



# The Future of Mobility

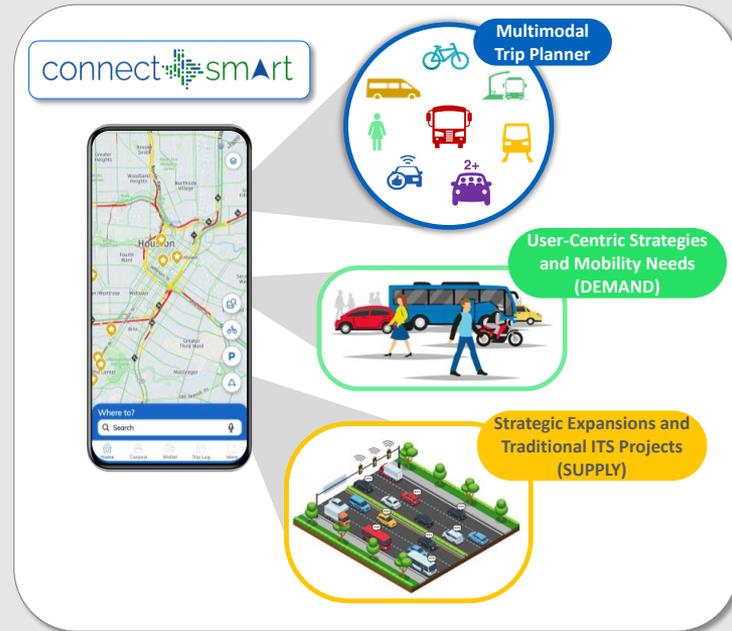
## Gateway of the Americas



# *Introduction to ConnectSmart*

# ConnectSmart – An Advanced and Integrated Multimodal Mobility Platform

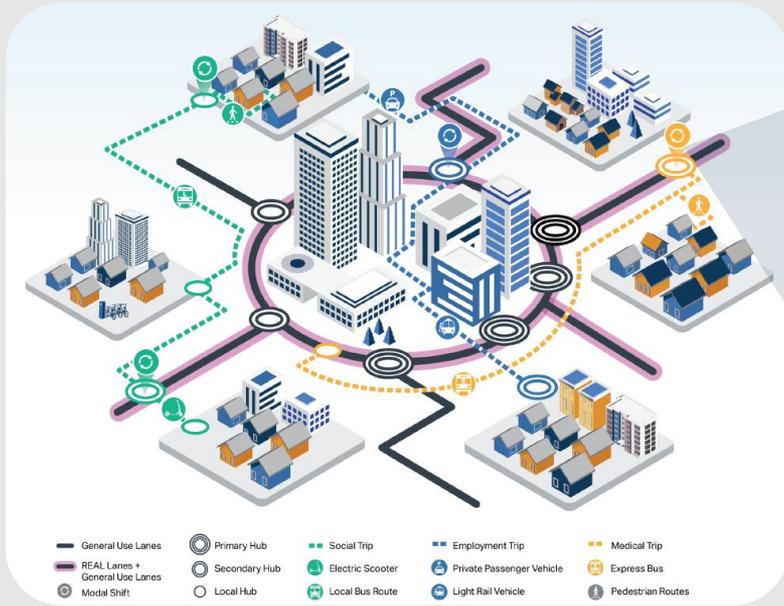
- Goal: *Making Houston More Connected and Less Congested*
  - by delivering a better and safer travel experience to commuters
- Technology platform and mobile app bridging:
  - Transportation Systems Management and Operations (TSMO),
  - Mobility as a Service (MaaS),
  - Travel Demand Management (TDM),
  - and Behavioral Economics
- Seamlessly integrates Supply and Demand



ConnectSmart Website: <https://www.HoustonConnectSmart.com/>



# ConnectSmart – An Advanced and Integrated Multimodal Mobility Platform



ConnectSmart is the technology connecting users to transportation infrastructure and services

**connect smart**

**Multimodal Trip Planner**

**Traveler Services**

**Traveler Information**

**Stalled Vehicle Along Your Route** ⚠️  
Expect delays at IH-69 Southwest Southbound after Almeda Rd on your upcoming trip

OK **View Location**

ConnectSmart Website: <https://www.HoustonConnectSmart.com/>



# ConnectSmart – Bridging TSMO and TDM

Transportation Systems Management and Operations (TSMO)

Transportation Demand Management (TDM)

