


Greater Houston Freight Committee


January 15, 2026

Regional Collaboration • Transportation Planning • Multimodal Mobility

Houston-Galveston Area Council

Agenda

- Welcome
  - Chad Burk and Bruce Mann, GHFC Co-Chair
- Autonomous Vehicles In Texas
  - Zeke Reyna. TxDOT Emerging Technology
- HCTRA Freight Plan
  - Josie Ortiz, HCTRA
- TESLA Innovation
  - Mac Burns and Emily Conway, TESLA
- Clean Vehicles Program
  - Ben Finley, HGAC
- Announcements
- Adjourn

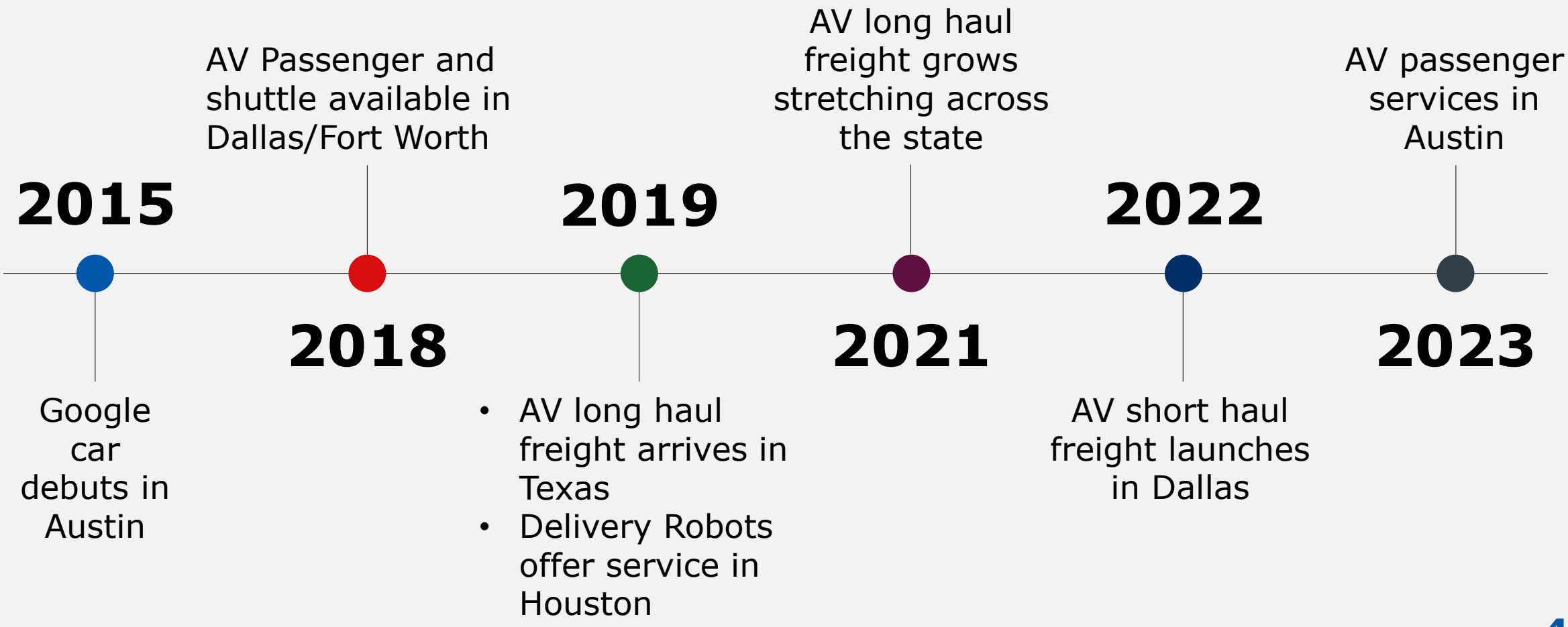
Autonomous Vehicles In Texas

Strategic Initiatives and Innovation Division

Texas Department of Transportation

January 28, 2026

Timeline


2015
Google car debuts in Austin
2018
AV Passenger and shuttle available in Dallas/Fort Worth
2019
AV long haul freight arrives in Texas
Delivery Robots offer service in Houston
2021
AV long haul freight grows stretching across the state
2022
AV short haul freight launches in Dallas
2023
AV passenger services in Austin

Autonomous Vehicle Ecosystem in Texas

Department of Transportation (TxDOT)
- Emerging Technology
- Collaboration
- Research

Department of Licensing and Regulation (TDLR)
- TNC Registration

Public Safety (DPS)
- Enforcement
- Emergency Response

Insurance (TDI)
- Insurance

Motor Vehicles (DMV)
- Registration
- Licensing

State of Texas Legislation Regarding Automation

SB 2205, 85th Legislature (2017)

SB 2205 creates a legal framework for the operation of automated motor vehicles in Texas and explicitly allows an automated motor vehicle to operate on highways in the state, with or without a human operator, under certain circumstances.

HB 1791, 85th Legislature (2017)

HB 1791 authorizes an operator of a vehicle equipped with a connected braking system that is following another vehicle equipped with that system to be assisted by the connected braking system to maintain a clear distance or "sufficient space."

SB 969, 86th Legislature (2019)

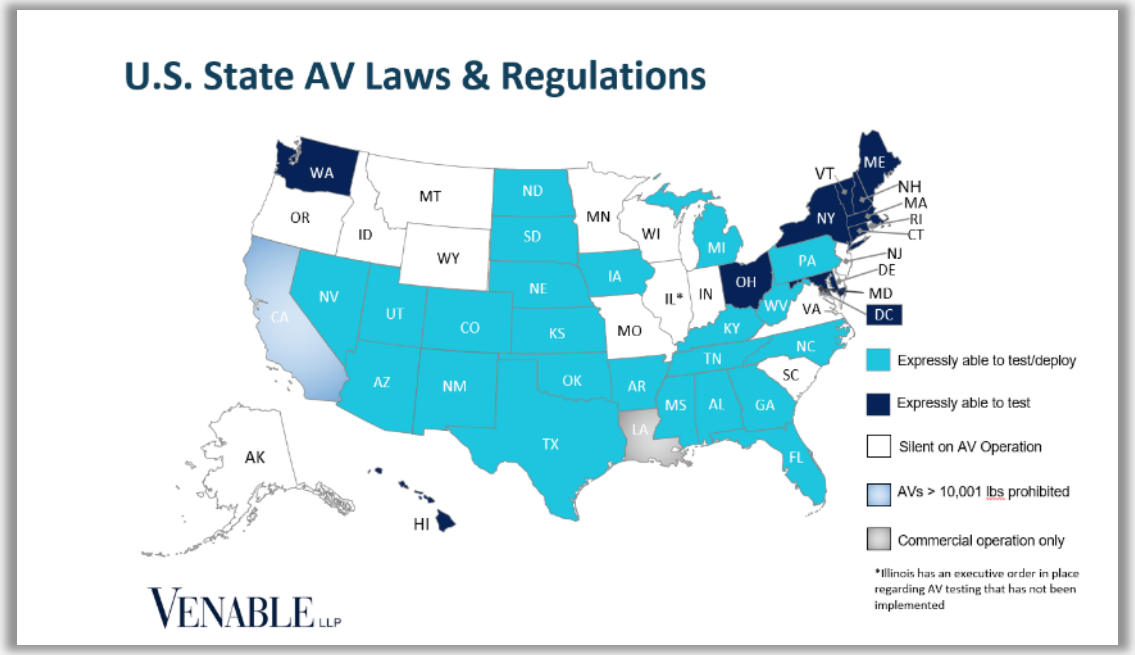
SB 969 governs the operation of a personal delivery or mobile carrying device in a pedestrian area or on the side or shoulder of a highway.

HB 3026, 87th Legislature (2021)

HB 3026 allows that when an ADS (AV) is designed to be completely operated without a human driver, then certain items are no longer required, such as mirrors, steering wheels.

SB 2807, 89th Legislature (2025)

SB 2807 creates a registration process and first responder plans.



State of Texas Legislation Regarding Automation

SB 2807, 89th Legislature (2025)

Originally SB 2425, the bill creates a streamlined regulatory framework across multiple state agencies.

