined from 45 members in 2021 to 11 members in 2025. The reduction in personnel resulted in scaling back operations from 24 to 8 hours per day and directly impacted the resources available for Station Lake Charles to engage with the recreational boating community and enforce regulatory standards.

c. There is a high volume of recreational vessel traffic in the vicinity of the Golden Nugget Casino and Calcasieu Point. Recreational vessels depart the area in the late afternoon and frequently maneuver into the path of large commercial vessel traffic without regard for vessel size, speed, or navigational constraints.

d. Recreational boaters frequently operate recklessly near designated shipping channels and demonstrate a lack of awareness regarding maritime conditions and commercial vessel operations. The actions of recreational boaters routinely impede the safe and efficient transit of large commercial traffic, creating significant navigational and safety concerns.

3. WRF - Waterway Use.

a. There is concern regarding the potential increase of autonomous vessels operating in the waterway due to the lack of comprehensive regulations.

E. Waterway Risk Condition – Waterway.

1. WRF – Dimensions.

a. Stakeholders, particularly pilots, expressed concerns regarding the channel's current depth and width. The channel needs dredging to a greater depth to improve navigational safety and efficiency. Only half the channel is dredged each year because it is cost prohibitive to dredge the entire channel annually.

b. During the transit of LNG vessels, there is a one-way traffic restriction due to the channel's limited width. The channel is not sufficiently wide to safely accommodate two LNG vessels passing simultaneously.

2. WRF – Obstructions.

a. There are challenges associated with hurricanes and the storm recovery following landfall. There is a perceived lack of urgency to remove debris and the reopen waterways in the Lake Charles area.

b. Stakeholders expressed numerous concerns regarding dredging operations, highlighting issues with the management and staging of dredge pipelines during active dredging activities.

3. WRF – Visibility Impediments

a. The streetlight at Cameron Ferry impedes visibility of the "C Range" and stakeholders are unable to identify the responsible party for corrective action.

b. The inspected towing vessel fleet obstructs the Calcasieu Channel D Range Front and Rear Light (LLNRs 21740 & 21750) when staged in the vicinity of Devil's Elbow.

c. Background lighting from towing vessels and facilities near Cameron LNG, in the vicinity of the 210 Bridge, creates visibility challenges for vessels moored at the facility and in the area.

4. WRF – Configuration.

a. There is a lack of ATON discrepancy reports submitted to Coast Guard Aids to Navigation Team Sabine Pass in remote sections of the study area for aids that are off-station.

b. Muddy and sludge-filled waters in the USACE spoil area make it challenging to access the Calcasieu Delta Range River Light for maintenance and repairs.

c. An expansion project for the Cameron Jetties is needed to improve navigational safety and accommodate increased volume and size of marine traffic.

Appendix D. Geospatial Participant Comments

Facilitators captured participant observations that made specific geographic references. Those observations were then transferred to an ArcGIS online web-application to generate chartlets reflecting the location and specific context of each comment. The chartlets, included below, are represented as Figures 1 through 6.