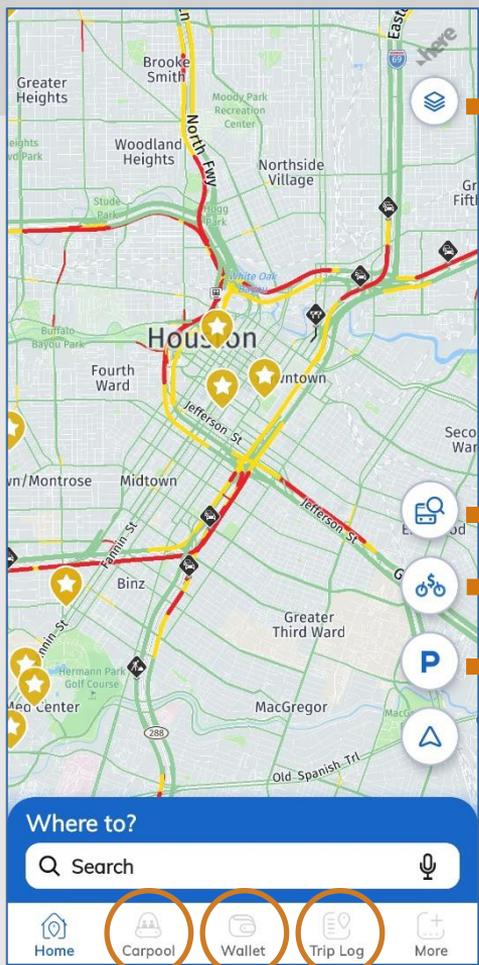


connect smart  
**Platform**  
(and Mobile App)



*An integrated platform addressing  
System Goals and User Needs*





### TranStar Integrations

- Message Signs ✓
- Cameras ✓
- Flood Warning ✓

### METRO Integrations

433 METRORAPID SILVER LINE

NORTHWEST TC - NB

- Westpark / Lower Uptown Brt  
Arriving in 7 mins
- Richmond Station NB  
Arriving in 4 mins
- West Alabama / Galleria Station NB  
Arriving in 6 mins
- Westheimer / Galleria Station NB  
Arriving now
- Guilford Station NB  
Arriving in 2 mins
- Ambassador Station NB  
Arriving in 3 mins
- San Felipe Station NB  
Arriving in 5 mins

Source: METRO  
Last update: 9:45 AM

### COH BCycle Integration

< 408 Hadley St, Houston, TX 77002

West Gray & Baldwin  
BCycle • 4.0 mi

3 Classic / 4 Docks

View Route

### COH Parking Integration

< 600 Milam E

All Parking lot On-street

Zone 47520 / MIL601E

High vacancy (50%)

View Route



**SECTION**

# ***Introduction to REAL***

# What is the REAL Plan?

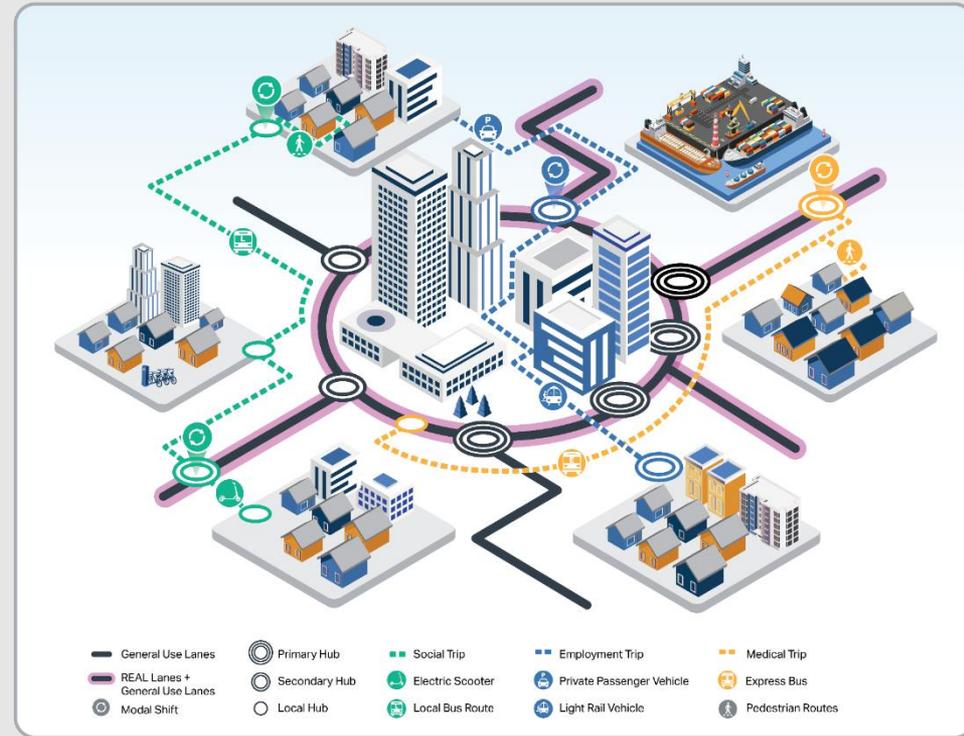
The REAL Plan is a **comprehensive plan** to present a **long-term vision** for the future that shows how the transportation network will evolve over time to **move people and goods**.

The REAL Plan includes an **interconnected multimodal transportation system** to provide **equitable access** to opportunities for the entire region.



