**Objectives**

**Texas Technology Task Force Meeting - Minutes**

February 27 | 9:00am – 12:30pm CT

Location: Ortiz Center – 402 Harbor Dr. Corpus Christi, TX 78401
Room: Nueces Room

* Outline TxDOT’s role within the Texas port ecosystem and the vision for future innovation.
* Identify emerging federal freight priorities and opportunities to harness data for improved freight operations.
* Consider the roles and opportunities emerging technology plays amongst agencies across the supply chain.

**9:00 AM | Welcome & Introductions –** *Darran Anderson, TxDOT and Kent Britton, CEO – Port of Corpus Christi*

* Darran Anderson, TxDOT, introduced Kent Britton, CEO of the Port of Corpus Christi, to provide opening remarks. Kent Britton remarked on the importance of quality data to drive decision making, touting significant technological strides the port has made within the previous five years. These innovations have allowed the Port of Corpus Christi to operate for 35 years without the need to build a new dock, despite the growth in crude oil exports rising from 75,000 barrels to 2.2 million today. Kent concluded by acknowledging that the Port of Corpus Christi is focused on continually evolving to keep pace with the changing needs of people, processes, and technology, and again welcomed attendees for joining.
* Darran welcomed attendees to the first off-site Texas Technology Task Force meeting, at the Port of Corpus Christi. He noted the importance of visiting facilities and infrastructure across Texas to better understand how Texas’ ports are changing. He recognized Geir-Eilif Kalhagen, TxDOT’s Maritime Division Director.
* Darran spoke to major updates within TxDOT, including various applications for federal infrastructure funding, many of which have been awarded and others still pending. Steve Dellenback was appointed to the federal advisory committee on emerging technology. Hearing from experts at these Task Force meetings leads to lasting change and innovation for the Texas transportation system.
* There are numerous reasons driving the need to discuss freight and the supply chain today, including consistent economic growth, freight demand, and federal policies and funding opportunities driving infrastructure investment. Darran closes by acknowledging that the meeting will discuss the increasing stressors for meeting system growth when faced with existing system limitations.

**9:05 AM | Texas Technology Task Force Updates and Meeting Objectives** – *Andrea Gold, UT Austin*

* Andrea Gold, of UT Austin, reiterated the mission of the Texas Technology Task Force, and discussed the goals and motivations for the day’s topics. She recognized TxDOT’s efforts in assisting the coordination of the Task Force meeting.
* Andrea recognized Amit Bhasin, Chair of the UT Austin Center for Transportation Research.

**9:15 AM | TxDOT and a Vision for Texas’ Seaports**

**Presenter:** Geir-Eilif Kalhagen, Director – TxDOT Maritime Division

* The primary goals for TxDOT’s Maritime Division currently include developing high value growth, expanding collaboration between waterway operations and stakeholders, communicating necessary investments, and working alongside the Port Authority Advisory Committee (PAAC) to elevate ports as a vital component of the Texas transportation system.
* As it stands, Texas and the Port of Corpus Christi is the #1 energy exporter, contributes $450 billion to the Texas economy, and $1.3 billion to the US economy. These figures are expected to triple by the year 2050.
* Geir shared the 2024-25 mission plan of the TxDOT Maritime Division
* Strengthen seaport connectivity, focusing on roadways for improved connectivity, safety, and congestion.
* Maritime Infrastructure Program, with funding from the 88th Texas Legislature. Goals here include enhanced international trade, greater flow of cargo, increased passenger movements, growth in port revenues, and economic benefit to Texas. This is done via the Ship Channel Improvement Revolving Fund, following a greater need to modernize channels to accommodate larger ships.
* Geir noted the secondary benefits of channel investments, including use of dredge materials for habitat creation and restoration, beach nourishment, and shoreline stabilization.
* TxDOT is eyeing innovative waterways technology, including digital twins, and digital identification that would depict heat maps to track congestion and traffic flow.

**9:30 AM | Meet the Texas Seaports: Anchors of the Supply Chain System**

**Moderator:** Geir-Eilif Kalhagen, Director – TxDOT Maritime Division

**Rohit Saxena,** Director of Port Planning and Development – Port Houston

* Port Houston processes 15,000 trucks each day, a number that has doubled since five years prior, Rohit acknowledged that new infrastructure growth can never keep pace with growing demand and often ports are limited in available land space to accommodate major infrastructural investments.
* Technology can ease many of the challenges of infrastructural limitations, including improved truck turnaround time via RFID, facial recognition, and weighing motion scales.
* It is imperative to grow workforce skillsets in tandem with technology investments.