Geospatial Comments	
Point	**Comment**
1	The increased volume of recreational vessel traffic in the vicinity of the Cameron jetties creates unsafe conditions for large commercial vessels transiting in and out of the port.
2	A streetlight located at Cameron Ferry terminal impedes view of the Calcasieu Channel C Range.
3	Participants identified a need to add a newly established Alternative Oyster Culture farm to navigational charts to increase mariner situational awareness and prevent vessels from transiting the area and causing damage.
4	An influx of recreational vessel operators with an observed lack of knowledge of navigational rules, creates a hazardous navigation environment for large commercial vessels between this point and the Calcasieu Channel Lighted Buoy 'CC'.
5	High recreational vessel activity between the Intracoastal Park/Ellender Boat Ramp and the Calcasieu Ship Channel causes interference with the safe navigation of inland towing vessels (ITVs) and deep-draft vessel traffic.
6	Participants stated that it is necessary to replace the 60-year-old Black Bayou Bridge Pontoon Bridge with a fixed bridge.
7	Participants stated that it is necessary to replace the 60-year-old Lake Swing Bridge with a fixed bridge.
8	The intersection of the Calcasieu Ship channel and the Gulf Intracoastal Waterway results in persistent congestion throughout the year.
9	Calcasieu Channel D Range Rear Light is in a U.S. Army Corps of Engineers (USACE) spoil area. Access to the range for maintenance and repairs is limited due to spoil accumulation. This range light has been extinguished for more than nine months due to inaccessibility. A memorandum of understanding (MOU) between the Coast Guard and USACE is needed to establish a mechanism for consistent range access to facilitate maintenance and repairs.
10	Tugs and barges laid up on both sides of the Gulf Intracoastal Waterway – Calcasieu Ship Channel exacerbate waterway congestion.
11	An influx of recreational traffic makes it increasingly risky for large commercial vessel traffic to navigation in this area.
12	Tugs fleeting and staging in front of the Devil's Elbow Industrial Canal Range obstruct mariner visibility.
13	Scheduling constraints at the Gulf Intracoastal Waterway (GIWW) lock cause barge fleeting in the Industrial Canal, which results in laid up barges for multiple days.
14	Towing vessels awaiting passage through the Calcasieu Lock cause increased waterway congestion in the vicinity of Devil's Elbow and Calcasieu Point Landing.
15	Towing vessels laid up along the bank of the GIWW Calcasieu Ship Channel awaiting passage through the Calcasieu Lock contribute to increased vessel traffic congestion.

16	Increased recreational vessel traffic creates hazardous maneuvering conditions for large commercial vessels that are restricted to the navigable channel.

Table 1 - Geospatial Comments.

