

Greater Houston Port Bureau

Port Bureau News

Quarter One / 2025



Cybersecurity Year in Review:
Maritime, Logistics, Oil & Gas, and Beyond

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As we closed the chapter on 2024, the narrative of cybersecurity across critical industries was one of escalating threats, transformative lessons, and a glimpse into the evolving battlefield of the digital age. Read more on page 6.

Captain's Corner

New Year, New Projects, More Opportunities



It is a popular idea that all hierarchy conflict is bad and should be avoided at any cost. But we argue that hierarchy conflict is not always self-serving, and the motivation for it could have a significant effect on its outcome. See page 16.

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Welcome 2025! Last year was great for us and for our port community, and we'll continue to be the voice of our port region. As we all know, the ports of Freeport, Galveston, Houston, and Texas City are central to Texas' and the nation's economic and logistical infrastructure, playing key roles in the global shipping network. Together, these ports handle a significant portion of the nation's imports and exports, particularly in the energy, petrochemical, and manufacturing industries. The year 2024 also marked another period of growth, innovation, and investment for these critical ports, with significant accomplishments across different sectors, from a record breaking 380+ cruise ships out of Galveston (with more than 1.7 million passengers), to strong numbers at the Port Houston container terminals, and an overall 5% increase in total tonnage across all public facilities.

While all this was happening, we successfully led advocacy campaigns in DC and Austin, discussing dredging operations, two-way vessel traffic during construction and after completion of the Bolivar Gates, and to ensure the federal and state governments provide adequate funding to the maintenance and operation of the Houston Ship Channel. I had the honor to testify at the Texas House Transportation Committee hearing and provided a brief to the to the Houston Public Safety Committee, discussing the importance of the Houston Ship Channel to the city, the state and to the nation. We also participated in meetings with Governor Abbott and Lt. Gov. Patrick's staff to address our needs, and Port Bureau members attended the Texas Triangle/Panama Strategic meeting in Panama City to strengthen our partnerships and to make trade routes more efficient for commerce, especially in energy and industrial export.

Project 11

The Houston Ship Channel saw tremendous progress in 2024 as part of the ongoing Project 11 expansion initiative. Project 11 aims to deepen and widen the Ship Channel to accommodate the larger vessels being used in global trade, particularly those in the post-Panamax category. By the end of 2024, the Channel was significantly wider, allowing for the passage of larger container ships, tankers, and bulk carriers. This project will also

allow reduced vessel congestion and waiting times, boosting operational efficiency, and is expected to lead to even more significant economic benefits in the coming years. The enhanced capacity will allow the port to handle larger volumes of goods, supporting Texas' robust petrochemical industry and facilitating trade with global markets, particularly in Asia and Europe. We are all super excited about the future, and we are already having conversations about what will be our next step - Project 12.

Cruise Ships

Galveston continues to recover from the effects of the COVID-19 pandemic, with passenger numbers returning to pre-pandemic levels and beyond! As I mentioned above, in 2024, Galveston broke records for cruise passenger arrivals, positioning the port as a key cruise hub in the Gulf of Mexico (or Gulf of America). Later this year, they will open Cruise Terminal 16 and will welcome MSC Cruises to the port. The terminal is forecast to generate close to 1,000 local jobs, with \$58 million in income and \$21 million in local purchases. They are moving in the right direction, and I encourage you to stop by to see how much they have expanded and consider taking your family on a cruise out of Galveston!

As we move into 2025, I would like you to join us at one of our numerous events, aimed at strengthening relationships within the Houston region port community. We had over 3,700 attendees at our networking events such our Commerce Club luncheons, Port 101 seminars, Women in Maritime Happy Hours and Port Bureau Connect Happy Hour last year. You can also join our social media to keep track of our initiatives and events and see how much we have to share with our 14,000+ subscribers. The future remains bright for our ports, with numerous opportunities to build on our accomplishments and further solidify our position as one of the best in the world. See you around!

#myportcommunityisbetterthanyours



CAPT Eric Carrero, USCG (Ret.)
GHPB President

Letter From the 2025 Greater Houston Port Bureau Chairman



Norman Rockwell told us that “the secret to so many artists living so long is that every painting is a new adventure. So, you see, they’re always looking ahead to something new and exciting. The secret is not to look back.”

So, we look forward to a new adventure and sensational year in 2025. Beginning my second year as chairman of the Greater Houston Port Bureau is a tremendous honor. Looking ahead to our new adventures for the Houston Ship Channel, the Greater Houston Port Bureau is stronger than ever to contribute to the future successes. Our over 240 members reflect the diversity of the business along the 52-mile bayou we call the Houston Ship Channel. Our port members: Port Houston, Texas City, and Galveston contribute critical information and leadership to our members by serving on the board of directors with me. Our committees are active and develop action plans for the strategic plan. Our executive partners provide the backbone of support for the Port Bureau, and I thank them for the continued sponsorships, support and contributions. This year we are adding an additional level of membership: Sustaining member. A sustaining member will be the highest level of membership. Sustaining members will receive additional benefits and recognition as a part of their membership.

Our team, led by President Eric Carrero, is a fantastic leader, exciting to engage with and passionate about our future at the Greater Houston Port Bureau. Our board is made of shoreside and waterborne leaders. The Port Bureau reflects the multitude of businesses, small and large, regional and multinational - learning from one another.

As our adventure continues in 2025, we will continue to lead in advocacy and focus on the following:

- 1. Economic significance of our port region:** it is a major contributor to Texas' economy, supporting thousands of jobs. The port generates over 1.35 million jobs statewide, generating over \$400 billion to the state of Texas. For the nation, it generates over 3 million jobs and \$1.1 trillion. The milestones achieved by Port Houston, Galveston, and Texas City are remarkable, and the upcoming projects and initiatives demonstrate a strong dedication to enhancing the region's economic and logistical prowess.

Port Houston is #1 in almost EVERYTHING! The overall port, which

includes 200 private and eight public marine terminals, is the nation's largest petrochemical complex, the largest port by tonnage and the busiest deep-water transits.

Port Houston achieved a record-breaking 53,066,219 million tons of cargo in 2024, up 6% over 2023 at the public terminals. Container volume rose 8%. This milestone demonstrates Port Houston's critical role in moving cargo and driving economic prosperity for Houston, the region, and the nation.

Galveston is currently the #4 Cruise terminal in the U.S. (Soon to be #3 in 2025) Galveston continues to recover from the effects of the COVID-19 pandemic, with passenger numbers returning to pre-pandemic levels and beyond. In 2024, Galveston broke records for cruise passenger arrivals, with more than 1.7 million passengers, positioning the port as a key cruise hub in the Gulf of Mexico. Later this year, they will open Cruise Terminal 16 and will welcome MSC Cruises to the port. The terminal is forecast to generate close to 1,000 local jobs, with \$58 million in income and \$21 million in local purchases.

Port of Texas City. Port of Texas City is an energy port and is ranked 17th in the U.S. (5th largest in Texas) by tonnage moving over 32,000,000 tons in 2023. The Port of Texas City Ship Channel is currently dredged to 45 ft., with authorization to 50 ft., has 38 docks and is located just 1.5 hours from the Gulf of Mexico. More than 1,000 deep draft vessels and 4,150 inland barges called on the port in 2024. The Port of Texas City generates over 43,000 jobs throughout the state of Texas and represents \$15.4 billion dollars in economic benefit.

- 2. Infrastructure and growth:** Expansion Projects – Project 11 and Project 12: The Port's ongoing infrastructure projects will increase capacity, (including dredging efforts to accommodate larger vessels (post-Panamax), as well as improvements to the container terminals. The larger channel will allow larger vessels with more cargo to transit while maintaining two-way traffic. Less transits = less risk and a safer channel.
- 3. Energy industry hub:** Oil and Gas: our ports play a pivotal role in the global energy sector, particularly with oil

exports, LPG exports, petrochemical products, and LNG exports. We are the home to one of the largest petrochemical complexes in the world and as the global markets continue to grow, so will our production and exports for decades to come.

- 4. Advocacy:** The Port Bureau recognizes the need for trade-friendly policies. We will continue to advocate for trade policies that support U.S. exports, fair trade agreements, and improvements in customs efficiency to reduce delays.

The Port Bureau will voice and advocate support for infrastructure funding. The Port Bureau will discuss the need for state and federal investment to maintain and upgrade port infrastructure, ensuring that our ports remain competitive in a global market in Austin and Washington D.C. Additionally, due to our vulnerability to hurricanes and flooding, it is important that we invest in disaster preparedness. Proper investment must be balanced with our two-way traffic to ensure the port's functionality in times of crisis.

- 5. Collaboration with local and state governments:** Lastly, we will continue to work within local partnerships to strengthen collaboration between the port authority, city and county officials, and state legislators to address regional transportation, environmental, and economic challenges. We will work closely with USCG, ACOE and CBP to ensure forward progress is made in 2025.

So in closing, please pick up your brush and paint the future bright. Your adventure awaits. Be a member of the Greater Houston Port Bureau.

Thank You So Much,



Chairman
Vincent DiCosimo

Senior Vice President Government Affairs
Targa Resources



Roger Guenther Named as Greater Houston Port Bureau's 2025 Maritime Leader of the Year

The Greater Houston Port Bureau (“Port Bureau”) is pleased to announce that Roger Guenther, retired executive director of Port Houston, has been named the 2025 Maritime Leader of the Year. Guenther will be honored at the Port Bureau's Annual Maritime Dinner on August 23, 2025. The Port Bureau Board of Directors named Guenther as the 2025 honoree for his leadership and commitment to the port region.

Guenther joined Port Houston in 1988, serving as executive director from 2014 until he retired in 2024. Prior to this, he served as deputy executive director of operations and was responsible for all container and breakbulk cargo operations, management and construction of capital development projects, facility and asset maintenance, and real estate interests. Guenther was appointed by Governor Gregg Abbott to the board of the Gulf Coast Protection District and continues to support the maritime industry in this role.

“We recognize Roger Guenther as the Greater Houston Port Bureau's 2025 Maritime Leader of the Year. For over 35 years, he demonstrated an unwavering commitment to the growth and success of our maritime industry and made a profound impact on the port of Houston and beyond,” said Vincent DiCosimo, chairman of the Greater Houston Port Bureau. “His remarkable contributions to Project 11 - the expansion of the Houston Ship Channel - ensured that our region remains a global leader in trade and commerce.”

In May 2022, Guenther was also inducted into the International Maritime Hall of Fame by the Maritime Association of the Port of New York and New Jersey for his leadership and dedication to advancing the industry through innovation and determination. He was also appointed to the Maritime Transportation System National Advisory Committee by Secretary of Transportation, Pete Buttigieg, and has also served on

numerous other boards and committees, including the Texas Department of Transportation's Texas Freight Advisory Committee, the Greater Houston Port Bureau, and more.



“I am humbled and honored to receive this award. As a former board member of the Port Bureau, I know how much the Maritime Dinner means to the maritime community, and I am excited to be a part of it,” said Guenther.

The Houston Ship Channel is the nation's busiest waterway. Collectively, the more than 200 private and public terminals along the 52-mile channel make the area the nation's largest port for waterborne tonnage. The Channel supports 1.54 million jobs in Texas and 3.37 million jobs nationwide, and economic activity totaling \$439 billion in Texas – nearly 20 percent of Texas' total gross domestic product (GDP) – and \$906 billion in economic impact across the nation

Over 800 maritime, transportation, and industry professionals and their guests attend the Annual Maritime Dinner to recognize maritime leaders or companies that have exhibited outstanding leadership and support for the port region. Recent honorees include Jürgen Schröder, founder of Schröder Marine Services, Inc., David Grzebinski, CEO of Kirby Marine Services, Port Houston Commission Chairman Ric Campo, and Jim Teague, Co-CEO of Enterprise Products Partners L.P.