# What is an interconnected multimodal transportation system?

- **Agile** multimodal transportation system
- Connected through **mobility hubs**
- Provide wide range of **multimodal** choices
- **Scalable** mobility concept
- **Adaptable** to future growth and innovation



**SECTION**

# ***Why REAL?***

# What's Driving the REAL Plan?



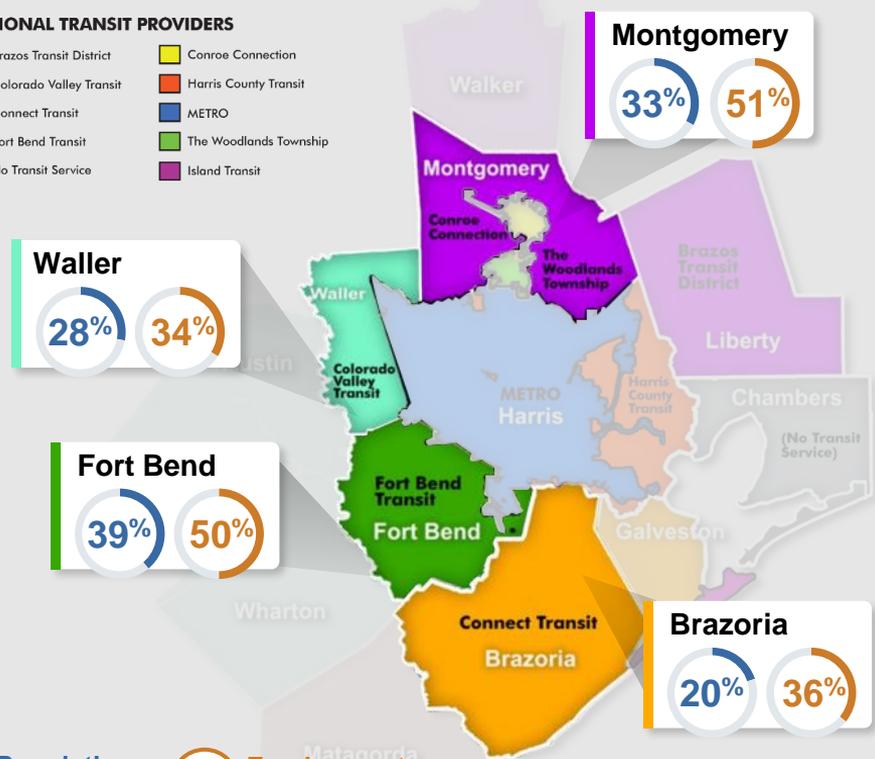


# Public Transit

- Limited transit service outside Harris County
- Lack of integrated/seamless intermodal system
- Tremendous population and employment growth outside Harris County/METRO service area

### REGIONAL TRANSIT PROVIDERS

Brazos Transit District	Conroe Connection
Colorado Valley Transit	Harris County Transit
Connect Transit	METRO
Fort Bend Transit	The Woodlands Township
No Transit Service	Island Transit



Population Change%

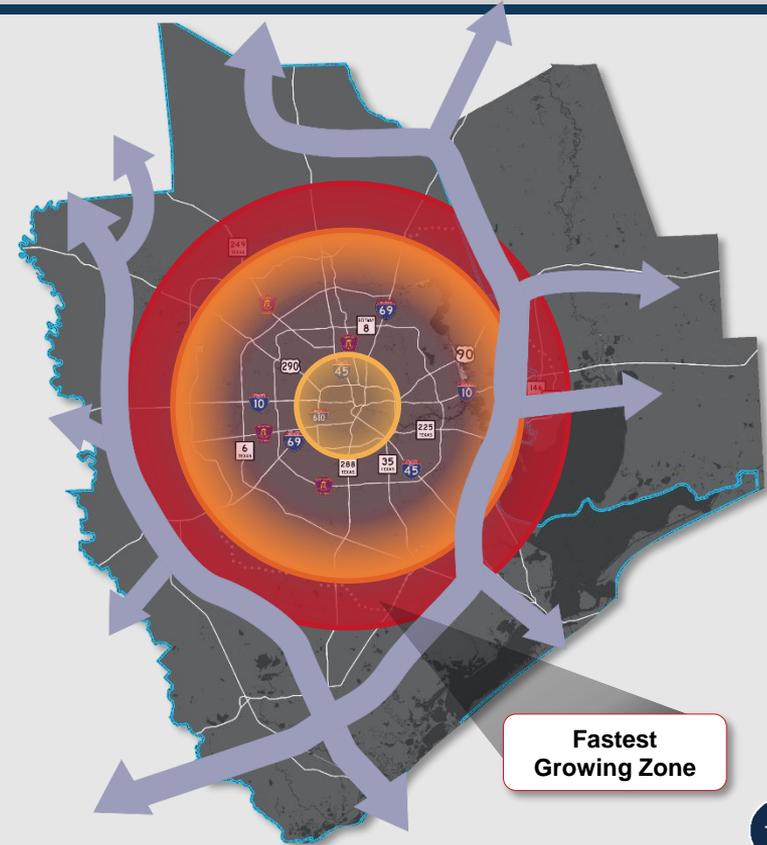


Employment Change%

Source: U.S. Census Bureau, 2019 Population Estimates, U.S. Bureau of Labor Statistics - September 2019 Estimates



- 6th ranked U.S. container port by total TEUs
- Truck trips to the Port of Houston are expected to grow from 3.5 million in 2019 to 8.5 million in 2045
- Congestion & bottlenecks at interchanges
- Safety issues
- Network connectivity/access to intermodal facilities
- Community and environmental issues
- Keeping freight traffic away from urban core



Source: H-GAC Regional Goods Movement Study, 2013; H-GAC Port Area Mobility Study, 2020



