

Meeting begins at 1:00p



01

Please mute your mics

02

Please use the raise hand option to be recognized during discussion

03

Please state your name and organization after being recognized

04

The Q&A feature can be used to submit questions during presentations



Agenda



Welcome & Introductions

Greater Houston Freight Committee

PROTECT & the IIJA H-GAC

Port Updates

Port Galveston Update Port Galveston

Port Freeport Update Port Freeport

Port Houston Update Port Houston Hon. Ed Emmett
Fellow at the Baker Institute

Allie Isbell
Regional Transportation Manager

Roger Rees
Director & CEO

Phyllis Saathoff

Executive Director/CEO

Rich Byrnes
Chief Port Infrastructure Officer

Port Panel Discussion: Supply Chain, Regional Operations and Emerging Technology



Overall Summary

- Signed into law: Monday, November 15
- \$1.2 trillion total spending
 - \$550 billion new spending
 - 5-year FAST Act Reauthorization
 - Beyond transportation: power, water, broadband, and more
- New programs, policies, requirements
- Three types of funding
 - Highway Trust Fund
 - Guaranteed appropriations
 - General Fund (requires Appropriations)





IIJA Guaranteed Funding									
	202:	L 2022	2 2023	3 2024	4 2025	5 2026	Total		
Port and Pipeline Safety	N/A	\$675M	\$650M	\$650M	\$650M	\$650M	\$3B		
FAA/Airports	N/A	\$5B	\$5B	\$5B	\$5B	\$5B	\$25B		
FRA/Rail	\$3B	\$13B	\$13B	\$13B	\$13B	\$13B	\$66B		
FTA/Transit	\$13B	\$18B	\$18B	\$18.8B	\$19B	\$19B	\$91.1B		
FMCSA/Safety	\$676M	\$1B	\$1B	\$1B	\$1B	\$1B	\$5.1B		
NHTSA/Safety	\$1B	\$1B	\$1B	\$1B	\$1B	\$1B	\$6.7B		
FHWA/Highway	\$49B	\$68B	\$69B	\$70B	\$72B	\$73B	\$351.3B		
Grant Programs	N/A	\$4B	\$4B	\$4B	\$4B	\$4B	\$19.2B		
Total	\$67B	\$110B	\$112B	\$115B	\$115B	\$117B	567.5B		





Existing Programs

- Port Infrastructure Development Grants (\$2.25B)
 - Improve port resiliency to address sea-level rise, flooding, extreme weather events; projects to reduce port pollution or GHG emission
- Consolidated Rail Infrastructure and Safety Improvement (CRISI) Grant (\$5B)
 - RR safety technology, congestion mitigations impacting rail service, highway/rail grade crossing improvements, rail relocation, short line rail infrastructure
- Local and Regional Project Assistance Program (RAISE) (\$15B)
 - Federal aid-eligible highway and bridges, freight rail, port infrastructure, surface transportation components of airport
- Nationally Significant Freight and Highway Projects (INFRA) (\$8B)
 - National multimodal freight network, including freight rail, intermodal, or port facilities



New Programs

- Bridge Investment Program (\$12.5B)
 - Replace, rehab, preserve bridge on National Bridge Inventory
- Rural Surface Transportation Grant Program (\$2B)
 - Highway, bridge, tunnel, or freight projects to improve rural transportation infrastructure and generate economic growth
- Reduction of Truck Emissions at Port Facilities (\$400M)
 - Advancement of electrification of ports to reduce truck idling and emissions
- Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation Projects (PROTECT) (\$1.4B)
 - Includes port facilities; resilience planning and improvements





New Programs

- Multi-State Freight Corridor Planning (\$25M)
 - Multi-State Freight Compacts; public or private sector entities such as ports, freight rail, shippers, carriers, logistics providers, environment and community organizations
- National Infrastructure Project Assistance (Mega-Projects) (\$10B)
 - Freight intermodal, freight rail, rail/highway grade separation projects likely to generate regional economic, mobility, and safety benefits
- Railroad Crossing Elimination Program (\$3B)
 - Track relocation, grade separation, safety improvements, including planning and environmental phase
- Rail Vehicle Replacement (\$1.5B)
 - Replacement of rail rolling stock approaching or exceeding useful service life





Preparation to Receive Federal Infrastructure Funds

- White House Infrastructure Implementation Coordinator recommended coordination with Metropolitan Planning Organizations to begin:
 - Prioritization of capital needs
 - Use Bipartisan Infrastructure Guidebook
 - Ensure projects are part of MPO's TIP
 - Map sites for EVs and alternative fuel charge stations
 - Inventory and map lead pipes (Biden-Harris Lead Pipe and Paint Action Plan
 - Work with state's broadband agency to map needs and inventory
 - Build relationships with regional offices for key federal agencies



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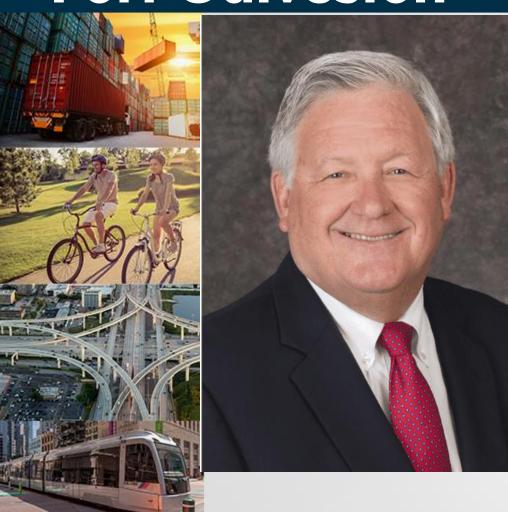
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Rodger Rees Port Galveston



Rodger E. Rees officially joined the Port of Galveston as Port Director/CEO on January 15, 2018. The Port of Galveston is a public agency, an "Enterprise Utility" of the City of Galveston, functioning as a "Landlord Port" covering more than 850 acres on Galveston and Pelican Islands, with nearly 100 employees, total capital assets of \$147.823 million and currently generating more than \$52 million in operating revenue in 2019.