The Annual Maritime Dinner is supported by Title sponsor Port Houston and Queen of the Fleet sponsors Callan Marine, Enterprise Products Partners L.P., Kinder Morgan, Targa Resources, and Vopak. Proceeds from the Annual Maritime Dinner support the Port Bureau's regional maritime advocacy efforts. Table and sponsorship opportunities and additional information are available online at www.txgulf.org/annual-dinner or call 713-678-4300.



Cybersecurity Year in Review: Maritime, Logistics, Oil & Gas, and Beyond



As we closed the chapter on 2024, the narrative of cybersecurity across critical industries was one of escalating threats, transformative lessons, and a glimpse into the evolving battlefield of the digital age. From maritime logistics and oil and gas to LNG facilities, refineries, TSA-regulated surface pipelines, and rail systems, the year spotlighted vulnerabilities that are not merely technical but deeply intertwined with economic stability, national security, and global interdependence.

Cyber adversaries, both state-sponsored and otherwise, have exploited weaknesses in both IT and operational technology (“OT”) systems, targeting everything from cranes in bustling ports to pipelines transporting energy across continents. The campaigns by advanced persistent threat (“APT”) groups like Volt Typhoon and Salt Typhoon exemplify this year’s challenges, demonstrating a new level of sophistication that blurs the lines between espionage and sabotage. This review delves into critical incidents, emerging patterns, and actionable strategies to strengthen resilience against increasingly persistent and adaptive threats.

Maritime Logistics and Cybersecurity

Rising Threats to the Maritime Domain

The maritime sector remains the lifeblood of global commerce, with nearly 80% of world trade transported via sea routes. This indispensable role makes it a prime target for cyber adversaries. In 2024, the U.S. Coast Guard reported an unprecedented rise in cyber incidents targeting port operations, vessel navigation systems, and associated logistics networks. The convergence of IT and OT systems in maritime operations has created a perfect storm of vulnerabilities. State-sponsored actors, particularly Volt Typhoon, exploited maritime IT networks, gaining long-term access with their “living off the land” strategy, using legitimate tools already present in systems. These sophisticated methods have highlighted the inadequacy of traditional cybersecurity models, emphasizing the need for advanced detection techniques and rapid response capabilities.

Ports as Targets of Opportunity

Modern ports rely heavily on automated cranes, IoT devices, and advanced logistics software for efficiency. However, this digital transformation has exposed them to significant risks. ZPMC cranes, used in ports worldwide, became a focal point in 2024 due to their potential for remote exploitation. Reports of adversaries leveraging vulnerabilities in these cranes for espionage or operational disruption led to extensive mitigation efforts, including network segmentation, physical inspections, and enhanced monitoring. These incidents underline the necessity for a comprehensive cybersecurity strategy that secures both IT systems and OT environments, thereby protecting the critical role of maritime sectors in global trade.

Increased Regulatory Oversight

At the national level, there was a greater call for increased government oversight of critical infrastructure. With updates to the Transportation Security Administration (“TSA”) directive for pipelines to the Notice of Proposed Rule Making (“NPRM”) by the U.S. Coast Guard to officially bring cyber into the Code of Federal Regulations, the emphasis is on preventive measures to improve critical infrastructure resiliency.

We can look back at what has occurred and strategically prepare for what is about to come. The last two administrations took efforts to improve cybersecurity resiliency. Increased regulatory oversight in maritime and oil/gas industries’ cybersecurity represents a significant shift in how these critical sectors approach digital security. While the new regulations pose compliance challenges and increase operational complexities, they also drive improvements in cybersecurity practices, fostering greater resilience against evolving cyberthreats.

With the release of the NPRM and a handful of Maritime Security Bulletins that address cybersecurity, combined with the efforts by the Cybersecurity and Infrastructure Security Agency’s (“CISA”) publishing their NPRM to meet the Cyber Incident Reporting for Critical Infrastructure Act (“CIRCA”), more emphasis has been placed on collaboration with government organizations.

The success of these regulatory efforts will depend on continued collaboration between industry stakeholders and regulatory bodies, as well as the ability to adapt to the rapidly changing threat landscape. As cyber risks continue to evolve, it is likely that regulatory oversight will continue to intensify, requiring ongoing adaptation and investment from companies in these vital sectors.

Oil and Gas, and Specialty Gases: The Cybersecurity Frontline

Increasing Threats to Energy Infrastructure

Energy infrastructure remains a prime target for cyber adversaries, as evidenced by the persistent attacks on the oil and gas sector throughout 2024. From ransomware incidents to advanced infiltration attempts, the sector faced relentless challenges. Volt Typhoon’s campaigns revealed the evolving threat landscape, targeting pipeline control systems and refinery operations to gain footholds for potential sabotage. The interconnected nature of oil and gas networks, often dependent on aging infrastructure, continues to expose vulnerabilities. Coupled with the strategic importance of energy infrastructure, these weaknesses underscore the critical need for strong cybersecurity measures.

Refineries and product pipelines, including gas pipelines, are key targets for cyber sabotage due to their pivotal roles in energy supply chains, economic stability, and national security. These facilities represent essential components of global energy infrastructure, making them a high-value focus for adversaries intent on causing widespread disruption, leveraging geopolitical advantage, or profiting from ransomware and theft of intellectual property. The deep integration of OT with IT networks creates exploitable vulnerabilities, posing risks to production, safety, and the environment. Potential consequences include process safety incidents, loss of containment, shelter-in-place scenarios, and compromised emergency response capabilities.

LNG Facilities, Refinery Challenges, and Threats to Transportation Infrastructure

Although no confirmed ransomware attacks directly impacted refinery or LNG facility operations in 2024, the industry remains highly exposed. Past incidents and hypothetical scenarios highlight how a single breach can ripple through IT and OT environments, derailing operations, supply chains, and financial stability. The Transportation Security Administration has responded with strict cybersecurity directives that emphasize access controls, timely patching, and well-developed incident response plans. However, balancing operational uptime with the need for enhanced security measures remains a significant challenge in an industry where downtime carries high financial costs. Preparing for potential attack scenarios is essential for protecting these critical infrastructures.

The transportation sector, including surface pipelines and rail systems, also saw an increase in cyber threats in 2024. These infrastructures,

critical for moving goods and energy, are increasingly targeted by adversaries aiming to disrupt operations and undermine national security. Volt Typhoon's activities against pipelines and rail systems revealed an intentional effort to infiltrate critical infrastructure and exploit vulnerabilities during times of geopolitical tension. These threats highlight the importance of a coordinated cybersecurity strategy across the transportation sector.

The Role of TSA Security Directive SD-02E

Security Directive SD-02E, issued by the TSA, outlines cybersecurity measures for critical pipeline operators. It requires operators to conduct risk-based assessments, implement effective incident response plans, report cyber incidents promptly, and secure both OT and IT systems against emerging threats. SD-02E takes a performance-based approach, focusing on achieving outcomes rather than prescribing specific technologies or methods. This flexibility allows operators to adopt measures tailored to their unique environments while meeting the directive's security objectives.

Halliburton Cybersecurity Impact in 2024

One of the most significant developments in 2024 was the cybersecurity impact experienced by Halliburton, a major oilfield services company. The company confirmed a cyberattack in August 2024 that led to unauthorized access to some of its systems, causing disruptions at its Houston campus and affecting global connectivity networks. To contain the breach, Halliburton took certain systems offline and engaged external cybersecurity experts to address the issue and mitigate further risks.

The attack resulted in data theft, with subsequent financial reports referencing costs related to the incident. While Halliburton has not disclosed specific details about the stolen data or the broader implications, these developments raised significant concerns about vulnerabilities in its supply chain. Reports indicated that some attacks reached their OEM systems deployed in asset owner-operator environments, underscoring the ripple effects of compromising OEM technologies and the risks posed to critical operational systems managed by their clients.

Halliburton, which has long prioritized security, faced a stark reminder that even mature, security-focused organizations are not immune to sophisticated cyberattacks. For many asset owner-operators relying on OEM-provided and site-hosted technologies, these breaches amplified concerns about the integrity and security of embedded systems critical to drilling, production, and maintenance operations.

The incident highlighted the urgency for OEMs to adopt secure-by-design and secure-by-default principles, enforce stringent vendor access controls, and bolster the security of software and firmware updates. It also underscored the need for improved incident response measures and proactive risk management across the supply chain.

In financial terms, the cyberattack led to an immediate drop in Halliburton's stock price, with a more pronounced impact seen in the week following the disclosure. The initial 6% decline in stock price directly after the attack equated to an estimated \$1.69 billion drop in market capitalization, based on the stock's price at that time, according to a Reuters report published on August 21, 2024. Over the longer term, Halliburton's stock continued to face pressure, as market dynamics and investor confidence were influenced only initially by the fallout of the attack. Analyst reactions included adjustments to ratings and price targets, reflecting concerns about the company's vulnerabilities and operational impact.

For asset owner-operators and financial stakeholders, this incident serves as a stark reminder of the importance of trust in third-party providers. Beyond the immediate operational and financial repercussions, the long-term restoration of trust among asset owners, operators, and investors hinges on Halliburton's commitment to transparency, enhanced security measures, and sustained resilience in the face of evolving cyberthreats.

Despite the initial setbacks caused by the cyberattack, Halliburton has made strides in financial performance, delivered shareholder returns, and

has seen its stock price stabilize and show signs of recovery. However, by December 2024, the stock price had not yet returned to its pre-attack levels.

The Role of Emerging Technologies

Emerging technologies are reshaping operations and cybersecurity by offering innovative solutions to enhance both across various sectors. AI-driven monitoring and predictive analytics stand out for their ability to detect anomalies in real-time, helping mitigate threats proactively by analyzing patterns in network behavior and system operations. Drones are also becoming vital for physical security in large infrastructures like ports and refineries, spotting unauthorized access or monitoring for cyber physical threats. While these advancements bring great promise, their adoption is hindered by challenges such as integration with legacy systems, budget constraints, data privacy concerns, and a shortage of skilled professionals.

Despite the potential, the path to widespread adoption remains complex. Integrating AI and predictive tools often requires significant upgrades to existing systems, which can be costly and challenging, especially for smaller organizations. Additionally, the need for large datasets to train AI systems raises privacy concerns, and there's a skills gap that leaves these tools underutilized. Technologies like quantum computing, blockchain, and 5G offer both opportunities and risks, particularly as 5G expands attack surfaces and quantum computing challenges encryption methods. As these technologies evolve, the focus must be on overcoming these barriers to fully unlock their potential in strengthening cybersecurity.

The Role of Advanced Threat Actors

Volt Typhoon and Salt Typhoon: A New Era of Cyber Warfare
APT groups like Volt Typhoon and Salt Typhoon have reshaped the cybersecurity landscape, blending espionage with sabotage. Volt Typhoon targeted critical infrastructure across multiple sectors, revealing a strategic intent to disrupt entire supply chains. Salt Typhoon focused on telecommunications, exploiting legacy systems to intercept sensitive communications.

Lessons from Their Campaigns

These campaigns highlight several critical lessons for cybersecurity professionals:

- **Securing OT Environments:** Often overlooked in traditional approaches, OT systems must be as rigorously monitored and protected with trained and competent staff.
- **Proactive Threat Detection:** Leveraging AI and machine learning for real-time risk identification and mitigation is essential.
- **International Collaboration:** Combating state-sponsored threats requires cooperation across borders to share intelligence and best practices.