## Future Technology



CV/AV adoption



EV charging



Mobility as a Service



Autonomous trucking facilities



Automated incident detection



Dynamic lane markings



Last mile freight delivery



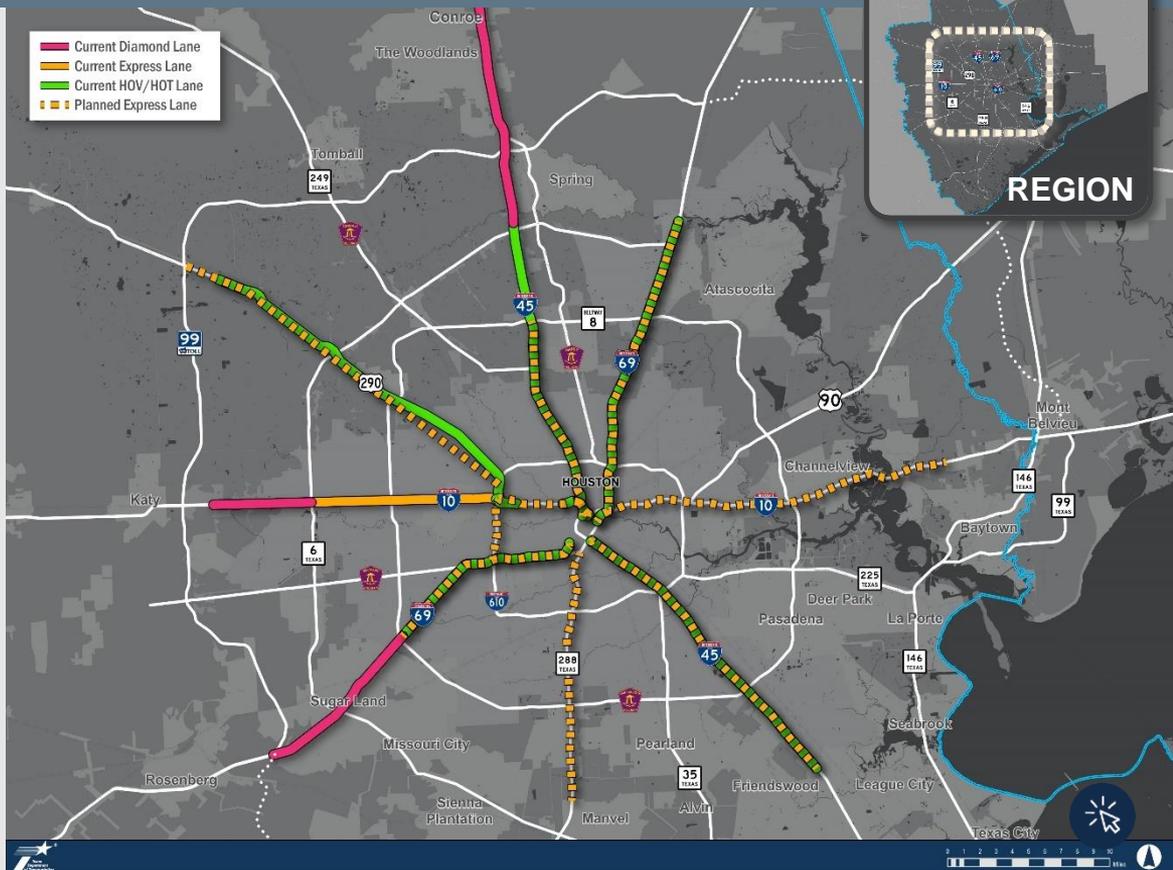
Drone





# On-going Regional Initiatives

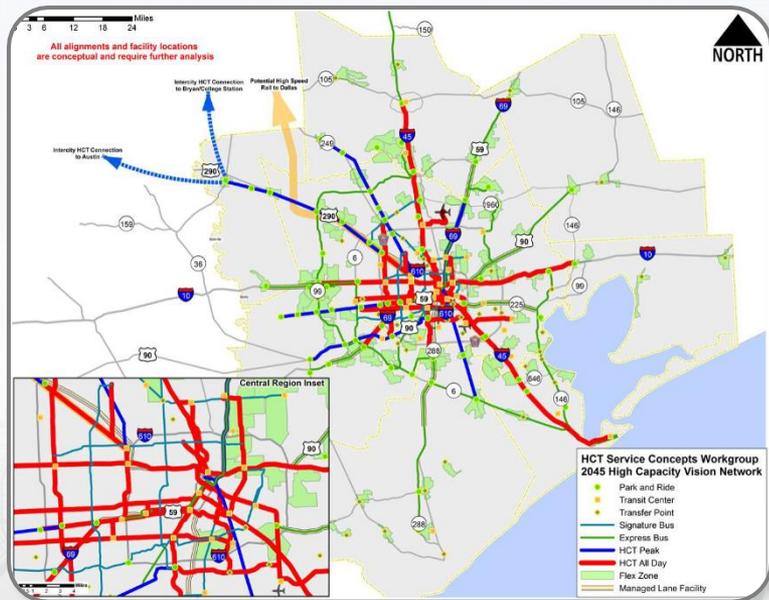
- **143 miles** of existing HOV/HOT on TxDOT facility
- **Future conversion** of HOV/HOT to 2-way Express Lanes along:
  - I-45
  - I-69
  - US 290
- **Planned Express Lanes** along:
  - Inner Katy
  - I-610 W
  - SH 288
  - I-10 E
  - Hempstead Road