- Texas Department of Motor Vehicles
  - AV Registration
  - Arbitration Process
- Texas Department of Public Safety
  - Law Enforcement Interaction Plans
- Texas Department of Licensing and Regulation
  - Transportation Network Companies (TNC)

Texas CAV Task Force Overview

Mission: To provide a single, unified resource for information regarding the coordination and advancement of CAV technologies across the state.

- Data, Connectivity, Cyber Security, and Privacy Subcommittee
- Education, Communication, and User Needs Subcommittee
- Freight and Delivery Subcommittee
- Licensing and Registration Subcommittee
- Safety, Liability, and Responsibility Subcommittee
- Workforce and Economic Opportunities Subcommittee

- Government Transportation Agencies
- Research Institutions
- Transportation Organizations
- Industry

CAV Task Force Website

CAV task force subcommittees

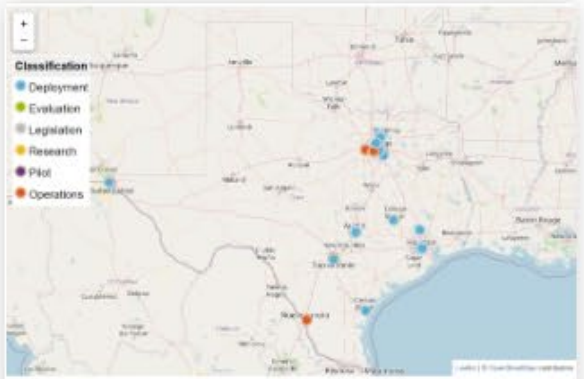
What are the CAV task force subcommittees?

About subcommittees

CAV task force meetings and materials

Find meeting notes and reports.

Meeting information



Autonomous vehicles deployment map in Texas

View a map of autonomous vehicle deployments in Texas.

View map

Welcome to Texas!

What makes Texas a welcoming environment for CAV deployment?

CAV in Texas

First Responder and AV Company Collaboration

- Leverage advanced technology to create safer roads, save lives, and improve efficiency
- Revolutionize emergency response and traffic management.
- First responders are benefiting from these educational opportunities and highlighting their specific needs. The stakeholders are discussing potential regulatory standardization. (E.g. – first responder interaction plan)
- Communication – By providing real time data sharing, improvements can be made to emergency response strategies and road safety.

AV Events

Both public stakeholders and AV companies have made considerable efforts to provide educational events to the public. These include:

- Two AV Days at the Texas Capitol
- AV interactions in the Austin area
- Texas State Fair AV showcase in Dallas

Local Coordination

Through the CAV Task Force and regulator communication, TxDOT has built a strong relationship with local municipalities and MPOs.

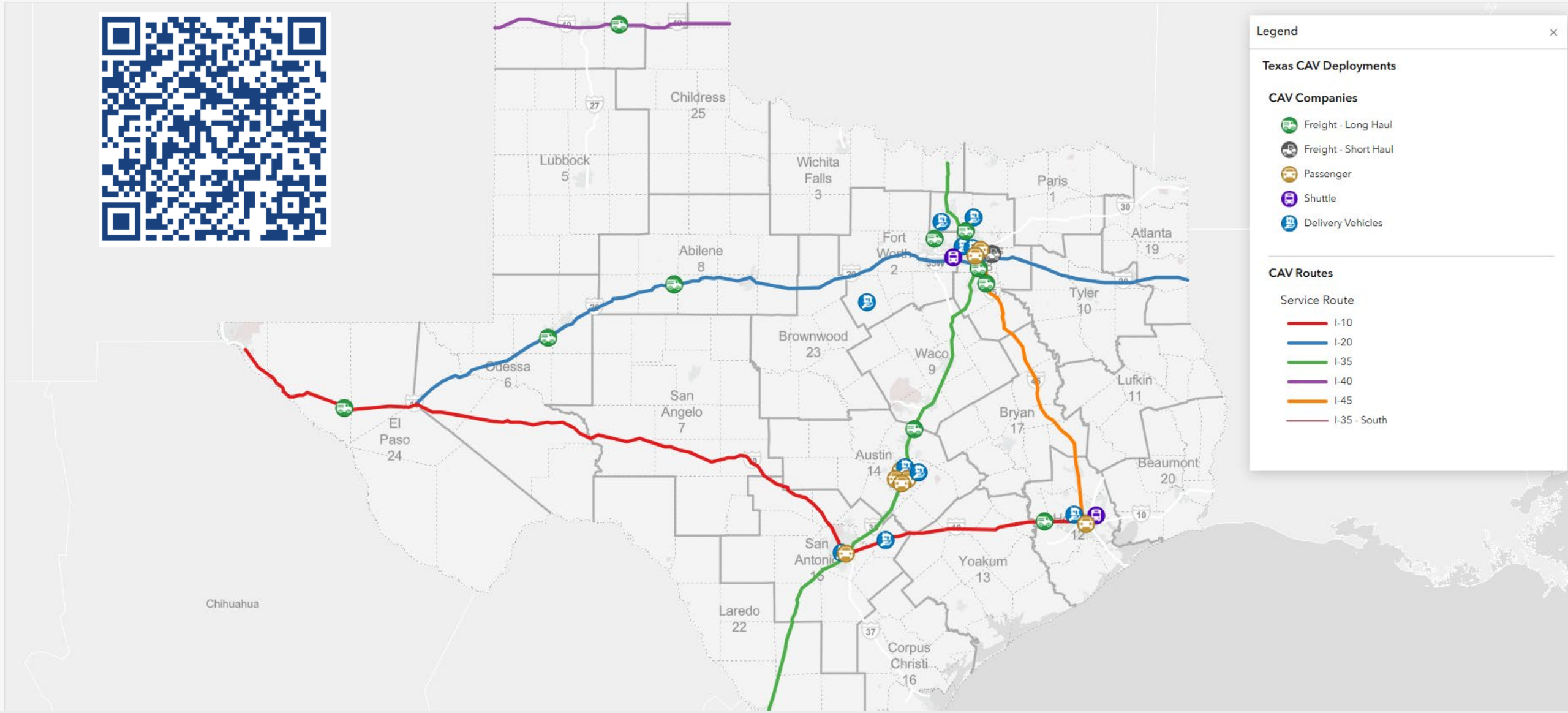
- Interactions with cities that have AV operations.
  - Participate in City of Austin AV Task Force meetings
  - Connect local AV teams across the state.
- Provide a resource for public and private sector stakeholders to collaborate.

Texas Department of Transportation

Connecting you with Texas.

Autonomous Vehicle Deployments

Company	Location	Type of Service
None	None	None



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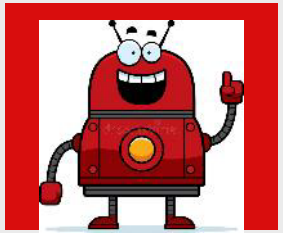
AV Companies Operating in Texas

Automated Vehicle Types in Texas

Long-Haul Freight

Short-Haul Freight

Passenger Vehicles



Delivery Devices

Shuttles

AV Freight (Short and Long Haul)

- Automated trucking is taking place across Texas on major interstates and in urban areas.
- AV Freight enhances efficiency and lowers costs.
  - ❑ increase safety
  - ❑ improve delivery times
  - ❑ streamline supply chains

Long Haul	Short Haul
•Aurora •Kodiak Robotics •Torc •Navistar/Plus.ai •Waabi •Stack •BOT •Volvo	•Gatik

Autonomous Freight Efficiency and Effectiveness

AURORA REDEFINES CROSSING THE BORDER

- Collaboration with U.S. Customs and Border Protection
- 3-5 AV freight trucks cross the border daily
- Seamless navigation includes sign and human detection

KODIAK ADVANCES SAFETY INSPECTIONS

- Working with TxDPS and FMCSA
- Developed and refined a pre-inspection pilot
- Certified inspector approves truck before leaving the depot
- Truck can bypass weight stations to improve efficiency

Autonomous Passenger Vehicles

Autonomous passenger vehicles have been introduced in Texas cities, such as Austin, Dallas, and Houston. These vehicles use an app-based platform to provide rides to the public for a fee within a limited area of the city.

Currently, there are multiple deployers either testing or operating, with individual companies beginning public operations in 2022 in Austin.

Deployers: AV Ride, Volkswagen, Waymo, Zoox, Tesla, Cruise (*Past*)

Autonomous Delivery Robots

Delivery robots are autonomous or remotely controlled machines designed to transport goods. They navigate sidewalks or streets, using sensors and GPS to deliver packages, food, or other items directly to customers.