The campaigns of 2024 highlight several critical lessons for cybersecurity professionals working to safeguard critical infrastructure. As cyber threats become more sophisticated, securing operational technology environments has become an imperative. Traditional security models,



which often focus primarily on IT, must evolve to include OT systems, ensuring they are rigorously monitored and protected with trained, competent staff. The need for a defense-in-depth strategy is evident, with security layers designed to work together, detecting and mitigating risks in real time. This proactive approach, supported by AI and machine learning, allows organizations to identify potential threats before they escalate into full-scale attacks.

A key focus is the importance of securing all points of entry and communication within OT environments. The integration of continuous monitoring, network segmentation, and anomaly detection across both IT and OT systems is critical in preventing adversaries from exploiting vulnerabilities. The experience of 2024 also highlights the necessity of ensuring that both internal and external connections are properly secured, with robust authentication and access control mechanisms in place. In this context, cybersecurity initiatives must be holistic and strategic, considering the long-term security needs while addressing immediate risks.

Preparing for the Future

Building Resilience

The events of 2024 underscore the need for resilience across sectors. Key strategies include:

- **System Segmentation:** Reducing the risk of lateral movement within networks.
- **Strengthened Access Controls:** Limiting human error through advanced technologies and comprehensive training.
- **Regular Updates and Backups:** Ensuring systems are patched and capable of swift recovery.
- **Continuous Education:** Embedding cybersecurity awareness into organizational culture.
- **Incident Response and Intelligence Sharing:** Establishing robust response plans and promoting cross-sector collaboration.

One essential strategy is furthering system segmentation, zones, conduits, and defense in depth helps limit the potential for lateral movement within networks. By compartmentalizing systems and isolating critical assets, organizations can contain attacks and prevent them from spreading throughout the infrastructure. This approach, when combined with strong access controls, significantly reduces the risk of human error and minimizes the opportunity for unauthorized access. Advanced technologies and comprehensive training ensure that employees understand the importance of access security and are equipped to prevent and detect potential threats.

Another fundamental aspect of resilience is ensuring systems remain up-to-date and capable of swift recovery. Regular vendor approved and vetted updates are necessary to patch vulnerabilities, strengthen defenses, and maintain continuity in the event of an incident. This proactive measure ensures that critical systems are not only protected but can also be quickly restored if attacked. Backup, backups, backups; protected online and offline and are quickly available for restoration. However, backups are only one piece of resilient data and systems recovery. The other part is the testing of the backups through disaster recovery or incident recovery drills. Verify that you can get back to an operational state when an incident/disaster occurs.

Equally important is fostering a culture of continuous education. Cybersecurity awareness must be deeply embedded within the organizational culture to effectively reduce risk. By regularly training employees on the latest threats and best practices, organizations empower their workforce to contribute actively to the security of the network.

The Role of Policy and Governance

The White House administration under Donald Trump is anticipated to elevate cybersecurity to a critical national security issue. This shift in policy could lead to a significant reduction in reliance on foreign technology, particularly following incidents like those involving ZPMC cranes and the Salt Typhoon campaign. By promoting domestic

production and innovation, the administration might encourage "security by design" in tech development, reducing vulnerabilities from supply chains and foreign-made equipment. This approach would also likely see an enhancement in public-private partnerships, establishing or expanding collaborative frameworks for real-time threat intelligence and incident response, alongside offering incentives for companies to bolster their cybersecurity measures.

Additionally, there's an expectation of increased funding for cybersecurity initiatives, potentially leading to more robust budgetary support for research, development, and education in cybersecurity. This could mean the creation or strengthening of federal cybersecurity centers, with a focus on sector-specific strategies for critical infrastructure like oil and gas, maritime, and transportation. The administration might also prioritize policy innovation, introducing regulatory reforms to keep pace with technological advancements and advocating for international cybersecurity norms to combat state-sponsored cyber activities. The emphasis on education and workforce development would aim to address the cybersecurity skills gap through comprehensive strategies from K-12 to professional levels, promoting diversity to enrich the cybersecurity workforce and thereby enhancing national cyber resilience.

Conclusion

The cybersecurity landscape of 2024 was a wake-up call for industries worldwide. From the maritime sector to energy infrastructure, the lessons of the past year highlight the urgency of adopting a proactive and holistic approach to security. In 2025, the focus must remain on resilience, innovation, and international collaboration to safeguard the infrastructures that underpin modern life.

Addressing state-sponsored threats requires cooperation beyond borders. International collaboration is essential, as cyber adversaries operate globally, exploiting vulnerabilities in interconnected systems. Sharing intelligence, best practices, and lessons learned will enable organizations across sectors to collectively improve their defense capabilities. By fostering a culture of collaboration, the cybersecurity community can better address the challenges of an increasingly interconnected world. Building resilience requires well-established incident response and intelligence-sharing frameworks. Effective response plans, combined with cross-sector collaboration, enable organizations to react promptly to cyberthreats and share valuable information to strengthen collective defense.

For those committed to securing our nation's critical infrastructure, joining the Houston InfraGard Members Alliance, where industry leaders and experts collaborate to drive resilience in our communities, can make a tangible impact. Special recognition goes to the Greater Houston Port Bureau and Houston Ship Channel Security District for their support of cybersecurity awareness in the Houston area and their dedication to fostering resilience in the maritime domain.

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This article was authored by Marco (Marc) Ayala, president of InfraGard Houston, chair of Threat Intelligence and Cybersecurity AMSC Gulf of Mexico – Outer Continental Shelf and Chris Wolski, sector chief for the Maritime Domain, AMSC Houston-Galveston and CEO of Applied Security Convergence, LLC, with the aim to inspire action and foster collaboration to meet the evolving challenges of cybersecurity head-on.

A Nuclear Future for the Maritime Sector

Embracing nuclear technology will enable the maritime sector to move into a new era of prosperity through clean energy



Photo: Offshore Floating Nuclear Power Plant

The nature of the shipping industry is changing. The maritime sector is on the brink of a transformation as great as that between the age of sail and the adoption of steam propulsion. But while some present this challenge as an onerous burden, it in fact presents a huge opportunity – to revolutionize port operations and shipping, while making them more efficient and more cost effective.

Ports and shipping companies, like the rest of society, rely on the vast benefits that fossil fuels provide. But the industry is mandated to move away from these fuels over the coming decades. So, we need to find a complementary replacement over time that provides abundant energy – and, importantly, provide that energy on demand and at low cost.

Some have proposed synthetic ‘green’ fuels as a solution, but they are neither complementary nor a viable replacement for fossil fuels. Synthetic liquid fuels (such as ammonia and methanol) are produced using electricity from low- or zero-carbon sources. Although synthetic fuels could be used in combustion engines, producing them efficiently and at scale would require vast amounts of green electricity. Their energy density is much lower than existing fuels, which means we need a lot more fuel to produce power. Clearly, we need a different approach.

A solution exists that will enable the maritime sector to improve efficiency and lower costs. It will also allow port and ship operators to provide wider benefits to society. That solution is nuclear energy.

The Nuclear Option

To understand the potential of nuclear energy, it’s essential to grasp how it works. It uses the process of nuclear fission – splitting the atom. When the nucleus of an atom is split into smaller nuclei, this releases an immense amount of energy in the form of heat. This heat is used to produce steam or hot gas, which drives turbines connected to generators that produce electricity.

Nuclear energy can create vast amounts of electricity. It is vastly more energy-dense than fossil fuels, and decades of operational experience show that it is a good alternative.

But nuclear energy has also faced headwinds throughout its history. Traditional nuclear reactors use solid uranium fuel and need pressurised water for coolant. This requires complex safety and containment shelters, which have pushed up costs and construction times.

To roll out nuclear on a large scale, we need a new approach. New concepts and technologies are being developed that will help unlock nuclear energy’s full potential.

Make it Modular

One such concept is that of small modular reactors (“SMRs”). Traditionally, nuclear power plants have been built as large, one-off installations at the gigawatt scale, with little standardization of construction techniques or components. By contrast, SMRs are smaller, with generation capacities of less than 300MW, and mass assembled on a production line. Building each component in this modular makes them cheaper and quicker to build. The small size of SMRs means they can be easily shipped to where they are needed.

Additionally, advanced nuclear technologies can improve safety and efficiency while further reducing costs. Designs for next-generation reactors will use new types of fuel – for example, using a molten salt to carry the uranium rather than solid fuel pellets. This offers improved safety as the reactors operate at lower pressures, reducing the risk of failure while reducing costs, as expensive containment and safety systems are not as important. Significantly, advanced nuclear technologies use uranium much more efficiently than traditional reactors, enabling them to run for many years – even decades – without refueling.

Putting these pieces together, it’s easy to see how they can benefit ports and the wider maritime industry, and vice versa.

Shipyards have been using modular construction techniques for decades. Building advanced SMRs in shipyards will make use of existing skilled workforces to deliver energy projects on time and on budget. Additionally, maritime manufacturing will enable nuclear energy projects to be produced as two key applications: floating nuclear power plants (“FNPPs”) and marine civil nuclear propulsion (“MCNP”).

Energy Afloat

From a port operations point of view, FNPPs are likely the most attractive of these two options. As their name suggests, FNPPs are power plants that employ SMRs securely installed in floating barges. They will be mass produced in shipyards and then towed to locations around the globe. FNPPs can then provide electricity to local grids and provide power for port services. They can even be used off-grid for purposes such as desalination, decarbonizing upstream oil and gas operations, or powering



Photo: Barge Floating Nuclear Power Plant

AI data centers. It’s been done in the U.S. before. The first FNPP, the Sturgis, was deployed in the Panama Canal in 1968. Floating fossil fuel power barges are already in operation worldwide and thus are a proven concept. FNPPs will provide clean, reliable electricity to where it is needed in the same way. Smaller, nearshore barges can be berthed at ports, while larger capacity plants will be moored further offshore. In both cases, FNPPs can be quickly installed and easily towed back to central servicing yards for refueling or decommissioning. This ‘plug and play’ flexibility means FNPPs can easily respond to changes in energy demand.

With these factors in mind, it’s easy to see why FNPPs in various configurations present an attractive opportunity to port operators. They will provide electricity to power quayside services and could easily be used to supply surplus power to the local electricity grid – potentially creating extra revenue – at times when harbor-based demand is low.

This means using nuclear to power ports will only increase the economic benefits that the maritime sector already provides, such as boosting economic development, providing strong infrastructure and offering long-term employment opportunities.

Moreover, FNPPs will solve the problem of rising demand for electricity for port operations. With the San Pedro Bay ports (Los Angeles and Long Beach) needing 585 MW of generation capacity by 2050, according to Pacific Merchant Shipping Association estimates, it’s clear that FNPPs will be well placed to cater for this burgeoning need.

The engineering and regulatory hurdles involved in building FNPPs are lower than those for MCNP ships and therefore FNPPs will be built first. The use of nuclear propulsion in ships isn’t new – its origins stretch back

70 years. The United States launched the world’s first nuclear-powered submarine in 1954, and nuclear propulsion was more widely adopted in various military vessels, including surface ships, over the following decades.

Atomic Advantage



Photo: Nuclear Container Ship

The advantages of nuclear-powered ships are obvious. They can operate for years without refueling, and travel at faster speeds than conventional vessels. Also, the space needed for nuclear fuel is tiny in comparison with the space needed for

fossil fuels, freeing up more room for cargo.

These massive potential benefits mean MCNP could revolutionize not only the shipping sector, but also the entire world. Eighty percent of global trade is carried by sea, meaning that swifter and efficient nuclear-powered merchant ships will transform the world economy.

Given these enormous advantages, how come the civil shipping sector hasn’t taken up nuclear propulsion on a large scale? The answer is because the global nuclear regulatory environment is not set up to govern the operation of civil nuclear-powered vessels.

