Interim Report

TO THE EIGHTY-NINTH TEXAS LEGISLATURE

HOUSE COMMITTEE ON TRANSPORTATION

NOVEMBER 2024

HOUSE COMMITTEE ON TRANSPORTATION
TEXAS HOUSE OF REPRESENTATIVES
INTERIM REPORT 2024

A REPORT TO THE
HOUSE OF REPRESENTATIVES
89TH TEXAS LEGISLATURE

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Committee On
Transportation

November 22, 2024

Terry Canales
Chairman

P.O. Box 2910
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The Honorable Dade Phelan
Speaker, Texas House of Representatives
Members of the Texas House of Representatives
Texas State Capitol, Rm. 2W.13
Austin, Texas 78701

Dear Mr. Speaker and Fellow Members:

The Committee on Transportation of the Eighty-eighth Legislature hereby submits its interim report, which includes recommendations and drafted legislation for consideration by the Eighty-ninth Legislature.

Respectfully submitted,

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INTRODUCTION

The Honorable Dade Phelan, Speaker of the House of Representatives, appointed thirteen members of the 88th Legislature to serve on the House Committee on Transportation. The following members were named to the committee: Chair Terry Canales, Vice-Chair John Raney, Representative Trent Ashby, Representative Yvonne Davis, Representative Erin Gámez, Representative Caroline Harris Davila, Representative Brooks Landgraf, Representative J. M. Lozano, Representative John Lujan, Representative Claudia Ordaz, Representative Jared Patterson, Representative Mary Ann Perez, and Representative Ramon Romero, Jr.

Pursuant to House Rule 3, Section 32, the House Committee on Transportation has 13 members, with jurisdiction over all matters pertaining to the following:

(1) commercial motor vehicles, both bus and truck, and their control, regulation, licensing, and operation;
(2) the Texas highway system, including all roads, bridges, and ferries constituting a part of the system;
(3) the licensing of private passenger vehicles to operate on the roads and highways of the state;
(4) the regulation and control of traffic on the public highways of the State of Texas;
(5) railroads, street railway lines, interurban railway lines, steamship companies, and express companies;
(6) airports, air traffic, airlines, and other organizations engaged in transportation by means of aerial flight;
(7) water transportation in the State of Texas, and the rivers, harbors, and related facilities used in water transportation and the agencies of government exercising supervision and control thereover;
(8) the regulation of metropolitan transit; and
(9) the following state agencies: the Texas Department of Motor Vehicles, the Texas Department of Transportation, and the Texas Transportation Commission.

After the 88th legislative session, Speaker Phelan charged all committees to study and make recommendations to numerous challenges the State of Texas is facing. The interim charges for the House Committee on Transportation are listed on the following page.

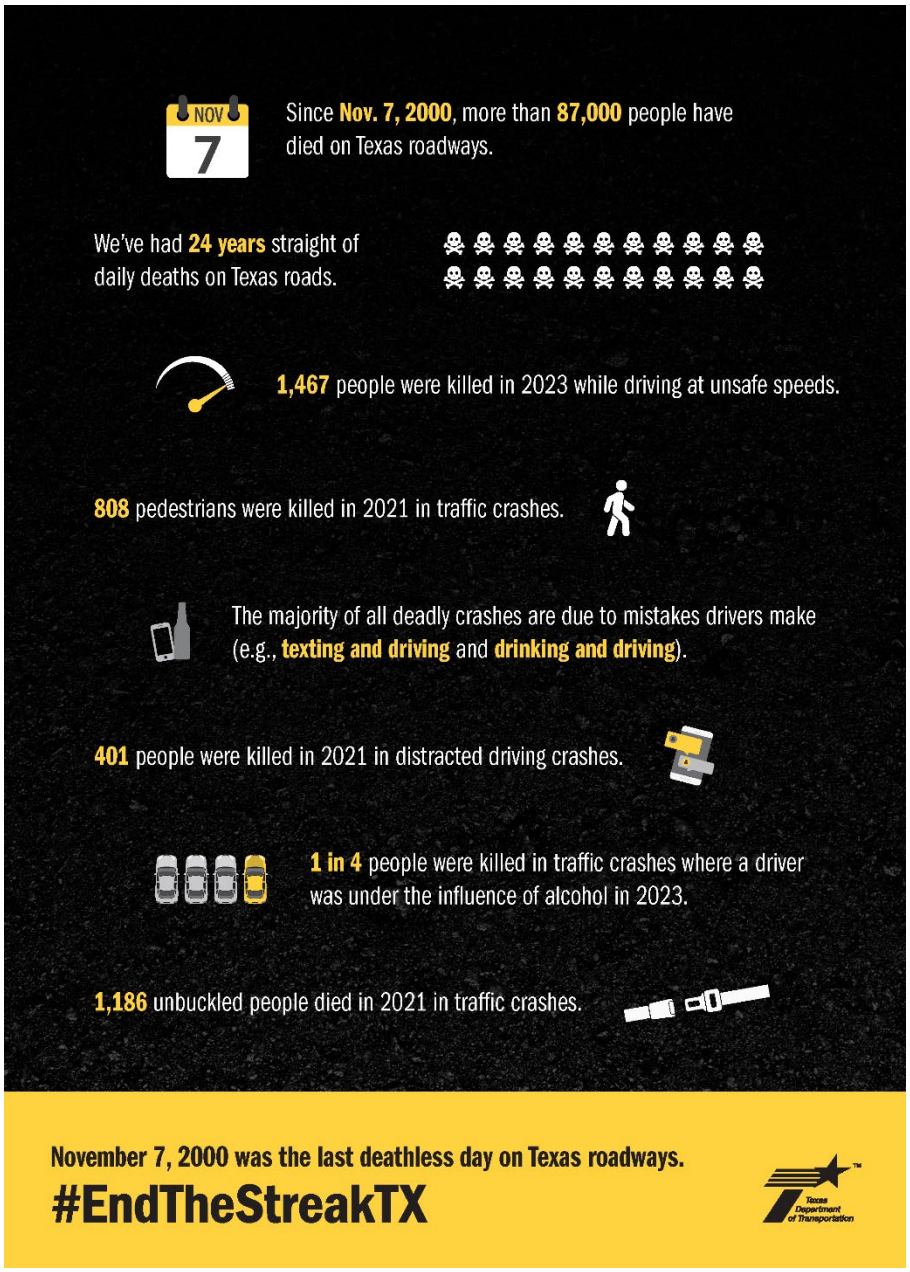
INTERIM CHARGES

CHARGE I: MONITOR LEGISLATION	Monitor the agencies and programs under the Committee's jurisdiction and oversee the implementation of relevant legislation passed by the 88th Legislature. Conduct active oversight of all associated rulemaking and other governmental actions taken to ensure the intended legislative outcome of all legislation.
CHARGE II: PORT INFRASTRUCTURE AND MARITIME INDUSTRY	Study long-term needs of the maritime industry in Texas. Evaluate the implementation status of the Maritime Port Mission Plan and make recommendations to improve port planning, safety measures, and project delivery. Examine the status of TxDOT seaport projects that received funding during the 88th Legislature.
CHARGE III: BRIDGE SAFETY	Evaluate the current status of state-maintained bridges, existing safety standards related to bridges, and long-term financial needs for bridge planning, construction, maintenance, and inspection. Examine ways to improve bridge project delivery.
CHARGE IV: ALLEVIATING ROAD TRAFFIC	Identify the state's most congested roadways and review state forecasts for future congestion and the expected impact on economic activity. Evaluate TxDOT plans for alleviating congestion and consider the necessity of additional options to ensure economic development, congestion, and safety goals are achieved in a timely manner with reduced cost to public tax dollars.

TRANSPORTATION SAFETY

November 7, 2000 was the last deathless day on Texas roadways. There's been a death every day on Texas roads for 24 years straight — that's more than 87,000 people. And that's a streak we want to break. How can we end the streak? Most fatalities are due to driving at unsafe speeds, impaired driving, distracted driving or failure to use seat belts. In other words, they're preventable. Ending the Streak is in your hands.

4,289 people lost their lives on Texas roadways in 2023.



CHARGE I: MONITOR LEGISLATION

Monitor the agencies and programs under the Committee's jurisdiction and oversee the implementation of relevant legislation passed by the 88th Legislature. Conduct active oversight of all associated rulemaking and other governmental actions taken to ensure the intended legislative outcome of all legislation.

SUMMARY OF COMMITTEE ACTION

The House Committee on Transportation addressed this interim charge on October 10th, 2024, in a public hearing at the Texas Capitol. The committee heard testimony from the Texas Department of Transportation (TxDOT), the Texas Department of Motor Vehicles, and other key stakeholders. The public hearing notice, meeting minutes, and witness list can be found on the website of the Texas House of Representatives, www.house.texas.gov, or the hyperlinks below:

October 10, 2024
Hearing Notice
Meeting Minutes
Witness List

BACKGROUND ON HB 718

HB 718, Relating to the issuance of specific tags, permits, and license plates authorizing the movement of vehicles and the transfer and renewal of certain license plates.

The Texas Legislature proposed and passed House Bill 718 (HB 718) in response to a surge in criminal activities and safety concerns tied to the misuse of temporary paper license plates. Texas has seen a marked increase in fraudulent use of these paper tags, intended to be short-term identifiers for new and used vehicles before the issuance of permanent metal plates. This loophole, exploited primarily through the illegal sale and distribution of counterfeit tags, has enabled untraceable vehicles to evade law enforcement and participate in various criminal activities across the state, prompting legislators to take decisive action.

Temporary paper license plates have become a convenient tool for criminal activities, as the ease of falsifying or acquiring them illegally allows offenders to mask vehicle identities, making it difficult for law enforcement to track them. By some estimates, tens of thousands of fake paper tags were circulating, facilitating crimes ranging from minor traffic violations to more serious offenses such as human trafficking, drug smuggling, and violent crimes. This issue has posed a direct risk to public safety, with criminals capitalizing on the untraceability that fake tags provide. The Texas Department of Motor Vehicles (TxDMV) has struggled to curtail this surge in fraud, which has escalated over recent years despite increased efforts to tighten verification processes.

Fraudulent temporary tags have compromised the integrity of the state's vehicle registration system and law enforcement's ability to identify vehicles involved in crimes. Bad actors, often working through licensed and unlicensed dealers, exploited the online portal for issuing temporary tags, making it challenging for TxDMV to regulate the sale and distribution effectively. These fraudulent tags could be printed without official authorization, contributing to a thriving underground market where individuals could purchase counterfeit tags from online marketplaces or directly from unscrupulous dealers. This loophole has allowed vehicles that do not meet safety or emissions standards—or those carrying out illegal activities—to circulate freely, undermining the effectiveness of the regulatory system.

Pictured: Fake paper tags collected by Dallas Police.[1]

Texas lawmakers recognized the urgent need to eliminate paper tags to enhance public safety. Multiple state legislators expressed concerns that the current system posed a direct threat to Texans and put law enforcement in jeopardy. During public hearings and legislative sessions, supporters of HB 718 highlighted how temporary paper tags had been linked to severe crimes, citing data and testimonials from police officers who found these tags repeatedly involved in crimes. The evidence was compelling enough to gain bipartisan support for reform, with the bill passing the legislative chambers with minimal opposition.

FINDINGS ON HB 718

HB 718, which effectively bans temporary paper tags starting in 2025, represents a significant policy shift aimed at closing the gap in regulatory oversight and enhancing traceability. Under the

new law, temporary metal tags will replace paper ones, requiring tighter control over the issuance process and enabling better tracking of vehicles in real time. The shift to metal tags is also expected to curb the illegal tag trade, as metal tags are more challenging to replicate or distribute unlawfully. Additionally, the metal tag system is anticipated to aid law enforcement by providing a more reliable way to verify vehicle information, thereby reducing the anonymity exploited by criminals in the past.

While HB 718 received widespread support as a crucial step toward bolstering public safety and protecting Texans, some concerns have emerged regarding its implementation. Opponents have argued that moving to a metal-tag-only system may pose logistical challenges and delay legitimate vehicle sales, particularly in rural areas or smaller dealerships that rely heavily on temporary tags. Others have raised concerns about the potential cost increase for dealerships and consumers associated with implementing the new system. However, supporters counter that the long-term benefits of reducing crime and enhancing vehicle traceability outweigh these short-term challenges.

The 88th Texas Legislature appropriated $35 million to TxDMV in the 2024-25 biennial budget to implement and enforce the requirements of HB 718. The funding included 44 total additional staff positions and expenditures for additional system needs and programming enhancements to existing transaction software. To ensure revenue is sufficient to cover the department's operating expenses, including the new HB 718 expenditures, the TxDMV Board plans to set the one-time buyer's license plate fee at $10 per transaction.

Effective July 1, 2025, this bill requires Texas licensed dealers to use the department's webDEALER system to electronically process title and registration for vehicle sales with county offices. Dealers without webDEALER accounts and plate inventories will not be able to complete vehicle sales transactions beginning July 1, 2025.

The bill requires TxDMV to adopt administrative rules governing the new license plate operations by December 1, 2024. The department has worked with industry stakeholders and members of the public starting in February 2024 to develop and review draft rules that were posted for public comment in June 2024. The TxDMV Board adopted final rules during an open meeting on October 24, 2024.

BACKGROUND ON HB 1885

HB 1885, Relating to the authority of the Texas Transportation Commission to establish variable speed limits.

The Texas Legislature passed House Bill 1885 (HB 1885) to enable the Texas Transportation Commission to implement a Variable Speed Limit (VSL) system in response to concerns about road safety under fluctuating conditions. This legislation grants the authority to adjust speed limits in real-time to accommodate adverse weather, road construction, and traffic incidents, such as heavy rain, ice, or traffic congestion, where a standard speed limit may be unsafe.

Texas's vast road network experiences diverse environmental and traffic conditions that impact road safety. Traditionally, speed limits have been static, not reflecting the immediate conditions of

specific road segments. HB 1885 addresses this gap by authorizing the Texas Transportation Commission to lower speed limits by up to 10 miles per hour when necessary, allowing for temporary and location-specific adjustments based on real-time data and engineering assessments.

The legislation mandates that the implementation of any variable speed limit be based on an engineering and traffic investigation, ensuring that the modifications are data-driven and situationally appropriate. This requirement aligns with a broader focus on safety and precision, as the adjusted speed limits are only practical when correctly posted on electronic signage that provides at least 500 to 1,000 feet of advance notice to drivers, allowing them to react accordingly.