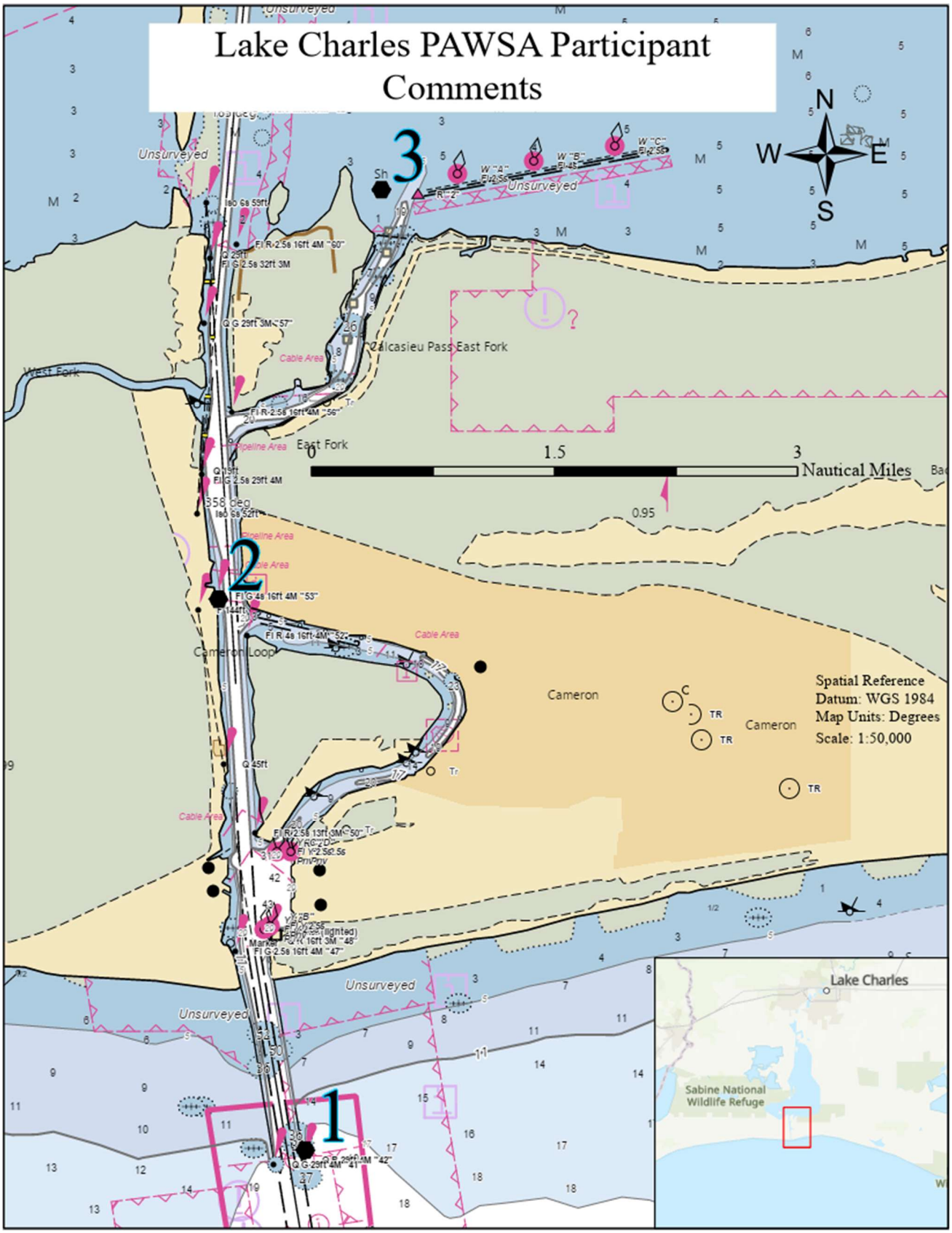

Figure 1 - Mapped location of geospatial participant comments 1-3.