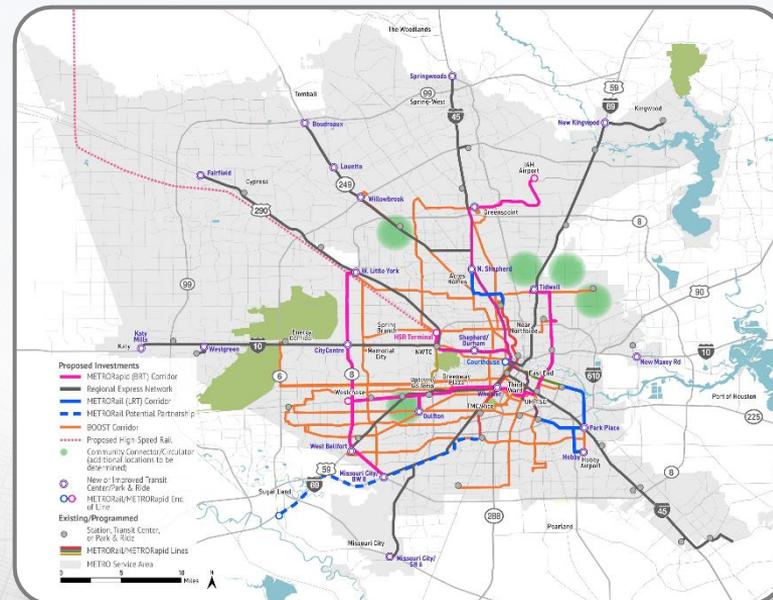


# On-going Regional Initiatives

## H-GAC HCTTF 2045 RTP



## METRONext Moving Forward Plan