Mr. Rees is responsible for the successful overall management of the Port including engineering and facilities, operations and Port Police, all administrative functions, business development and growth, strategic marketing, finance and the operations of the Port's cruise terminals and maritime facilities.



Phyllis Saathoff Executive Director and CEO, Port Freeport





Phyllis Saathoff is an accomplished executive with over 25 years of service in the port industry. She holds a Bachelor of Science in Accounting, from the University of Houston-Clear Lake, is a certified public accountant and a certified Professional Port Manager®. Phyllis began her maritime career at Port Freeport in 1992 serving as Managing Director and Interim Executive Port Director/CEO before joining the Port of Houston Authority in October 2012. Phyllis served in various capacities during her tenure at the Port of Houston Authority including, Chief People Officer and Deputy Executive Director of Corporate Affairs. Phyllis returned to Port Freeport in April 2016 as the Chief Executive Officer.

During her prior tenure at Port Freeport, Phyllis was successful in obtaining U.S. Army Corps of Engineers Chief's Report to deepen the Freeport Harbor Channel to 56 feet and in financing and initiating the development of the Port's first container terminal.

Phyllis has been recognized as one of the Top 10 Women in Gulf Transportation by Gulf Shipper Magazine. She has held leadership roles in several organizations including the National Association of Foreign Trade Zones and the Texas Gulf Ports Association. Phyllis currently serves as Chairwoman on the Port Authority Advisory Committee to the Texas Department of Transportation (TxDOT), HGAC Transportation Policy Council member, Vice President of Texas Ports Association and serves on the board of directors for the National Waterways Conference. Phyllis also serves on the board of directors and executive committee of the Economic Development Alliance of Brazoria County and as a member



Rich Byrnes Chief Infrastructure Officer, Port Houston





Rich Byrnes is the Port's Chief Infrastructure Officer. His team supports regional commerce and trade by focusing on Port Planning, Construction, Asset Management, the Houston Ship Channel, Freight Mobility, Environment, and Technical Analytics.

Rich's career spans engineering, operations and consulting across transportation and oil & gas industries. Starting at the South Pole, Antarctica managing supply chain, he moved into oilfield engineering in Saudi Arabia and Syria, and later led business and technical consulting business units at Schlumberger and Halliburton. He has consulted with corporations and governments world-wide on oilfield asset development, strategy, organization, and performance improvement.

Rich holds two Master's from MIT, in Ocean Systems Management and in Technology and Policy; a Bachelor's in Mechanical Engineering from UC Santa Barbara; an Associate's in Mathematics from Long Beach City College; and leadership certificates from Texas A&M.

He has also taught Leadership at Texas A&M and Strategic Management at the University of Maryland. Rich lives in the Houston area, and supports STEM education and youth sports.



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H-GAC Senior Planner

Port, Air Quality, & Electrification Andrew DeCandis

H-GAC Principal Planner

I-45 Zero Emissions Corridor Pilot Chris Van Slyke

H-GAC Travel Demand & GIS Manager





Project Team





Veronica
Green
Project Manager



Program Manager

Allie Isbell



Keith Bucklew Project Manager



Edulakanti Deputy Project Manager

Reddy









Existing Conditions



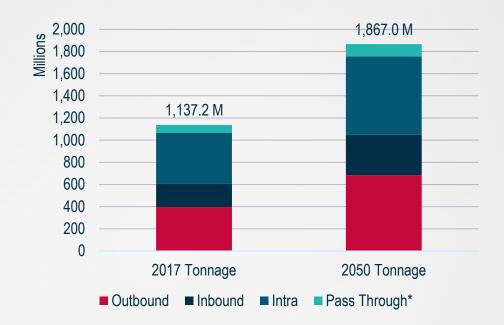
Forecast of Tonnages





The FAF <u>unconstrained</u> forecast for the Houston BEA is a 64% increase in tonnage (1.5% annual growth) from 2017 to 2050

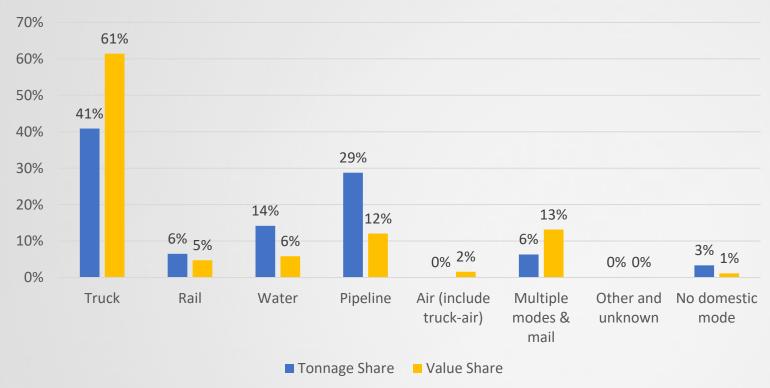
Forecast of Tonnages by Direction, 2017 - 2050



Source: Freight Analysis Framework Version 5.2 (FAF5.2) 2017 Data. Note: "Pass through" flows (not included in FAF5.2) were additionally estimated by the consultant team based on likely origin-destination path routings for US traffic flows.