**Phyllis Saathoff,** Executive Director and CEO – Port Freeport

* Port Freeport processes a sizeable market share of automobile trade, the growth of electric vehicles has brought to light new concerns regarding lithium-ion batteries and a new set of risks that the port must continually adapt to.
* In response to nuanced fire risk of lithium-ion batteries, Phyllis noted the need for better training for dockside emergency responders who are unable to use traditional protocol in response to combustion engine fires. New ships will be better equipped to handle these fires, in the interim, ports must continually communicate training tactics and best practices.
* Phyllis emphasized the need for a strong partnership between TxDOT and ports in preparation for future growth, this includes addressing sustainability and resilience practices, ensuring cybersecurity measures, and proactively scaling future land and equipment acquisition.

**Jason JonMichael,** Senior Researcher – USDOT Research and Technology

* Artificial Intelligence (AI) is an increasingly beneficial and complex tool, the Highly Automation Systems Safety (HAAS), is a tool by the USDOT to ensure the capability and validity of these emerging AI systems in transportation.
* Jason noted that the best way to understand the impact of transportation AI on the workforce is to predict and prepare for what jobs will look like in 3-5 years, this can be done via a review of GAO reports on port automations.
* Workforce development is a major consideration as technology continues to evolve, it is increasingly important to dedicate thought in. Further, indirect complementary innovation should be front of mind, including Advanced Air Mobility (AAM) or use of Machine Learning.

**Jeff Pollack,** Chief Strategy and Sustainability Officer – Port of Corpus Christi

* When considering an end-to-end supply chain, Jeff spoke to the awareness of those who mine resources to subsequent operations and impacts downstream industries. He noted that a healthy awareness of ports, and other downstream industries, through advanced communication and real-time responsiveness, may ease bottlenecks to support the flow of goods.
* Jeff acknowledged that the regulatory landscape is the slowest moving piece to development and implementation of infrastructure and operations. Technology groups and supply chain partners outside of the ports can help share the burden of efficiency and movement of resources through port facilities.
* Maintaining and upgrading infrastructure is the most pressing challenge regarding the future of ports, how can ports operationalize change in the face of climate adaptation?

**10:15 AM | Data as a Driver of Port Innovation** – Allison Dane Camden & Chandra Bondzie, *USDOT*

* Allison and Chandra spoke to an effort by the USDOT to serve as a hub for freight data insights, the Freight Logistics Optimization Works (FLOW) platform.
* FLOW is a community of supply chain stakeholders that share logistics data with the USDOT, who subsequently aggregate the anonymous data to produce a holistic view of the incoming containers and available assets to move containers in a given supply chain mode, all within a singular secure platform.
* FLOW provides insights otherwise unavailable and facilitates a better match between supply and demand with supporting insights into capacity at trade hubs.

 **10:30 AM | Alternative Energy and the Future of Ports**

**Moderator:** Steve Dellenback, VP of Research and Development – SwRI

**Laura Goldberg,** SVP, Strat. Initiatives, Comm. & Community Engagement – Center for Houston’s Future

* To best equip port facilities to handle alternative energy it is important to identify needs and specific uses to guide these investments. Where can hydrogen be used where other fuel sources cannot and what makes economic sense for that purpose?
* To best prepare for these alternative energy sources it is important to consider disruptions from extreme weather events, where ports must establish additional action plans to prepare adaptability and disaster planning protocols.
* Workforce development considerations are imperative, and these discussions must include industry, education, and government agencies from the start.

**Emily Spath,** Lead Project Manager – CALSTART

* With respect to workforce development, challenges often arise when unions are reluctant to agree to changes that result in job losses.
* CALSTART works to administer zero-emission vehicle incentive programs, including electric and hydrogen, and accompanied infrastructure.

**Iga Hallberg,** VP of Business Development & Partnerships – Gage Zero

* Hydrogen is an important opportunity to consider in the long-term, currently electrification can be used for light-and-medium-duty vehicles and drayage operations. A major challenge for fleet operators to adopt alternative energy capabilities are the scale with which they operate, where new vehicles come at a substantial overhead cost. Vouchers and an expanded ecosystem of grant writers are needed to support this transition.
* In the face of severe weather events, infrastructure must always be functional and ready to charge vehicles. Iga recommended on-site battery storage and phased adoption of EVs by fleet operators. Ultimately, including more energy storage and greater energy generation on-site is the long-term goal.
* Iga’s team learned that much of workforce development will take shape through STEM programs and vehicle maintenance training programs.

**Jeff Pollack,** Chief Strategy and Sustainability Officer – Port of Corpus Christi

* When identifying needs for expanding electrification infrastructure it is important to understand what makes sense for each vehicle type and what limitations are there in scaling up.
* Faced with severe weather events, diversification and decentralization are key. This model can take shape as microgrids and “islands” of infrastructure.
* Partnerships are key to establishing workforce development. These programs can stem from local communities and state institutions to expand training for those who have limited access to these opportunities.