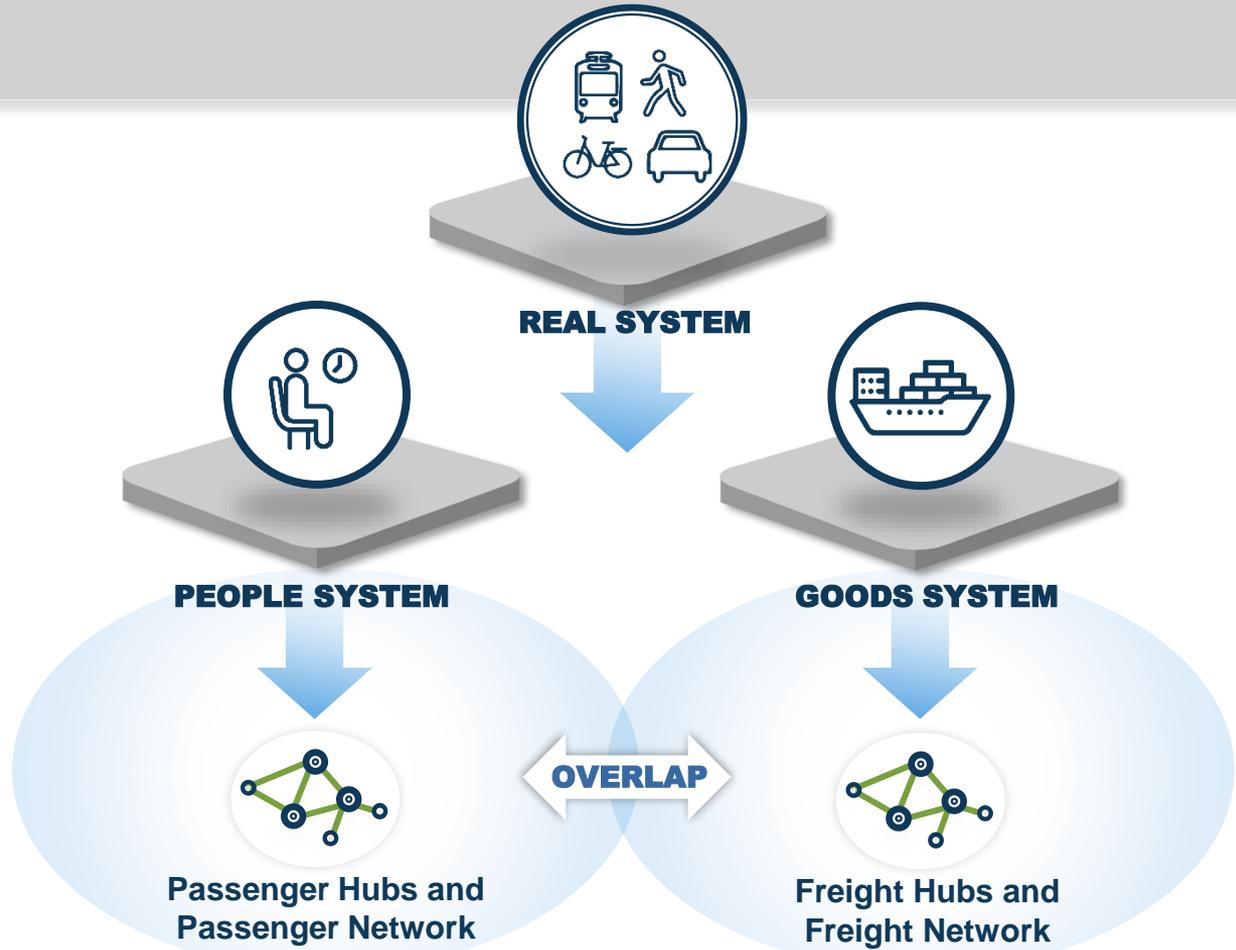
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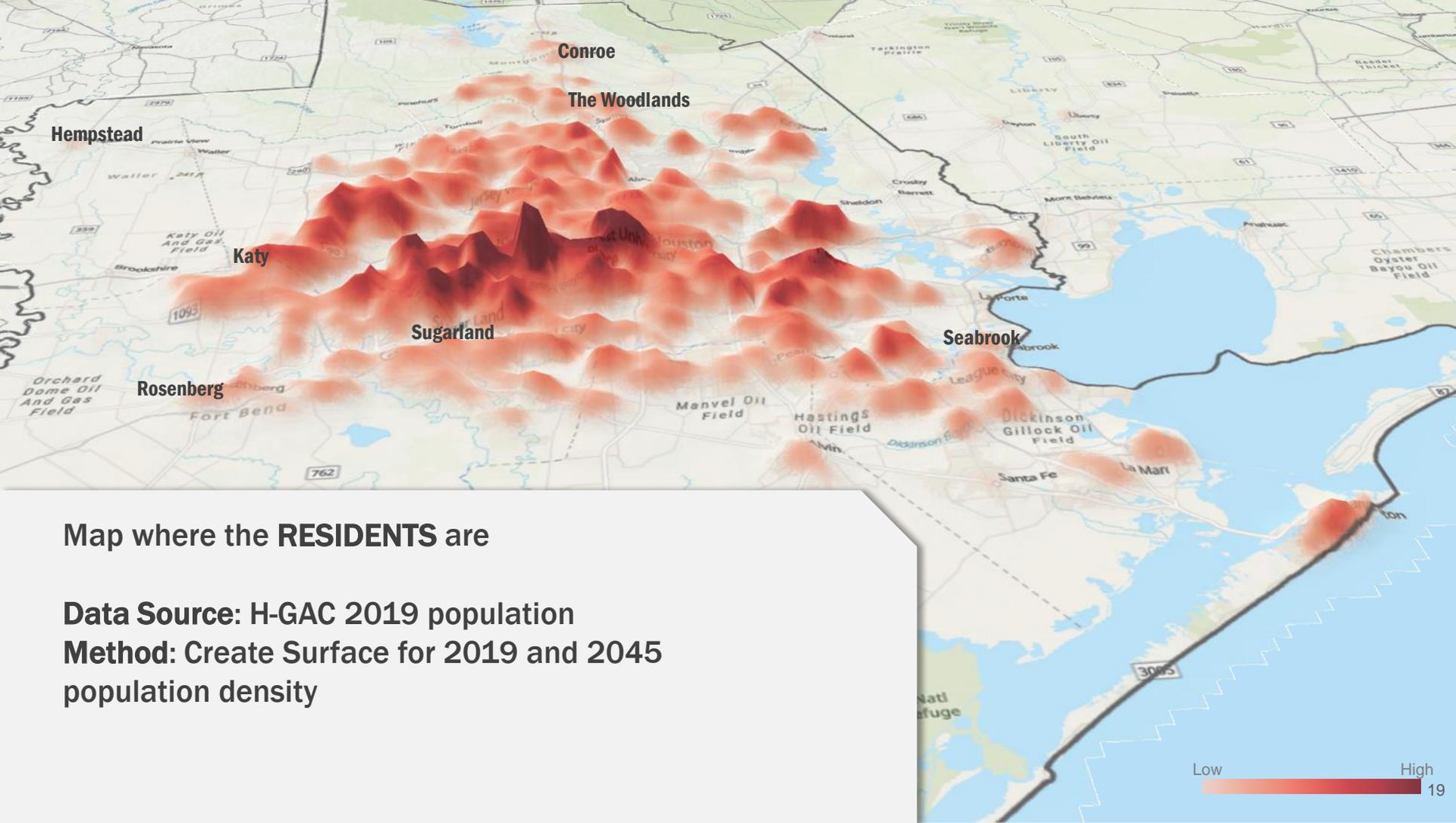
**2.3**