FINDINGS ON HB 1885

HB 1885 is part of Texas's commitment to reducing traffic accidents and fatalities by adapting infrastructure to current needs and conditions. By enabling temporary speed adjustments, the Texas Department of Transportation (TxDOT) aims to make highways safer, particularly during inclement weather or high-traffic periods, potentially reducing accidents caused by drivers operating at unsafe speeds. This proactive, adaptable approach to speed limits is expected to decrease the risk of weather-related crashes and improve traffic flow in areas affected by construction or accidents.

HB 1885 reflects Texas's initiative to enhance roadway safety and traffic management by implementing a flexible, responsive approach to speed regulation. This legislative move underscores Texas's prioritization of public safety and modernized transportation management through adaptive policies.

TxDOT developed rules for the VSL program, allowing temporary speed adjustments in response to varying road, traffic, and weather conditions. On September 26, 2024, TxDOT officially adopted the VSL implementation rules, marking the completion of regulatory preparations needed to operate the new system.

In October 2024, the VSL system became operational in El Paso, the first area to implement this system. The deployment allows for real-time speed adjustments, with electronic signage informing drivers of any temporary speed limit changes based on current conditions.

This structured approach to implementing HB 1885 demonstrates TxDOT's commitment to enhancing road safety and adapting infrastructure to meet real-time challenges, particularly in adverse weather or high-traffic situations. The successful deployment in El Paso is a model for potential expansion across Texas.

BACKGROUND ON HB 2170

HB 2170, Relating to toll collections by a toll project entity.

The Texas Legislature passed House Bill 2170 (HB 2170) to address widespread issues and complaints related to the billing practices and payment processing of toll road systems in Texas. Over the years, Texas toll road users have experienced numerous challenges with invoicing errors, delayed notifications, and difficulties in resolving billing disputes, leading to frustration, financial

strain, and sometimes severe penalties for unpaid tolls. HB 2170 aims to streamline the toll collection process, improve customer notification systems, and prevent the accumulation of penalties due to unnoticed missed payments.

Before HB 2170, tolling entities were not required to consistently notify customers of expired billing information in a timely or accessible manner, sometimes resulting in users missing toll payments or being unaware of declined transactions linked to their accounts. The lack of a standard process for immediate notification when a transaction fails often left customers with mounting penalties. HB 2170 addresses this by mandating that toll entities notify customers immediately if a credit or debit card transaction is declined, helping customers address issues promptly to avoid further fees.

Many toll road users found identifying and tracking their toll charges difficult due to unclear or poorly labeled billing statements. HB 2170 requires toll invoices to be marked as bills, making it evident that payment is due and giving users better visibility into their toll obligations. This change aims to enhance transparency and reduce missed payments that could lead to fines.

To further improve communication, HB 2170 allows SMS text notifications for customers who opt-in, in addition to traditional mail and email alerts. This feature provides immediate alerts on pending or missed toll payments, which is especially beneficial for customers with access to regularly check email or physical mail.

FINDINGS ON HB 2170

By passing HB 2170, the Texas Legislature aims to create a toll billing system that is more accurate, transparent, and responsive to customer needs. The law is expected to reduce the number of billing disputes, prevent undue financial strain on drivers, and rebuild trust in the state's toll road system. The immediate notification requirements, more apparent invoicing practices, and expanded communication options are intended to make toll road billing more user-friendly and equitable, addressing a critical need for consumer protection within Texas's toll infrastructure.

TxDOT reports that TxTag complies with the requirements outlined in HB 2170, which enhance toll invoicing notifications and processes. These requirements were put into effect on September 1, 2023. This includes:

- Immediate notifications to customers if a transaction is declined.
- Clear labeling of toll invoices as bills to indicate payment is required.
- Offering text message notifications as an option, in addition to email and first-class mail, for customers who provide their phone numbers and opt for text alerts.

These changes aim to improve customer awareness of toll charges and prevent billing-related issues that could lead to penalties.

BACKGROUND ON HB 3288

HB 3288, Relating to notice of transfer of a used motor vehicle.

House Bill 3288 (HB 3288) was introduced and passed by the Texas Legislature to address a severe loophole in vehicle ownership reporting that criminals had exploited. Before this bill, it was possible for individuals with criminal intent to manipulate vehicle ownership records by filing fraudulent reports with the Texas Department of Motor Vehicles (TxDMV), effectively removing an individual's name from a vehicle's registration. This tactic allowed criminals to make a car appear unregistered or without an identifiable owner, making it difficult for law enforcement to trace the vehicle if it was used in criminal activities.

Criminals often leveraged this loophole to erase ownership records, allowing them to use vehicles for illegal activities with little risk of detection or accountability. Vehicles without clear ownership records became ideal tools for crimes, such as trafficking, theft, and other illicit activities, as law enforcement faced difficulties tracing the car back to any responsible individual. HB 3288 addresses this by reinforcing the requirement for clear, verifiable records of vehicle ownership transfers, ensuring every vehicle has a traceable chain of custody.

Previously, the lack of stringent checks on ownership reports allowed terrible actors to file misleading or fake documents to strip the registered owner's name from a vehicle's records. This bill seeks to close this gap by tightening regulations around reporting and transferring vehicle ownership, reducing opportunities for criminals to exploit the system. HB 3288 strengthens the accuracy and accountability of vehicle records, helping prevent fraudulent reporting.

FINDINGS ON HB 3288

HB 3288 enhances public safety through improved vehicle traceability. The Legislature recognized that effective law enforcement relies on the ability to trace vehicles involved in crimes back to their registered owners. By mandating stricter reporting standards, HB 3288 helps ensure that the government has reliable data on vehicle ownership, which is crucial for investigations. In the event of a crime, law enforcement can now access accurate ownership information, making it harder for individuals to operate with untraceable vehicles.

Reports from the DPS highlighted the frequency and ease with which criminals had exploited the previous system, prompting legislative action. HB 3288 was developed in direct response to these concerns, with legislators recognizing the need for a statutory fix to close this dangerous loophole. By ensuring that each vehicle sale is appropriately recorded and reported, the bill strengthens public safety and supports law enforcement in preventing crime.

The passage of HB 3288 reflects Texas's commitment to modernizing its vehicle registration system to prevent criminal misuse. The primary goals of the bill are to ensure a continuous and transparent record of vehicle ownership and to make it significantly harder for individuals to file false ownership reports. By requiring that each car sale is accurately recorded, the state aims to improve public safety, support law enforcement efforts, and maintain a clear, reliable registry of vehicle ownership across Texas. This change is anticipated to act as a deterrent against crime

involving untraceable vehicles and contribute to a more secure vehicle ownership framework.

BACKGROUND ON HB 4422

HB 4422, Relating to a study on enhancing border security outcomes through public safety, technological, and transportation infrastructure improvements near Texas-Mexico border crossings.

House Bill 4422 was passed by the Texas Legislature with a focus on addressing three primary areas related to public safety, transportation efficiency, and border technology at commercial motor vehicle (CMV) crossings along the Texas-Mexico border. This legislation was driven by the growing need to improve the safety and efficiency of transportation infrastructure and operations along this critical border region, aligning closely with Texas's economic and security interests.

HB 4422 aims to bolster public safety by implementing technologies and infrastructure that facilitate safe and streamlined CMV connectivity at Texas-Mexico border crossings. With frequent congestion and security challenges, the bill directs resources to improve CMV performance through border safety measures and supporting local law enforcement efforts, which are essential for sustaining safe border communities and transportation corridors.

The bill mandates improvements to transportation infrastructure to handle the high volume of CMV traffic efficiently. By minimizing congestion and expediting processing times, HB 4422 seeks to make the border crossings more efficient, ultimately benefiting the movement of goods and Texas's economic interests. Specific recommendations include optimizing CMV routes and implementing modern asset management practices to maintain and upgrade infrastructure.

HB 4422 is also designed to amplify the efforts of Operation Lone Star, a Texas state initiative focusing on border security. The bill emphasizes coordination with various state agencies to enhance the inspection, technology deployment, and security measures in place at the border, reinforcing Texas's commitment to safeguarding its borders and addressing illegal activities.

The legislation advocates for advanced technologies at CMV crossings, such as weigh-in-motion systems, license plate readers, and thermal brake indicators, to facilitate rapid inspections and improve law enforcement capabilities. It also promotes the adoption of digital systems to streamline data sharing among agencies, which is pivotal for real-time decision-making and efficient CMV operations.

HB 4422 involves extensive collaboration with a wide range of stakeholders, including state and county governments, law enforcement, transportation industry representatives, and research institutions. This engagement ensures that the proposed measures address practical needs and reflect the interests of those impacted by border operations.

FINDINGS ON HB 4422

The final report, due by December 1, 2024, is expected to provide further insights and recommendations, outlining immediate and long-term strategies for sustainable and secure CMV

border operations across Texas.

This multi-faceted approach emphasizes Texas's commitment to improving cross-border trade and security while addressing the unique challenges associated with its border infrastructure.

BACKGROUND ON SB 505

SB 505, Relating to imposing an additional fee for the registration of an electric vehicle.

Texas Senate Bill 505 was introduced to address the funding gap created by the growing adoption of alternatively fueled vehicles (AFVs), specifically electric vehicles (EVs). As EVs become more popular in Texas, they contribute less to road maintenance funding, which traditionally relies on gasoline and diesel fuel taxes paid by drivers of petroleum-powered vehicles. The fuel tax revenue is essential for Texas's transportation fund, which supports road construction, maintenance, and improvement projects statewide.

Before SB 505, EVs, though using Texas roads just as petroleum-powered vehicles do, were bypassing the fuel tax, resulting in decreased funding for transportation infrastructure. Senate Bill 505 imposed an additional registration fee of $200 per year on EV owners to equalize their contribution with the average fuel tax paid by petroleum vehicle owners. This amount was chosen based on the average annual gas tax that a typical petroleum vehicle user pays, aiming to create a fair contribution for all road users.

With more Texans switching to EVs, the state anticipates a further reduction in fuel tax revenue in the coming years, which could impact Texas's ability to maintain and improve roads for all drivers. S.B. 505 helps create a sustainable funding model that accommodates the shift to alternative fuels without relying solely on diminishing fuel tax revenues.

By implementing a fee for EVs, the bill ensures that all vehicle owners—regardless of fuel type—contribute to the upkeep of the roadways they use. This approach promotes fairness, recognizing that all drivers benefit from road improvements funded by the state's transportation resources. S.B. 505 was designed to offset the loss of fuel tax revenue caused by the rise of EVs and ensure a balanced approach to road funding, where all vehicles contribute to the infrastructure from which they benefit.

FINDINGS ON SB 505

TxDMV has implemented SB 505, which requires electric vehicle (EV) owners to pay an additional annual fee of $200 starting September 1, 2023. For new EV registrations, an initial $400 payment is required because new car registrations are valid for two years.

RECOMMENDATIONS

1. The Legislature should continue to monitor the Texas Department of Motor Vehicles so that it has all the tools necessary to combat temporary tag fraud as it evolves.

2. The Legislature should continue to monitor the toll billing system to ensure that it is accurate, transparent, fair, and responsive to customer needs.

3. The Legislature should invest in modernizing the communication between the Texas Department of Transportation, the Texas Department of Public Safety, and the Texas Department of Motor Vehicles to improve border security and trade efficiencies.

4. The Legislature should review the recommendations for safety improvements, infrastructure enhancements, technology upgrades, and funding needs from the HB 4422 Report TxDOT will finalize by December 1, 2024.

CHARGE II: PORT INFRASTRUCTURE AND MARITIME INDUSTRY

Study the long-term needs of the maritime industry in Texas. Evaluate the implementation status of the Maritime Port Mission Plan and make recommendations to improve port planning, safety measures, and project delivery. Examine the status of TxDOT seaport projects that received funding during the 88th Legislature.

SUMMARY OF COMMITTEE ACTION

The House Committee on Transportation addressed this interim charge on October 10th, 2024, in a public hearing at the Texas Capitol. The committee heard testimony from the Texas Department of Transportation (TxDOT) Maritime Division, The Office of the Governor, the Port of Corpus Christi, the Port of Houston, the Port of Galveston, and other key stakeholders. The public hearing notice, meeting minutes, and witness list can be found on the website of the Texas House of Representatives, www.house.texas.gov, or the hyperlinks below:

October 10, 2024
Hearing Notice
Meeting Minutes
Witness List

BACKGROUND

Historic Funding

Texas leads the nation in exports and is a leader in waterborne trade. To maintain this position and remain competitive in the future, both domestically and globally, Texas recognized that the seaports need additional funding for port development and infrastructure improvements.[2]

The 88th Legislature appropriated historic, first-time funding of $200 million to TxDOT in general revenue for Fiscal Year 2024 and Unexpended Balance Authority in Fiscal Year 2025 for capital projects inside port gates from the Texas Port Capital Investment Report.

The Texas Transportation Commission approved the Port Authority Advisory Committee's recommended project list in September 2023, and recipient ports have committed to letting their projects for construction by the end of Fiscal Year 2024. Allocated funds will allow Texas ports to make critical capital investments supporting port activity, such as multimodal connectivity enhancements, port expansions, and replacing outdated and failing port facilities to keep Texas ports competitive and continue providing economic value to our state.

The Ship Channel Improvement Revolving Fund (SCIRF) at TxDOT received $400 million in Fiscal Year 2024 to capitalize the Ship Channel Improvement Revolving Fund. This historic, first-

time funding provides low-interest loans to local sponsors of federally authorized ship channel widening and deepening projects that will allow ports to move more cargo and become more competitive. The costs of these projects are shared between the local sponsor and the U.S. Army Corps of Engineers.

Due to this historic appropriation from the legislature, The Texas Transportation Commission approved historic funding for ship channel improvement projects to support Texas' economic growth, increase trade, generate jobs, and ensure our seaports remain competitive.[3] The Commission approved $400 million in Ship Channel Improvement Revolving Fund (SCIRF) loans for two projects near Beaumont and Brownsville. The funding is the result of a bill passed in the 88th Legislature and signed by Governor Greg Abbott in 2023.

"Texas ship channels and seaports are economic engines within our state. I want to thank Governor Greg Abbott for supporting this vital industry," said Texas Transportation Commissioner Steven D. Alvis. "Ship channel improvement projects are extremely costly, often making it incredibly difficult to make improvements. The foresight of the Governor and the Texas Legislature to make Ship Channel Improvement Revolving Fund loans available is critical to ensure Texas ship channels are prepared to accommodate larger vessel sizes, resulting in a more robust and resilient supply chain."