So, bringing FNPPs and MCNP to market demands much more than simply creating the technology. It requires a holistic solution that will need to create the regulatory operating environment and physical infrastructure necessary for both solutions to work – from creating the global consensus on regulation and insurance, to building the supply chain and training the workforce, to ensuring robust procedures for servicing and decommissioning.

Navigating the Challenges

CORE POWER is building a Maritime Civil Nuclear Program – the first of its kind within the Organisation for Economic Co-operation and Development (“OECD”). It is funded by substantial investments from strategic customers in shipping, industrial energy, finance and private equity.

We also a founding member of the Nuclear Energy Maritime Organization (“NEMO”). NEMO is an international industry association working to assist governments and intergovernmental agencies in developing

harmonized regulations for maritime nuclear applications. With over 30 organizations contributing expertise – from classification societies and insurers to reactor manufacturers and shipyards – NEMO is laying the foundation for integrating nuclear technology into the marine sector.

Meanwhile, CORE POWER, along with key partners, is developing the technology needed for FNPPs and MCNP. Using advanced nuclear technologies for FNPPs and maritime propulsion will solve the problems of insurability and conforming to regulatory requirements.

Once these regulations are in place, port operators will be in a prime position to benefit from the nuclear revolution. The expertise they gain in operating FNPPs can then be used to facilitate the operation of nuclear-powered vessels – ensuring a competitive advantage over non-nuclear operators.

Voyage Into the Future

The maritime sector certainly has critical challenges to face over the coming years. But nuclear energy’s potential to create economic growth means it is a game-changing solution. The unparalleled efficiency, low cost and adaptability of advanced nuclear technologies hold the key to a sustainable maritime future. These technologies will enable the sector to improve economics and efficiency while complying with ever stricter emissions regulations.

By championing innovations such as advanced SMRs and FNPPs, and partnering with companies such as CORE POWER, port operators can lead the way in embracing clean, reliable, and scalable energy solutions.

Why nuclear is the ideal solution:

- Zero emissions: nuclear power produces no harmful emissions, making them ideal for meeting stringent environmental regulations.
- Unmatched efficiency: a single nuclear fuel load can power advanced reactors for years or even decades, eliminating the need for frequent refueling and reducing operational costs.
- Energy independence: unlike fossil fuels, nuclear power is less affected by price volatility and geopolitical tensions, ensuring stable operating costs.

As we navigate the seas of change, harnessing maritime nuclear power will help us chart a course toward a more prosperous world.

Mikal Boe
CEO

CORE POWER
<https://corepower.energy>



Mikal Boe is CEO of CORE POWER of new nuclear technologies for marine applications with offices in London, Washington and Tokyo.

Women in Maritime Happy Hour, February 18 with Guest Speaker: Barbara Pickering, President, Chevron Shipping

We are excited to announce our upcoming Women in Maritime Happy Hour event with guest speaker Barbara Pickering, president, Chevron Shipping Company on February 18, 4:30 – 6:30 PM at the East River Studios. The Houston Ship Channel has more than 272 public and private facilities, housing chemical plants, refineries, petroleum storage facilities, container facilities, and other industrial facilities. It is also a vital economic engine bringing \$439 billion in economic value to the state of Texas and \$906 billion in U.S. economic impact nationwide.

Barbara Pickering is the president of Chevron Shipping Company, a position she has held since February 2024. Previously, she served as vice president of Chevron Shipping Operations. She is the first female president of Chevron Shipping Company in its 130-year history.

Chevron Shipping is the global marine transportation subsidiary of Chevron Corporation and has approximately 2,000 employees worldwide. Chevron Shipping operates a fleet of tankers and liquefied natural gas ("LNG") carriers and charters additional vessels that transport crude oil, LNG, LPG, refined petroleum products and chemicals in support of the corporation’s upstream and downstream business segments.

For details, sponsorships, or to register, go to:
<https://www.txgulf.org/events>

We encourage our women membership to attend and bring early and mid-career women from their organization as their guests. This is a free event and includes food and drink.

February 18, 4:30 PM-6:30 P.M.
East River Studios, 2850 Clinton Dr, Houston, TX, 77020

Women in Maritime Happy Hour

Guest Speaker
Barbara Pickering
President
Chevron Shipping Company LLC

For information and to register go to: [txgulf.org/events](https://www.txgulf.org/events)

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Port Watch

A Gilded Globe

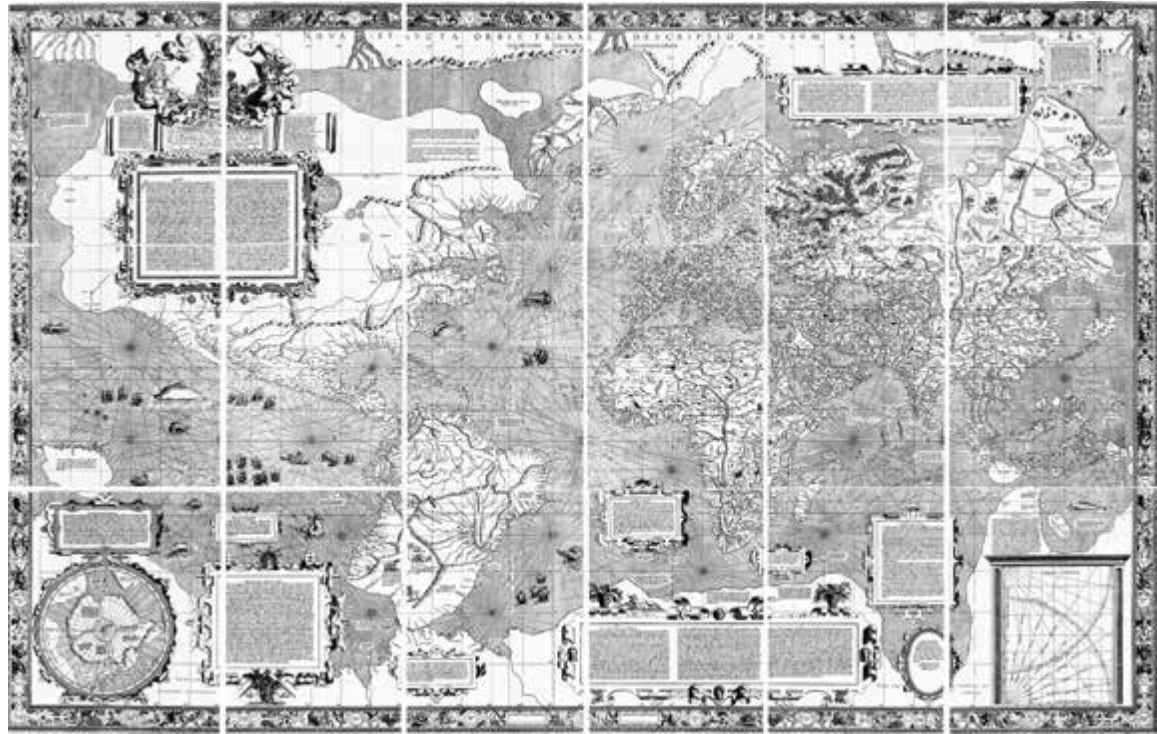


Photo: Mercator 1569 world map from Wikipedia

It was the golden age of cartography. The shadows leagues beyond the horizon were becoming illuminated by the scores of mariners returning from their discovery quests. Maps of the Americas, Australia and archipelagos across the vast Pacific Ocean were continually updated with new discoveries and adorned with elaborate calligraphy and mythical creatures of the deep.

The most talented of cartographers were commissioned by the rulers of Europe and wealthy merchants to craft both terrestrial and celestial globes. Gerardus Mercator gained the attention of several future benefactors when he produced his first map of the world in 1538. This was followed by his meticulously crafted globe in 1541. Yet, the flurry of maps, world atlases and globes could barely keep pace of the thousands of updated surveys that were pouring into the ports of Europe. Worse yet, portraying land masses from a sphere on a flat surface did not facilitate accurate navigation over a several hundred mile voyage.

The rhumb line conundrum was solved when Mercator created a scale on his chart that adjusted for latitude. That is, the higher the latitude the greater adjustment in the geographic scale. This cartographic innovation had a profound impact on dead reckoning sailing; particularly when sailors were unable to update their positions via celestial sightings. Mariners could more confidently ply the seven seas which, in turn, facilitated commerce across what was formerly known as Terra Incognita.

Commerce was alive and well across the Lone Star State as the second quarter of the 21st century dawned. 1% more tows traipsed across the ship channel in 2024 despite the fact that December was the year's nadir. Blue water movements throughout the ports of Texas were also up 1% in 2024. Unlike the brownwater fleet, December witnessed the greatest number of arrivals for the year.

While Houston did not log the highest annual percentage gain across the state, the port achieved some impressive milestones for the year. One percent more steel rolled across the city docks facilitated by the 2% uptick in general cargo vessels. Bulkers - which generally outpace general cargo calls - further outshined this category with an 8% year-over-year gain. Tankers enjoyed their 2nd best month of the year in December. This particular vessel category experienced one of its best annual percentage gains in years with a 6% rise. While chemical tank arrivals were flat on a year-to-date basis, LPG's yearly percentage gain matched that of tankers.

Paradoxically, the container vessel count remains on the wane for the year. Of course, this is rather deceptive given that the port easily pushed through the 4 million TEU mark. Total import and export TEUs were up 6% and 8% respectively. Of particular note, is the fact that empty TEU exports jumped 18% over the past year. The Gulf of America's - yes, it's official - largest container port will undoubtedly benefit from the Houston Ship Channel Project 11 channel improvements which will permit even larger container ships to navigate Jesse Jones's ditch.

Fifty miles away, the Port of Galveston took top honors with respect to annual year-over-year percentage gains. December's 11% monthly gain was shy of the port welcoming its largest number of deep draft vessels in 2024. Nonetheless, December's totals for both cruise ships and tankers was not equaled by any other month. More impressive is that fact that tanker arrivals were an eye watering 54% higher than 2023. Chemical tankers were also up 33% for the year.

The nearby port of Texas City posted its best December performance in over a half decade. The nation's most productive rail port, benefited from a bounty of tankers and chemical tankers in the final month of the year. Both categories wrapped up the year on a high

note; albeit, tankers were still off 7% for the year. Chemical tankers were up a modest 4% in 2024. This was the primary reason the port tallied a 2% higher vessel arrival count for the year.

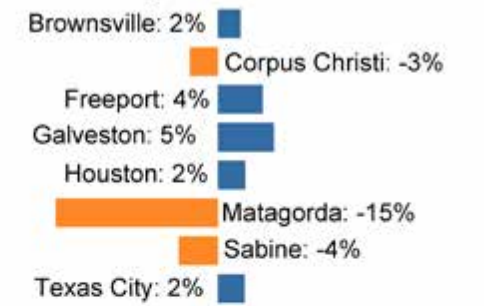
Texas' unsung port of Freeport continued to quietly climb the vessel arrival charts as it ended the year with the 4th highest total vessel count in Texas. Three vessel categories registered counts that peaked in December - container ships, LPG carriers, and car carriers (RO/RO). The port's ever-expanding footprint accommodated 3% more container ships and an unprecedented 82% climb in car carriers in 2024. Thus, despite 1% fewer LPG vessels and 17% fewer chemical tankers - the two categories that comprise the lion's share of vessels that call upon Freeport - the port's arrival count clicked up by 4%.

Corpus Christi was one of the few Texas ports that did not see a vessel arrival increase in 2024 as reflected in a 3% decline. Tankers, which account for 50% of the arrival totals, fell 5%. The 2nd most frequent caller of the port - chemical tankers - plunged by 12% in 2024. Despite those lows, there were a few bright spots. Bulkers had a robust year with a 21% climb and 74% more general cargo vessels entered its harbor.