Texas currently has two types of delivery robots.

- Personal Delivery Devices (PDD)

Deployers: AV Ride, Kiwibot, Serve Robotics, Refraction.AI, Starship (*Past*), Coco (*Past*)

- Neighborhood Electric Vehicles (NEV)
  - On road capabilities
  - Vehicle Identification Number (VIN)
  - Speed >20mph (not limited to 10-20mph)

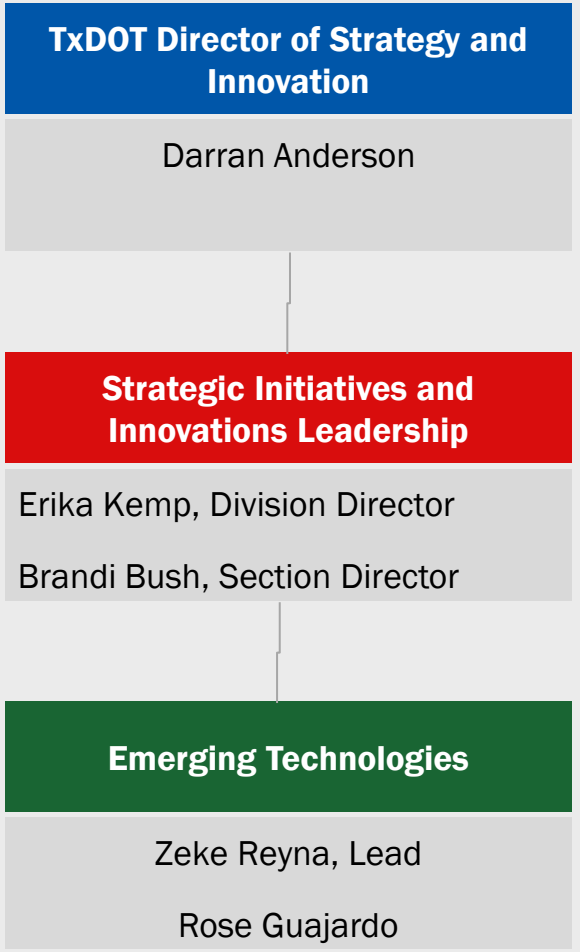
Deployers: NEV: Nuro, Clevon (*Past*)

Autonomous Shuttles

- Autonomous shuttles transport passengers along predefined routes in urban or campus environments. They offer a convenient, efficient, and eco-friendly solution for short-distance travel, reducing the need for personal cars and easing traffic congestion.

Deployers: May Mobility (Arlington), Houston Metro (*Past*), Beep (*Future*)

TxDOT CAV Coordination Team



Harris County Freight Study

Greater Houston Freight Subcommittee

January 15, 2026

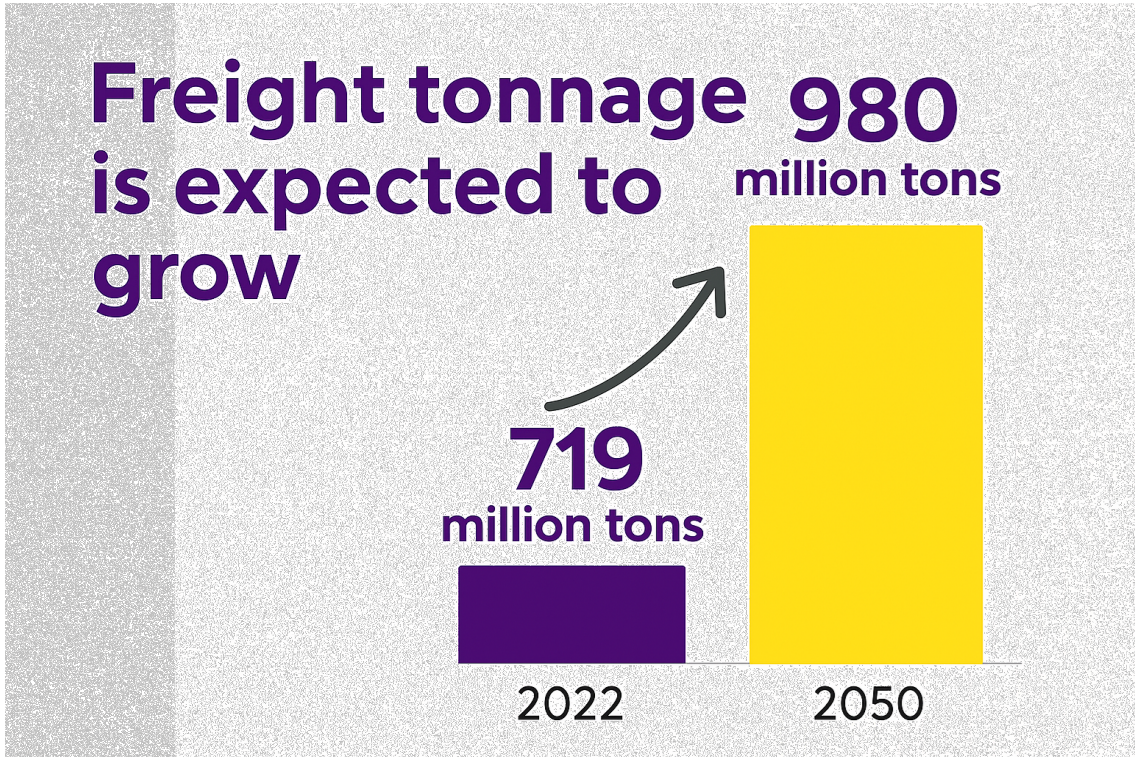
Today's Agenda

- Project Overview
- Findings
- Recommendations
- Next Steps

Project Overview

Project Initiation

- Began in May 2025
  - Partnership with OCE
- Steering Committee
  - OCE
  - Precincts
  - Judge's Office
- Stakeholders



Study Goals

1. Improve freight **mobility, efficiency, and resiliency** to make the network more reliable and dependable
2. Strengthen **economic vitality** and competitiveness
3. Improve **safety**
4. Reduce **environmental and social** impacts
5. Enhance **equity**