In August 2024, the Commission approved a loan of up to $357 million for the Sabine-Neches Navigation District (SNND) to begin deepening the Sabine Neches Waterway--the third-largest waterway by tonnage in the nation--from its current 40-foot depth to its authorized depth of 48 feet. This project is estimated to cost $1.8 billion, and the SNND is responsible for $600 million to finance its local share. It's anticipated that this project will add 336,000 jobs and generate $200 billion in business activity and $6 billion in annual sales tax revenue. The waterway is crucial to national security, supporting two U.S. strategic military ports.

In September 2024, the Commission approved a loan of up to $43 million for the Brownsville Navigation District (BND) to help fund the cost of deepening the Brazos Island Harbor Channel from 42 feet to its authorized depth of 52 feet. BND is responsible for $71.5 million of the total $139.5 million cost for this portion of the project. Following completion, the project will create an additional 800 permanent full-time jobs, increase export capability, and increase access to clean energy.

Texas Port Mission Plan

The 2024-2025 Texas Port Mission Plan outlines the Texas Department of Transportation's (TxDOT) strategic vision for enhancing Texas ports' efficiency, capacity, and competitiveness.[4] With an emphasis on supporting Texas's role as a critical hub for international trade, the plan details the funding needs and strategic objectives necessary to sustain port infrastructure and ensure long-term economic growth. Texas leads the nation in exports, with a robust port system that enables the state to engage globally, mainly with top trading partners like Mexico, China, and Brazil. TxDOT's Maritime Division oversees this mission plan and addresses funding, investments, and logistical challenges, underscoring the importance of public and private collaboration.[5]

The Texas Port Funding Needs are estimated at $9.67 billion, encompassing many projects to improve port infrastructure, inland connectivity, and channel improvements. Funding allocation includes $4.34 billion for channel projects, $3.66 billion for inland connectivity, and $1.67 billion for facilities investment.

Texas ports have historically relied on private funding for development, with 98% of investments in the last decade funded by private sources. However, local, state, and federal public funding is essential for large-scale projects, particularly channel improvements involving federal navigation standards and dredging operations.

The Port Mission Plan prioritizes channel improvements, inland transportation infrastructure, and facility upgrades. Channel improvement projects are authorized for eight primary ship channels, which are essential for accommodating larger vessels and increasing shipping capacity.[6]

Inland connectivity projects aim to improve the road and rail networks linking ports to inland distribution centers, thus reducing congestion and increasing logistical efficiency. Facilities upgrades focus on enhancing port efficiency and capacity by expanding warehouses, loading docks, and intermodal facilities, allowing ports to handle increasing cargo volumes.

Texas ports are instrumental in supporting the state's leading position in exports. The ports facilitate trade with major global partners, including Mexico, China, Brazil, and South Korea, with commodities ranging from petroleum and machinery to vehicles and organic chemicals. This diverse export base highlights the importance of robust port infrastructure to Texas's economic growth.

While private investments dominate Texas port development, public funding remains crucial for specific projects, particularly large-scale infrastructure changes, like channel dredging. The partnership between public and private sectors ensures that Texas ports can meet national and international standards while remaining competitive globally.

Channel improvement is central to Texas's port strategy, as it directly impacts the capacity to accommodate larger cargo vessels, which is increasingly important for global trade. The planned projects will deepen and widen channels and maintain Texas's competitive edge in attracting high-capacity ships. This is essential for remaining aligned with the broader shifts in global shipping, where larger vessels reduce cost per unit but require deeper ports.

The Port Mission Plan's allocation for channel improvement underscores Texas's commitment to preserving the state's logistical advantages. By ensuring these projects are completed, Texas can solidify its role as a national export leader, with efficient channels capable of handling increasing cargo volumes.

The emphasis on inland connectivity highlights the critical role of intermodal transportation in Texas's port strategy. Efficient inland routes, including rail and highways, must move goods swiftly from ports to inland markets. This approach addresses congestion and supports broader economic growth by linking rural and urban areas, facilitating faster transit for goods, and lowering

transportation costs.

These connectivity projects are significant given Texas's geographic and economic position as a primary gateway to the southwestern United States and Mexico. Improved connectivity will reduce bottlenecks, ease urban congestion near port cities, and support seamless logistical operations.

Texas's ports largely depend on private investment, a proven effective model in funding infrastructure. However, public funding becomes indispensable for projects involving essential public services or significant infrastructure changes (e.g., dredging). The state's strategy of leveraging private capital while supplementing with public funds when necessary has allowed for sustainable development without overburdening public resources.

This model brings private expertise and efficiencies and ensures that taxpayer dollars are used strategically. Nevertheless, the need for public investment is evident in projects requiring extensive federal approval or those affecting national navigation standards. Texas's commitment to maintaining this balance is a testament to its pragmatic approach to port funding.

As global logistics embrace automation and digital tracking, Texas ports must invest in technologies that enhance operational efficiency, such as automated cargo handling and real-time inventory tracking. These advancements could reduce labor costs, increase throughput, and improve the competitiveness of Texas ports globally.

The 2024-2025 Texas Port Mission Plan reflects a robust, forward-looking strategy to ensure that Texas ports remain competitive, efficient, and capable of meeting growing trade demands.[7] Texas is addressing its current infrastructure needs by focusing on channel improvements, strengthening inland connectivity, and leveraging public-private partnerships while positioning itself for future economic growth. While private investment remains a central pillar, the selective application of public funding for large-scale infrastructure projects underscores Texas's commitment to sustainable port development.

Texas's ports are essential to the state's economy and the broader U.S. economy, acting as critical points of entry and exit for goods moving internationally. The success of the Port Mission Plan will depend on Texas's ability to secure necessary funding, adapt to technological and regulatory changes, and maintain its strong partnerships with public and private entities. As global trade evolves, Texas's proactive approach to port infrastructure will support the state's economic resilience and maintain its position as a leader in exports.

Economic Impact

The Texas Ports Association contracted Martin Associates to estimate the economic impacts generated by marine cargo transiting Texas' marine terminals; their study found that the state's $640 million investment in port infrastructure over the last 2 years supports a return to the state of $53.46 in state and local tax revenue for each dollar of state investment on an annual basis.

According to Martin Associates' report, terminal cargo activity supported $196.7 billion in total personal wage and salary income and local consumption expenditures for Texas residents.

In 2023, marine cargo activity at the public marine terminals located in the state of Texas generated $713.9 billion of total economic value in the state of Texas, **representing 28% of the $2.6 trillion State Gross Domestic Product.**

Of the $713.9 billion total economic value, $61.3 billion is the direct business revenue received by the firms directly dependent upon the marine terminals and providing maritime services and inland transportation services to the cargo handled at the marine terminals and the vessels calling the port, as well as ship and rig repair and maintenance services. An additional $40.9 billion represents the re-spending of the direct income, which is used for in-state purchases of goods and services by those directly employed. The remaining $611.7 billion represents the value of the output to the state of Texas that is created due to the cargo moving via the public and privately owned marine terminals. This includes the value added at each stage of

producing an export cargo and the value added at each stage of production for the firms using imported raw materials and intermediate products that flow via the marine terminals and are consumed within the State. It is important to emphasize that these three components of total economic value are additive and do not represent any double counting of monetary impacts. In contrast, direct income, local purchases by firms, and taxes generated are all paid from the direct and related user revenue.

Marine cargo activity at the terminals supported $196.6 billion of total personal wage and salary income and local consumption expenditures for Texas residents. This includes $62.2 billion of direct, indirect, induced, and local consumption expenditures, while the remaining $134.5 billion was received as income by the employees of the related port users.

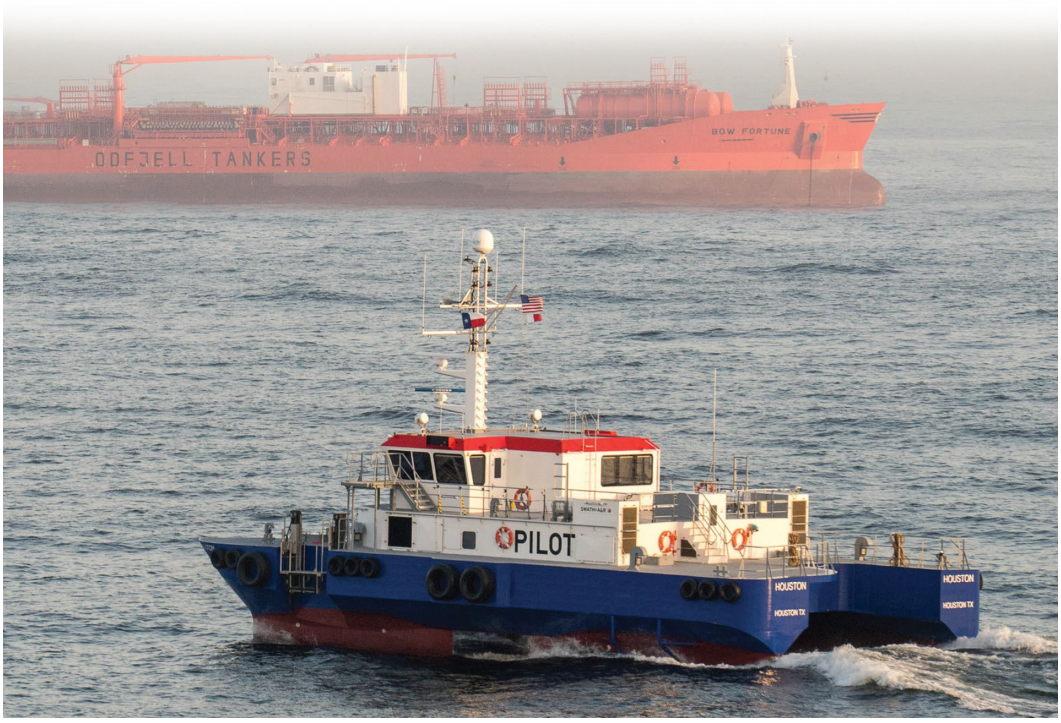
The committee heard from Kent Britton, Chief Executive Officer of the Port of Corpus Christi. Britton shared that the Port of Corpus Christi is the number 1 crude oil export gateway in the United States, the number 2 port for LNG exports, and the 3rd largest export port for crude oil worldwide. The Port of Corpus Christi customers have a significant economic impact on our State. They generate over 95,000port-related jobs in Texas (according to the South Texas Economic Development Center at Texas A&M University-Corpus Christi). Throughout the past decade, the Coastal Bend Region of the Gulf Coast has attracted $65 billion in capital investments mainly because of the deep-water channel.

Workforce Investment

The committee heard from the Houston Pilots, who shared that ship channel piloting is one of the most dangerous jobs in the world. Cargoes range from chemicals to containers to automobiles. Pilots possess one-of-a-kind skills and local knowledge to ensure the transit of 19,000 ships per year, 24 hours a day, 365 days a year. Pilots require a minimum of 10 years of maritime experience and an additional 3 years of training. Pilots must meet the industry demands while maintaining the highest level of safety.

The Houston Pilots also shared with the committee that the Houston Ship Channel has one of the narrowest, most congested, and busiest waterways in the world. The Houston Ship Channel has one of the most extended transit times in the country. The Houston Pilots are setting the highest industry standard for training and technology, preparing for future more extensive and more complex vessels.

The committee heard from John Stauffer, Associate Vice Chancellor of Maritime at San Jacinto College, that the maritime industry is facing a projected shortfall of 30,000 qualified mariners over the next decade, which threatens to affect operations across the industry. This challenge is further compounded by recent labor disruptions, highlighting the need for a stable, well-trained workforce to maintain continuity in maritime operations. Recently, this shortage led to the deactivation of 17 Military Sealift Command vessels due to a lack of qualified mariners, demonstrating the urgency of addressing the workforce gap.



FINDINGS

Texas is home to 19 commercial seaports, including 11 deepwater ports. Texas is home to two of the three largest ports in the United States based on tonnage – Port Houston (#1) and Port of Corpus Christi (#3). [8]

In 2023, 354 cruise vessel calls were recorded in the state of Texas, carrying more than 2.9 million passengers and supporting 4,600 direct, induced, and indirect jobs in Texas. Ports also support commercial fishing and marina activity with $15.1 million in total personal income and $70.2 million in business revenue, plus $1.3 million in state and local taxes collected.

According to a 2023 Texas Ports Association and Martin Associates report, Texas maritime ports generate $713.9 billion in economic value (including related user output value, direct business revenue, re-spending, and direct income).

Texas ports impact more than 2.5 million jobs (including direct, induced, indirect, and related) and generate $12.6 billion in personal income and $17.1 billion in total taxes (including direct, induced, indirect, and related state and local taxes).

Texas ports are also home to Texas LNG facilities, with several in the late construction phase, which is another critical industry for Texas.

The state's $640 million investment in port infrastructure over the last 2 years supports a return to the state of $53.46 in state and local tax revenue for each dollar of state investment on an annual basis.

Texas ports account for 28% of Texas' GDP.

The combination of the significant return on investment for each tax dollar spent and the ability to impact such a large portion of Texas' GDP represents a significant investment opportunity for the State of Texas.

RECOMMENDATIONS

1. In order to support our continued historic population growth and economy, Texas should continue to invest in its port infrastructure to support the demand on the supply chain.

2. The 2024-2025 Port Capital Investment Report includes 49 capital projects and two studies at 15 different ports whose total project cost is just under $1.67 billion. All ports are willing to provide a minimum cost share of 25% for each recommended project and study.

3. The Ship Channel Improvement Report includes eight federally authorized projects that are eligible for the revolving fund, representing a $2.19 billion federal share and $1.47 billion local share, for a total estimated first construction cost of $3.66 billion. This report also reflects two projects in the feasibility study phase for future Congressional authorization and eight non-federal projects, which are ineligible for SCIRF funding.

4. The Port Connectivity Report assesses the current state of landside connectivity at 18 maritime ports along the Texas seacoast, summarizing conditions for rail, pipeline, and road systems serving the ports. In combination, these issues lead to inefficiencies for multimodal freight movement. This report evaluates the existing conditions for landside access at the Texas seaports, identifies connectivity issues facing port transportation, and proposes 142 projects – with total construction costs estimated at up to $4.34 billion – as potential solutions to these issues.