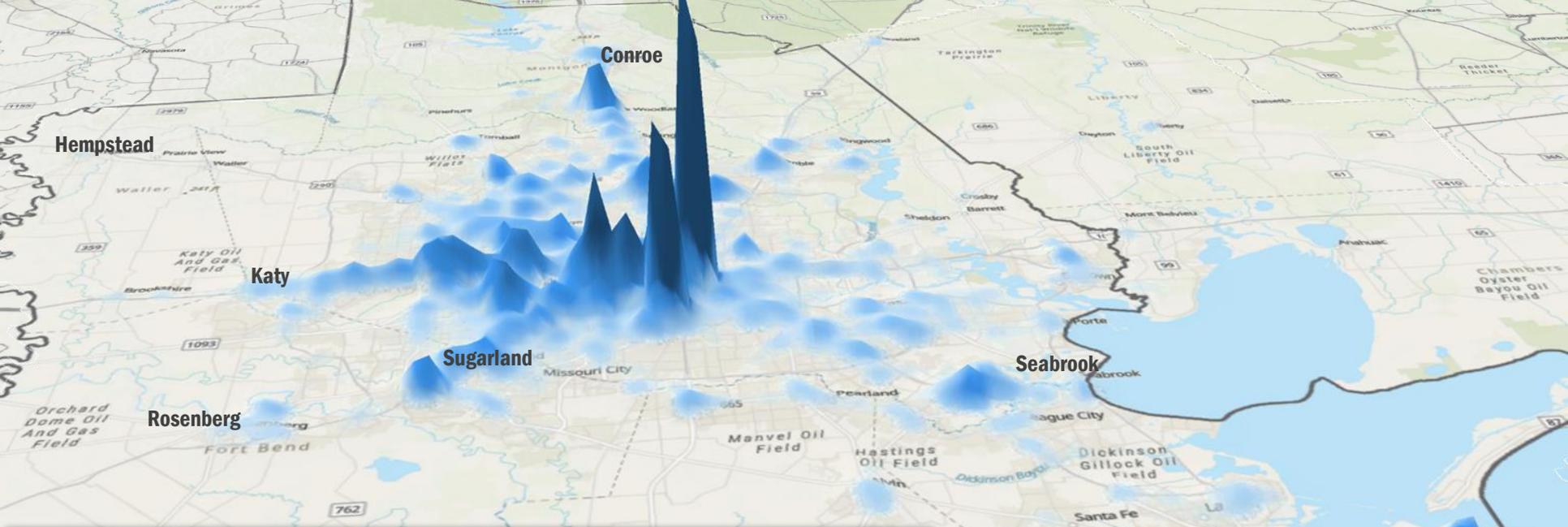
***REAL System  
Development***

# Overview of REAL System

- There are **two** components of the REAL system
  - People System**
  - Goods System**
- Each “system” has two components
  - Multimodal Hubs**
  - Network of REAL Lanes and Connections**
- People System and Goods System will overlap