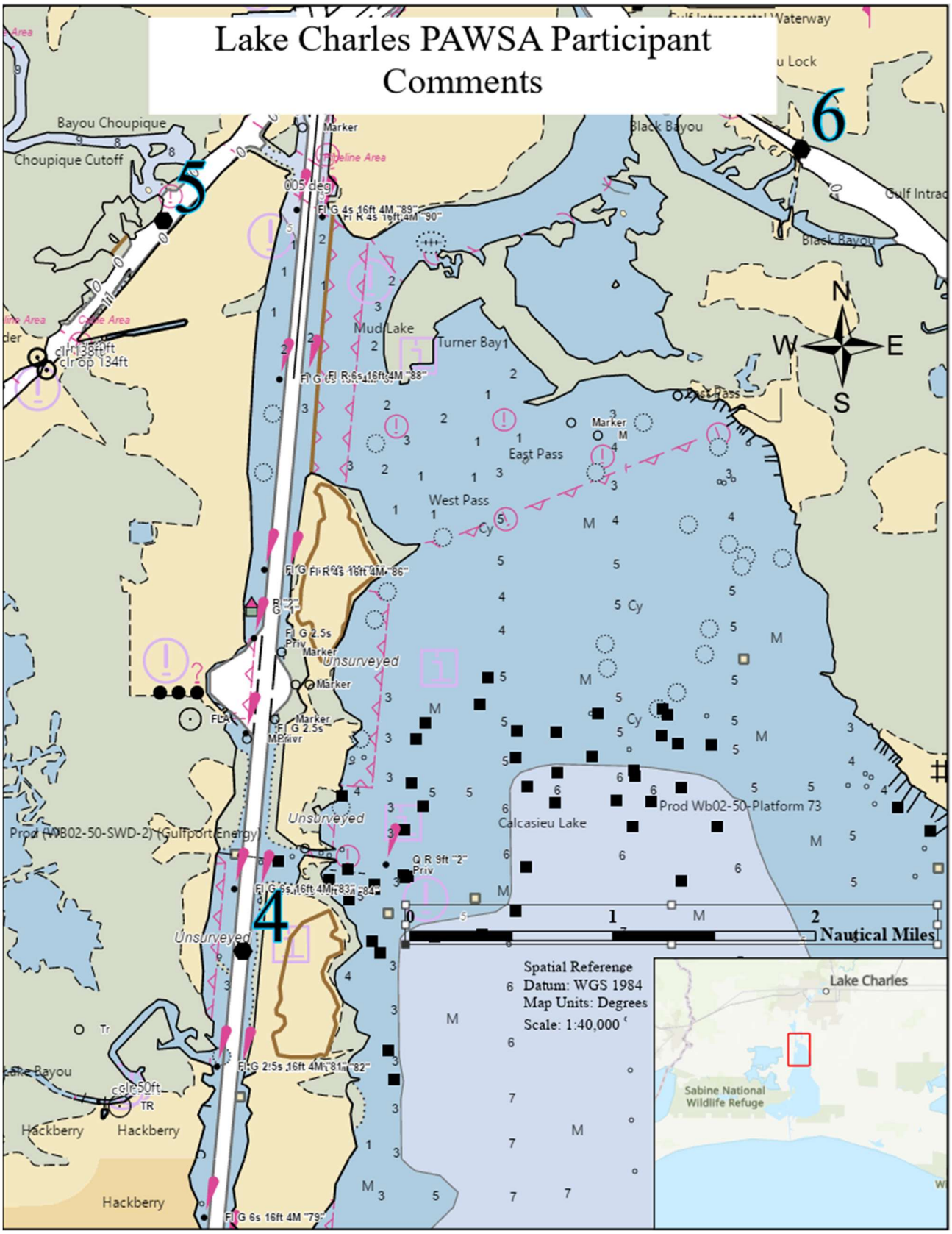

Figure 2 - Mapped location of geospatial participant comments 4-6.