CHARGE III: BRIDGE SAFETY

Evaluate the current status of state-maintained bridges, existing safety standards related to bridges, and long-term financial needs for bridge planning, construction, maintenance, and inspection. Examine ways to improve bridge project delivery.

SUMMARY OF COMMITTEE ACTION

The House Committee on Transportation addressed this interim charge on October 10th, 2024, in a public hearing at the Texas Capitol. The committee heard testimony from the Texas Department of Transportation (TxDOT), the US Department of Defense, and other key stakeholders. The public hearing notice, meeting minutes, and witness list can be found on the website of the Texas House of Representatives, www.house.texas.gov, or the hyperlinks below:

October 10, 2024
Hearing Notice
Meeting Minutes
Witness List

BACKGROUND

TxDOT's Chief Engineer Lance Simmons presented the following information to the Committee at their October 10th hearing:

Bridge Overview

Texas leads the nation in the number of bridges, with over 56,000 in total, which is approximately 30,000 more bridges than any other state. Of these, 35,986 bridges are part of the State Highway System. Additionally, there are 20,639 bridges located off the state system, which includes bridges on city streets and county roads. Texas also has 33 international bridges, including seven federally owned border bridges and 26 border bridges owned by TxDOT and local entities.

Bridge Replacement, Rehab, and Maintenance Funding

In 2024, TxDOT plans to initiate $487 million in bridge replacement or rehabilitation projects. For 2025, an additional $543 million is planned for bridge projects. The Unified Transportation Program (UTP) has programmed a total of $4.68 billion for bridge-related projects in the fiscal year 2025. Approximately 85% of the funding for these projects is sourced from federal funds, while the remaining 15% comes from state funds.

Bridge Programs

Through several specialized programs, TxDOT utilizes state and federal funds to preserve, rehabilitate, and replace bridges. The Highway Bridge Program (HBP) focuses on significant

rehabilitation or replacement projects for bridges in Poor or near-poor condition. The Bridge System Safety Program (BSSP) addresses high-risk areas by replacing rails, managing scour risks, and creating railroad separations for on-system bridges. The Bridge Maintenance and Improvement Program (BMIP) is dedicated to addressing deficiencies on larger bridge projects.

Bridge Inspections

Under TxDOT's Bridge Inspection Program, all publicly owned vehicular bridges are regularly inspected in accordance with the National Bridge Inspection Standards (NBIS) to ensure traffic safety. Most bridges undergo an inspection every 24 months unless specific conditions or bridge types require more frequent assessments. Low-risk bridges may have inspection intervals extended to every 48 months if permitted by NBIS guidelines. During inspections, bridges are rated on a scale from 0 (lowest) to 9 (highest) for various components. A rating of 7 or higher indicates a bridge in Good Condition, with minimal signs of deterioration. Bridges with ratings of 5 or 6 are in Fair Condition, showing minor to moderate deterioration that may require maintenance or repair. Bridges rated four or lower are considered in Poor Condition, exhibiting advanced deterioration that necessitates major repair, rehabilitation, or replacement. Any on-system bridge deemed unsafe is immediately closed to traffic.

Current Overall Bridge Conditions

The average age of bridges on the Texas state highway system is 49 years, while bridges off the state highway system average 34 years. Currently, 51.0% of bridges in Texas are in Good Condition, 48.13% are in Fair Condition, and 0.87% are in Poor Condition. Texas ranks 12th nationally in the percentage of bridges in Good Condition and has the third-lowest percentage of bridges in Poor Condition among all states.

The committee asked the Texas Transportation Institute (TTI) for ways that technology can help improve project delivery. Artificial intelligence (AI) was identified as an important resource that could be utilized to avoid errors. TTI provided a report from Dr. Bill Eisele to the committee. The report suggested to improve bridge project delivery, the Texas Department of Transportation (TxDOT) could leverage AI tools to address common challenges that delay projects and increase costs.

A notable AI application under development with TxDOT aims to minimize change orders, which are a significant obstacle to on-time and on-budget project completion. Common causes of change orders include omitted work items, utility and geotechnical issues, environmental considerations, and owner-requested enhancements. These issues account for up to 60% of project delays and budget overruns.

The AI tool addresses this by identifying likely change order items early in the project planning phase. Using AI algorithms, it compares current project estimates with historical data from similar past projects to predict potential discrepancies. By proactively identifying these issues, TxDOT could prevent many common change orders, saving both time and money. According to TTI, early beta testing suggests that this tool could reduce errors by up to 50%, potentially saving $50 million per year.

At the October 10th hearing, the committee heard from Larry Kelley, Port Director/CEO of Port of Port Arthur. The port, located in Port Arthur, Texas, is the regional home to a global-scale industrial cluster of energy refining and commodities movement. Three bridges cross the Sabine Neches Waterway, home to the 5th highest waterborne tonnage in the nation. The lowest air draft restriction is 136' at the ML King (Hwy 82) Bridge, bisecting the Port of Port Arthur. The cantilever bridge was designed by the US Army Corps and is maintained by TxDOT. The bridge is 5,032' long and 27.9' wide and completed in 1970 as the Gulfgate Bridge. The longest span is 664' and is protected by four sheetpile-supported dolphins.

Director Kelley shared with the committee that he knew of 4 vertical strikes on the bridge last year, as reported by Coast Guard Vessel Traffic Service. He reported they likely involved antenna masts or lightning suppression. Additionally, at least one event involved a partial lowering of a ramp to move under the bridge. Other ports can report delays due to the height. We are aware of at least two periods this year, extending 1-2 weeks, where the waterway operators enforced a restricted air draft due to higher-than-normal water levels influenced by flood waters and tidal conditions impacted by the effects of tropical storms.

Director Kelley and the Port of Port Arthur called attention to the bridge limitation and informed the committee that a TxDOT-commissioned study is underway.

FINDINGS

The air draft restriction at the Hwy 82 Bridge bisecting the Port of Port Arthur is an impediment to economic growth. Repeated allisions create a safety issue within the port.

The Port of Beaumont is a strategic military port that would also benefit from improvements to the air draft restriction at the Hwy 82 Bridge.

RECOMMENDATIONS

The Legislature should look at ways to accelerate funding for bridges in Poor Condition that pose potential safety risks.

The Legislature should invest in tools like TTI's AI tool for project planning to reduce errors and decrease costs for project delivery.

The Legislature should utilize the study being completed by TxDOT on the Hwy 82 Bridge draft restriction for recommendations to improve the air draft restrictions.

CHARGE IV: ALLEVIATING ROAD TRAFFIC

Identify the state's most congested roadways and review state forecasts for future congestion and the expected impact on economic activity. Evaluate TxDOT plans for alleviating congestion and consider the necessity of additional options to ensure economic development, congestion, and safety goals are achieved in a timely manner with reduced cost to public tax dollars.

SUMMARY OF COMMITTEE ACTION

The House Committee on Transportation addressed this interim charge on October 10th, 2024, in a public hearing at the Texas Capitol. The committee heard testimony from the Texas Department of Transportation (TxDOT), the Texas Department of Motor Vehicles, and other key stakeholders. The public hearing notice, meeting minutes, and witness list can be found on the website of the Texas House of Representatives, www.house.texas.gov, or the hyperlinks below:

October 10, 2024
Hearing Notice
Meeting Minutes
Witness List

BACKGROUND

At the October 10th, 2024, hearing, the committee heard from 7 panels on Charge 4. First, the committee heard an analysis of current programs that began with Panel 1 on Project Clear Lanes, featuring presentations by TxDOT Executive Director Marc Williams, PE, and TTI Senior Research Scientist Brianne Glover, JD, discussing existing congestion-reducing initiatives.

The next five panels addressed emerging technology that can be used to address congestion. Panel 2 discussed the role of Automated Vehicles in alleviating congestion and potential regulations for Texas to consider. Panelists include Dan Goff from Kodiak, Aidan Ali Sullivan from Waymo, Ariel Wolf, JD, from AVIA, Susanna Gallun, JD, from the UT Center for Transportation Research, Cole Scandaglia from the International Brotherhood of Teamsters, Captain Bart Teeter from DPS, Yariel Diaz from Cruise, and Jeremiah Kuntz from Aurora. Panel 3 focused on Connected Infrastructure with an update from TxDOT's Darran Anderson and TTI's Michael Martin, who discussed how connected technology can help manage traffic flow.

Panel 4 was dedicated to Freight Rail Capacity & Technology and included speakers Peter LaCody from Texas Rail Advocates and Dr. Roop from Fr8 Way, who explored expanding rail capacity with unique technology to reduce road congestion. In Panel 5, the topic of Tolling & TxTag's HCTRA transition was discussed by Roberto Trevino, PE, Executive Director of HCTRA. Panel 6 discussed Advanced Air Mobility (AAM) and Urban Air Mobility (UAM) with insights from Dan Dalton, Chair of the AAM Advisory Committee and VP at Wisk, John B. Forristal, Public Affairs Director at Lilium eVTOL, and Kevin Cox, CEO of Ferrovial Vertiports, focusing on future air mobility options to relieve urban congestion.

The Analysis of Future Programs and Planning is covered in Panel 7, which reviewed Long-Term Plans & Economic Impact with panelists including TxDOT's Director for Transportation Planning and Programming, Humberto "Tito" Gonzalez, who updated the committee on the 2050 Long Range Plan, TTI Senior Research Scientist Brianne Glover, JD, Executive Director Adriana Cruz from the Governor's Economic Development Office, and VP Matt Able from the Texas Economic Development Council, who will discuss the projected economic impacts of long-term transportation planning in Texas.

Texas Clear Lanes Project Overview and Key Components

The Texas Clear Lanes (TCL) Project is a statewide initiative to relieve traffic congestion across Texas's most congested roadways.[9] Launched in 2015 by Governor Greg Abbott, TCL was developed to improve road infrastructure, enhance economic growth, and address the transportation needs in Texas's rapidly growing metro areas, particularly Austin, Dallas, Fort Worth, Houston, and San Antonio. The project directly responds to the increasing demands of Texas's expanding population and strategically allocates funds toward critical highway expansions and upgrades.[10]

The Texas Department of Transportation (TxDOT) designed TCL to alleviate traffic on the state's most problematic road segments without introducing tolls.[11] It emphasizes efficient and cost-effective planning, focusing on expanding capacity on the top 100 congested roads, which represent critical bottlenecks in the state's urban areas. TCL integrates funding from state sources with a significant allocation in the 2025 Unified Transportation Program (UTP). Notably, in 2024, TCL projects received $6 billion from strategic priority funds in UTP's funding distribution, underscoring the commitment of Texas leadership to reduce congestion sustainably and swiftly.

1. **Funding and Economic Impact**: TCL's funding structure leverages a broad range of categories in the UTP to finance preventive maintenance, urban corridor improvements, congestion mitigation, and bridge safety. The overall 10-year projected investment in transportation projects, as outlined in the UTP, is approximately $148 billion, with TCL specifically receiving $6 billion from strategic allocations. This significant financial commitment aims to reduce annual delay hours, which is estimated to cost Texans $17 billion yearly due to congestion. Further, the project is expected to improve economic productivity and statewide connectivity, which are vital for Texas's growth.

2. **Congestion and Traffic Flow Analysis**: Data from the Texas A&M Transportation Institute reveals notable congestion trends, including increased vehicle miles traveled (VMT) and escalating traffic delays. In 2022, congestion remained below pre-pandemic levels, yet truck delays surpassed 2019 metrics by 1%. These findings indicate a strong need for dedicated roadway improvements, which TCL aims to fulfill. A particular emphasis is placed on the top 100 most congested roadways, with significant projects focused on notorious traffic corridors in Harris, Dallas, Tarrant, and Travis counties.

3. **Regional Distribution**: Congestion is heavily concentrated in five metropolitan areas that contribute disproportionately to the state's economic output. Nearly 94 out of the top 100

congested road segments are within Austin, Dallas, Fort Worth, Houston, and San Antonio, which account for 68% of Texas's population, 89% of the state's GDP, and 70% of employment. TCL projects aim to improve mobility in these regions, fostering economic development by reducing transit delays for commuters and freight operations.

4. **Projected Growth and Future Needs**: Texas's population and economic indicators suggest intensifying demands for robust transportation infrastructure. Projections indicate a 70% population increase by 2050 within these major metros, alongside a doubling of employment and freight volume. These factors necessitate TCL's forward-looking approach, where projects are not only addressing current traffic issues but are also planned to accommodate anticipated future congestion.

Texas Clear Lanes Key Projects and Completed Works

Several projects under TCL have achieved substantial results, with completed expansions and reconstructions of top congested roadways. The projects aim to create tangible economic, safety, and environmental benefits for commuters and businesses.

1. **I-35 Capital Express**: One of the most critical projects within TCL is the I-35 Capital Express in Austin. This project alone is projected to yield over $10 billion in economic benefits, including $6.2 billion in congestion cost savings and $1.6 billion in safety and environmental improvements. Analysis shows a 3.4:1 benefit-cost ratio, meaning every dollar invested brings back $3.40 in economic benefits. The expressway's enhancement also promises improved safety, with an estimated reduction of 90 fatal and 120 serious injury crashes.

2. **Regional Corridor Enhancements**: Major improvements on other key highways such as the I-635 in Dallas and I-10 in Houston aim to address heavy traffic volumes. By focusing on segments that have ranked consistently high in congestion indexes, these projects are designed to unlock faster transit and reduce significant bottlenecks. For example, the SH 121 corridor in Fort Worth saw a 24% increase in VMT due to strategic lane additions and interchange upgrades.

3. **Long-term Cost Savings**: TCL projects contribute to long-term savings for Texas commuters. In 2022, these projects were estimated to save over $3 billion in commuter time and related costs. The ongoing construction in these highly trafficked zones directly supports enhanced access to urban and suburban communities, improving the daily lives of thousands of commuters.

The Texas Clear Lanes Project holds substantial economic implications for Texas, emphasizing both direct and indirect impacts. By focusing on alleviating congestion, TCL contributes to enhanced productivity, reduced transportation costs, and increased accessibility to key economic centers. Additionally, TCL supports local economies through direct investments, while improvements in property values are anticipated as connectivity and accessibility improve.

1. **Economic Multiplier Effect**: Large infrastructure projects like TCL foster economic growth by enabling businesses to operate more efficiently, reducing delivery times, and allowing consumers easier access to services. The improvements are anticipated to support increased property values, with nearly $17 billion projected in additional property growth by 2037 for the I-35 corridor alone.