The state's border port of Brownsville - once again - eked out a modest year-over-year gain of 2%. This bulk-carrier centric port in the state's hinterland was poised to do a bit better. Unfortunately, December's 15% fall could not be overcome by the modest increase in tanker calls throughout the year. In light of the tariff chatter that has dominated the air waves as of late, things may be in state of flux for Brownsville.

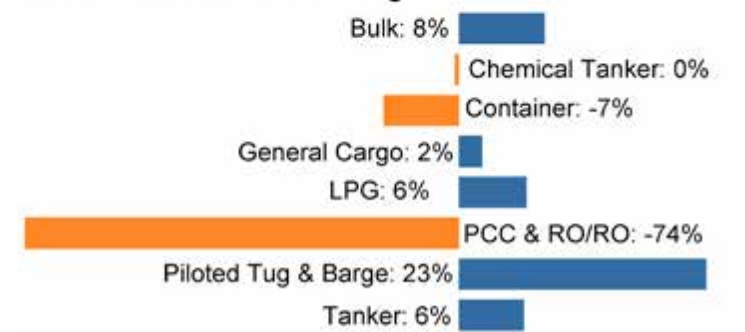
Finally, on the opposite end of the Gulf Intracoastal Waterway, Sabine's percentage performance for the year was not too far afield of Corpus Christi. That is, a 4% wane when compared to 2023. Chemical tankers was the sole category that was envied by others

Deepdraft Vessel Arrivals by Port Q4 Year-to-Date Percent Change



Source: Greater Houston Port Bureau's Marine Exchange of Texas

Houston Deepdraft Arrivals by Type Q4 Year-to-Date Percent Change



Source: Greater Houston Port Bureau's Marine Exchange of Texas

as it logged its highest monthly tally for the year and ended 2024 5% ahead of 2023. Tankers, on the other hand, were an unenviable 16% below 2023's arrival total. The remaining BTU plays - LNG and LPG - also failed to eclipse 2023's arrival count. Interestingly, bulkers plummeted 20% year-over-year. Yet, general cargo arrivals leapt 50%. Overall, things were somewhat languid in the state's second busiest port. No matter, the port's energy export potential and proximity to a growing population bodes well.

The explosion of maritime activity during the 16th century's age of discovery certainly boded well for Europe as it focused on trade routes to the west. Mercator's peers quickly adopted his latitude-based scale as seafarers circumnavigated the globe with greater frequency. By the 1570s, another renown map maker and close friend of Mercator - Abraham Ortelius - began to puzzle over the shape and location of the various continents. He observed that the Americas were "torn away from Europe and Asia". Ultimately, he concluded, "if someone brings forward a map of the world and considers carefully the coasts of the three continents" it appears that at one point in time they were all one.

This rather creative musing did not garner much attention upon Ortelius's passing in 1598. Eventually, in 1912 Alfred Wegener published his theory on continental drift documenting that the continents were once one massive land mass that was torn asunder by plate tectonics. Without a doubt, Mercator could never have imagined that his inquisitive fellow cartographer had seen what others failed to grasp for hundreds of years.

Tom Marian
Buffalo Marine Service
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Can Hierarchy Conflict Actually Help Organizations Thrive?

Disputes over workplace influence can ruffle feathers — but depending on their motivation, they can also foster growth and strength.



It is a popular idea that all hierarchy conflict is bad and should be avoided at any cost,” says van Knippenberg. “But we argue that hierarchy conflict is not always self-serving, and the motivation for it could have a significant effect on its outcome.”

Key Findings:

- Conflict hierarchy” happens when members of a team have disputes in competing for influence and status.
- Academic literature on the topic tends to assume that self-interest is the primary driver.
- Daan van Knippenberg and his colleagues suggest that hierarchy conflicts can stem from a desire to benefit the team. When driven by such prosocial motives, these conflicts are expressed more directly and with less intensity, leading to more positive team performance.

In every team, there is a hierarchy. And in every hierarchy, there is competition for status.

In hierarchy conflict, team members seek to differentiate themselves to acquire socially valued resources like acknowledgment and influence. Senior members of a team might jockey for leadership roles or to guide the team’s mission. Junior team members sometimes compete for even informal recognition that could set them apart from peers and accelerate their climb up the corporate ladder.

The potential costs of hierarchy conflict are well-established in academic literature. Team members who engage in it might refuse to share their knowledge, reducing the flow of information and inadvertently hindering decision-making — all to maintain an advantage over internal competition.

But research by Daan van Knippenberg (Rice Business), along with colleagues at Michigan and Erasmus University in The Netherlands, challenges conventional wisdom, arguing that hierarchy conflict isn’t always a bad thing.

“It is certainly true that there can be a tension between the interest of an individual and what is best for the team as a whole,” says van Knippenberg, the Houston Endowed Professor of Management. “Actions that serve one team member’s career goals are often not the best way to achieve the team’s mission.”

When is Hierarchy Conflict Good?

Hierarchy conflict can potentially serve the collective good, van Knippenberg and colleagues argue in the top journal *Organization Science*. When conflict is motivated by the broader interests of the team, it could actually improve rather than harm group performance. That’s because, in these situations, individual and team interests are aligned.

“It is a popular idea that all hierarchy conflict is bad and should be avoided at any cost,” says van Knippenberg. “But we argue that hierarchy conflict is not always self-serving, and the motivation for it could have a significant effect on its outcome.”

Consider the case of a company’s team managers competing for resources on an upcoming project. Each of the managers seeks to gain the favor of company executives so that resources will be allocated to their team. It is possible — even probable — that some of these managers are motivated by self-interest. After all, promotions and bonuses are given to people who show they can seal the deal.

But the managers could also earnestly believe their teams will make the most of those resources — that they really are best positioned to perform for the benefit of the firm.

The Motivation for Conflict is Key

To explore why people have different motivations in conflict over status or hierarchy, van Knippenberg and his team used something called interdependence theory. This theory suggests that it’s natural for people to have “pro-self” motivations and act in ways that focus on their own

interests. Interdependence theory also argues that people can, at the same time, have “prosocial” motivations and act with the collective good in mind — depending on their deeper goals and values.

“Engaging in hierarchy conflict for prosocial reasons may occur less often than it does for pro-self reasons,” says van Knippenberg. “But when it does occur, it could be a more constructive force.”

The researchers created a theoretical model that predicts how these differences in motivation play out in practice. It predicts that when hierarchy conflict is motivated by a team member’s self-interest, it can lead to intense conflicts that are detrimental to team performance.

“When someone is trying to gain respect and recognition, they might challenge other team members or interrupt their peers,” says van Knippenberg. “Not only can that have a negative impact on team dynamics, it also limits the number of perspectives being expressed and how much information is actually being exchanged.”

But when hierarchy conflict is motivated by the team’s collective interest, the conflict itself tends to be a little more low-key. It is expressed more directly and less intensely, which could have the opposite effect, facilitating an exchange of ideas and increasing the flow of information between team members.

Managing Hierarchy Conflict

For management to deal effectively with hierarchy conflict, it’s important to consider motivations so they can anticipate what effects there will likely be. While the study of hierarchy has grown in recent years, it tends to focus on its negative aspects.

“We wanted to add nuance to this conversation, and shift how scholars think about hierarchy conflict,” van Knippenberg says.

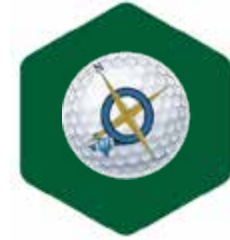
“When team members engage in this type of conflict for prosocial reasons, the effects might not be so bad. But it is also not the same as acting out of altruism. In the context of a team, the self is a part of the collective, and every team member benefits when the team achieves its goals. When a team member is primarily motivated by this shared outcome, it could create significant differences in how hierarchy conflicts play out.”

Vaan van Knippenberg

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Daan van Knippenberg is the Houston Endowed Professor of Management at the Jones Graduate School of Business, Rice University. His areas of expertise include leadership, diversity and inclusion, team performance, and creativity and innovation. Before joining Rice, van Knippenberg was at Drexel University, Erasmus University Rotterdam, University of Amsterdam, and Leiden University, where he also received his Ph.D.



The 16th Annual Captain's Cup Golf Tournament



Buffalo Marine's Team Wins the Captain's Cup Golf Tournament
 Team: Dee Hunt, CAPT Bill Diehl, Tara Battle, and Tim Studdert

Players teed off under gray skies, but uncertain weather couldn't slow down the great sport or dim the enthusiasm of the golfers on Sugar Creek Country Club's greens at the Port Bureau's 16th Annual Captain's Cup Golf Tournament last Nov. 4

The team from Buffalo Marine Service - Dee Hunt, Tara Battle, CAPT Bill Diehl (former Port Bureau president!), and Tim Studdert - took home the first place gross honors. Second place gross went to Chris Catteral, Joe Etzler, Buddy Sexton, and Jamie Sylvester of the Crowe team.

Additional team wins went to:

- **First place net:** Lloyd Engineering team - Brandon Bicknell, Craig Drachman, Patrick McKenney, and Owen Parker.
- **Second place net:** John Bludworth Shipyard team - Gasper D'Anna, Randy Glasgow, Matt Kearns, and Mike Wike.
- **Third place net:** AccuTRANS team - Darren Gautreaux, Josh Herdejurgan, Josh Knichel, and Gavin Osorno

The friendly competition was high, with players vying for the top spot in several contests. Winners were Cameron Smith, Closest to Pin # 4 Trent; Jared Gutierrez, Closest to Pin #8 Trent; Greg Harner, Closest to Pin #1 Jones; and Jason Godfrey for Longest Drive #6 Trent. Golfers also scored wins in the Chipping Contest and, new to the Captain's Cup in 2024, a Putting Contest.

In addition to breakfast, lunch, and dinner, hospitality tents dotted the course, offering beverages, snacks, and giveaways. A raffle, along with a dinner and awards ceremony at Sugar Creek's restaurant topped off day's celebrations.

The Port Bureau appreciates all our golfers, volunteers and sponsors! In addition to our generous sponsors, we would also like to thank the Golf Committee for their hard work: Tim Studdert, chair (Shamrock Marine), Jamie Sylvester, co-chair (Crowe, LLP),

Royce Clutter (Suderman & Young Towing Co.), Blaire Hoffman (Haugen Consulting), Shannon Montes (Mobilease, Inc.), Gavin Osorno (AccuTRANS), Crissy Rivera (Texas Capital Bank), Richard Rojas (Stellar Bank), Karl Schröder (Schröder Marine Services), Kate Skaggs (Mobilease, Inc.), Heather Ward (Kinder Morgan Terminals), and Frank Yonish (Fifth Third Bank).

The Captain's Cup sells out rapidly each year. If you or your company is interested in participating in the 2025 tournament, please email to golf-info@txgulf.org to receive updates.