Modal Share by Tonnage and Value





Trucks move the most freight by tonnage share (41%) and freight value (61%)



Pipelines account for the second largest share of freight tonnage (29%) and third largest share of freight value (12%) by moving primarily crude petroleum and coal not-elsewhere-classified

Source: Freight Analysis Framework Version 5.2 (FAF5.2) 2017 Data.

Note: "Pass through" flows (not included in FAF5.2) were additionally estimated by the consultant team based on likely origin-destination path routings for US traffic flows.



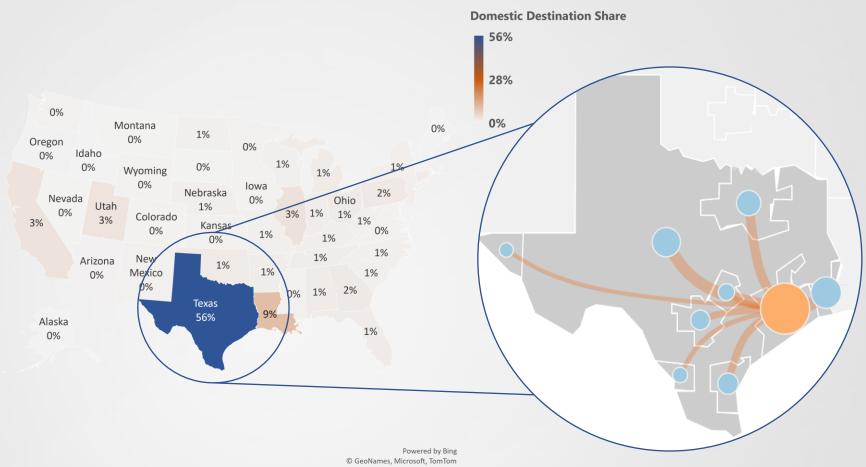
Outbound Movements – Domestic Destinations (All Modes)



Movements to the rest of Texas account for 56% of all outbound tonnage



Louisiana and Illinois are the next top destinations for outbound tonnage, 9% and 3% respectively



Source: Freight Analysis Framework Version 5.2 (FAF5.2) 2017 Data.



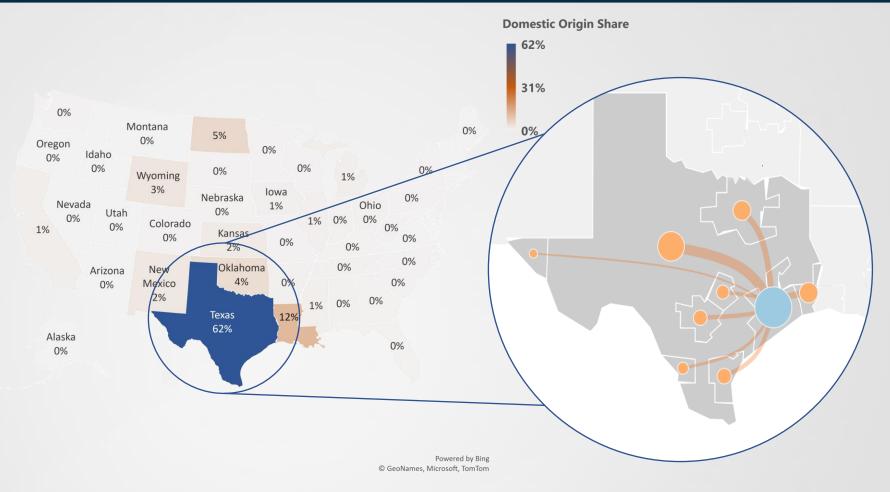
Inbound Movements – Domestic Origins (All Modes)



Movements from the rest of Texas account for 62% of all inbound tonnage



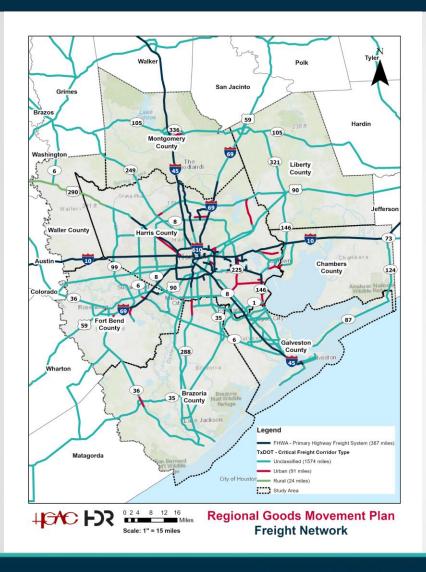
Louisiana and North Dakota are the next top originators of inbound tonnage, 12% and 5% respectively



Source: Freight Analysis Framework Version 5.2 (FAF5.2) 2017 Data.