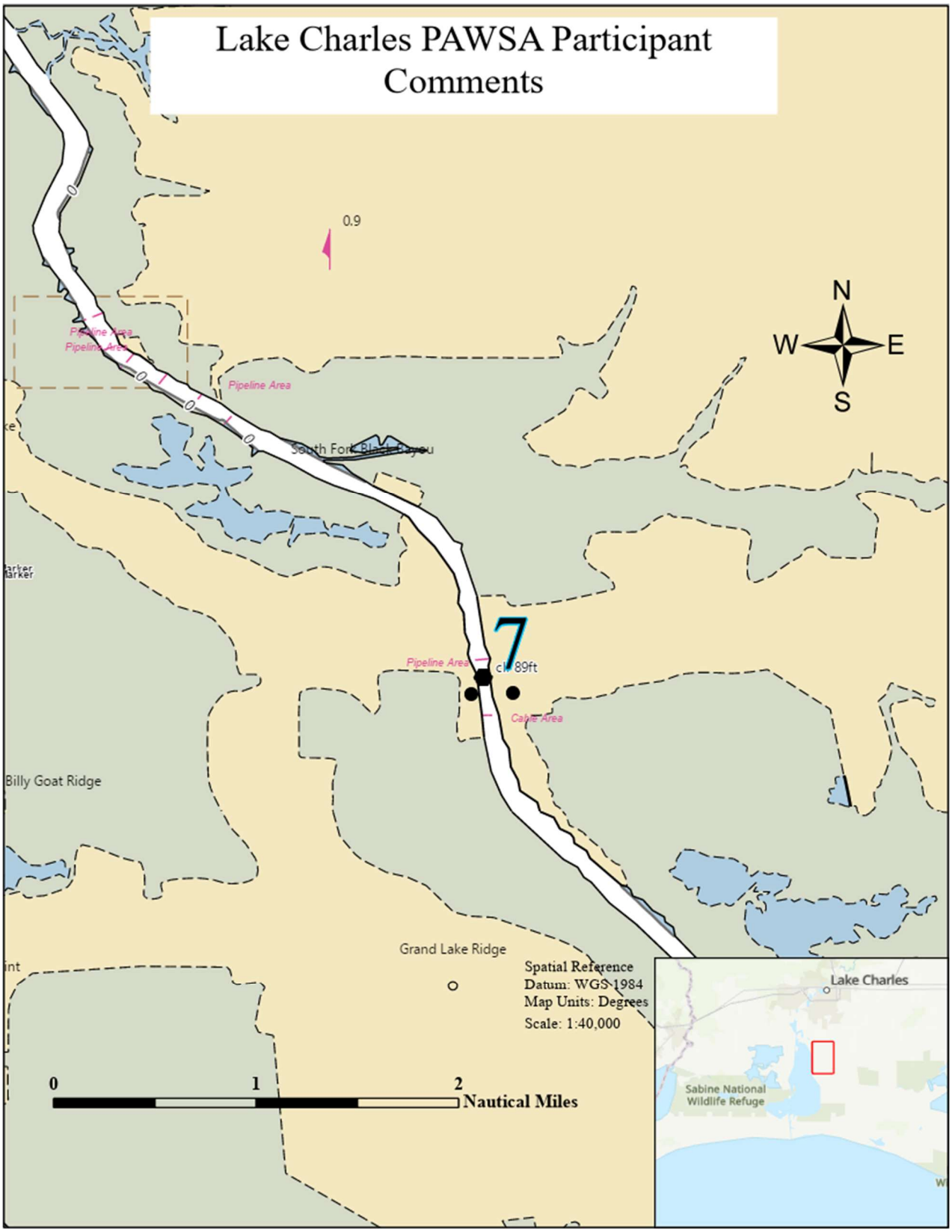

Figure 3 - Mapped location of geospatial participant comment 7.

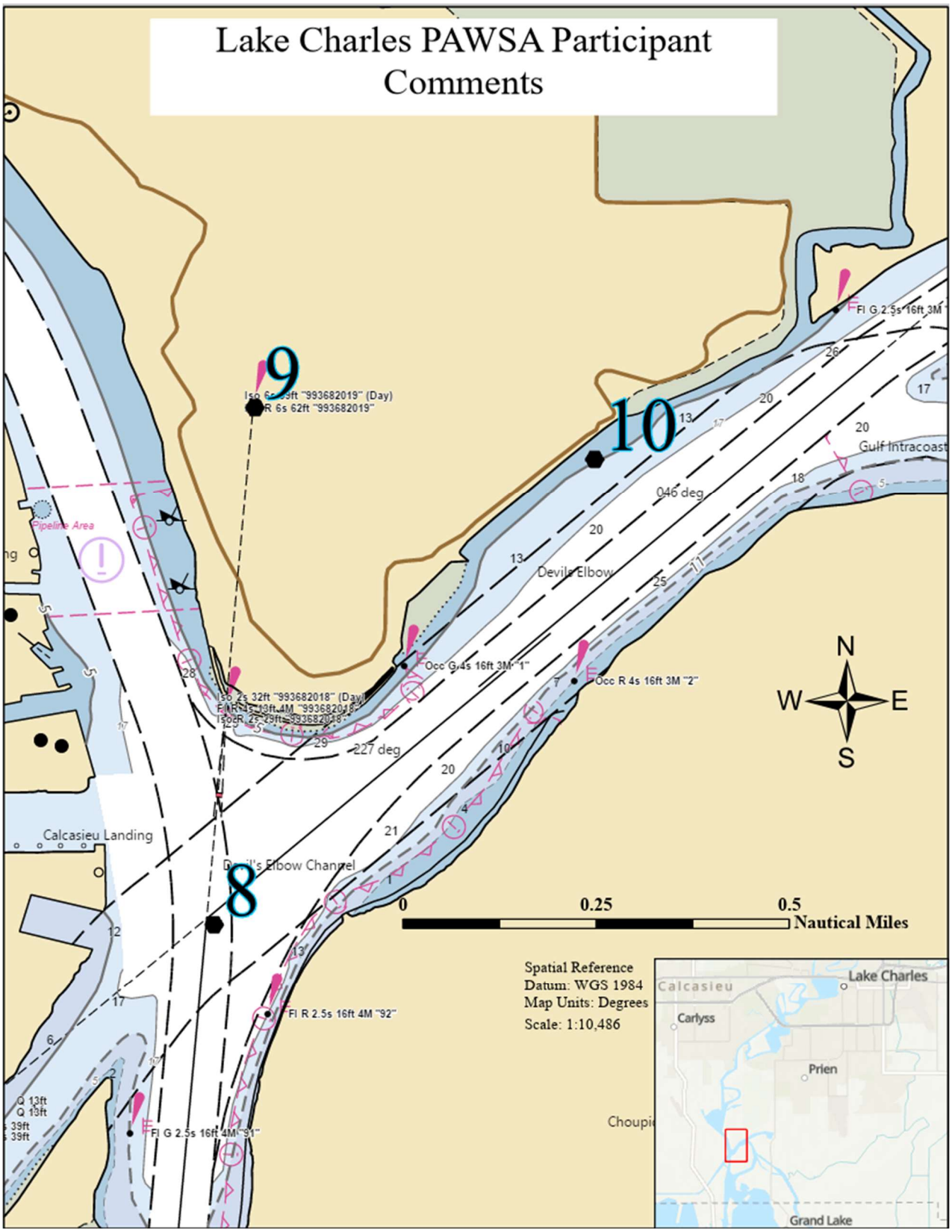

Figure 4 - Mapped location of geospatial participant comments 8-10.