Methodology

Existing freight mobility

Freight profile and supply chain analysis

Key issues, needs, projects

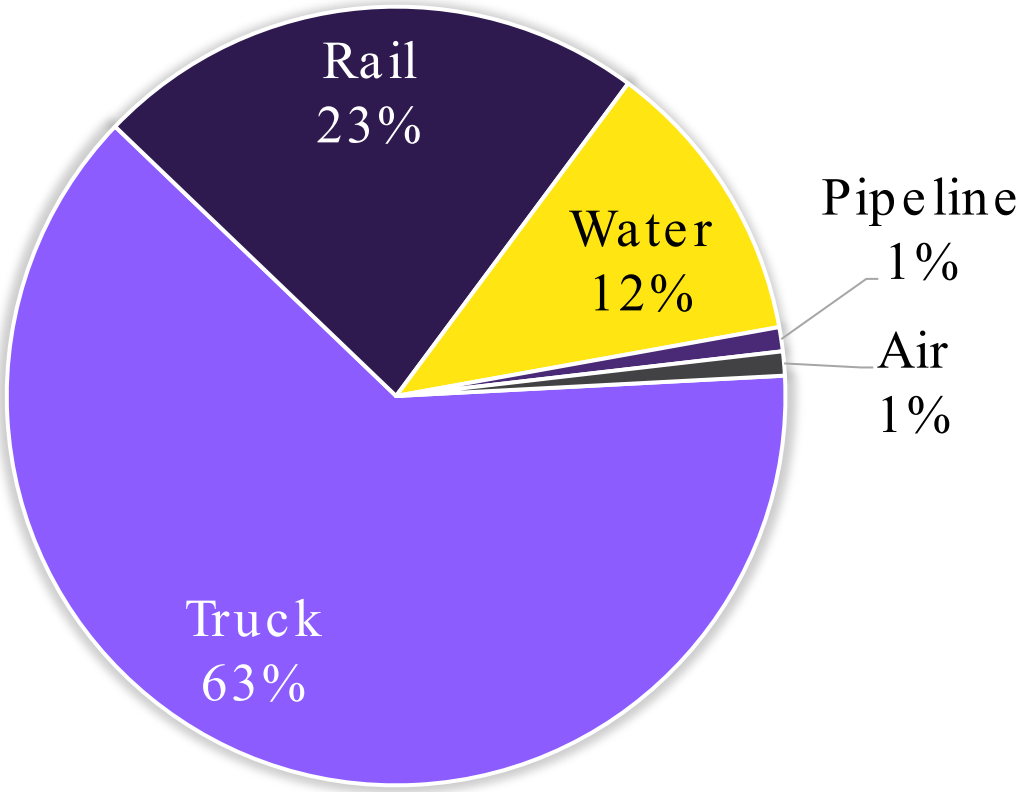
Recommendations

Findings

Commodity Flow Analysis

	Tonnage	Value
2022	719 M	$970 B
2050	980 M	$1.7 T
Annual Increase	1%	2%

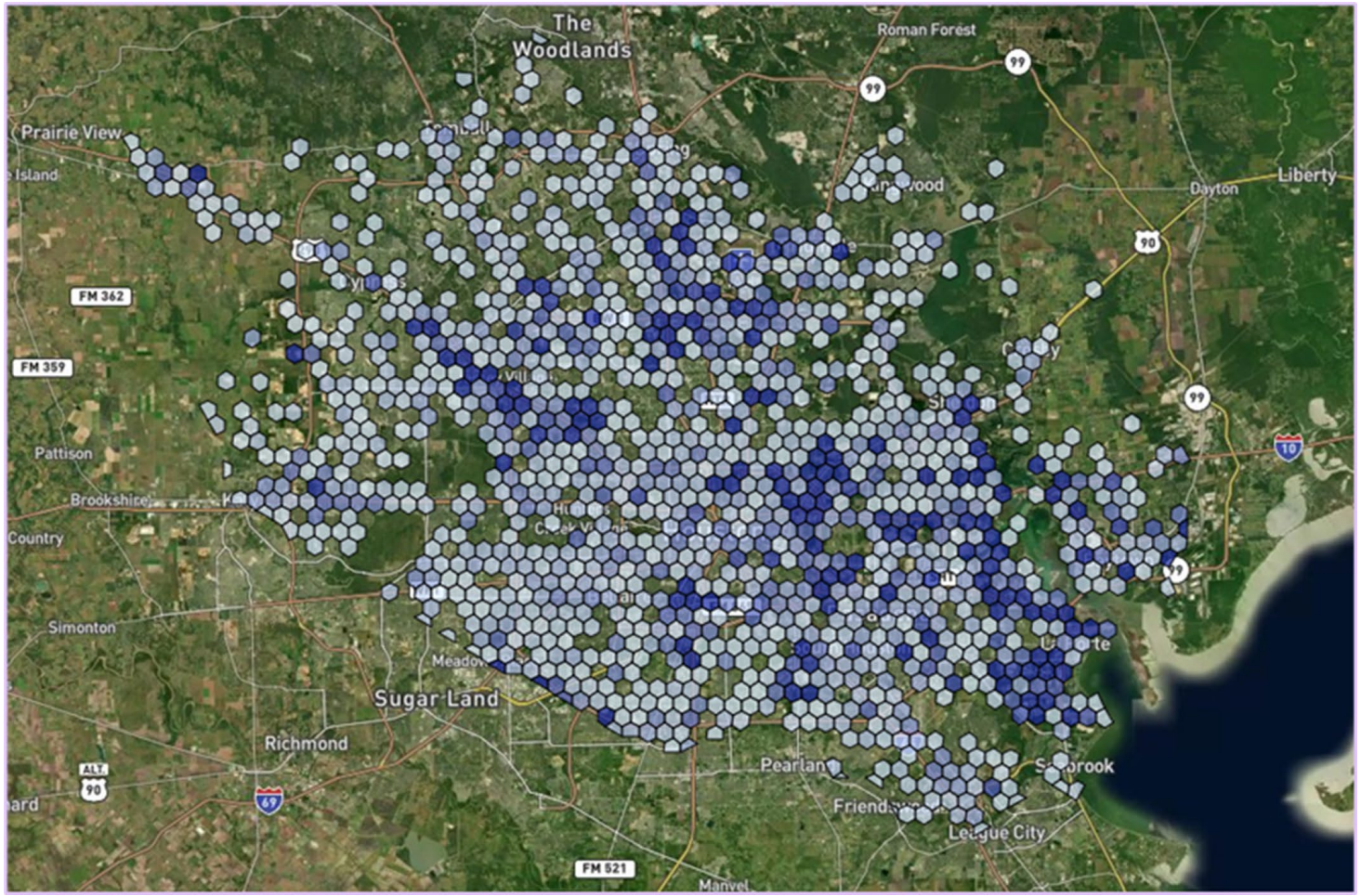
Freight Forecasts
By tonnage and value of goods



Percent of freight value shipped in 2022 by mode
(e.g. $970B of goods were shipped in 2022 – 63% of that travelled by truck)

Truck Origin-Destination Analysis

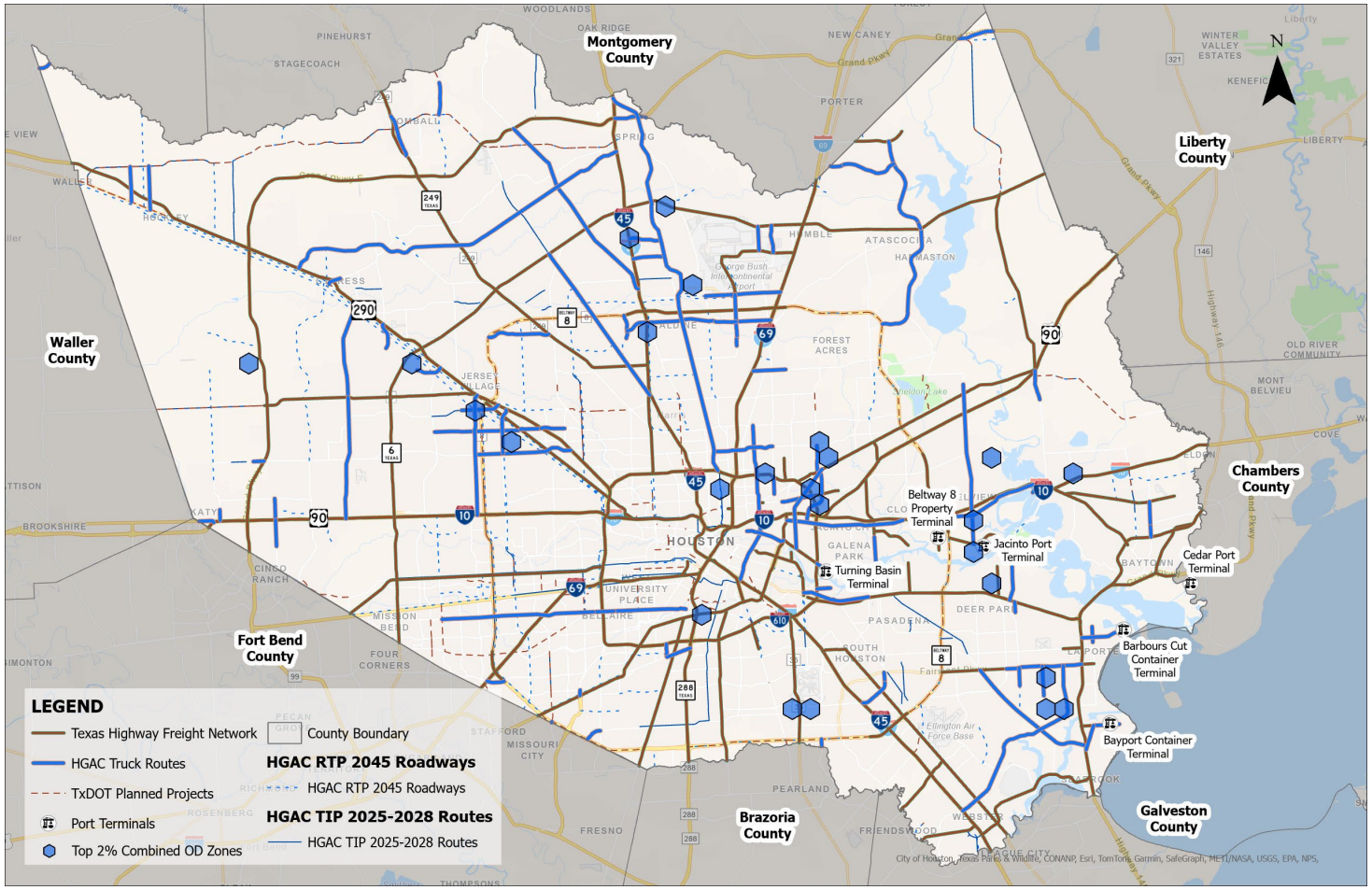
- Split County into equally sized zones (1,245)
  - One-mile wide
- Data analyzed over 4 one-week periods
  - August & October 2023
  - January & April 2024



All Truck Trip Destination Zones in Harris County
(the darker the blue, the higher the relative number of truck stops)

Truck Origin-Destination Analysis (cont.)