Freight Network



- FHWA Primary Highway Freight System: 387 miles in the H-GAC eight-county region
- Texas Highway Freight Network: 1689 miles in the H-GAC eight-county region
- Critical Urban Freight Corridor (CUFC) -In 2017, 91 miles of corridors were identified as CUFC by H-GAC
- Critical Rural Freight Corridor (CRFC) –
 24 miles of corridors identified as CRFC primarily in Waller County

Source: National Highway Freight Network Shapefile and Data Description, FHWA, Date: 02/27/2020

Texas Highway Freight Network Shapefile and Data Description, TxDOT, Date: 09/10/2020

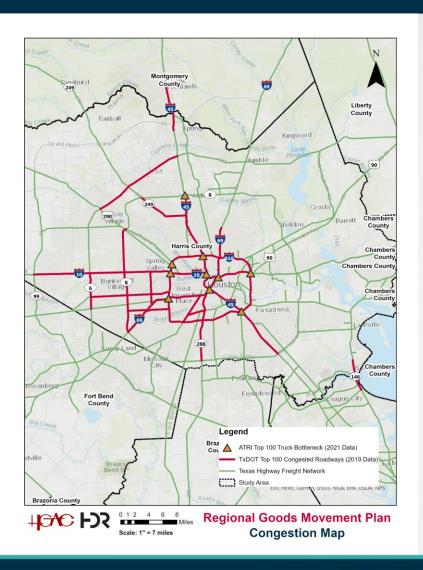




Congestion



Congestion



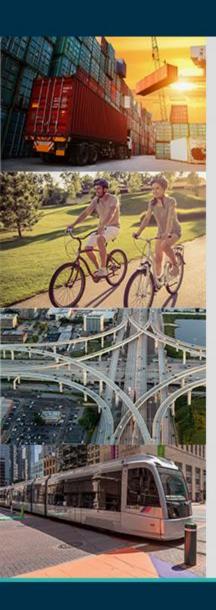
- American Transportation Research Institute (ATRI) Top 100 Truck Bottlenecks in 2021 –
 10 bottlenecks in the study area, all in Harris County
- Top 100 most congested roadways in Texas for the Year 2019 (pre-pandemic) – Most of the congested roadways in study area located in Harris County
- 34% of the Texas Highway Freight Network in Harris County is congested

Source: American Transportation Research Institute, https://truckingresearch.org/2022/02/08/top-100-truck-bottlenecks-2022/, Date 02/16/2022

TxDOT Top 100 Most Congested Roadways,
https://gis-txdot.opendata.arcgis.com/datasets/7f23449889f94a539a24ce4f0ac143a8_0/about,

Date 02/07/2021

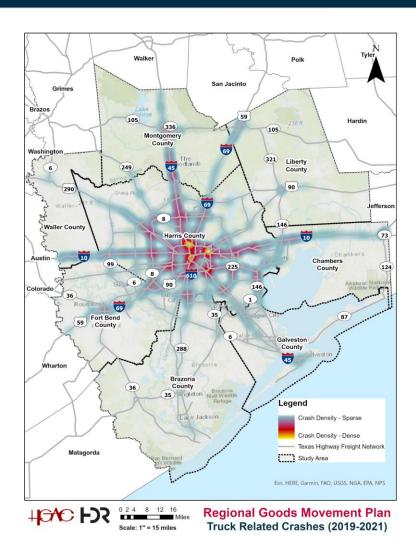
ORGANIZATION



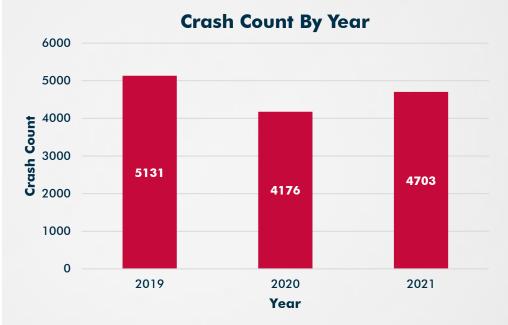
Safety



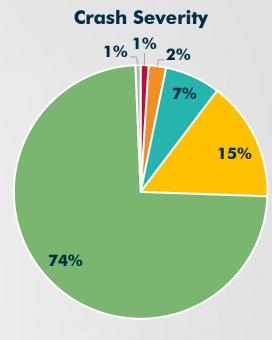
Truck Related Crashes



- 14,010 truck related crashes were observed in the 3-year period (2019 – 2021)
- The hotspots for these crashes are primarily located on the IH 610 interchanges

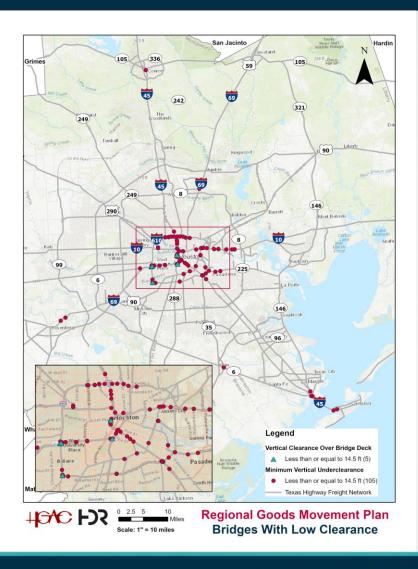






- K Fatal Injury (141)
- A Suspected Serious Injury (311)
- B Suspected Minory Injury (991)
- C Possible Injury (2136)
- O Property Damage Only (10339)
- Unknown (92)

Bridge With Low Clearance

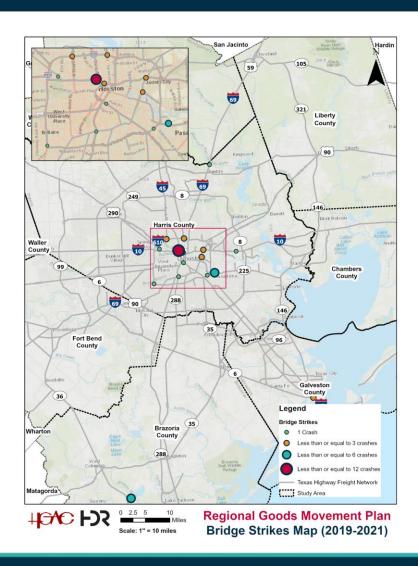


• 110 Bridges on Texas Highway Freight Network had a vertical clearance of less than 14.5'