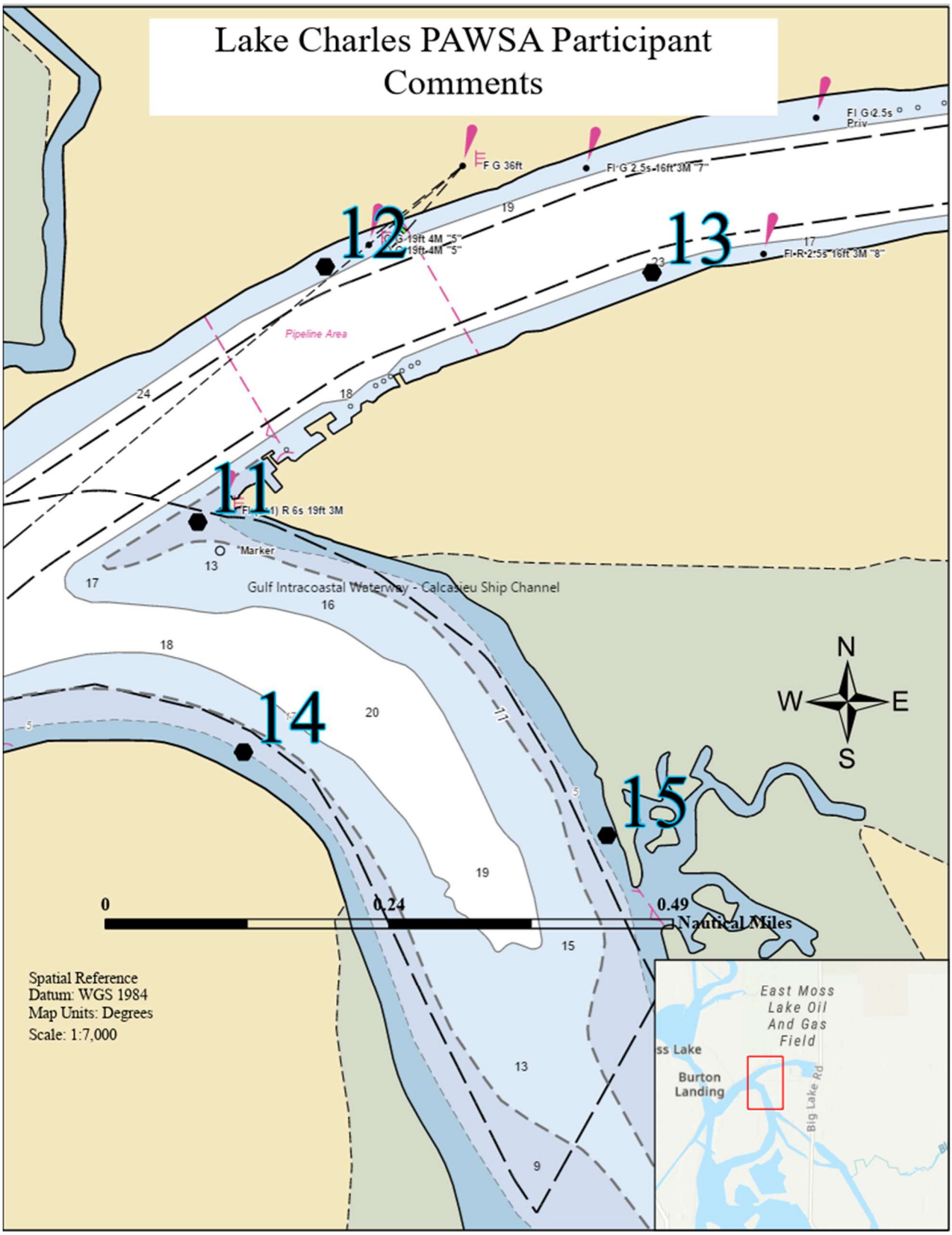

Figure 5 - Mapped location of geospatial participant comments 11-15.