2. **Safety and Environmental Benefits**: By improving the structure and capacity of Texas highways, TCL promotes road safety, reducing fatal and severe accidents. This translates into not only fewer traffic incidents but also lower associated medical and property costs. Additionally, TCL addresses environmental concerns by alleviating idling times on highways, which reduces emissions from stalled vehicles, supporting Texas's air quality improvement initiatives.

3. **Quality of Life**: Improved transportation corridors mean better access for Texas residents to employment opportunities, healthcare, education, and recreational spaces. As such, TCL enhances social equity, bridging gaps between urban and suburban areas. Projects like I-35 aim to streamline traffic flow, decrease travel times, and thus improve the quality of life for residents in these congested areas.

The Texas Clear Lanes Project represents a critical, ongoing initiative aimed at addressing Texas's transportation infrastructure challenges. With a strategic focus on high-impact congested corridors, TCL effectively directs funds toward relieving bottlenecks that hinder economic growth and public safety. The project is instrumental in managing Texas's fast-paced population growth and urban expansion, promising sustained benefits for the state's economy, safety, and environmental health. However, as the state continues to grow, maintaining the momentum and ensuring the adaptability of TCL will be essential to meet future transportation needs efficiently.

Emerging Technology

In 2017, Texas passed legislation allowing autonomous vehicle (AV) companies to operate in Texas with essentially no regulations beyond regular vehicles. This lack of regulation with clear operating authority spurred investment in the AV industry in Texas as intended. At the time, regulators believed that AVs would become a reality in the future, not in 2023. There's a challenge to regulating an industry that doesn't yet exist or is constantly changing. Sometimes, waiting until the technology is closer to the market will allow for better-informed policy decisions.

AVs are here, and many companies plan to remove their drivers in Texas in 2024 or 2025. Robotaxis are already operating in other states and have been for years. Robotaxis were operating in Texas in 2023 without drivers under one company that temporarily paused operations but will return soon.

No regulatory mechanism exists to force an AV company to stop operating under current Texas law. If Texas were to face an incident like California or Arizona did regarding a pedestrian being hit, our state would struggle with having any legal authority to stop an AV company from operating. Left unchecked, a bad actor could destroy public trust in AVs and leave citizens feeling

unsafe.

Although robotaxis have minimal regulations, the AV trucking companies operate under current Texas motor carrier regulations. Texas is fortunate to have companies that are proactive and good actors, but there is no floor to stop bad actors. DPS has told legislative offices that they have not had issues with the AV trucks, partially due to the AV trucking industry working heavily with law enforcement in advance of operations.

The current Levels of Automation are established by NHTSA & mirror those of SAE J3016.

Level 3 requires the driver to take control back when the feature requests.

Only Level 4 & Level 5 are able to operate entirely without the presence of a driver. Level 4 is geographically bound & Level 5 is not.

The largest threat to public safety and the public trust in the AV industry may not actually be AVs, but the uninformed public not understanding the difference between their Level 2 or 3 personal vehicle with advanced driver assistance and a Level 4 robotaxi that is able to operate in full autonomy.

The autonomous vehicle (AV) industry in Texas is expanding rapidly, driven by technological advances, supportive regulations, and the state's strategic position as a transportation hub. AV companies in Texas are pioneering innovations across three major segments: Robotaxis, Long-haul trucking, and Middle-mile trucking. Texas's unique environment, which includes urban centers, sprawling highways, and access to trade routes, has allowed these AV companies to refine and test autonomous solutions in varied, real-world scenarios.

Robotaxis

Robotaxis represent the forefront of urban AV operations and is primarily geared towards ride-hailing and passenger transport. Companies like Waymo, Zoox, Cruise, and Volkswagen are testing their robotaxi programs in Texas, focusing on creating safe, reliable, and convenient autonomous mobility solutions in urban settings.

- **Waymo**: As a leader in the AV industry, Waymo operates autonomous passenger vehicles in Texas cities, conducting extensive testing on navigation through complex urban settings. Their fleet, equipped with sophisticated sensor arrays and AI-driven mapping, targets high-demand areas for ride-hailing, using Texas's supportive regulations to operate a significant number of autonomous vehicles. Waymo's goal is to create a scalable, driverless mobility service that can handle varied traffic patterns and road users found in densely populated areas.
- **Zoox**: Owned by Amazon, Zoox is focused on deploying a purpose-built autonomous vehicle designed from scratch for urban driving. In Texas, Zoox is testing its bi-directional, fully autonomous vehicle in cities, which allows for efficient movement in tight, urban environments. Zoox's vehicle architecture, which forgoes traditional car designs, emphasizes passenger comfort and efficiency, enabling the robotaxi to navigate crowded

city streets and complex intersections safely. Texas provides Zoox with a broad operational environment to test its innovative design, particularly in accommodating various passenger demographics and urban layouts.

- **Cruise**: Backed by General Motors, Cruise is another major player in Texas's robotaxi sector. With a fleet designed for urban areas, Cruise is running pilot programs and collecting data to enhance its autonomous ride-hailing services. Cruise AVs use a robust suite of sensors, including lidar and cameras, to navigate city streets and manage interactions with other vehicles, pedestrians, and cyclists. Cruise aims to provide a safe, on-demand mobility solution that integrates seamlessly into Texas's urban infrastructure.
- **Volkswagen**: Volkswagen has entered the robotaxi market in Texas, exploring autonomous ride-sharing as part of its strategy to diversify mobility offerings. Volkswagen's AV operations in Texas involve testing software and hardware that will eventually be deployed in its upcoming autonomous electric vehicles, focusing on smooth and efficient passenger services. The testing environment in Texas allows Volkswagen to refine the AV systems that will drive its ride-hailing fleet in urban centers worldwide.

Key Objectives and Challenges for Robotaxis

The main objectives for robotaxi companies in Texas are to provide a safe, reliable, and user-friendly ride-hailing experience while minimizing reliance on human drivers. Companies are focused on collecting data to enhance safety features, manage complex urban traffic, and build consumer trust in AV technologies. Challenges remain, including adapting to Texas's unique driving culture and managing interactions with both human-driven vehicles and pedestrians, particularly in densely populated areas.

Autonomous Long-Haul Trucking

Long-haul trucking in Texas is a rapidly growing segment in the AV industry, with companies like Aurora, Kodiak, Waabi, Torc, and Stack AV leading in the development of autonomous freight solutions for interstate routes. Texas, with its major highways and logistics corridors, provides an ideal landscape for these companies to test and deploy AV technology for long-haul freight transport.

- **Aurora**: Aurora operates an extensive AV trucking fleet in Texas, using the state's highways to test its Aurora Driver system for large trucks. Aurora's approach focuses on long-distance freight, where autonomous systems handle repetitive highway driving over extended periods. The company's AVs use a blend of radar, lidar, and camera-based perception to navigate safely across Texas's freight corridors. Aurora's operations aim to streamline long-haul logistics, enhancing efficiency and safety for intercity freight transport.

- **Kodiak Robotics**: Kodiak specializes exclusively in autonomous trucking, focusing on optimizing AV systems for freight. In Texas, Kodiak runs autonomous trucks on major highways, refining its AV technology for efficient, long-distance transport. Kodiak's approach includes modular sensor setups that can be easily integrated into different truck models, allowing for easy scaling and adaptability within existing logistics networks.
- **Waabi**: Waabi is innovating in AV trucking with an emphasis on simulation-driven testing combined with real-world highway trials in Texas. By running autonomous trucks along Texas highways, Waabi is validating its AI-driven AV systems to ensure safety, reliability, and adaptability to dynamic traffic conditions. Waabi's focus on simulation allows it to accelerate development, while Texas's open highways provide essential data for its algorithms.
- **Torc Robotics**: As a partner of Daimler Trucks, Torc operates in Texas to refine its autonomous systems for Freightliner trucks. Torc uses the state's extensive interstate network to test its AV trucks in real-world freight operations, focusing on operational efficiency and safety. With an emphasis on long-haul routes, Torc's AV trucks are designed to minimize human intervention, providing reliable service over extended distances.
- **Stack AV**: Stack AV also operates within Texas's long-haul freight sector, deploying AV trucks designed to enhance logistical efficiency. Stack AV's systems are optimized for handling heavy freight loads across long distances, using machine learning algorithms to adapt to diverse traffic patterns. Texas's infrastructure enables Stack to test these systems extensively, refining both the technology and operational protocols for future commercial deployment.

Key Objectives and Challenges for Long-Haul Trucking

The main goal for long-haul AV companies in Texas is to achieve efficient, safe, and reliable freight transport over extended distances. By minimizing human intervention, these companies aim to lower operational costs and optimize fuel efficiency. Challenges include ensuring safety on high-speed highways, integrating AV trucks into current logistics systems, and handling adverse weather conditions across Texas's diverse regions.

Autonomous Middle-Mile Trucking

Middle-mile trucking refers to the segment of the AV industry focused on transporting goods between distribution centers and retail outlets or warehouses, typically within shorter distances than long-haul trucking. In Texas, **Gatik** is the primary AV company in this segment, concentrating on short-to-medium routes critical for retail and distribution logistics.

- **Gatik**: Specializing in middle-mile logistics, Gatik operates autonomous box trucks in Texas, working with major retailers to streamline distribution networks. Gatik's focus on middle-mile routes allows it to simplify AV deployment, as these routes tend to be more controlled and predictable than long-haul or urban environments. Gatik's AV trucks are optimized for repeatable, high-frequency routes between warehouses and retail stores, emphasizing safe navigation, efficient loading and unloading processes, and minimal disruption to existing supply chains.

Gatik's operations in Texas provide a valuable testing ground for refining AV technology on middle-mile routes, where it can handle traffic patterns specific to suburban and urban interfaces. By focusing on this niche, Gatik addresses a distinct need within the AV industry, supporting

retailers with reliable, autonomous delivery services that enhance distribution efficiency.

Key Objectives and Challenges for Middle-Mile Trucking
Gatik's objectives center around reliability, efficiency, and safe navigation within controlled environments. Challenges for middle-mile AV operations in Texas include managing interactions with human drivers in urban and suburban areas, ensuring consistency in delivery times, and adapting to evolving consumer demand within retail logistics.

Texas is a crucial hub for the AV industry, supporting varied applications in Robotaxis, Long-haul trucking, and Middle-mile trucking. Companies like Waymo, Zoox, Cruise, Volkswagen, Aurora, Kodiak, Waabi, Torc, Stack AV, and Gatik have established operations in Texas, leveraging the state's supportive regulatory environment, expansive highways, and strategic location for trade and logistics. Each segment—urban robotaxis, interstate freight trucking, and middle-mile logistics—presents unique challenges and opportunities that Texas's diverse infrastructure allows AV companies to address.

Through ongoing testing and refinement, these companies are advancing the state's AV ecosystem, setting a foundation for safer, more efficient, and sustainable transportation solutions that could soon offer benefits for congestion.

The committee heard testimony from Susanna Gallun, an attorney and researcher with the Center for Transportation Research at UT Austin. Her research offers recommendations that the committee should consider when developing a state regulatory system for AVs.

Regulatory elements for consideration:

Establish an AV Permitting and Registration Framework
Texas should implement a state-level permitting and registration process specifically for AVs. This framework would allow the state to monitor AV deployment closely, ensuring that only safe, well-vetted AVs operate on public roads. Developing an AV Permitting and Registration framework would enable Texas to identify and remove unsafe AVs from the road while promoting innovation and regulatory certainty.

Require Collection of Granular Operational Data
Current federal regulations provide broad AV safety data but lack detailed operational metrics that are crucial for state-level oversight. Texas could mandate the collection of specific data on miles driven, road geometry, location-based incident data, and traffic conditions. This would provide local first responders and the Department of Transportation (TxDOT) with actionable insights into AV operations, potentially aiding in rapid response to incidents and long-term policy adjustments.

Enhance First Responder Training and Incident Management
Since Texas law preempts local regulation of AVs, statewide training programs for first responders should be developed to manage AV-specific incidents effectively. Such training would cover AV traffic violations, crash response, and incident assessment. Regular

communication channels between AV companies, law enforcement, and first responders would further support the efficient handling of AV-related incidents, minimizing congestion impacts.

Strengthen Public Education on AV Technology and Safety
Public understanding of the differences between Advanced Driver-Assistance Systems (ADAS) and Automated Driving Systems (ADS) remains limited, often causing confusion about AV capabilities. Texas could lead public awareness campaigns to clarify AV functionalities and limitations, reducing misconceptions. This approach aligns with strategies used in other states like California, which has enacted laws against misleading AV marketing.

Mandate Safety Self-Assessments and Transparency from AV Manufacturers
Texas could require AV companies to submit Voluntary Safety Self-Assessments (VSSAs) to the state as a condition for road operation. This process would promote transparency regarding safety standards, testing practices, and software reliability. Additionally, mandating regular updates on critical safety developments, software upgrades, and post-collision assessments could enhance public trust and state oversight.

Leverage Industry Expertise for Continuous AV Safety Improvements
Texas should engage in partnerships with AV stakeholders, including manufacturers, tech developers, and federal agencies like the National Highway Traffic Safety Administration (NHTSA). These collaborations could focus on standardizing AV safety protocols and addressing gaps in regulatory authority, particularly concerning AV software defects. Working groups could continuously assess safety and congestion impacts, recommending proactive regulatory updates.

Pilot Programs to Address Congestion and Improve AV Technology
Implementing state-funded pilot programs would allow Texas to test AVs' real-world impacts on congestion and safety in controlled settings. By focusing on specific high-traffic areas, Texas could evaluate AV effectiveness in reducing congestion, supporting data-driven adjustments to AV policies, and fostering insights on integrating AVs into the broader transportation system.

Through careful oversight, Texas can foster AV innovation while protecting public safety and optimizing roadway efficiency.

The committee also heard from Darran Anderson, Chair of TxDOT's CAV Task Force, about connected infrastructure and the potential benefit of reduced congestion.

The **Texas Connected and Autonomous Vehicles (CAV) Task Force White Paper**[12] from August 2023 outlines the challenges, opportunities, and framework needed for data exchanges to support the burgeoning field of autonomous and connected vehicle technology in Texas. This document, developed by the Data, Connectivity, Cybersecurity, and Privacy Subcommittee of the Texas CAV Task Force, highlights the crucial role of data exchanges in managing, sharing, and protecting the enormous amounts of data generated by CAVs, as well as in fostering collaboration

across public and private sectors.