2nd Gross-Crowe



1st Net-Lloyd Engineering



2nd Net-John Bludworth Shipyard



3rd Net-AccuTRANS

Team Wins

First place gross:

Buffalo Marine - Dee Hunt, Tara Battle, CAPT. Bill Diehl, and Tim Studdert

Second place gross:

Crowe - Chris Catteral, Joe Etzler, Jamie Sylvester, and Buddy Sexton

First place net:

Lloyd Engineering - Brandon Bicknell, Craig Drachman, Patrick McKenney, and Owen Parker

Second place net:

John Bludworth Shipyard - Gasper D'Anna, Randy Glasgow, Matt Kearns, and Mike Wike

Third place net:

AccuTRANS - Darren Gautreaux, Josh Herdejurgan, Josh Knichel, and Gavin Osorno



Six Months into EPA's New Hazardous Substance FRP Rule, Compliance Remains Elusive

When the Environmental Protection Agency's ("EPA") new Clean Water Act ("CWA") Hazardous Substance ("HS") Facility Response Plans ("FRP") rule went into effect on May 28, 2024, it made quite a splash in the consulting world and trade groups. The impact in the industry itself was not as great, mostly because it was not well publicized. Today, many more people know about this rule, and given that it is a behemoth with many new planning requirements, there is a lot of anxiety about it. One of the biggest concerns is that the current deadline - June 1, 2027 - is too short based on what is required. The burning question is, what do we do now and why?

Currently, the rule is unfunded until late 2025, so money for implementing it won't likely be available until 2026. This means there is no money to develop critical, required planning tools or to issue corrections and clarifications. There are two big issues worth noting. First, the planning model, which EPA has promised to develop, has yet to

be started. Without it, you cannot fulfill a large portion of the rule's requirements. Second, the rule presently doesn't exclude oil. While the EPA has noted that it does not intend to regulate oil, until a formal correction or a guidance document is issued, oil is still regulated under the rule. EPA is working on the correction.

In addition to these critical concerns, there are other important questions, outlined below, that we've encountered while deep-diving into the rule. In our private conversations with the EPA, the agency noted that many of them are being addressed internally, and they should have guidance in late 2025. With this in mind, your organization must decide whether to act now or wait.

At the end of this article, I provide my thoughts on what companies should do now. Ultimately, though, your organization will need to decide what to do next.

High-level concerns and roadblocks to complying:

On Sept. 11, 2024, Witt O'Brien's hosted Rebecca Broussard, the EPA's program lead for the new rule. During her presentation, she noted areas that the EPA was working to fix, the current position on critical compliance elements, and those elements that the EPA was still working on. Her most noteworthy comments are listed below, along with a list of questions Witt O'Brien's published shortly after the rule came out that highlight areas of the rule that needed clarification in order for operators to start developing plans. (Comments noted "regarding question" are tied to the original questions at the end of the article.)

1. In a somewhat surprising admission, the EPA noted that the current rule is not funded, and they are advising companies not to invest in complying until 2026. Many components still require development or further clarification. Many may change with the outcome of the presidential election. That said, Witt O'Brien's recommends doing the actions outlined above.
2. The EPA hopes to have a guidance document like its Spill Prevention, Control, and Countermeasure in 2026. They noted that this would come after the publication of the Oil Facility Response Plan Rule guidance document that is still in the works.
3. Though oil is not currently exempted in the new rule, EPA plans through guidance or corrective action, to make it clear that if something is considered an oil, it is exempt.
4. EPA is working on amending the National Preparedness for Response Exercise Program ("PREP") and should have something out in late 2025.
5. EPA is developing a model for the rule's complex modeling requirements. No date was noted, but they are addressing this critical industry component.
6. They emphasized that this is not a prevention rule, so there are no requirements for containment. However, it is highly advisable to provide containment around HSs.
7. Regulated substances in piping need to be accounted for, as piping is regulated as a container.
8. There is not a de minimis container size. The rule is wholly based on the aggregate quantity of storage on site.
9. The expectation under this rule is that firefighting capabilities are the responsibility of the operator, and you should not rely on local fire departments. If no resources are on site, they expect operators to secure third-party contracted support by contract.
10. Qualified Individuals are expected to have Incident Commander level Hazardous Waste Operations and Emergency Response training.
11. Operators are responsible for identifying proper response equipment with their Spill Response organization ("SRO") [SRO is the new term for Oil Spill Removal Organization ("OSRO")]. The rule doesn't set a standard, and as of right now, the United States Coast Guard ("USCG") has not started a program to vet and certify SROs for this program as they do for OSROs under the Oil FRP Rule.
12. Regarding the question, "Are there exclusions for discharges under National Pollutant Discharge Elimination System ("NPDES") permits?" The EPA answered, "Yes."
13. Regarding the question, "The rule exempts Publicly Owned Treatment Works ("POTW"); does it also exempt industrial, privately owned systems? The EPA answered, "Yes, we view these as the same; however, there may be components that are not exempt, such as skimmer tanks."

14. Regarding the question, "The rule provides container types that are not included in the definition. What is a "process vessel" – is it HS-filled manufacturing equipment?" The EPA answered, "One needs to review all areas where regulated substances are stored, treated, or are in process at a facility." This is not a direct answer; however, the takeaway is that HSs should be accounted for everywhere, as there are no container/equipment exemptions.
15. Regarding question 18 listed below about guidance on new planning requirements, it was noted that these would have to be conversations with the Regional Administrator ("RA"). They mentioned that they would try to address these in the proposed guidance document. There is still a lot to gather here.
16. Regarding question 4 listed below about the need to evaluate chemical/mechanical processes at refineries for coverage of regulated HSs, the answer was simple: "Yes, and we know it will be challenging."
17. Regarding question 6 listed below about ignitions and reactions, two slightly different responses were given, so this remains challenging. On the one hand, it was noted that one would only have to account for these in the discharge and whether it would react to things downstream. Later, it was also pointed out that one should look at realistic scenarios if a release could impact something on site, and the example given was the ITC incident. What does this mean? At this point, and until there are enough plan reviews with feedback, you and your plan preparer will have to make the best judgment and make a case as to why you only addressed what is noted in your plan – risk assessment.
18. Regarding question 11 about working with Local Emergency Planning Committees ("LEPC"), EPA noted that you must only share your FRP. However, EPA did not discuss when changes were requested and what cooperation was needed. Can you say no? Or are you required to address any requests? Further discussion is still needed.
19. Regarding question 12 about self-inspections for response equipment or regulated containers, the EPA noted this is not a prevention program, so the expectation here is limited to noting what industry standards you are adhering to, and where the answer is "none," describing what you are doing. It is a discussion, not setting a standard/requirement.
20. Regarding question 15 about what else the EPA expects beyond noting if impacts to communities with environmental justice concerns may apply, this is a limited exercise, noting if this applies and what precautions you have taken.
21. Concerning gases, it was noted that due to the HS rule regulating many gases, the expectation is primarily screening. If the planning distance is zero, you enter this in the Substantial Harm form. This means that you should complete the Substantial Harm form, submit it (only), and keep a copy on file. Important note: part of this rule is to determine if a gas release could cause enough acid rain (example) to trigger the need to develop an FRP: this would need to be addressed on this form.
22. One confusing comment from the EPA was that manmade structures could be used to avoid developing an FRP. It was also mentioned that this would have to be discussed and approved by the RA. Honestly, I don't think a 100% containment in a tank dike or retention pond would ever be approved in this manner, but it is worth including, as it was noted during the conference.

Questions that arose when the rule was first published:

1. As the plan holder determines the equipment required to respond, do SRO agreements need to list everything or will the USCG eventually be the certifying agency as in the Oil FRP Rule? If the latter, will the plan holder only have to show proof of a contract? If not, what level of documentation will be required?
2. Will the EPA develop a model for the planning calculations and Worst-Case Discharge modeling, or does the industry have to develop a model? If it's on the industry, what level of documentation will be required? Also, if it's up to the industry, there are many conditions that need to be modeled, so will there be guidance on how to apply these conditions and clear resources (e.g., where to find water standard databases and how to use, tools for different water characteristics, list of capable models with their limitations, tools for surface condition modeling, weather modeling) to use as reference tools?
3. The rule provides container types that are not included in the definition. What is a "process vessel" – is it HS-filled manufacturing equipment?
4. At manufacturing/refining locations, does every chemical/mechanical process, from feedstocks, to interim products, to final products, have to be evaluated for coverage of regulated HSs? The rule notes process equipment, which implies that they will.
5. Are there exclusions for discharges under NPDES permits?
6. The rule notes that ignitions and reactions must be considered. Does this mean you have to evaluate all secondary products when something is ignited, as well as all the outcomes if substances mix?
7. What is the difference between distance and the definition of planning distance?
 - a. *Distance to the endpoint means the greatest distance a CWA hazardous substance in a worst case discharge into or on the navigable waters or a conveyance to navigable waters can travel while still having the ability to cause injury to public receptors or fish, wildlife, and sensitive environments ...*
 - b. *Planning distance means the distance to an endpoint such that a worst-case discharge of CWA hazardous substances into or on the navigable waters or a conveyance to navigable waters from a non-transportation-related onshore facility could adversely impact a public water system or cause injury to fish, wildlife, and sensitive environments or public receptors ...*
8. The rule exempts POTW; does it also exempt industrial, privately owned systems?
9. The rule does not exempt oil; will it be exempted?
10. PREP has yet to be updated to address this new rule. When will it be updated?
11. Companies are required to work with local emergency planning committees. If these LEPCs have unreasonable requests, will the EPA moderate expectations?
12. Are self-inspections for response equipment or regulated containers under this program?
13. For the hazard analysis, is there a preferred methodology, as it reads very similar to Process Safety Management, or is it up to the plan holder's best judgment?
14. For firefighting equipment, what proof do you need to demonstrate that the local fire department can respond? If they can't, and you have to contract out, what level of documentation is required?
15. Beyond noting if impacts to communities with environmental justice concerns may apply, what else is the EPA expecting?

16. The information on mixture requirements is unclear. Does the mixture have to meet the threshold quantity or is it added to the total aggregate quantity at the site?
17. There is an "and" used in the Resource Conservation and Recovery Act exemptions language. Does the "and" mean "and/or" or does it mean "one must be both"? (See rule definitions for further information) Also, if other HSs are at the exempted facilities, but not part of the waste, are they to be screened, or is the entire facility exempted?
18. The rule contains several extensive planning requirements, and expectations for addressing them in the FRP are not clearly defined. Will guidance be provided, or will these be case-by-case per-plan reviews (which will cause a lot of "shots in the dark")? For example, climate change, extreme weather, injury to public receptors, the potential for hazards uses an etc. in its requirements, etc.
19. Gases and solids must be screened; what level of documentation must be documented to support these reviews?
20. What does "peak concentration" mean under §118.3?
21. What date triggers the 5-year re-submittal – the date the Substantial Harm ("SH") form is submitted or the date the FRP is submitted for approval for Significant ("S")+SH facilities?
22. What are some examples of configuration changes that trigger resubmittals?

Based on these significant concerns, there is no physical way to comply fully with the rule today. This presents the industry with a dilemma: What do we do now? Do we start complying with what we can? Do we wait and see if the new administration will impact the rule before we act? I don't have an answer for these questions. Your organization will have to work through the risk analysis. That said, I have been advising companies that they should complete the actions listed below, hold until mid-2025 to see where things progress, and then make a decision on how to proceed.

1. Run a query of your safety data sheets ("SDS") against the 296 regulated substances.
2. Once you identify SDS that have regulated substances, determine the amount of the substance aggregately stored onsite, then do the math to ascertain if the amount stored onsite exceeds the RQ multiplier or if it makes sense if just on the edge to reduce onsite storage.
3. Then, and only then, review the exceptions and exemptions under §118.8 to see if any of these can be excluded.
4. After compiling your final list of what is regulated and not regulated, hold tight until mid-2025 once the EPA provides more understanding and guidance on how to comply with the rule. The EPA is still working on several large sections of the rule, e.g., the planning model, updated PREP, identifying SROs, and other areas that require further guidance. Hopefully, these will be more transparent by mid-2025.