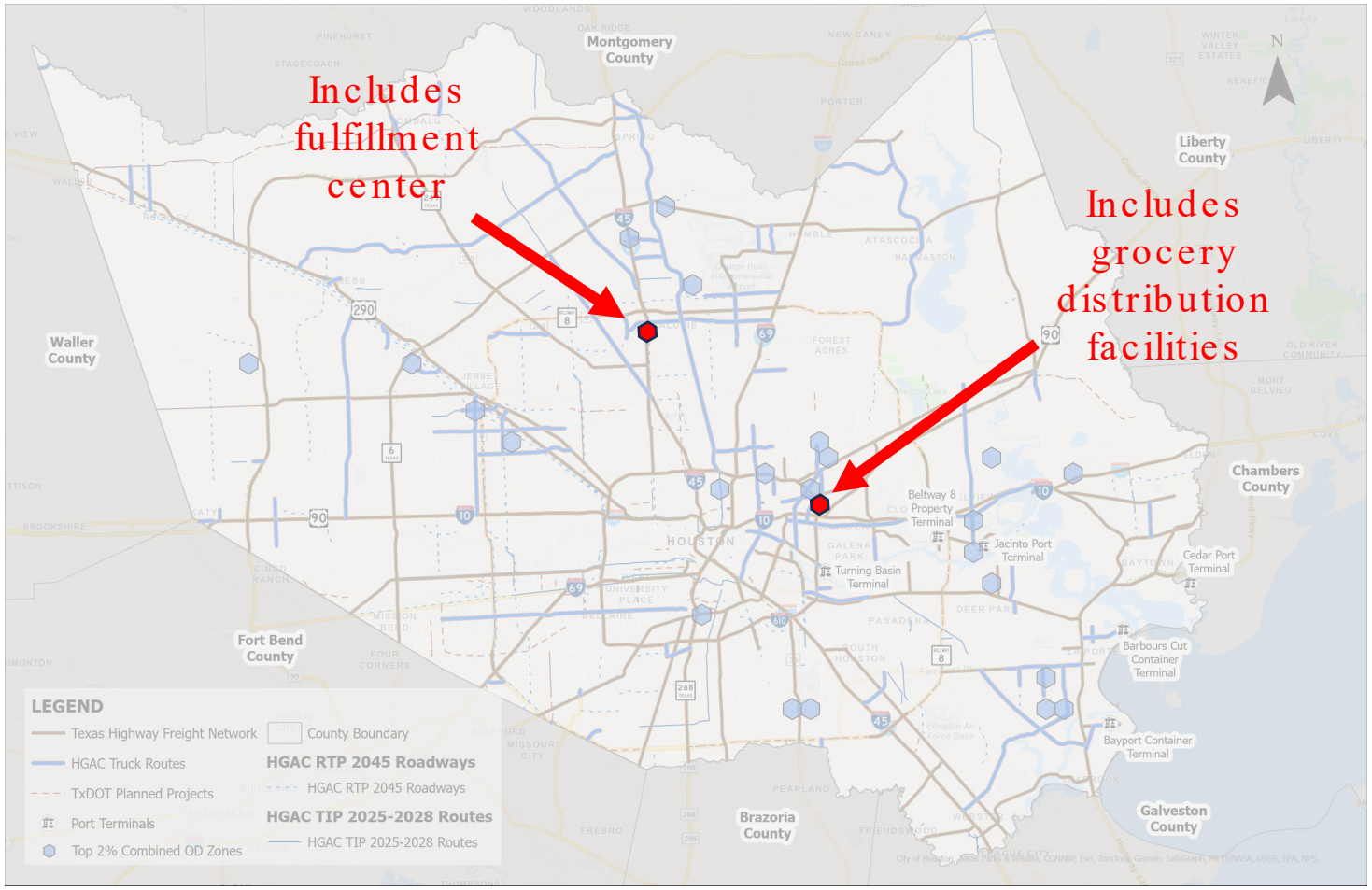
- Top 25 O-D zones account for nearly half of all truck trip origins and destinations



Top 25 Origin-Destination Zones

Truck Origin-Destination Analysis (cont.)

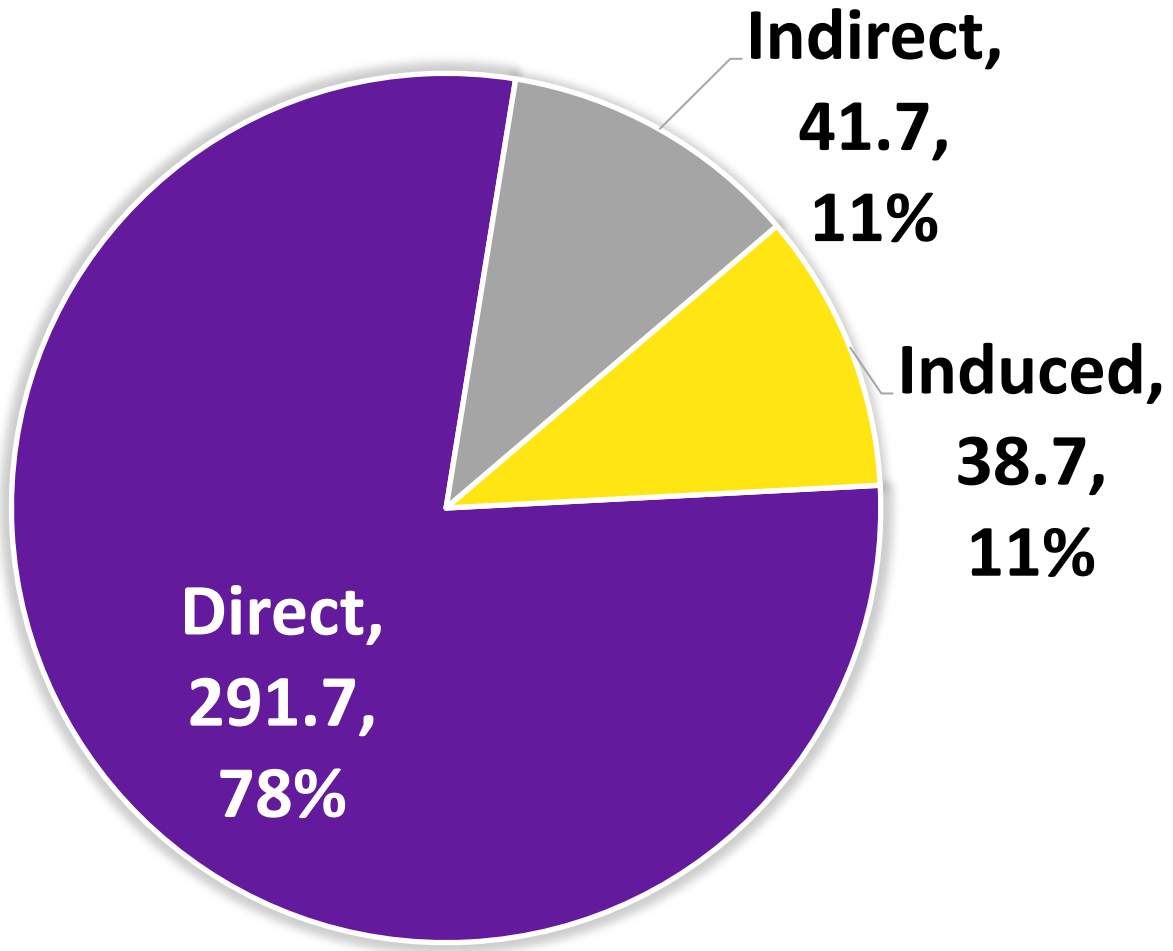
- Top 2 origin-destination zones = 5% of trips