With the rise of autonomous vehicles and connected technology, data has become a critical asset in transportation, helping to improve everything from vehicle safety to infrastructure management. The white paper[13] emphasizes the importance of data exchanges—digital platforms or systems that facilitate the secure sharing of data between organizations, whether public or private. Texas is a national leader in AV adoption and testing, and these exchanges are essential for continuing this momentum.

As CAV technology advances, so does the volume of data generated. This data includes real-time information on vehicle behavior, road conditions, driver activities, infrastructure elements, and environmental factors. Managing this data effectively requires standards, policies, and systems that ensure secure, efficient sharing while respecting privacy and operational needs. The Texas CAV Task Force aims to establish a framework that enables the state to use data exchanges to improve traffic safety, optimize infrastructure, and support AV companies' ongoing innovation efforts.[14]

Types of Data Exchanges and Functionality
Types of data exchanges relevant to CAV operations, each serving different purposes:

1. **Peer-to-Peer Data Exchange**: Allows direct data sharing between two entities within the same organization or across different organizations.
2. **Private Data Exchange**: Used within specific consortia, such as insurance companies sharing data with regulators.
3. **Public Data Marketplace**: An open platform where companies or individuals can access data sets from various sources.
4. **Public/Cooperative Data Exchange**: A collaborative data exchange, often supported by public agencies, that enables broad access to data for mutual benefit, like the Federal Highway Administration's Work Zone Data Exchange (WZDx).
5. **Public-Private Partnership Data Exchange**: A hybrid model where government and private companies partner to securely share data for public safety, infrastructure management, or other purposes.

Each of these data exchanges offers baseline functions such as searchable catalogs, access control, data transfer capabilities, transaction management, and account management. The paper underscores that successful data exchanges will require these features, along with additional functionalities like data enrichment, selective sharing, and enhanced onboarding, to meet the complex needs of CAVs in real-world applications.

Governance, Security, and Privacy in Data Exchanges

Data governance is a key component of any data exchange platform, ensuring that data rights, responsibilities, and decision-making processes are well-defined. The white paper outlines roles crucial to effective governance, including a steering committee, data owners, and data stewards, each responsible for guiding data policy, managing data quality, and ensuring compliance with privacy standards.

Privacy and security are also paramount concerns. With large volumes of sensitive data exchanged daily, including potentially identifiable vehicle journey information, Texas's data exchange framework must protect personal and operational data from misuse. The white paper calls for stringent privacy protocols, including anonymization techniques, access restrictions, and data encryption, to prevent unauthorized access to sensitive information. By adhering to established privacy guidelines and involving legal and technical experts, Texas can minimize risks while promoting transparency in data handling.

Additionally, **data quality and trust** are essential. Data exchanges must ensure that the data they provide is accurate, consistent, and high-quality to maintain the trust of both data providers and users. To support this, the white paper recommends practices like data curation, profiling, sampling, and a consumer feedback system that rates data quality, much like e-commerce product reviews. These practices can help build a reliable, widely trusted data exchange system that all stakeholders feel confident in using.

To ensure the proposed data exchange meets industry needs, the Texas CAV Task Force conducted interviews with leading companies in the CAV field. Key takeaways include:

- **Data Needs and Sharing Preferences**: Companies identified high-value data types, including real-time traffic information, work zone data, and vehicle performance metrics. For example, Panasonic emphasized that the ability to integrate multiple data sets is crucial for intelligent mobility solutions, while other companies highlighted the importance of consistent, reliable work zone data for safe, autonomous convoy operations.
- **Privacy and Security Concerns**: Privacy concerns were particularly strong, with companies stressing the need for mechanisms to protect proprietary information. Locomation, for instance, noted that while non-sensitive data could be shared easily, data identifying specific vehicles or routes would require careful protection.
- **Data Standards**: Adhering to standardized data formats is necessary to avoid compatibility issues and ensure that all stakeholders can interpret data accurately. Both Panasonic and Locomation expressed interest in working with standards, although they acknowledged challenges in implementing consistent standards across different systems and devices.

Case Studies and Existing Data Exchange Models

The white paper[15] examines existing data exchange models, including the **Work Zone Data Exchange (WZDx)** and the **Florida Department of Transportation (FDOT) Data Exchange**:

- **Work Zone Data Exchange**: Led by the Federal Highway Administration, WZDx aims to provide standardized work zone data accessible to all stakeholders, enabling safer and more efficient travel. Texas, through TxDOT and other jurisdictions, is actively using WZDx to enhance data sharing in work zones, benefiting both human drivers and autonomous systems.
- **Florida DOT Data Exchange**: FDOT's project represents a large-scale V2X (vehicle-to-everything) data exchange that standardizes data across CAVs and infrastructure networks. Through partnerships with private-sector entities and academic institutions, FDOT gathers data from thousands of devices and transforms it into a comprehensive, enriched data stream for real-time and historical analysis. This model highlights the potential for CAV

data exchanges to unify disparate data sources, enabling better safety management and infrastructure planning.

These case studies illustrate the importance of clear data standards, collaborative efforts, and public-private partnerships in developing successful data exchanges.

The Texas CAV Task Force identifies several opportunities for enhancing CAV data exchanges in Texas:

1. **Comprehensive Data Exchange Inventory**: Texas should document available data exchanges that support CAVs, focusing on use cases that enhance both autonomous and human-driven vehicle safety.
2. **Identify High-Priority Use Cases**: Working with both public and private stakeholders, Texas should identify use cases that would most benefit from a data exchange. For example, work zone data, traffic updates, and road condition data are immediate priorities for many CAV applications.
3. **Action Plans for Data Exchange Development**: Texas could develop tailored action plans for implementing data exchanges for each high-priority use case, addressing technical, operational, and regulatory considerations.
4. **Identify Potential Collaboration Challenges**: Given the potential for data-sharing conflicts, Texas should anticipate possible challenges in public-private collaborations, such as data ownership issues and privacy concerns, and develop solutions to mitigate these challenges.
5. **Statewide Push for Work Zone Data Sharing**: Expanding WZDx reporting statewide would enhance safety by providing critical information to CAV systems and human drivers alike, reducing accident risks in work zones.
6. **Procurement of Third-Party Data**: By incorporating third-party data into state-run data exchanges, Texas can enhance data quality and promote standardized data-sharing practices across public and private stakeholders.

Texas’s focus on developing a robust data exchange framework will support its leadership in the CAV industry. As the white paper outlines, secure, efficient data exchanges are essential for managing the exponential growth in CAV-generated data and for ensuring the safe and successful integration of autonomous vehicles across Texas's transportation infrastructure. With the right governance, privacy safeguards, and public-private partnerships, Texas is well-positioned to leverage CAV data to improve infrastructure, enhance safety, and foster innovation in autonomous vehicle technology.

Freight Rail Expansion

Union Pacific Railroad and the **Texas Railroad Association** presented written testimony to the Texas House Transportation Committee to highlight the critical role of rail infrastructure in addressing Texas's transportation challenges. Railroads play a key role, and rail networks are important in alleviating road congestion, supporting economic growth, and providing an environmentally friendly alternative to road-based freight. These testimonies call for a multimodal transportation approach, focusing on rail investments and infrastructure improvements, particularly in urban areas with significant traffic delays and pollution concerns.

Union Pacific Railroad, represented by Senior Director of Public Affairs Raquel Espinoza, emphasized the company's commitment to Texas's economic development through extensive rail infrastructure investments. Serving 23 states across the western U.S., Union Pacific has a strong presence in Texas, with a network of 6,000 track miles connecting Texas's industries to national and international markets. From 2019 to 2023, Union Pacific invested over $3.6 billion in Texas, aiming to enhance rail capacity and operational efficiency through infrastructure upgrades.

Englewood Rail Yard in Houston: As the largest rail switching facility in Texas, Englewood Yard is central to Union Pacific's operations and connects the Ports of Beaumont, Brownsville, Corpus Christi, Freeport, Houston, and Victoria. However, the rail yard's operations impact local communities, particularly Houston's East End and Fifth Ward, where rail crossings often cause traffic delays and limit mobility for residents and local businesses.

Congestion Relief through Grade Separations

Union Pacific advocates for state support in creating overpasses and underpasses (grade separations) to reduce traffic congestion in areas affected by rail crossings, especially near Englewood Yard. Such projects would benefit not only Union Pacific's operations but also improve safety, mobility, and air quality for surrounding communities. Union Pacific notes that other major rail-served cities, like Chicago, have effectively addressed similar issues by increasing grade separations, which reduce community impacts and improve urban connectivity.

Union Pacific voiced its support for the Texas Department of Transportation's (TxDOT) 2024-2025 Texas Port Mission Plan, which includes $550 million in funding for public safety improvements and grade separation projects in key port-connected cities. Union Pacific encourages the state to consider additional funding to expedite these projects in the East End and Fifth Ward to support local economic growth and reduce environmental impacts from stalled traffic.

The Texas Railroad Association (TRA), represented by Lindsay Mullins, emphasized the potential of rail networks to relieve Texas's growing transportation pressures through a multimodal approach. Texas's rapid population growth and increasing freight demands have stressed the state's highway infrastructure, causing congestion, increased emissions, and higher costs for roadway maintenance. TRA advocates for integrating rail as a core element of Texas's transportation strategy to manage these pressures effectively.

Texas's population grew nearly 40% over the past 20 years, leading to a corresponding increase in vehicle miles traveled and economic activity. Freight demand has risen sharply, driven by Texas's position as the nation's top export state, with heavy traffic along routes like Interstate 35 connecting Texas, Mexico, and Canada. The state's highways and ports are essential for freight but are increasingly congested.

1. **Efficiency and Environmental Benefits of Rail**: Rail transport is significantly more fuel-

efficient and environmentally friendly than road transport. Freight trains can move a ton of cargo over 500 miles on a single gallon of fuel, and a single freight train can replace 280 trucks on the road. This reduction in road freight alleviates highway congestion, reduces wear and tear on infrastructure, and contributes to a significant decrease in greenhouse gas emissions and other pollutants.

Unlike highway infrastructure, railroads are largely privately funded, with Texas railroads investing approximately $1 billion in capital improvements in 2023 alone. This private funding model reduces the strain on public resources and allows railroads to continually modernize and expand their networks. TRA emphasizes that supporting rail policies aligns with fiscal efficiency by lessening the need for taxpayer-funded highway expansion and maintenance.

To maximize rail's role in a multimodal transportation system, TRA suggests policies that promote targeted investments in rail infrastructure, such as grade separations at key intersections. Additionally, TRA advises against policies that could limit rail capacity or discourage investment, advocating instead for a state approach that leverages rail to address congestion and environmental concerns. With rail's efficient freight capabilities and its role in reducing highway burdens, TRA posits that enhanced rail infrastructure can serve Texas's long-term economic and environmental goals. TRA's testimony underscores rail's strategic advantages in managing Texas's transportation needs while reducing the environmental impact of increased freight. By investing in rail infrastructure and promoting rail-friendly policies, the state can enhance its multimodal transportation network, lessen the need for extensive road expansions, and mitigate congestion-related issues. Supporting rail not only bolsters the state's economy but also improves sustainability and reduces public expenditure on highway upkeep.

The testimonies from Union Pacific and the Texas Railroad Association converge on several key points, advocating for a **multimodal transportation system** where rail plays a central role in alleviating Texas's congestion and environmental challenges. Both parties emphasize the need for grade separation projects in urban areas, highlighting the benefits of reducing traffic disruptions, improving safety, and enhancing community quality of life.

1. **Expand Grade Separations**: Prioritize state funding for grade separation projects in high-impact urban areas, such as Houston's East End and Fifth Ward. These projects will allow railroads to operate efficiently while minimizing negative impacts on nearby communities.
2. **Multimodal Transportation Approach**: Encourage a multimodal transportation strategy where rail complements road infrastructure. This approach reduces the strain on highways, minimizes pollution, and supports Texas's economic growth by facilitating efficient freight movement across the state.
3. **Environmental and Economic Benefits**: Emphasize the environmental and fiscal benefits of rail. By shifting more freight to rail, Texas can reduce greenhouse gas emissions, lower public maintenance costs, and support private investment in infrastructure, aligning with the state's sustainability and budgetary goals.
4. **Rail Infrastructure Funding and Supportive Policies**: Maintain policies that support private rail investment while opposing measures that restrict rail capacity or competitiveness. Public support for infrastructure like grade separations and multimodal

projects enhances rail's effectiveness in the broader transportation ecosystem.

5. **Address Community Impact in Urban Rail-Served Areas**: Focus on minimizing the community impact of rail operations in urban areas by implementing infrastructure improvements that reduce crossing delays and improve local mobility. Engaging with local communities will be essential for aligning transportation goals with quality-of-life concerns.

Conclusion

These testimonies reveal how Texas can leverage its rail network to manage the growing pressures on its transportation infrastructure. With sustained investment in rail infrastructure, grade separations, and supportive policies, Texas can create a multimodal system that balances the needs of its economy, environment, and residents. Integrating rail more deeply into Texas's transportation strategy will be instrumental as the state navigates projected population and freight growth in the coming decades.

Advanced Air Mobility

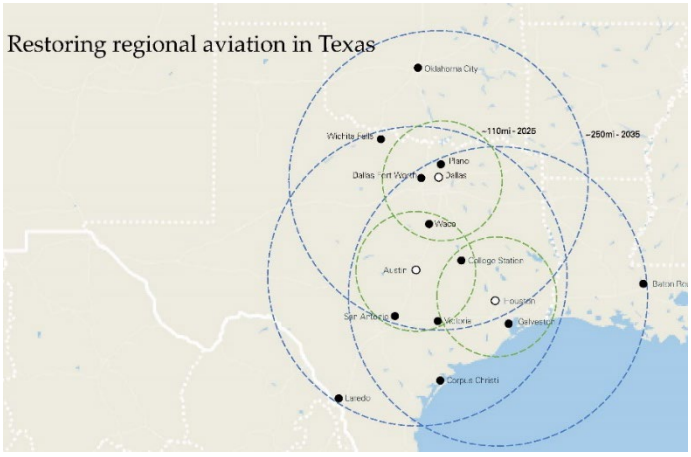
The **Federal Aviation Administration (FAA)** announced a groundbreaking new rule on October 22, 2024, establishing certification, qualification, and operational guidelines for a new category of aircraft called "powered-lift" vehicles.[16] These aircraft combine features of helicopters and airplanes, allowing them to take off and land vertically while cruising like airplanes. This new rule is pivotal as powered-lift aircraft are set to play a central role in **Advanced Air Mobility (AAM)**, encompassing operations such as urban air taxis, cargo deliveries, and other short-haul transportation needs in both urban and rural settings.[17]

Key Aspects of the new FAA Rule:

1. **Pilot and Instructor Training**: The rule defines the qualifications and training standards for instructors and pilots operating powered-lift vehicles, addressing areas like flight safety, minimum altitude, and required visibility. The rule adopts certain existing helicopter operation requirements for powered-lift aircraft while introducing flexibility in other areas, such as allowing training with a single set of flight controls.