John K. Carroll III

Associate Managing Director-Compliance



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- Port Security, Cybersecurity, and Emergency Management

This spring, the University of Houston will host its 6th Annual Port of the Future Conference on April 1-3 at the Hilton University Houston on the university campus. Since its inception in 2020, Port of the Future has garnered notice throughout the maritime sector as a dynamic, highly informative, content-packed event, and has become one of the largest port conferences in the western hemisphere.

“Our vision is to create a maritime conference shaped by new concepts, promising research, best practices, and cutting-edge technology,” stated Kevin Clement, conference director, at the Borders, Trade, and Immigration Institute at the University of Houston. “Our focus is to highlight pressing issues while providing the latest advances in technology and processes to help revitalize our nation’s ports. We strive to spotlight and promote new concepts and technologies relevant to our ports and the maritime sector.”

The Port of the Future Conference has become an international symposium. The conference has confirmed speakers and port representatives from Azerbaijan, Belgium, Canada, Denmark, the Netherlands, Nigeria, Colombia, Peru, Morocco, and the Bahamas - with more anticipated.

Living up to its tagline, “3 Days, 50 Ports”, more than 50 ports have already confirmed they will attend. Organizers anticipate that number will climb to over 70 participating ports.

This year’s list of guest speakers is stellar. Admiral Linda Fagan, commandant, U.S. Coast Guard, will provide the keynote address. Other plenary speakers include Jen Easterly, past director of the Cybersecurity and Infrastructure Security Agency; Stephen Metruck, executive director of the Port of Seattle; Carl W. Bentzel, past commissioner, Federal Maritime Commission; and Charlie Jenkins, executive director, Port Houston. Prominent international speakers are led by Juan Carlos Paz, president of the National Port Authority, Peru; Dina Rafaela Sierra, delegate superintendent of Ports and Superintendence of Transport for Colombia; Bola Oyemamiji, managing director and CEO of National Inland Waterways Authority for the Federal Republic of Nigeria, and Gurban Karimbayli, ESG advisor, Port of Baku, Azerbaijan.

The conference’s coverage of issues and advances relative to ports and the maritime industry is impressive. Organized in eight tracks, the conference covers the areas of: developing ports; intermodal connectivity; enhancing port infrastructure resilience; decarbonization and alternate fuels; port energy and sustainability; port infrastructure 4.0 (consisting of advances in artificial intelligence, automation, robotics, and digitalization and information sharing); ports in offshore wind energy; and port security, cybersecurity and emergency management.

The Port of the Future Conference is structured to address current and emerging issues. Carl Bentzel, formerly of the Federal Maritime Commission, will introduce the Maritime Transportation Data System, a new standard of information sharing in U.S. ports. Representatives from Peru will describe the development of Port Chancay by China and the impact of a growing Chinese presence in South America. David Walker, vice president of the American Bureau of Shipping will outline the creation of MARAD’s new U.S. Center for Maritime Innovation.

The rising threat of cyberattacks on ports is a central theme. Jen Easterly will provide perspectives on the “Cyber and Infrastructure Security of U.S. Ports.” Among other topics, Stephen Metruck is expected to discuss the Port of Seattle’s

response to its recent ransomware attack. The Port of Los Angeles and IBM will present information on the creation and operation of its Port Cyber Resilience Center.

Special topics are showcased throughout the conference using case studies. One such case study focuses on “Port Disaster Insurance and Underwriting.” In 2024, the port of Tampa Bay, fell victim to two hurricanes (Helene and Milton) within 13 days. In December, Peru’s coastline was slammed by massive waves, closing down 91 of its 120 ports. As hurricanes, flooding, and storm damage are becoming more common, ports and terminals suffer greater risk – and the threat of becoming overcharged and underinsured.

Efforts to accelerate the transition of ports and waterborne transportation to net-zero GHG emissions are highlighted in tracks on “Decarbonization and Alternative Fuels” and “Port Energy and Sustainability”. Michael Beruba, the U.S. Department of Energy’s deputy assistant secretary for Sustainable Transportation and Fuels will speak on new fuels and technologies. Panels will cover such topics as biofuels in the maritime sector, compare the future viability of electric drayage versus hydrogen-powered vehicles; and assess the introduction of electric ferry systems in U.S. ports. A presentation by Tidal Sails AS showcases ground-breaking technology to extract kinetic energy from slow moving water, generating low-cost electricity for ports.

This year, the conference allows interested persons to sign up for a one-day, reduced-rate track on “Port Security, Cybersecurity and Emergency Management.” In addition to cybersecurity topics, its speakers will offer presentations on next-generation port radiation monitors, the use of AI in incident command, InfraGard, expanded use of facial biometrics, and port surveillance systems with intelligence acoustic interpretation.

The Port of the Future Conference remains true to its roots in higher education. The conference again hosts its annual Student Research Poster Contest, promoting research in the maritime sector by undergraduate students. Other activities will include a networking reception with country music recording artists Bill Mock and Karl Waitz, a port grants workshop, and a boat tour of Port Houston.

Information on the Port of the Future Conference, including its agenda, speakers, and associated events, is posted online at www.PortoftheFutureConference.com. Registration is now open. Opportunities for sponsors and exhibitors remain available. Questions may be directed to Kevin Clement, conference director at PoFt@uh.edu or (512) 626-5413.

Innovating in the Transportation Systems Sector: Sam Houston State University's Institute for Homeland Security

The Institute for Homeland Security (“IHS”) at Sam Houston State University fosters collaboration between public and private sectors to enhance Texas' critical infrastructure resilience. This is achieved through strategic partnerships, applied research, and education & training. Our focus is to offer transformative solutions that add value to organizations.

Recently, IHS published two papers highlighting the evolving landscape of supply chain management. The first, “Adapting to the New Dynamics of Digital Supply Chains” by Willow Liu Yang, Pamela J. Zelbst, Milo D. Berg, and Kenneth W. Green, focuses on the impact of Industry 4.0 technologies on supply chain efficiency, security, and skill requirements. It emphasizes the widespread adoption of technologies like artificial intelligence (“AI”), the internet of things (“IoT”), blockchain, robotics, and machine vision and their transformative effect on manufacturing and logistics.

In a survey conducted for the research project, 97% of manufacturing organizations had implemented at least one of these technologies, and 76% had adopted all five demonstrating widespread adoption of emerging technologies as an increasingly mainstream practice.

- Machine Vision: Used primarily for defect detection from raw materials inspection to intermediate component evaluation, and ultimately, finished product examination.
- IIoT: Serves as a digital nerve center for real-time monitoring and data exchange. Manufacturers use it to accelerate new product introductions, dynamically respond to changing demand, and for real-time optimization.
- AI: The analytical engine of supply chains, enabling advanced supply chain oversight, real-time responses to production and logistical variances, and preemptive strategies. It's used for overseeing supplier production, tracking logistics, and mitigating risks related to supplier business considerations.
- Blockchain: Enhances trust and transparency with secure and immutable records. The survey shows manufacturers use blockchain to securely record transaction data, reduce transaction time and cost, and enhance security and privacy.
- Robotics: Crucial for automating repetitive tasks and improving precision in manufacturing. Its application ranges from unloading to delivery of finished goods.

The study found statistically significant interconnections among the five key Industry 4.0 technologies and their collective impact on the resilience of firms, enhancing their ability to anticipate, navigate, and recover from various threats. While Industry 4.0 technologies bolster security, they also introduce new vulnerabilities that must be carefully managed. Examples include reliance on data, the potential for algorithmic errors, and robotic malfunctions.

Even with advancements, the human element remains critical. Comprehensive training is needed to equip employees with both foundational and technical skills to leverage these new technologies. The digital transformation requires a workforce with augmented skills encompassing core supply chain skills, technical and digital proficiencies, and soft skills including adaptability. Organizations must be proactive in upskilling the workforce, establish robust and responsive IT infrastructure, foster a culture of agility and learning, and focus on sustainability and ethical considerations.

The second article, “Supply Chain Mapping for Emergency Management Decision Making” by Mark Scott, demonstrates that supply chain disruptions are an increasing problem for public sector emergency managers. Communities rely on these systems, which are primarily privately owned and operated for essential goods and services for daily life and survival. There is a growing awareness of the need for active surveillance of supply chains as they operate in real time to facilitate risk analysis and early detection of problems. Scott argues that supply chain mapping is the key to gaining this visibility.

The importance of building stronger public-private partnerships and learning from private sector mapping practices is stressed, and supply chain shocks are classified into four categories:

1. Unanticipated catastrophes
2. Foreseeable catastrophes
3. Unanticipated disruptions
4. Foreseeable disruptions

This classification highlights the range of potential threats for which emergency managers must prepare. Catastrophes are historically remarkable, large-scale, and can lead to trillions of dollars in losses. Disruptions, while serious and potentially costly, are localized and present a smaller scale interruption than catastrophes.

The paper emphasizes the need for supply chain visibility to understand how supply chains operate, as mapping the supply chain is the key to gaining this visibility into the system. Mapping focuses on:

- Supply nodes, where commodities originate
- Demand nodes, where consumers go to get those commodities
- Supply-demand links, how commodities get from supply nodes to demand nodes

Supply chains also have upstream, midstream and downstream components, while specific map elements include suppliers, processors, distribution centers, transportation, retailers, and consumers.

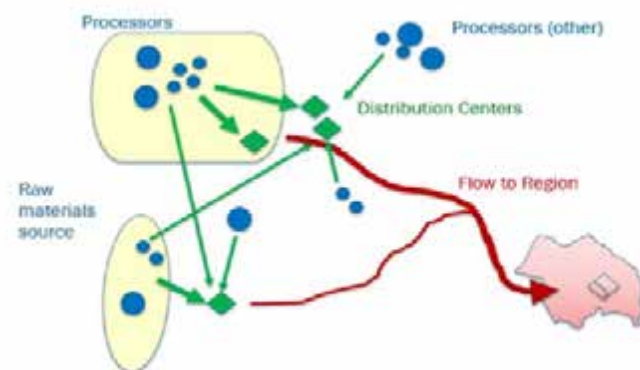


Photo: Generic depiction of supply chain mapping

Mapping includes the examination of factors which impact resilience such as geographic distance, relative diversity of supply, and concentration of production capabilities. Managers are advised to identify the primary crucial suppliers, the supply chain nodes within the scope of the review, and the ultimate destinations of goods. They should also identify infrastructure systems that provide critical support and overlay these with key threats and hazards.

Mapping enables managers to assess supply chain risks, strengthen preparedness, improve timely response to emergencies, enhance engagement with private sector owners and operators, and promote inter-jurisdictional coordination. Mapping is challenged by lack of data, the subjectivity and scope of the mapping process, the dynamic nature of supply chains, and the reluctance to share information from private sector entities emphasizing the importance of public-private partnerships. The paper highlights that companies with more visibility across their supply chains perform better during periods of disruption. It also discusses key concepts including structural visibility, knowing what the supply chain looks like, and dynamic visibility, knowing what's happening in real time.

Public sector officials and corporate emergency managers are urged to prioritize mapping the supply chains for their lifeline commodities, build meaningful public-private partnerships, and use mapping to conduct stress tests.

These sponsored research papers collectively paint a picture of a rapidly evolving supply chain landscape driven by technological innovation and increasing vulnerabilities. Success in this environment requires a holistic approach that integrates digital technologies strategically, fosters collaboration, and prioritizes both security and resilience. These papers and the entire library of topics can be accessed at <https://ihsonline.org/research/research-library>.

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GHPB Scholarships for Members

Congratulations to the Rice Business Executive Education Professional Development Scholarships Winners!

The Greater Houston Port Bureau has awarded two scholarships for professional leadership development at Rice Business Executive Education's Customer-Centric Strategy program February 24-27. Each scholarship is valued at \$6,500 and includes full tuition, class materials, and daily breakfast, lunch, and refreshments.