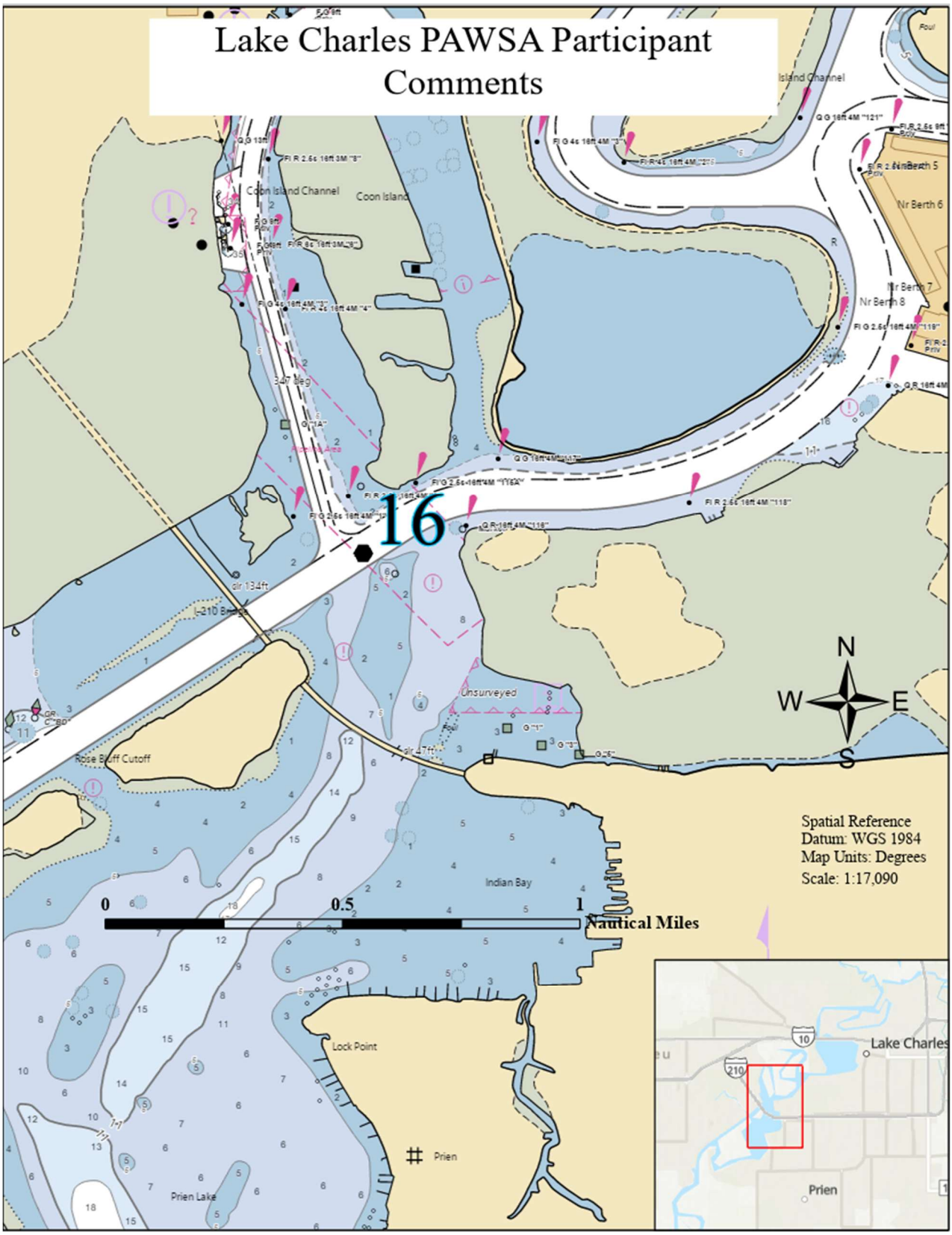

Figure 6 - Mapped location of geospatial participant comment 16.