2. **Operational Standards**: Establishing operational protocols for powered-lift aircraft, including performance-based rules for specific phases of flight, the rule enables these aircraft to safely integrate into the U.S. airspace.

Implications for Texas



1. **Infrastructure Development**: The rise of powered-lift aircraft will likely require new infrastructure, such as vertiports or landing zones within cities, which state governments may oversee. These facilities will necessitate land use planning, zoning adjustments, and possibly public funding.
2. **Public Safety and Emergency Response**: States may need to update emergency response protocols to handle incidents involving powered-lift aircraft. These updates will require collaboration with local law enforcement, fire departments, and emergency medical services.
3. **Economic and Community Impact**: States will see economic benefits from the new jobs and technological developments associated with the powered-lift sector, particularly in communities where these vehicles may operate for cargo and passenger transport. States may also have to address public concerns regarding noise, privacy, and airspace congestion.

This rule from the FAA marks a significant step towards a future where advanced air mobility could reshape urban transportation, emergency response, and short-haul travel, positioning states to actively engage in this next phase of air mobility innovation.

The committee heard from the Chairman of TxDOT's Advanced Air Mobility Advisory Committee, Dan Dalton, who outlined the state's progress and future steps in Advanced Air Mobility (AAM). AAM aims to integrate electric vertical takeoff and landing (eVTOL) aircraft, as well as autonomous aerial vehicles, into Texas's transportation system to reduce congestion, improve regional connectivity, and support economic growth. With Texas facing high congestion rates on major highways and increasing demand for innovative transportation solutions, AAM presents a viable approach to alleviate strain on existing infrastructure while meeting environmental goals.

Potential Impact of AAM in Texas

1. **Alleviating Congestion**: AAM technology, including eVTOLs, provides an additional mode of travel that can help relieve pressure on Texas's most congested roads. By enabling fast, on-demand air transport for short and regional distances, AAM could decrease urban traffic by a significant margin, helping Texas address one of its most pressing

transportation issues.

2. **Economic Growth and Job Creation**: AAM has the potential to drive significant economic activity in Texas by creating new jobs in aviation, engineering, manufacturing, and infrastructure development. Additionally, constructing vertiports and related facilities to support AAM operations would stimulate the construction and technology sectors, benefiting Texas's economy as a whole.

3. **Safety and Environmental Benefits**: AAM introduces new safety features that reduce human error, a primary cause of traffic accidents. Additionally, the electric power source of eVTOLs aligns with Texas's sustainability objectives, reducing emissions compared to traditional vehicles and contributing to cleaner air, particularly in densely populated urban areas.

To capitalize on AAM's potential, Texas should consider the following:

1. **Infrastructure Development**: Investment in vertiports, communication networks, and digital infrastructure is essential to scale AAM. State support in building these facilities can enable safe, efficient operations and encourage private-sector partnerships to minimize public costs.

2. **Safety Regulations and Standards**: Establishing clear safety regulations and integrating AAM into Texas's broader transportation system are critical. By doing so, Texas can ensure public trust in AAM technology and facilitate smooth integration into the airspace.

3. **Public-Private Collaboration**: Working with the private sector and research institutions will help Texas develop AAM-ready infrastructure, support testing, and foster innovation. Collaborative efforts can ensure that Texas stays at the forefront of AAM technology and implementation.

4. **Public Awareness and Acceptance**: Public education on AAM's benefits will be essential for widespread adoption. Informing Texans about the economic, environmental, and safety advantages can build community support and encourage acceptance of this new technology.

Texas is well-positioned to lead the nation in AAM by adopting a forward-thinking approach that includes robust infrastructure, safety standards, and public-private partnerships. By supporting AAM, Texas can create a sustainable, efficient, and innovative transportation system that meets the needs of its growing population while promoting economic and environmental benefits for all Texans.

Economic Impact of Congestion

Congestion increases transportation costs. Increases in transportation costs ripple through all industries, affecting not only the cost of goods from all economic sectors but also markets that may remain open for the goods.[18]

According to TxDOT, "If no improvements are made (to border crossings' infrastructure), border delays will result in an economic productivity loss of $4.4 billion in 2050, reducing GDP by $116 billion in both countries. This represents a GDP loss of more than $293,000 every minute."

According to written testimony submitted to the committee by the Texas Association of Business, addressing these delays is critical to maintaining the state's competitive position as a global trade hub and further enhancing our state's role as a nearshoring destination.

The committee learned from Adriana Cruz, Director of the Governor's Economic Development and Tourism Division, that Texas is the **#1 exporting state** in the country and has been the leading state in the nation for foreign direct investment over the last two decades.

In 2023, Texas topped U.S. exports for the **22nd year** in a row with nearly **$450 billion** in total exports. Thanks to trading and investment partners like Mexico, Texas upholds its reputation as a leader in the global economy.

Texas/Mexico Trade

In 2023, trade between Texas and Mexico totaled **$272.3 billion**, ranking Mexico as Texas' #1 trading partner. In fact, Mexico has been Texas' #1 trading partner for the past **16 years**.

In 2023, Texas-Mexico goods trade represented **34.1%** of the total value of U.S.-Mexico goods trade at **$272.3 billion** (i.e., $129.6 billion in exports and $142.7 billion in imports), which is almost four times more than what Texas traded with Canada, the state's second-largest trading partner (*Source: U.S. Census Bureau, Economic Indicators Division*). The economic impact of the Texas-Mexico border extends across the entire U.S. and Mexico, Texas, the Mexican border states, and the Texas-Mexico border region.

In 2019, the combined movement of people and goods generated **7.4 million jobs** on both sides of the border (1.9 million jobs in the U.S. and 5.5 million jobs in Mexico). These jobs support national, state, and regional economies in Texas, across the U.S. and in Mexico.[19] Shared industries between Mexico and Texas include food products, infrastructure, manufacturing and metals.

Mexico was Texas' #1 export destination in 2023 with **$129.6 billion** in exports.
Mexico was Texas' #1 import source country in 2023 with **$142.7 billion** in imports.

Mexico is the largest international inbound market for tourism to Texas and second largest for the United States. In 2023, an estimated 4.2 million Mexican residents visited Texas on an overnight trip. These visitors spent $3 billion at Texas destinations. The majority arrived by land (85%) or flew (15%). Roughly half (48%) were traveling for a vacation/holiday.[20]

Texas' Top Trading Partners:

NATION	TOTAL TRADE ($)	TOTAL TRADE RANK	TOTAL IMPORTS ($)	TOTAL IMPORTS RANK	TOTAL EXPORTS ($)	TOTAL EXPORTS RANK
Mexico	**$272,331,691,639**	**1**	**$142,733,396,590**	**1**	**$129,598,295,049**	**1**
Canada	$73,034,619,910	2	$36,962,230,200	2	$36,072,389,710	2
China	$59,414,867,666	3	$32,706,701,932	3	$26,708,165,734	3
South Korea	$32,010,518,018	4	$10,707,580,681	7	$21,302,937,337	5
Japan	$31,162,747,670	5	$18,046,034,975	4	$13,116,712,695	7
Netherlands	$28,048,364,389	6	$2,058,534,984	23	$25,989,829,405	4
Taiwan	$21,336,561,357	7	$9,610,142,838	8	$11,726,418,519	9
United Kingdom	$19,198,907,262	8	$5,699,754,213	13	$13,499,153,049	6
Germany	$18,826,273,082	9	$10,817,260,120	6	$8,009,012,962	14
Vietnam	$18,037,067,661	10	$16,375,586,621	5	$1,661,481,040	39

Texas Ports of Entry

Texas' international points of entry with Mexico **help feed the entire state**, bringing in food products, animal products, and product, and these points of entry **help provide our businesses and communities** with the critical supplies and raw materials they need to operate—including electrical machinery, transportation equipment, metals, plastics, rubbers, chemicals and more.

Approximately **76.9%** (nearly 77%) of U.S.-Mexico **commercial motor vehicle (CMV) and rail trade** (in terms of value) were processed at a Texas border crossing in 2022 (i.e., $481.2 billion of the $625.5 billion in U.S.-Mexico CMV and rail trade).[21]

The percentage of the total U.S.-Mexico trade that the Texas-Mexico border supports ranges from **59% for vegetable** products to **89% for chemicals.**[22] In 2022, almost **75 cents** of every $1 of U.S.-Mexico trade moved by **CMV** crossed at a Texas border crossing. Furthermore, **69.6%** (nearly 70%) **of CMVs** and **88.4% of trains** crossing into the U.S. from Mexico crossed into Texas in 2022.

The value of goods moved by CMV across the Texas-Mexico border will surpass **$1.2 trillion by 2050.**[23]

The economic impact of goods moving by rail across the Texas-Mexico border is forecast to grow to **$140 billion in 2050**[24] in total impact across the U.S. and Mexico.

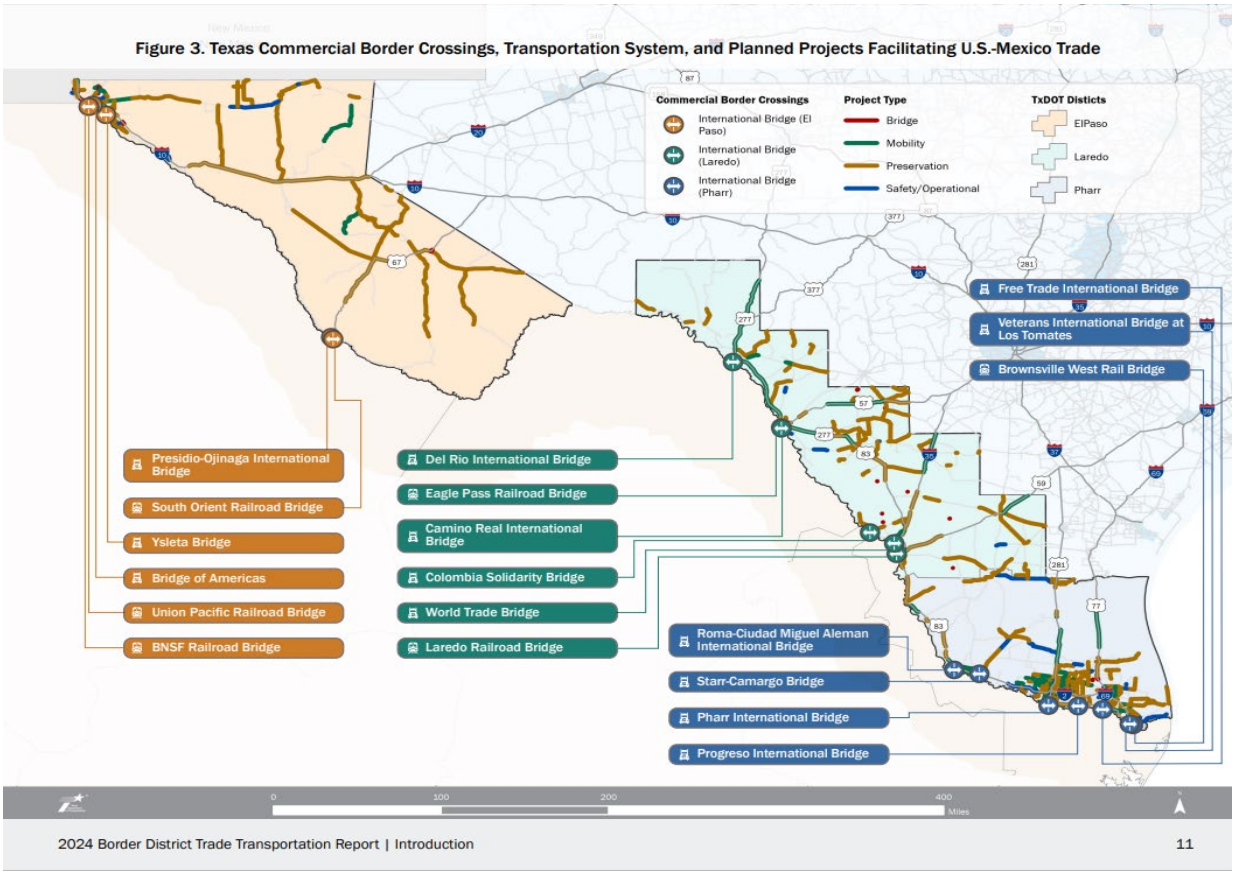
Texas is home to the **#1 port** in the nation at Port Laredo, which sits along the Texas-Mexico border and passes through **$320 billion** in total trade.

There are **28 border crossings** along the Texas-Mexico border, and **13 of them process commercial motor vehicles (CMVs)**—each is essential to the movement of people and goods between our two markets.[25]

There are **five** operating rail crossings along the Texas-Mexico border: Brownsville, Laredo, Eagle Pass, and two in El Paso.[26] These exchanges have effects that ripple through the economies of our entire state and all of our communities. The movement of people and goods also encourages tourism and economic development with the investment of Mexican firms as they grow and expand into Texas. The ratification of the USMCA helps facilitate trade growth by removing uncertainty and encouraging investment in trade-related infrastructure borderwide.[27]

TEXAS' PORTS OF ENTRY

Texas has 32 official ports of entry that serve as critical gateways to global trade. Each port, whether an airport, land port or seaport, serves many domestic and international economic activities across multiple industries. The Lone Star State is home to the #1 port in the U.S. for waterborne foreign trade—the Port of Houston—and the #1 international trade port in the U.S.—the Port of Laredo. Each port of entry plays a distinctive role in the state's robust transportation network and contributes to the state and local economies.



Note: the following districts are defined by the Texas Department of Transportation's 2024 Border District Trade Transportation Report.