Top 2 Origin-Destination Zones

Economic Impact

- Freight industry employment (2023)
  - 1.7 M total jobs
  - $195 B in labor income
  - Transportation and warehousing sectors as top job providers
- $372 B value added to County GDP
  - Manufacturing sector as top value added



Value Added to Harris County GDP (in Billions)

Direct – generated by freight activity

Indirect – business-to-business transactions

Induced – household spending in community

Network Needs & Challenges

Key industrial locations concentrated around port terminals and major transportation corridors

626 bridges and culverts rated fair and poor on National Highway Freight Network (in HC)

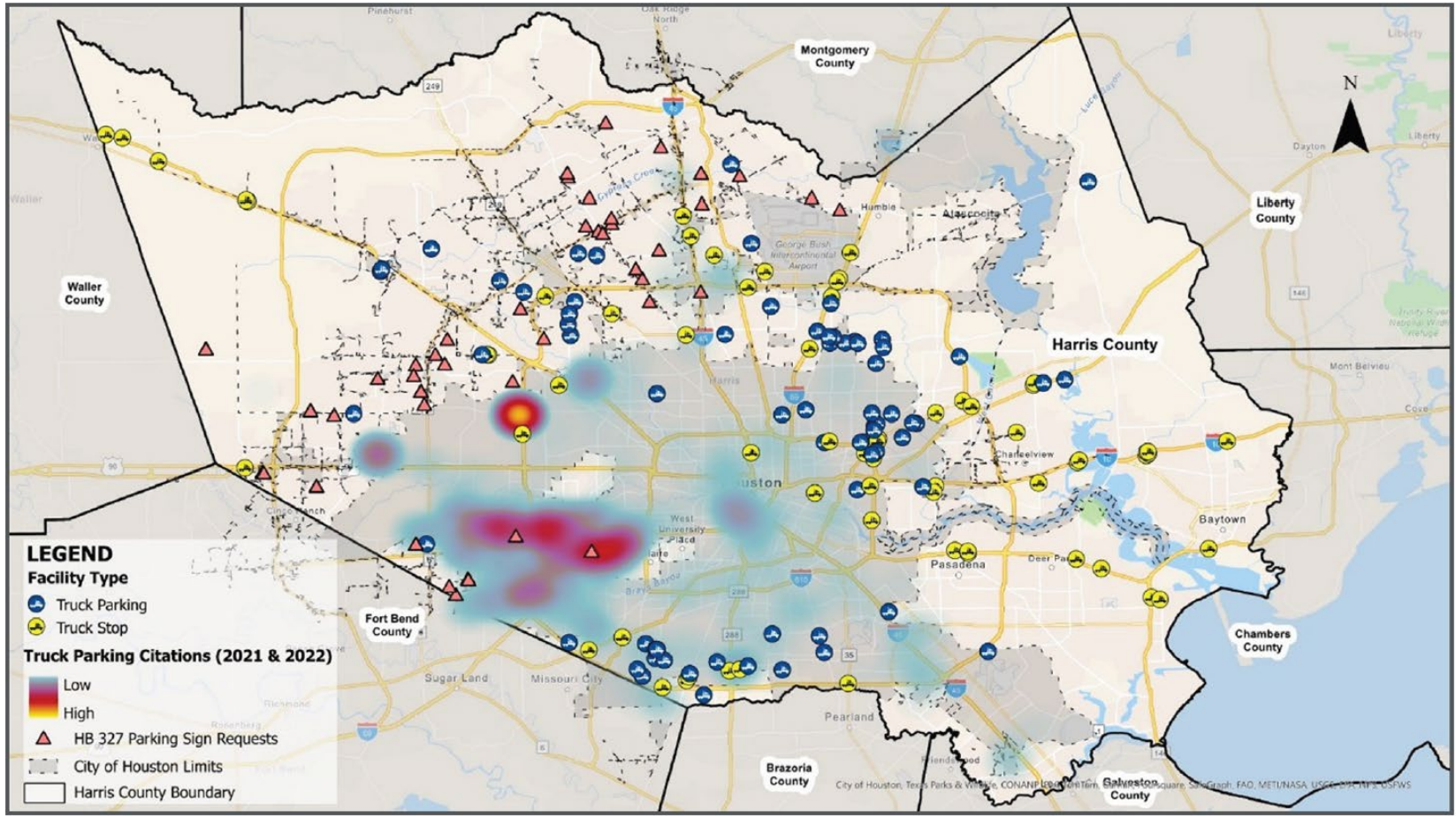
One way truck trips generated by Port could increase from 3.5 M (2019) to 8.5 M (2045)

Harris County has 9.9% of top 100 truck bottlenecks (nationally) and 31 of top 100 most congested roadway segments (Texas)

83.5% of major roads maintained by HC have good pavement condition

Truck Parking

- 61 facilities for truck parking in HC
  - 7,000 spaces
  - Average 123 spaces each
  - Annual cost ~ $2,000 (for owner-operator)
- Key issue = cost
  - Annual cost ~$2,000 (for owner-operators)
  - 86% of company drivers or leased-on owner-operators say carrier does not pay for truck parking



Location of Commercial Truck Parking Facilities and Truck Parking Citations

Truck parking facilities

Low
High
Truck parking citations

Recommendations

Policy

- Safety equipment / public awareness
- Truck parking provisions
- Pollution abatement equipment
- Extending operating times
- Matchbacks / dual container transactions
- Consolidated railroad project grant applications
- Review priority blocked railroad crossing locations

Source: Stantec, Direct Vision Transition Guide, An Operator's Guide to Transforming Fleets for Safety.

Methodology Summary

- All corridors within Harris County scored
  - Metrics based on goals
- Highest scores = highest need
- Project toolbox developed
- Planning-level cost estimate
- To avoid redundancy & maintain consistency, projects compared against
  - TxDOT Unified Transportation Plan
  - H-GAC Regional Transportation Plan
  - City of Houston Capital Improvement Plan
  - Harris County Capital Improvement Plan

Need Category	Weights
Safety Needs	40%
Infrastructure Needs	30%
Mobility Needs	30%

Scoring

Safety Needs (40%)

Indicator	Weight
Truck Crash Rate	30%
Truck Fatal and Injury Crash Rate	55%
At-Grade RR Xing Crashes	15%

Mobility Needs (30%)

Indicator	Weight
ADT	10%
Truck ADT	20%
Heavy Truck ADT	25%
Truck Delay / mile	20%
Truck 95th% PTI	10%
At-Grade RR Crossings	15%