The recipients are:



Lindsay Hrones
Host Agency

Nathan Selvidge
Oneok

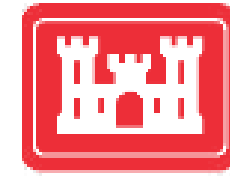
This four-day program will provide a journey to become a strategy-centric executive whose organization focuses on customers, develops accountability partnerships with employees, increases sales, and rewards shareholders by growing enterprise value. In this program, participants will learn how to bridge six strategy gaps in: (1) strategy thinking, 2) alignment, 3) formulation, 4) implementation, 5) monetization, and 6) embedding, and create superior performance.



Executive professional scholarships have been generously underwritten by Rice Business Executive Education, Rice University. For more information and details about Rice Business Executive Education programs, contact Zoran Perunovic at Zoran.Perunovic@rice.edu

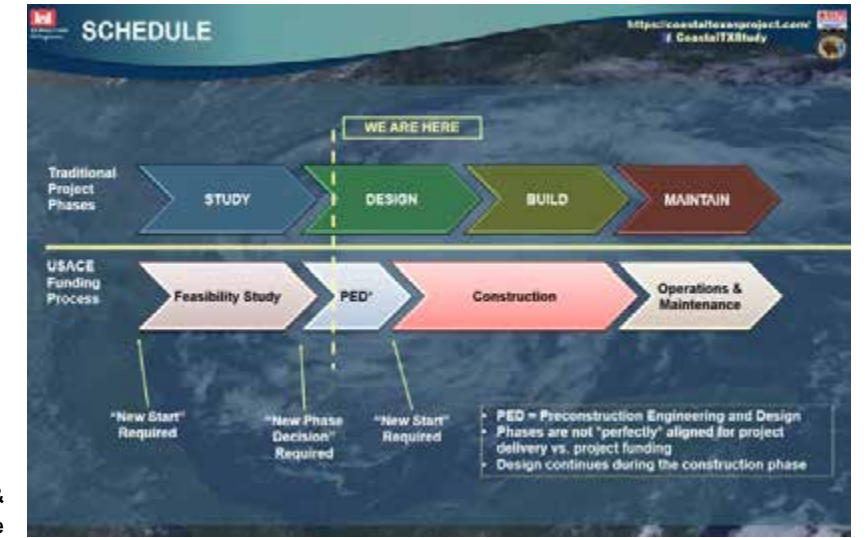


November Commerce Club Luncheon Featuring Colonel Rhett Blackmon, U.S. Army Corps of Engineers Galveston District



US Army Corps of Engineers

Coastal Texas Protection & Restoration Project Schedule



The Greater Houston Port Bureau welcomed Colonel Rhett Blackmon, commander and district engineer, U.S. Army Corps of Engineers ("USACE"), Galveston District as guest speaker at our Commerce Club luncheon on November 14, 2024.

"It's certainly an exciting time to be on the Texas Gulf Coast. The nation has pivoted from an importer to an exporter of energy — and we've had significant storms," said Blackmon. "Ike followed by Harvey, which raised the awareness of our need for improved flood risk mitigation. Those two things combined really created a lot of work and has made it an exciting time to be here."

The Galveston District is one of seven USACE districts in the U.S. and is an area of responsibility that spans the Texas Coast from Louisiana to Mexico, encompassing 50,000 square miles. As the commander and district engineer, the colonel is charged with executing the Galveston District's mission of providing public engineering services to strengthen security along the Texas Coast, energizing the local economy, and reducing risks from disasters.

Blackmon's presentation reviewed the core missions of USACE — navigation, flood risk management, coastal storm risk ("CSR") management, regulatory, ecosystem restoration, emergency management and response, and interagency support — and discussed how these missions were playing out in Texas and the port region.

He noted that the Galveston District has had numerous dredging projects the channels in their district. To execute these dredging objectives, USACE has between 650 and 700 federal placement areas for dredge material. He said dredge projects around docks are areas where many attendees at the Commerce Club interact with USACE.

"If you have a big project that you're doing, reach out to us and do a pre-application meeting, so our chief of regulatory can talk with you about what you will need and help set expectations," said Blackmon. "It makes us more 'user-friendly' and be a focused organization for you."

As part of the presentation, Blackmon showed a map of CSR projects on the Texas Coast. Project are the Orange County ("S2G"), Freeport, Port Arthur and Texas City projects, the McFaddin Salt Bayou Dune/Beach

Stabilization, the Jefferson County Ecosystem Restoration Study, and the Coastal Texas Study.

Of particular interest to the port region is the Coastal Texas project that includes the proposed Bolivar Roads Gates system for storm surge protection. He explained that Coastal Texas and S2G do support each other but are not "hydraulically linked". S2G will protect the communities it's intended to protect, with or without Coastal Texas and vice versa. The projects complement each other in terms of providing protection to the upper Texas coast.

The CSR projects are focused on managing threats largely from storm surge, rather than rainfall or wind. Neither are they linked to the category of a storm. Hurricane Ike, a category 2 storm, pushed in from 15 to 20 feet of storm surge, extending 15 miles upward into Chambers County and did about \$29.5 million in damage, in addition to its environmental impacts.

"The Gulf Coast Protection District does a phenomenal job of helping explain the national significance of the Texas Coast," Blackmon stated while stressing the significance nationally of the Texas coast. "When the federal government has to answer as to why the taxpayer in Iowa should fund this project on the Texas coast, the GCP really helps tell that tale."

He discussed various aspects of the proposed Bolivar Roads Gates System as well as other components of the feasibility study, including the Galveston ring barrier and ecosystem restoration.

"We talk to folks, and we learn things ... We will stay engaged with you and our partners to make the project right."

Thank you to our Sponsors



October Commerce Club Luncheon Featuring Commissioner Dawn Buckingham, Texas General Land Office



The Port Bureau hosted Commissioner Dawn Buckingham, M.D., Texas General Land Office (“GLO”), at the Commerce Club on Oct. 10, 2024. She made history when she won the statewide election to become the first female Land Commissioner in Texas in 2022. A 9th generation Texan and self-described as “fiercely Texan”, Buckingham is passionate about Texas, GLO, and its unique mission.

“I love what I do every day, and it is an honor and privilege to be here with you. The port is one of the most significant places, not just for Texas, not just for the United States, but for the world,” said Buckingham as she greeted attendees.

Commissioner Buckingham offered a quick overview of the General Land Office before participating in a Q & A style discussion session:

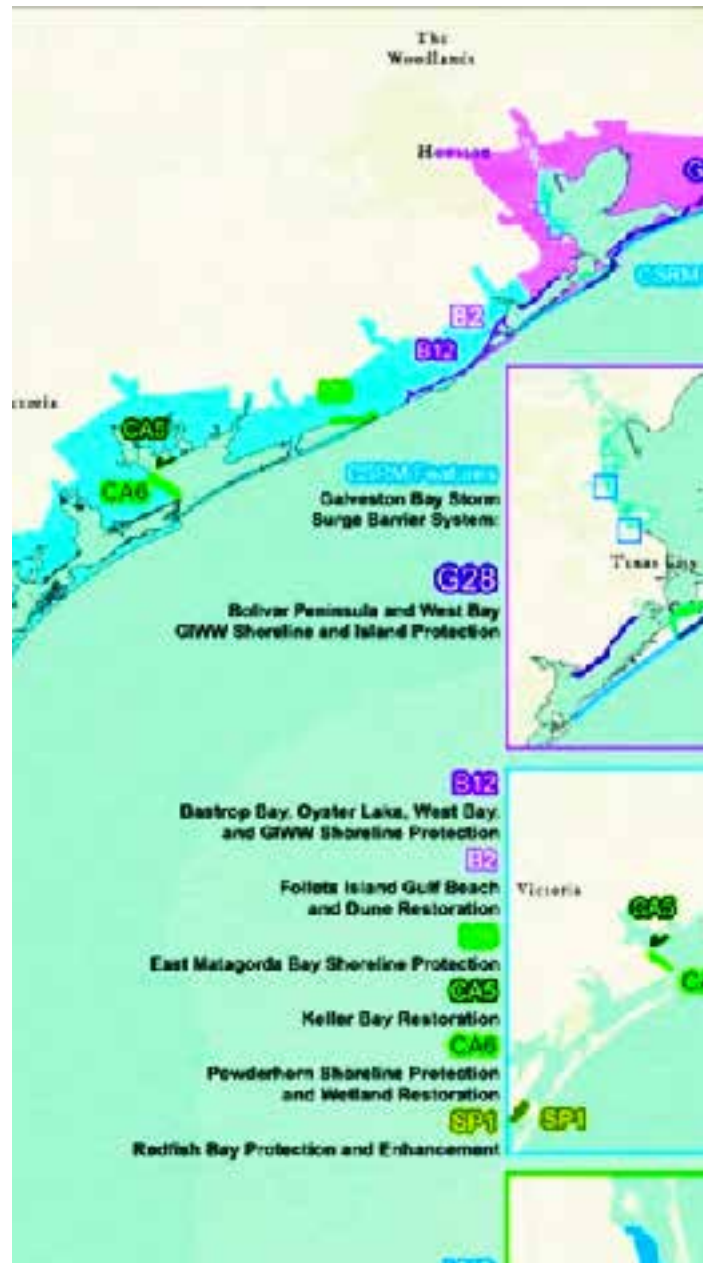
Energy: GLO leases state land to fund public schools, provide energy for Texans, and support jobs. This includes lands for lands for oil, minerals (such as gravel, limestone, and lithium to support construction and manufacturing), and other commercial surface uses. GLO also sells natural gas to schools, cities, and other public retail customers at a reduced rate through the State Energy Marketing Program.

Coastal protection & planning: GLO also ensures management and stewardship of the Texas coast through a combination of federally partnered and state-led coastal planning efforts. The Texas Coastal Resiliency Master Plan is GLO’s state led, ongoing, and iterative coastwide planning process to protect and promote a resilient Texas coast. They work closely with the U.S. Army Corps of Engineers, serving as the non-federal sponsor on various planning studies to reduce risk to coastal communities and restore ecosystem function. The Gulf Coast Protection District receives funding through GLO to implement various projects.

Texas heritage. In addition to events, digitization, and curriculum support has been the restoration of the Alamo battle site and historic structures. In late 2022, GLO opened the new Alamo Exhibition and Collections Building with first-class exhibition space and archival storage. A new state-of-the-art Alamo Visitors Center and Museum across from the Alamo Complex will open in 2027.

In the Q & A discussion session, Buckingham discussed GLO’s commitment to the coastal spine project, new energy, and funding for Harris County flood mitigation efforts. She particularly commended the cooperation and collaboration among county officials and leaders to move initiatives forward.

“They reach across the aisle and get things done at the county level for the community,” said Buckingham.



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Greater Houston Port Bureau Welcomes New Members

The Port Bureau extends a warm welcome to its newest members:

- Luis Ramirez
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- Servtec

For a full list of the GHPB members, please go to: <https://www.txgulf.org/member-directory>



FUTURE EVENTS: txgulf.org/events

- **February 14:** Port 101. CAPT Eric Carrero, President of the Port Bureau, will lead an informative session on the port region and ways to become more involved in the maritime business community.
- **February 18:** Women in Maritime Happy Hour with guest speaker Barbara Pickering, President, Chevron Shipping, at East River Studios, freebut you must register.
- **March 27:** Commerce Club guest speaker: Jesse Thompson, Senior Business Economist, Houston Branch Federal Reserve Bank of Dallas.
- **April 10:** Commerce Club guest speaker: Phyllis Saathoff, Executive Director/CEO, Port Freeport.

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