Laredo District

Laredo District has three Ports of Entry (POE) facilitating trade: Del Rio, Eagle Pass, and Laredo.[28] In 2022, the three POEs processed **$331.0 billion** in U.S.-Mexico goods trade—of which 39% ($129.0 billion) was exported.[29]

The Del Rio POE comprises the Del Rio International Bridge.[30] The Eagle Pass POE includes the Camino Real International Bridge and the Eagle Pass Railroad Bridge.[31] The Laredo POE consists of the Colombia Solidarity Bridge, the World Trade Bridge, the Laredo Railroad Bridge, and the Laredo International Airport.[32]

The border crossings facilitating trade are in Val Verde, Maverick, and Webb Counties. Val Verde County has one border crossing, Maverick County has two border crossings, and Webb County has three border crossings.[33]

The World Trade Bridge in Laredo exclusively handles CMVs and **is the largest border crossing** (in terms of the value of U.S., Mexico, and Canada trade handled) in North America.[34]
Port Laredo includes two international commercial crossings, a railroad crossing, and an airport.[35]

- Top commodities processed in the Laredo district[36] can be divided by region:
    - Laredo: electrical machinery, transportation equipment, metals, plastics or rubbers, chemicals and allied industries
    - Eagle Pass: transportation equipment, food and other consumables, metals, electrical machinery, vegetable products
    - Del Rio: electrical machinery, transportation equipment, misc. Products, plastics or rubbers, metals

Pharr District

Pharr District is home to five Ports of Entry (POEs) that facilitate trade: Roma, Rio Grande City, Hidalgo, Progreso, and Brownsville.[37] In 2022, the five POEs processed $68.2 billion in U.S.-Mexico goods trade—of which 44.3% ($30.2 billion) was exported.[38]

The Roma POE includes the Roma-Ciudad Miguel Aleman International Bridge.[39] Rio Grande City POE includes Starr-Camargo Bridge.[40] The Hidalgo POE consists of the Anzalduas International Bridge and the Pharr International Bridge. The Progreso POE includes the Progreso International Bridge. Finally, the Brownsville POE includes the Veterans International Bridge at Los Tomates, the Free Trade International Bridge, and the Brownsville West Rail Bridge.[41]

The border crossings that facilitate trade are in Starr, Hidalgo, and Cameron Counties. Starr County has two border crossings, Hidalgo County has three border crossings, and Cameron County has three border crossings.[42]

The Pharr International Bridge is the #1 location for produce imports from south of the border, and this year, the bridge will mark 30 years of facilitating trade between the two countries.[43] The Pharr International Bridge facilitates the import of over 65% of the nation's fresh produce, which includes over $6 billion in produce trade. And $47 billion in overall annual trade.[44] Over 200,000 shipments of fresh produce come through the bridge annually.[45]

Pharr is the third-ranked port for overall trade with Mexico and the seventh-largest and fastest-growing land port of entry.[46]

Top commodities processed in Pharr district:[47]

- Hidalgo: electrical machinery, mineral products, vegetable products, misc. Products, transportation equipment
- Brownsville: electrical machinery, mineral products, metals, transportation equipment, plastics or rubbers
- Progresso: vegetable products, food and other consumables, electrical machinery, mineral products, chemicals and allied industries
- Rio Grande City: metals, vegetable products, stone or glass, electrical machinery, wood and wood products
- Roma: vegetable products, food and other consumables, electrical machinery, metals, transportation equipment

El Paso District

El Paso District is home to three Ports of Entry (POEs): El Paso, Ysleta, and Presidio.[48] In 2022, the three POEs processed $99.2 billion in U.S.-Mexico goods trade—of which 43.9% ($43.5 billion) was exported.[49]

The El Paso POE includes the Bridge of the Americas (BOTA), BNSF Railroad Bridge, Union Pacific Railroad Bridge (also known as the Black Bridge), and the El Paso International Airport that support trade.[50] CBP separated the Ysleta POE from the El Paso POE in March 2020. The Ysleta POE comprises the Ysleta Bridge. The Presidio POE includes the Presidio Bridge and the South Orient Railroad Bridge.

The border crossings that facilitate trade are in El Paso and Presidio Counties. El Paso County has four border crossings, and Presidio County has two border crossings.[51]

Top commodities processed in El Paso district:[52]

- El Paso: electrical machinery, mineral products, transportation equipment, vegetable products, metals
- Ysleta: electrical machinery, misc. Products, transportation equipment, metals, plastics, or rubbers
- Presidio: electrical machinery, animal and animal products, metals, transportation equipment, misc. Products

Texas 2050 Long Range Transportation Plan

The Texas 2050 Long Range Transportation Plan (LRTP), titled "Connecting Texas 2050," is a comprehensive strategic framework developed by the Texas Department of Transportation (TxDOT). This plan addresses the anticipated transportation needs across Texas over the next three decades. The primary objective is to create an innovative, safe, and efficient multimodal system that supports economic growth, addresses demographic shifts, and accommodates technological advancements. Envisioning a population increase to 40 million by 2050, the plan allocates considerable investments towards enhancing road safety, preserving infrastructure, reducing congestion, and expanding rural and urban connectivity.

At the core of the Texas 2050 LRTP is a vision for a multimodal transportation system that integrates roads, public transit, and technology to move people and freight safely.

The plan focuses on several essential goals:

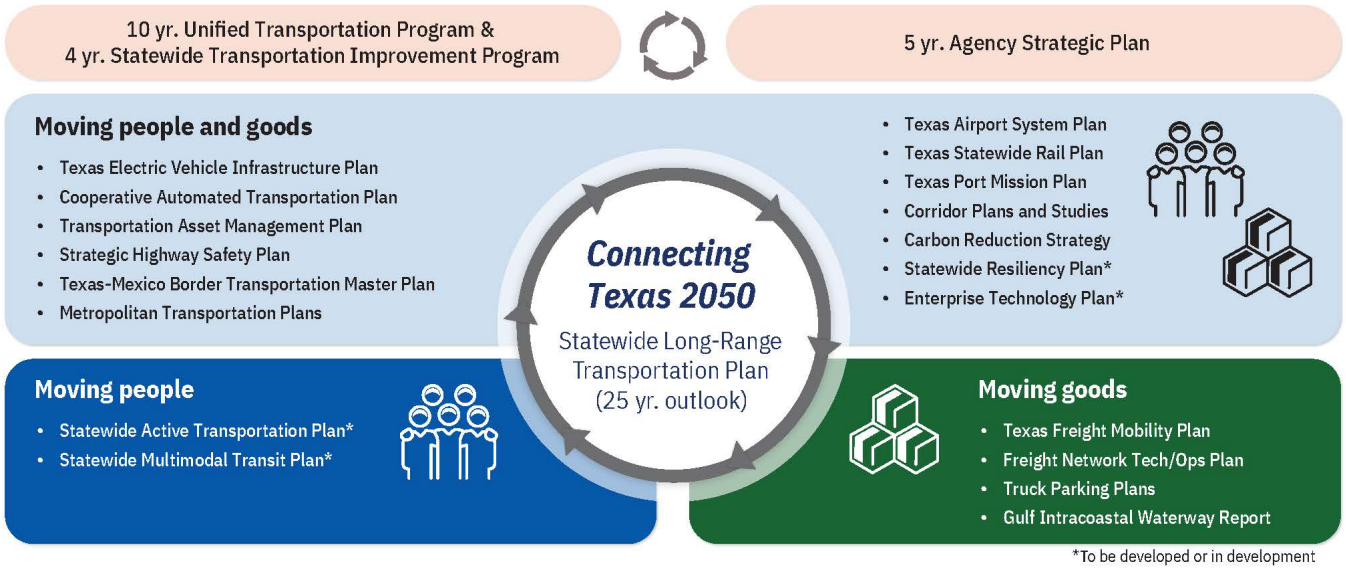
1. **Safety**: Reducing the increasing rate of fatal and severe injury crashes on Texas roads.

2. **Asset Preservation**: Ensuring that the existing transportation infrastructure is maintained, enhanced, and ready to support future traffic demands.

3. **Economic Competitiveness**: Supporting Texas's economic growth by facilitating efficient freight and commuter movement.

4. **Sustainability and Technology**: Leveraging cooperative and automated technologies, including Connected and Automated Transportation (CAT), to modernize Texas's infrastructure.

5. **Equitable Access**: Expanding transportation options across rural and urban areas, promoting accessibility and enhancing residents' quality of life.



The **Texas 2050 LRTP** identifies several challenges that impact the effectiveness and sustainability of the transportation system, including:

1. **Growing Fatality Rates**: The plan emphasizes an alarming rise in road fatalities, which increased by 6% in 2023. Safety improvements are, therefore, a significant focus, particularly for high-risk segments of the transportation network.

2. **Infrastructure Overextension**: Texas possesses one of the largest transportation infrastructures in the U.S., with 50% more roadway lane miles than California. This extensive network demands continuous investment for maintenance and preservation.

3. **Increased Vehicle Miles Traveled (VMT)**: The Texas 2050 LRTP projects a 42% increase in VMT by 2050, leading to more significant congestion, wear on infrastructure, and environmental concerns. Addressing this growth will require both roadway expansion and enhanced multimodal options.

4. **Population and Economic Growth**: Texas's population is expected to reach 40 million by 2050, concentrated in urban areas. This growth, coupled with a projected doubling of

employment in metropolitan regions, creates heightened demand for efficient and resilient transportation systems.

Opportunities for Innovation and Growth

To tackle these challenges, the Texas 2050 LRTP outlines several opportunities, mainly focusing on **technological integration** and **multimodal expansion**.

1. **Advanced Technology Integration**: TxDOT aims to incorporate Cooperative and Automated Transportation (CAT) systems into the state's infrastructure. CAT technologies, which enable real-time traffic management, automated vehicle guidance, and enhanced safety features, are expected to transform traffic flow and reduce congestion.

2. **Enhanced Multimodal Funding**: Recognizing the need for diversified transportation options, the plan promotes the development of public transit, bicycle, pedestrian infrastructure, and rail networks. It seeks to optimize funding for multiple transportation modes to reduce reliance on single-occupancy vehicles.

3. **Economic and Workforce Development**: Transportation improvements are anticipated to bolster Texas's economic competitiveness by reducing travel delays and enhancing the efficiency of freight and commerce networks.

Financial Requirements and Investment Strategy

The Texas 2050 LRTP projects a total investment of **$645–$710 billion** (in 2023 USD) to meet its targets for 2050. Key areas of investment include:

- **Safety Enhancements**: Allocating $65–$70 billion to reduce fatalities and severe injuries on Texas roads.
- **Pavement and Bridge Preservation**: Ensuring durable infrastructure with $75–$80 billion for pavement preservation and $45–$50 billion for bridges.
- **Congestion Reduction**: Given the significant increase in traffic volume, particularly in urban areas, the plan allocates $185–$205 billion to alleviate congestion.
- **Rural Connectivity**: Dedicated funds of $85–$95 billion aim to improve accessibility and connectivity in less urbanized regions.

The Texas 2050 LRTP emphasizes collaboration, technological adaptation, and stakeholder engagement as core strategies for successful implementation.

1. **Collaboration with Planning Organizations**: By strengthening partnerships with Metropolitan Planning Organizations (MPOs) and Regional Planning Organizations (RPOs), TxDOT aims to enhance the cohesion and coordination of transportation planning across Texas. Localized insights from these organizations will guide decision-making at both the state and regional levels.

2. **Stakeholder and Public Involvement**: Maximizing stakeholder engagement is essential

for aligning transportation initiatives with community needs. TxDOT will leverage public feedback to prioritize projects, allocate resources effectively, and shape policies.

3. **Data-Driven Planning and Performance Monitoring**: To adapt to future needs and enhance project accountability, TxDOT will employ reliable transportation data, scenario planning, and regular monitoring to assess the effectiveness of the transportation system. Data-driven planning will allow TxDOT to adjust resource allocation and policies dynamically based on real-time insights.

Projected Outcomes and Long-Term Impacts

The Texas 2050 LRTP's multifaceted approach to enhancing the state's transportation infrastructure is expected to generate several long-term outcomes:

1. **Reduced Traffic Fatalities**: Investments in safety measures are expected to lower fatal and severe injury crashes, contributing to safer roadways for all users.

2. **Improved Economic Competitiveness**: By reducing congestion and improving freight mobility, Texas's transportation improvements will likely foster a more robust business environment, enhancing the state's appeal to industries and boosting economic output.

3. **Environmental Benefits**: Multimodal transportation options, including CAT technology, are anticipated to decrease emissions by reducing vehicle idling and promoting alternative transit modes. This is particularly important as Texas addresses urban air quality and sustainability goals.

4. **Enhanced Quality of Life**: Expanding transportation options, especially in underserved rural areas, will improve access to essential services and economic opportunities, thereby enhancing residents' quality of life.

The Texas 2050 Long Range Transportation Plan offers a visionary roadmap for a more connected, safe, and sustainable transportation future in Texas. By emphasizing multimodal solutions, technological innovation, and stakeholder collaboration, the plan positions Texas to address the mobility needs of its expanding population while fostering economic growth and enhancing residents' quality of life. Achieving these goals will require TxDOT to overcome financial, environmental, and technological challenges, but with continued commitment and strategic investment, the Texas 2050 LRTP provides a robust framework to guide the state's transportation landscape into the future.

FINDINGS

Texas needs a plan to meet the ambitious financial goals of the Texas 2050 LRTP that require stable and continuous funding sources. The cost of maintaining and expanding Texas's extensive transportation network may necessitate new funding mechanisms or public-private partnerships.

Texas lacks regulations for autonomous vehicles beyond those for human-driven cars. Integrating connected and autonomous technologies holds promise, but keeping pace with rapid advancements in transportation technology requires flexible planning and investment. The state's long-term success will be essential to adapting to evolving technologies like autonomous vehicles and electric vehicle infrastructure.

RECOMMENDATIONS

1. The Legislature should embrace technology, including autonomous vehicles and connected infrastructure, to manage congestion. The state should ensure sufficient regulation exists to keep the public safe and data private and secure.

2. The Legislature should prioritize state funding for grade separation projects in high-impact urban areas, such as Houston's East End and Fifth Ward. These projects will allow railroads to operate efficiently while minimizing impacts on surrounding communities affected by blocked crossings.

3. The Legislature should identify ways to increase dedicated funding for transportation to prevent the cost of goods from rising due to the impacts of congestion on the supply chain. Failing to invest additional funding in transportation infrastructure could slow Texas' economic growth.

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