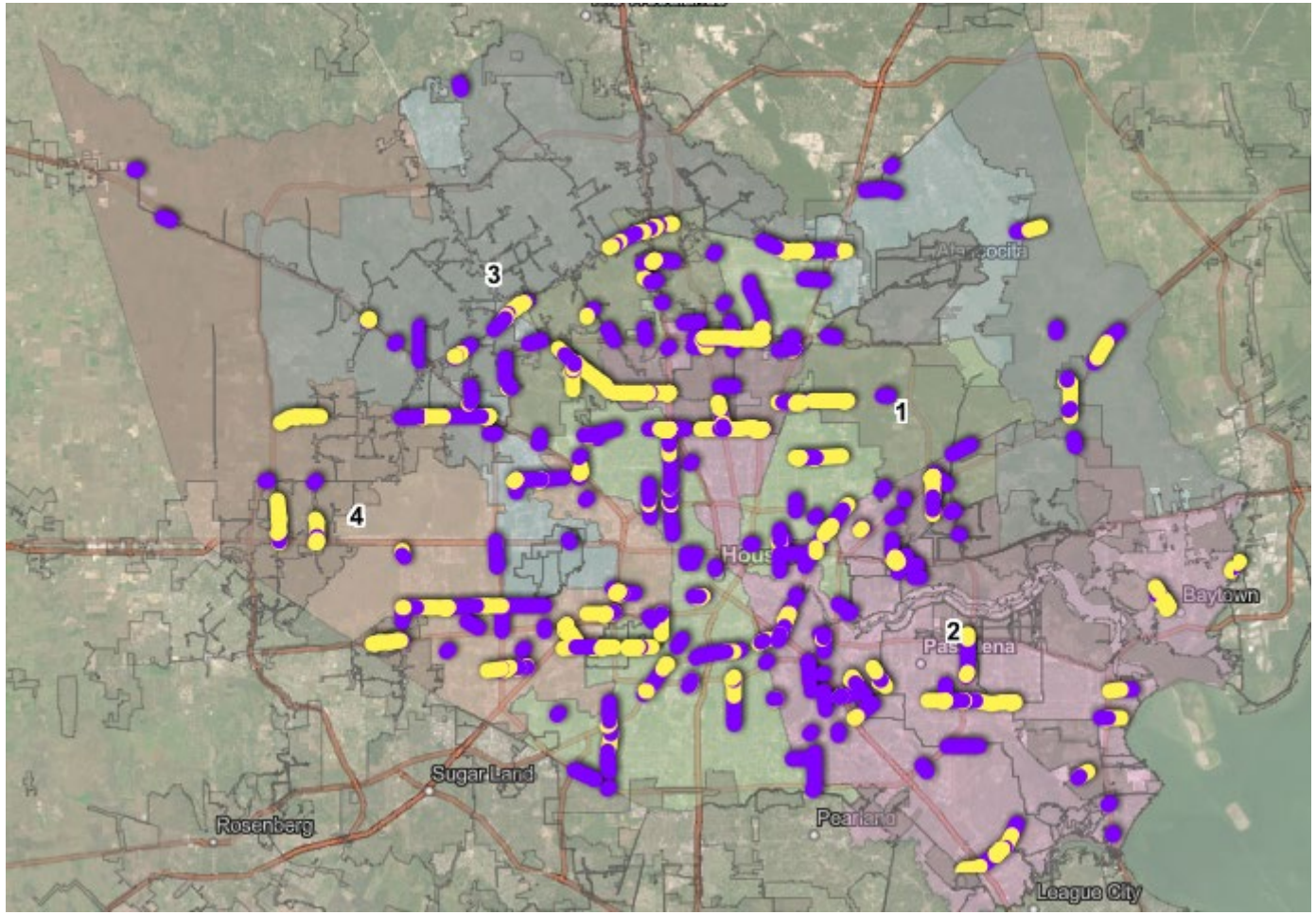
Infrastructure Needs (30%)

Indicator	Weight
Pavement Condition	30%
Bridge Condition	20%
Bridge Loading	10%
Vulnerability Index	15%
Criticality Index	25%

Adequate data to measure equity was not available; H-GAC's vulnerability population index (VPI) dataset is provided along with recommendations to help prioritize

Recommendations

- Projects recommended for high-scoring segments (extended where appropriate)
  - Intersection improvements (geometry, signalization/timing)
  - Lighting
  - Signage
  - Pavement upgrades
  - Railroad crossing enhancements
  - Access management
  - Bridge replacement / rehab
  - Technology updates
- Planning-level cost estimates



Non-Highway High-Need Segments

High-Need Segments Extensions

Next Steps

Next Steps

- Transmit to Commissioner’s Court
- Provide to County Office of the Engineer (OCE)
  - Inclusion into County Transportation Master Plan
- Prioritization and implementation by Precincts and OCE
- Potential future update to Pavement Condition Index data


Stay connected with us!
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@HCTRA_EZTAG
HCTRA
CONNECTS
EZ TAG
(281) 875-3279
Harris County Toll Road Authority
HCTR98675309
10% DISCOUNT
Get an EZ TAG and SAVE
10% on HCTRA Toll Roads
just by using your EZ TAG.
(Applies to 2-axle vehicles.)

Tesla Semi Update

Houston-Galveston Area Council

Greater Houston Freight Committee

January 15, 2026

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Semi is the future of trucking

500
mile range

800
kW drive power

1.2
MW Charging

1.7
kWh/mi

Product

Vehicle Class Class 8

Axle Configuration 6x4

Cab Type Day cab

Use On-Road/On-Highway

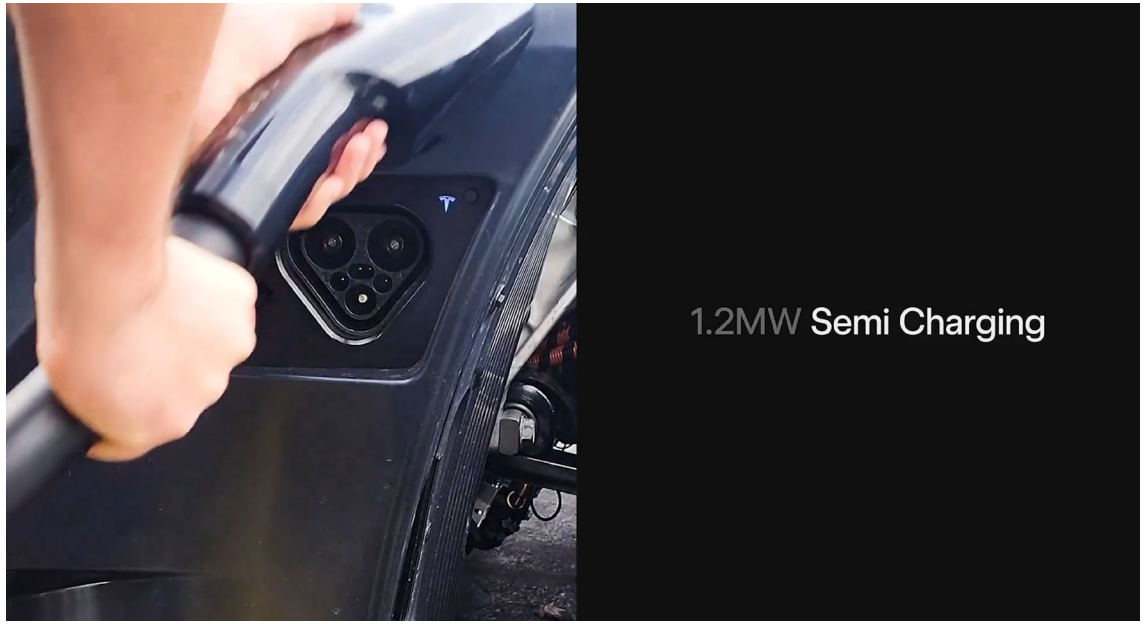
Powertrain Tri-motor design for balance of power and efficiency

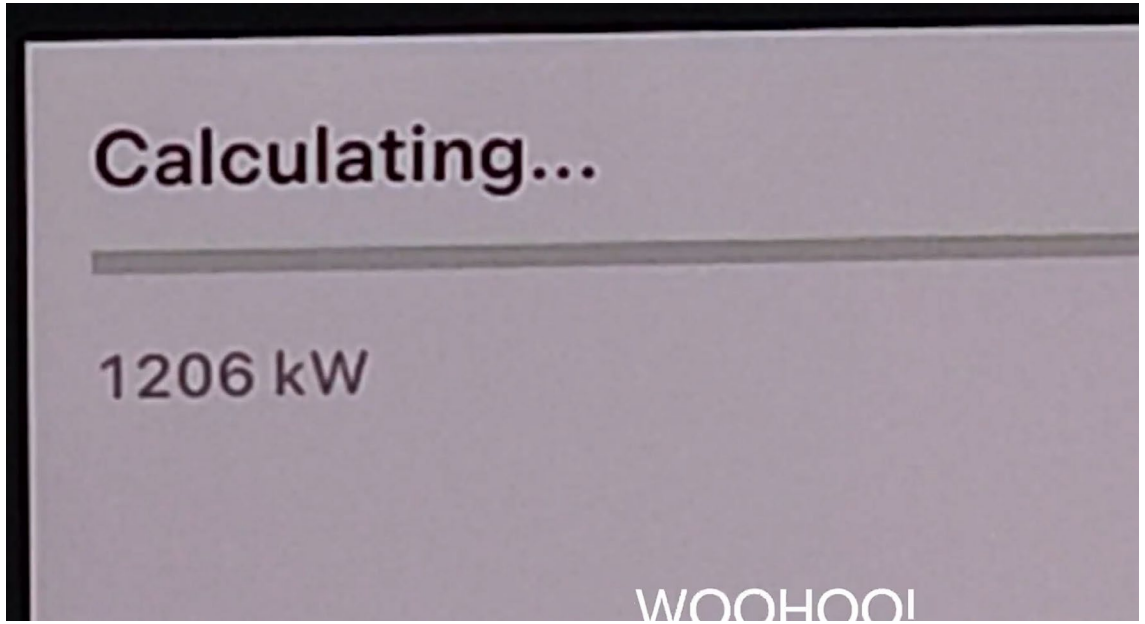
Charging MCS (Megawatt Charging Standard) support up to 1.2MW