Source: TxDOT Bridges, TxDOT, Date: 01/21/2022



Bridge Collisions (2019-2021)



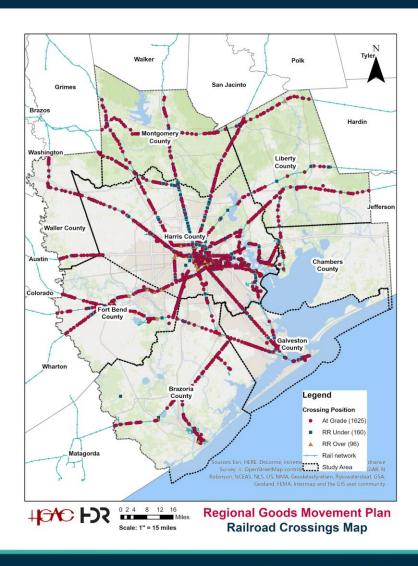
 Commercial Motor Vehicle crashes between 2019-2021 involving bridge strikes were identified. Any bridge with clearance less than 16 ft is summarized below

LOCATION	# OF CRASHES	MIN. CLEARANCE	COUNTY	RR BRIDGE
IH 10 at Houston Ave.	12	14 FT 3 IN	Harris	-
Lawndale St. at UP RR Bridge	6	13 FT 0 IN	Harris	Y
County Rd. 400 at UP RR Bridge	5	12 FT 0 IN	Brazoria	Y
IH 610 at Hardy St.	3	13 FT 5 IN	Harris	-
IH 10 at UP RR Bridge	3	14 FT 6 IN	Harris	Υ
Clinton Dr at UP RR Bridge	3	13 FT 9 IN	Harris	Υ
IH 45 at SH 146	2	14 FT 3 IN	Galveston	-
IH 610 at Durham Dr.	2	13 FT 4 IN	Harris	-
Judge Alfred Hernandez Tunnel Bridge	2	12 FT 9 IN	Harris	-
Hamblen Rd. U-Turn at IH 69/US 59	1	13 FT 0 IN	Harris	-
IH 610 at Broadway St.	1	14 FT 1 IN	Harris	-
SH 288 at US 90 A	1	15 FT 7 IN	Harris	-
IH 610 at N Braeswood Blvd.	1	15 FT 2 IN	Harris	-
IH 10 at Freeport St.	1	14 FT 2 IN	Harris	-
Hempstead Rd at UP RR Bridge	1	13 FT 10 IN	Harris	Υ
IH 45 at Jefferson St.	1	15 FT 5 IN	Harris	-

Source: TxDOT CRIS Data, 2019-2021



Railroad Crossings

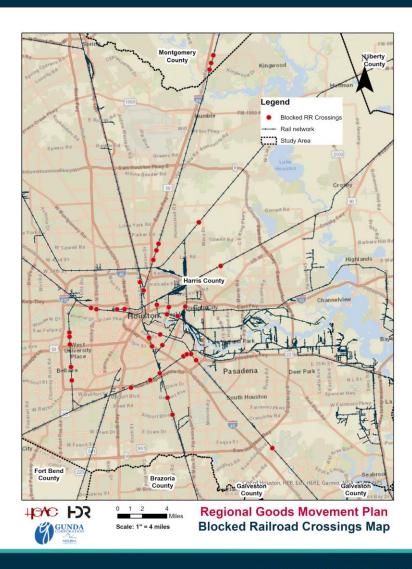


- Railroad Crossings in the H-GAC eightcounty region was identified.
- The 3 Major Class I Railroads identified were UP, BNSF, and KCS (only in Fort Bend County)
- A total of 1881 crossings were observed in the H-GAC eight-county region
- 85% of the crossings are at-grade crossings

Source: Federal Railroad Administration, USDOT, https://railroads.dot.gov/



Blocked Railroad Crossings



- Frequently blocked railroad crossings in the City of Houston have been identified
- A total of 39 crossings of concern have been identified

Source: Gulf Coast Rail District





CUFC Criteria



TxDOT CUFC Criteria

CUFCs are required to meet one or more of the following criteria:

- 1. A public roadway that Connects an Intermodal facility to:
 - The Primary Highway Freight System (PHFS)
 - The Interstate System
 - An intermodal freight facility
- 2. Located within a corridor of a route on the PHFS and provides an alternative highway option important to goods movement
- 3. Serves a major freight generator, logistic center, or manufacturing and warehouse industrial land
- 4. Important to the movement of freight within the region, as determined by the MPO or the state

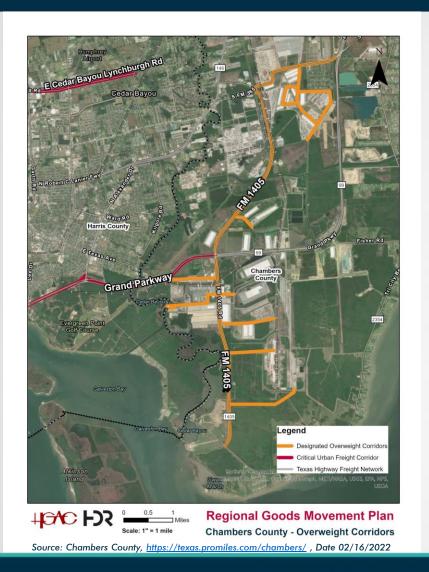
Source: Texas Freight Mobility Plan, TxDOT, Date: 03/07/2018