**11:15 AM | Data and Digitization Driving Solutions** – Terry Bills, Transportation Industry Director – *ESRI*

* Terry outlined foundations for successful digital twin projects. 1) Be clear on what is required, 2) start small and expand over time, 3) plan for an end-to-end comprehensive system integration, and 4) incorporate data standards and protocols from the beginning.
* Key opportunities digital twin technology offer includes 1) a historical record and baseline comparisons, 2) operational performance monitoring, and 3) capability to test or predict future outcomes.
* These platforms are made more successful as data capture integration continues to become easier.
* Digital twins and smart control boards allow for shared situational awareness, a standard operational understanding, and operational performance improvement.

**11:30 AM | Multimodality and Data Exchange, a Vision for the Future of Ports**

**Moderator:** Russell Laughlin, EVP of Strategic Development & Innovation – AllianceTexas

**Rodger Horton,** Owner – Shea Transportation Consulting

* Railroads comprise a key mode of the supply chain, opportunities to ease congestion and improve throughput exist by simplifying and streamlining port throughputs by way of class 1 railroads.
* Simplified and standardized technology across state and national borders best set a foundation for preventing cyber-attacks and security risk.
* Texas rail transport would benefit from state support in mapping existing infrastructure and in building out technological systems that expand and simplify digital access to the movement of goods.

**Kara Hill,** Director of Strategic Projects – TechPortSA

* Supplemental technology that adds an additional level of on-demand options for disruptions or emergency events, would greatly ease challenges ports face.
* When considering future development, Texas ports should be considering the implementation of AAM and UAM technology and operations.
* PortSA is utilizing esports as an opportunity to build and engage the next generation of supply chain experts.

**Andrew Price,** Director of Commercial Programs & Network – Waabi

* Andrew posited data as a key enabling technology that allows for the seamless transportation of cargo across the supply chain, integrating these systems across inland ports and seaports is an important first step.
* The future of autonomous supply chain technology comes down to terminals and transfer hubs. These systems must seamlessly interact with the location of fuel infrastructure, inspection protocols, training programs, and data across points of the supply chain.
* For continued success in the autonomous freight and supply chain industry, Texas should continue engaging with operators and remain welcoming to pilot projects and deployments.

**Natalie Littlefield,** Senior VP of Strategy and Business Development **–** Borderplex Alliance

* Leveraging AI, predictive analytics, and machine learning are all opportunities to harness technology that mitigate disruptions of economic throughput. These technologies also serve to supplement the human experience of employees who now have access to technological assistance.
* Harnessing the capabilities of predictive technology is important for creating plans in times of disruptions or crashes, though cyber security must be paramount across its implementation.
* A primary need from Texas leadership is additional funding for technology and infrastructure that allows for congestion mitigation and faster throughput of people and vehicles.

**12:15 PM | Rapid Reflections from Task Force Members –** Andrea Gold, UT-Austin, and Task Force Members

**Shelley Row** – Blue Fjord Leaders

* Three standout takeaways:
	+ Importance of staying focused port fundamentals like dredging, bridges, and roadways.
	+ Texas port traffic volume and growth is staggering.
	+ The mismatch in time to build and the speed of tech development and updates.
* There is a need for nonstop lobbying for infrastructure and investment.
* Current and future challenges are so big we need to ask new questions.
* The government entities need to be the chief storyteller and do so well.

**James Bass** – CTRMA

* Broadening the audience helpful to get full picture and buy in.
* There is a need for people to work together, collaborate, and coordinate.
* How do we think outside the box? Possibly convening a panel of cities using revolutionary methods to reconceive infrastructure because of lack of space for new lanes.
* TxDOT’s power to convene is a very significant and strategic asset.

**Michael Morris** - NCTCOG

* At a high-level, silos across agencies must be torn down and an environment of communication and partnerships needs to continue to be fostered.
* Take links out of supply chain to create synergies between inefficient elements like conveyer systems over more trucks.

**Amit Bhasin** – UT Austin

* The amount of tonnage moving through the ports breaks down to one freight truck per second. Tech is changing faster than investments. Efficiency and resilience often diverge, we need to focus on redundancy and resiliency.

**12:20 PM | Closing Remarks & Adjourn –** *Darran Anderson, TxDOT and Kristie Chin, UT Austin*

* The summer Task Force meeting is to be held June 11th in Austin.
* Darran remarked on the great discussion and offered thanks to the Port of Corpus Christi, Task Force members, TxDOT’s Strategic Initiatives and Innovation Division, and the UT Austin Center for Transportation Research for hosting and organizing the event. With an additional thanks to speakers and participants who joined in-person and online.

**12:30 PM | Adjourn to Lunch and Tour**