Variants Standard Range option (300 mile)
Long Range option (500 mile)

Up to 1.2 MW Charging System

1.2 MW Charging System in Action





Up to 70% of range in 30 minutes

[1.2MW Charging Video Link]

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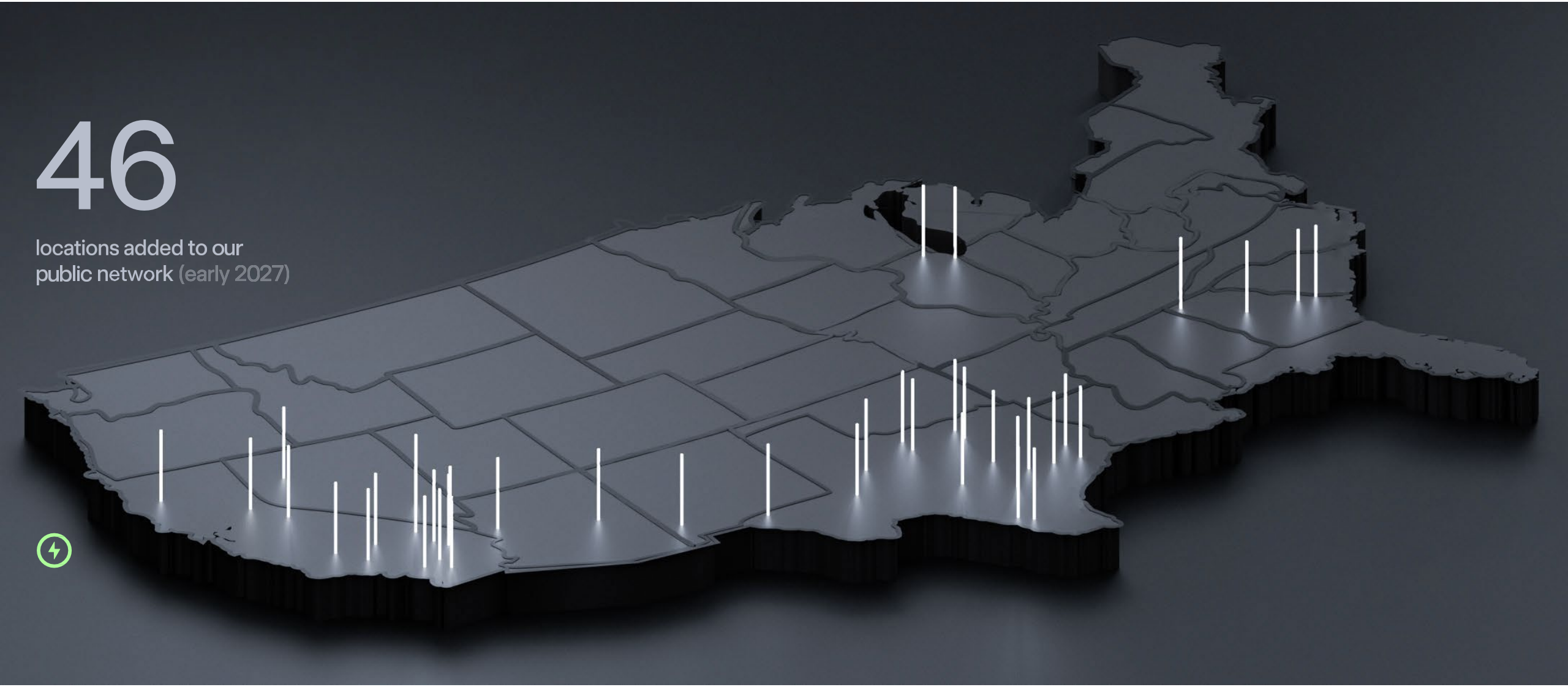
locations added to our public network (early 2027)



Dedicated Semi Factory - Nevada

Built for high volume production, only for Semi

Thank you

Emily Conway – Sr. Business Development Manager – Semi
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Mac Burns – Business Development Manager – Semi
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H-GAC Clean Vehicles Program

Contracting for a Cleaner Region

Regional Collaboration • Transportation Planning • Multimodal Mobility

H-GAC
METROPOLITAN PLANNING ORGANIZATION

Introduction to the H-GAC Clean Vehicles Program (CVP)

- The Houston-Galveston Area Council (H-GAC) Clean Vehicles Program (CVP) assists local fleets in replacing older vehicles to cleaner, more efficient models

- Reduces Nitrogen Oxides (NOx) emissions, improve public health, and fosters advanced technology adoption

- Eligibility: Public, Private, Non-Profit, and Owner/Operators in the Houston-Galveston-Brazoria area

Rules & Eligibility for the CVP

- Trucks being replaced (old) must be:
  - Class 8 diesel powered trucks
  - No older than 25 years old
  - In current operation
  - Scrapped once new truck is delivered

- Replacement trucks (new) must be:
  - New – current model year
  - Build America / Buy America (BABA) compliant
  - Used in region for 5 years to meet contractual usage obligation

- Grant funds:
  - Reimbursement!

Diesel-to-Diesel and Alternative Fuels

- Grant is related to the NOx reduction
  - Window for diesel-to-diesel truck replacements is open, but closing rapidly
  - H-GAC is emphasizing cleaner alternatives to maximize NOx reductions
- Eligible alternative fuels include:
  - Compressed Natural Gas (CNG) / Renewable Natural Gas (RNG)
  - Propane (LPG) and Liquefied Natural Gas (LNG)
  - Electricity (Battery Electric Vehicles)
  - Hydrogen Fuel Cell

Alternative Fuels Considerations

- Alternative fuels considerations:
  - More expensive vehicle, but larger grants
  - Usually lower Fuel costs, but need to consider fueling infrastructure
  - Specialized maintenance (sometimes less maintenance overall)
  - Better MPG
  - Opportunity to compete as a “Green Fleet”

- Find the right fuel for the job:
  - Long Haul:
    - CNG / RNG
    - Propane / LNG
  - Drayage, distribution, regional hauling, and short hauling:
    - CNG / RNG
    - Propane / LNG
    - Electric*
    - Hydrogen*

Build America / Buy America (BABA)

- All replacement trucks must comply with BABA: Build America, Buy America requirements.
  - Trucks must have at least 70% of the steel manufactured in the United States, with final assembly occurring in the United States
  - Truck manufacturers will be asked to self-certify to BABA compliance

- Exciting News:

  TESLA trucks are now BABA compliant!

H-GAC CVP

CVP Staff:

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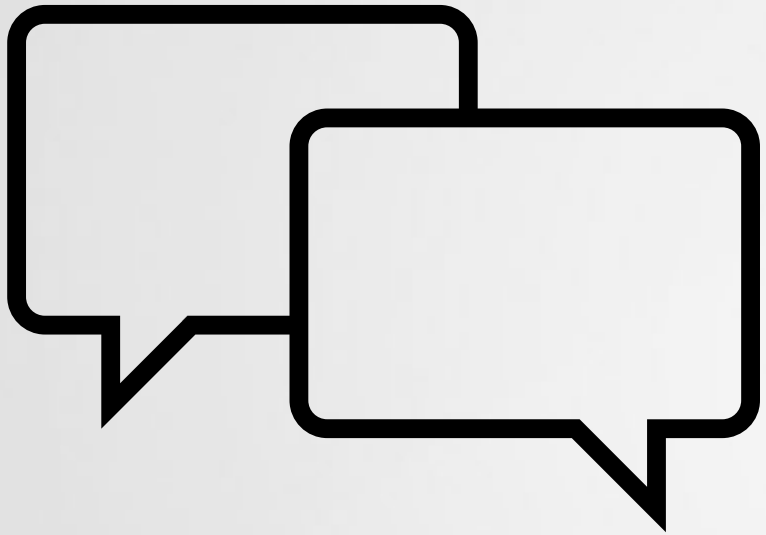
Announcements



- Open discussion

Upcoming Meetings

- Transportation Policy Council – January 23, 2026
- Transportation Safety Committee – January 27, 2026
- Technical Advisory Committee – February 18, 2026
- Greater Houston Freight Committee Meeting - April 16, 2026

- Thank you for attending

HGAC Staff contact

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