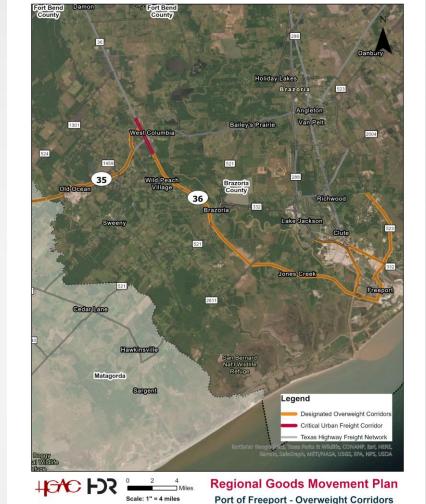
H-GAC Criteria

In addition to the above, whether there are projects planned in the next five years



Overweight Corridors

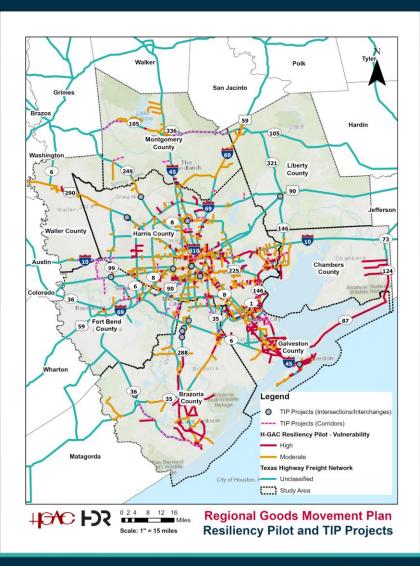




Source: Port of Freeport, https://texas.promiles.com/PortFreeport/, Date 02/16/2022



Resiliency and Future Projects



- H-GAC resiliency pilot classifies the corridors in the region based on the vulnerability and criticality risk
- Segments along the freight network(not currently CUFC) with an overall vulnerability risk of "High" or "Moderate" were identified
- H-GAC Transportation Improvement Program (TIP) projects along the freight network(not currently CUFC) were also identified

Source: HGAC



Public Engagement and Data Tools



H-GAC Engage Webpage

https://engage.h-gac.com/regional-goods

- Access links to the data tools
 - H-GAC Region FAF Data Tool
 - Regional Goods Movement Plan Update Storyboard
- Subscribe to meeting updates
- Access to previous meeting
- Review meeting materials



Contacts



Veronica Green
Veronica.green@h-gac.com

Allie Isbell

Allie.Isbell@h-gac.com



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Senior Planner

Port, Air Quality, & Electrification **Andrew DeCandis**

H-GAC Principal Planner

Chris Van Slyke I-45 Zero Emissions Corridor Pilot

Travel Demand & GIS Manager H-GAC



Ports, Air Quality and Electrification



Background

- Overview of some ongoing electrification and zero emission vehicle (ZEV) activities in the regional freight sector
- Many of these are H-GAC based, but not all
- Not intended to be a comprehensive overview of electrification projects within the region



EPA DERA Projects

- Diesel Emission Reduction Act (DERA) funding
- Offered annually by EPA to accelerate the upgrade and turnover of the existing diesel fleet
- Funding available for:
 - Regional, state, or local agencies and port authorities
 - Nonprofits with fleets or that promote transportation or air quality improvement
- Regional freight projects:
 - H-GAC Replace four diesel yard tractors with EV models (2018-19)
 - Coalition for Sustainable Inits. Replace 29 trucks with CNG (2020)
 - Port Houston Repower two marine vessels (2021)



Houston-Galveston Clean Cities

 Department of Energy funded program to reduce the use of petroleum fuels within the United States

Main Activities:

- Alternative Fuel Vehicle and Compliance Coordination Efforts
 - Helping alternative fuel applicants through a grant system
- General Stakeholder Outreach / Awareness Events and Activities
 - Hosting Stakeholder meetings, webinars, podcasts, and virtual site visits
- Technical Training and Education
 - Classroom training
 - Technical webinars
 - Hands-on demonstrations



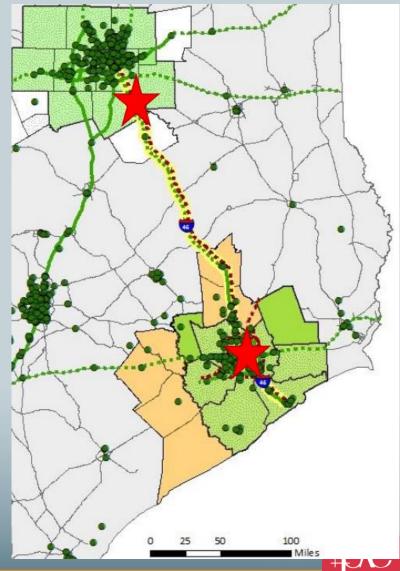
Hydrogen

- Through the ZEV Corridor Pilot, we know that there is significant local interest in using hydrogen for freight activities
- Pros vs Electricity:
 - Lower overall vehicle weight
 - Larger freight capacity
 - Longer duty cycle than heavy duty Evs
 - Fast fueling
- Cons:
 - No fueling stations in our region
 - Higher overall costs at present



I-45 ZEV Corridor Pilot

- Project Funded by FHWA to help develop a zero-emission corridor on I-45 between Houston and Dallas
- Developed and led by NCTCOG staff with data and outreach assistance from H-GAC staff
- Held a series of stakeholder meetings that included fleets, electricity and fueling providers
- Project is ongoing, but is expected to wrap up this summer
- Will develop and release a final corridor development plan – discussions will continue to make the ZEV corridor a reality.



Questions?



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Background



- NCTCOG received planning grant from the FHWA Alternative
 Deployment Program to create I-45 Zero Emission Vehicle (ZEV)
 plan on corridor from Dallas to Houston.
- **Objective:** Find sites best suited for electric vehicle (EV) and hydrogen fueling infrastructure to develop Electric and Hydrogen corridor along IH-45.
- Focus is on medium and heavy-duty sectors. Grant will support
 Future Strategic Initiatives in the Corridor, such as Truck Platooning
 and AV Technology Deployment.

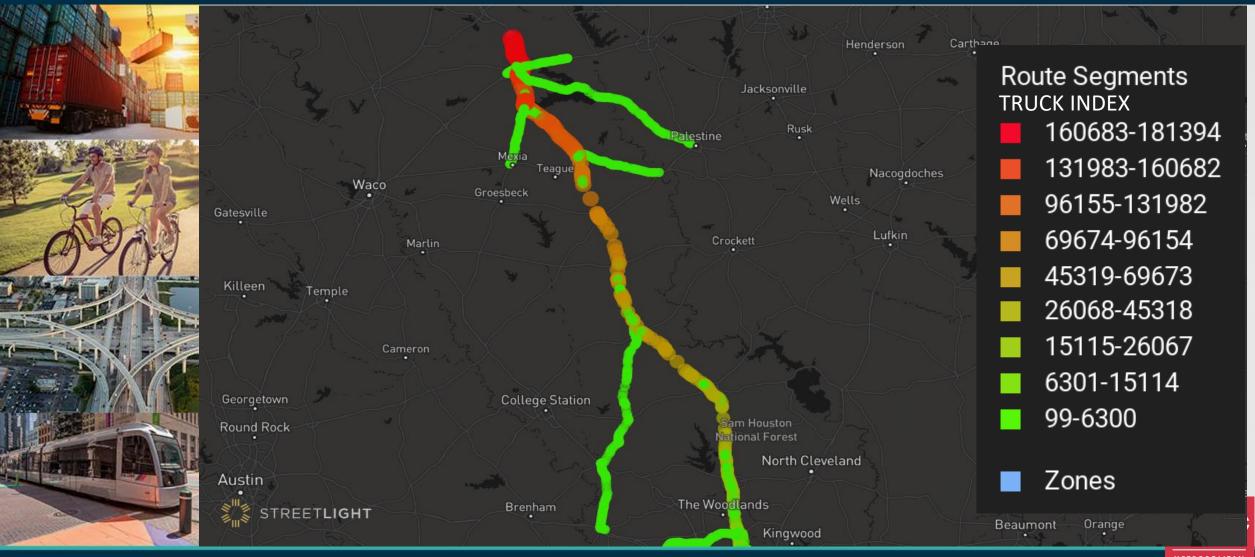
H-GAC & Streetlight Big Data



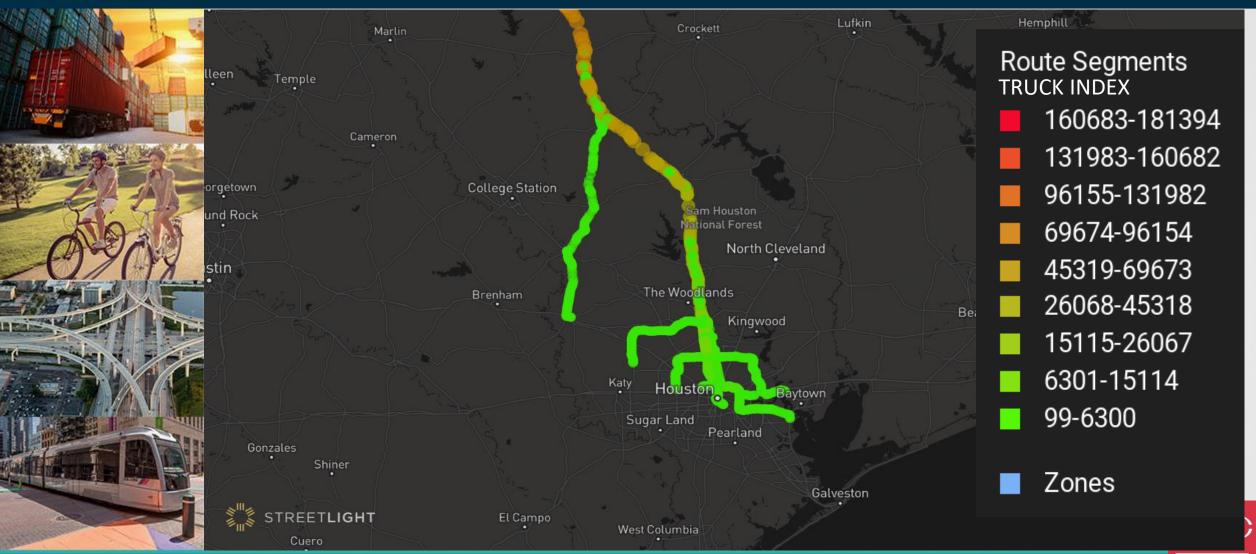
- H-GAC is assisting this project by providing Streetlight Big Data analysis to assist in selecting alternative fueling stations
- Streetlight is a Big Data platform that helps understand travel patterns between origin and destinations for many modes of travel, but particularly trucks.
- Analysis was created utilizing Streetlight's 'Top Routes' tool. By providing an origin zone, Streetlight provides a complete picture on where trucks travel from that zone.



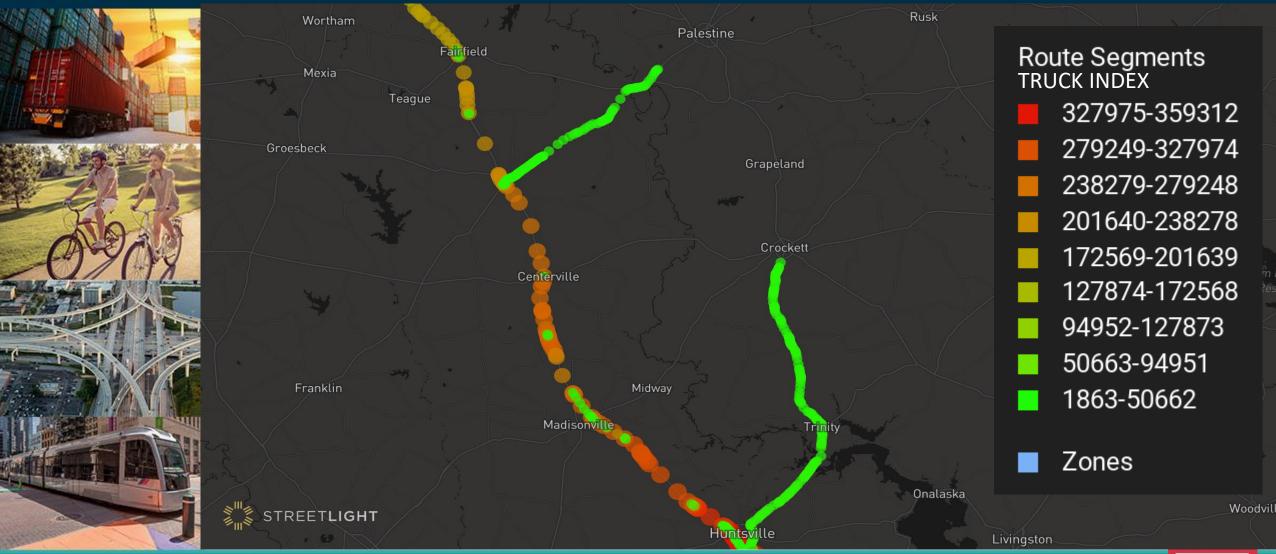
Streetlight: Top Routes from South DFW on I-45 (northern corridor)



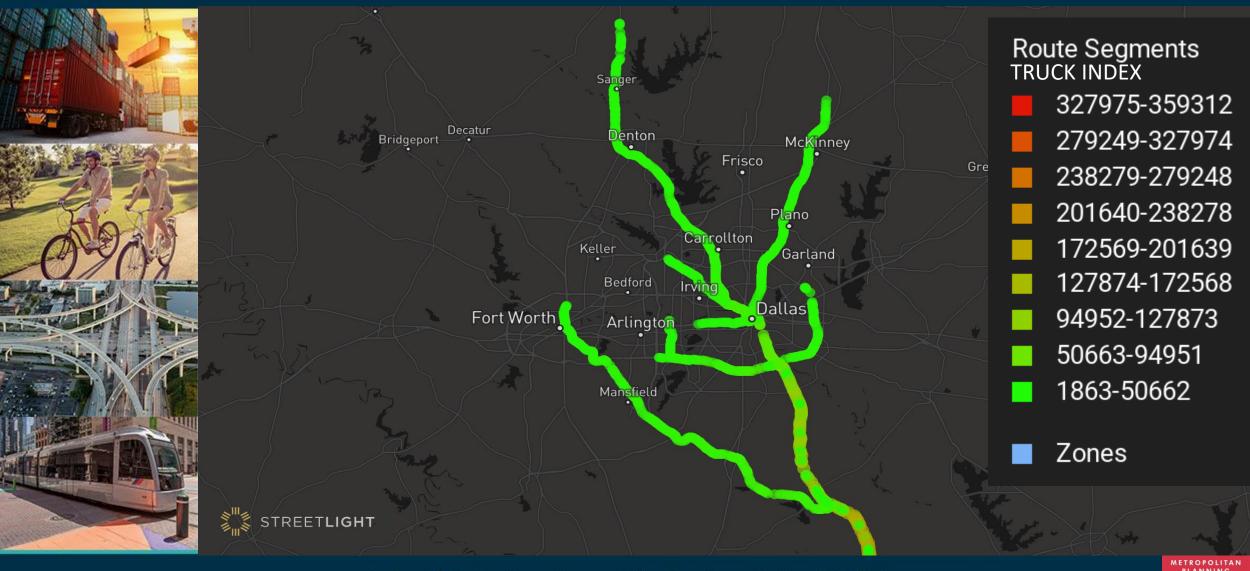
Streetlight: Top Routes from South DFW on I-45 (southern corridor)



Streetlight: Top Routes from North HOU on I-45 (southern corridor)



Streetlight: Top Routes from North HOU on I-45 (northern corridor)



Questions

NCTCOG:

Soria Adibi, SAdibi@nctcog.org

Senior Transportation/Air Quality Planner

(817) 704-5667

H-GAC (Streetlight related questions):

Larry Meyer, larry.meyer@h-gac.com

Senior Data Analyst

(713) 993-4537



Announcements

- Board of Directors Meeting
- Transportation Advisory Committee
- Transportation Policy Council
- Regional Air Quality PAC

March 15, 2022, 10a-12p

March 16, 2022, 9:30a-11:30a

March 25, 2022, 9:30a-11a

March 31, 2022. 10a-12p,



Adjournment

Thank you