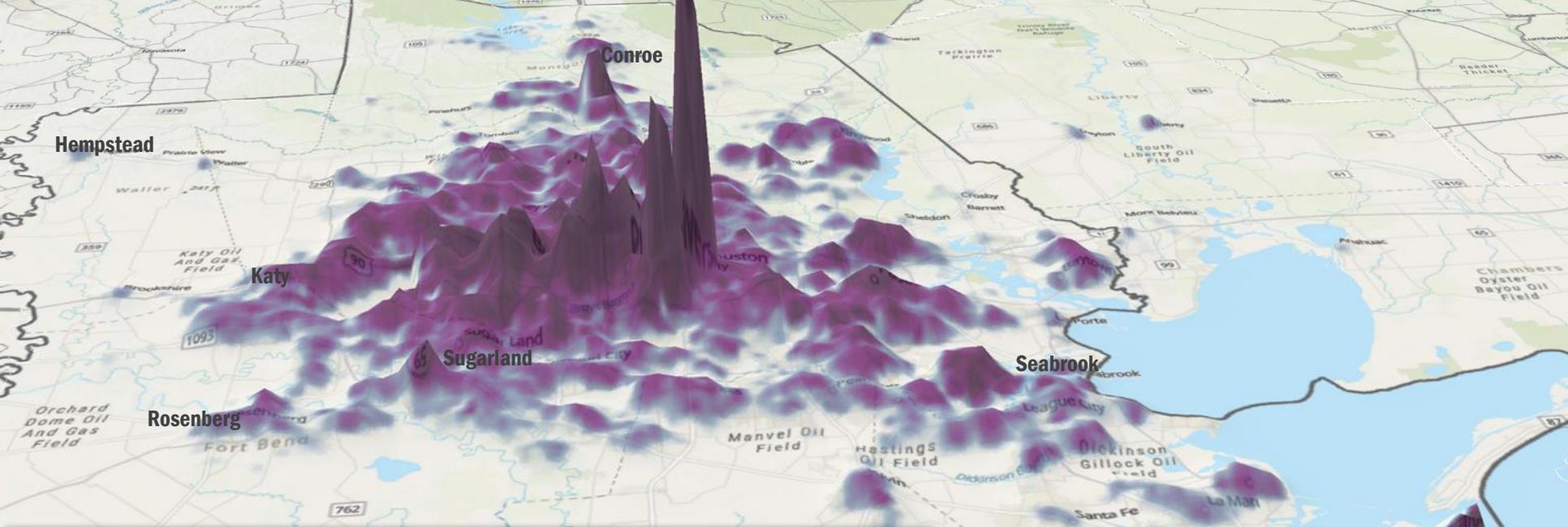




Map where the **JOBS** are

**Data Source:** H-GAC 2019 employment  
**Method:** Create Surface for 2019 and 2045  
employment density





Map where both **RESIDENTS** and **JOB**s are

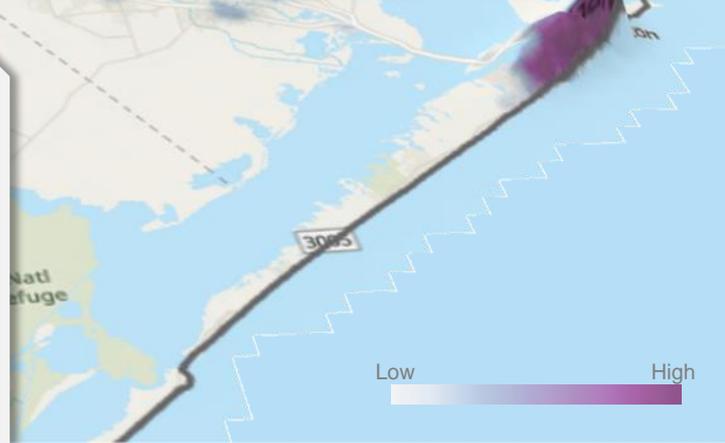
**Data Source:** H-GAC 2019 employment + population

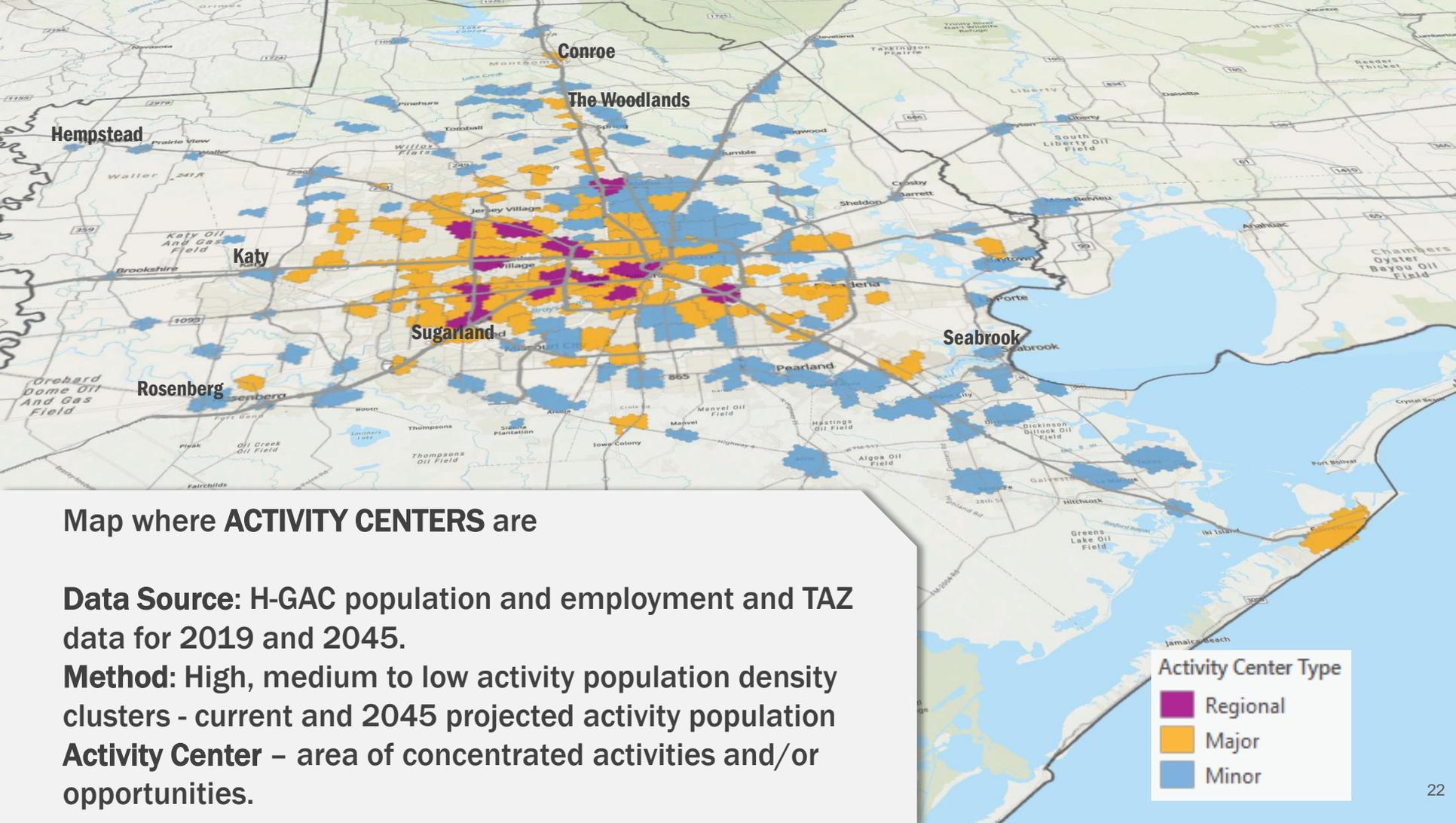
**Method:** Create Surface for 2019 and 2045 activity

population density

**Activity population** – summed population and

employment in each area unit

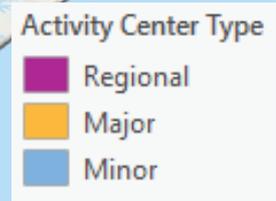


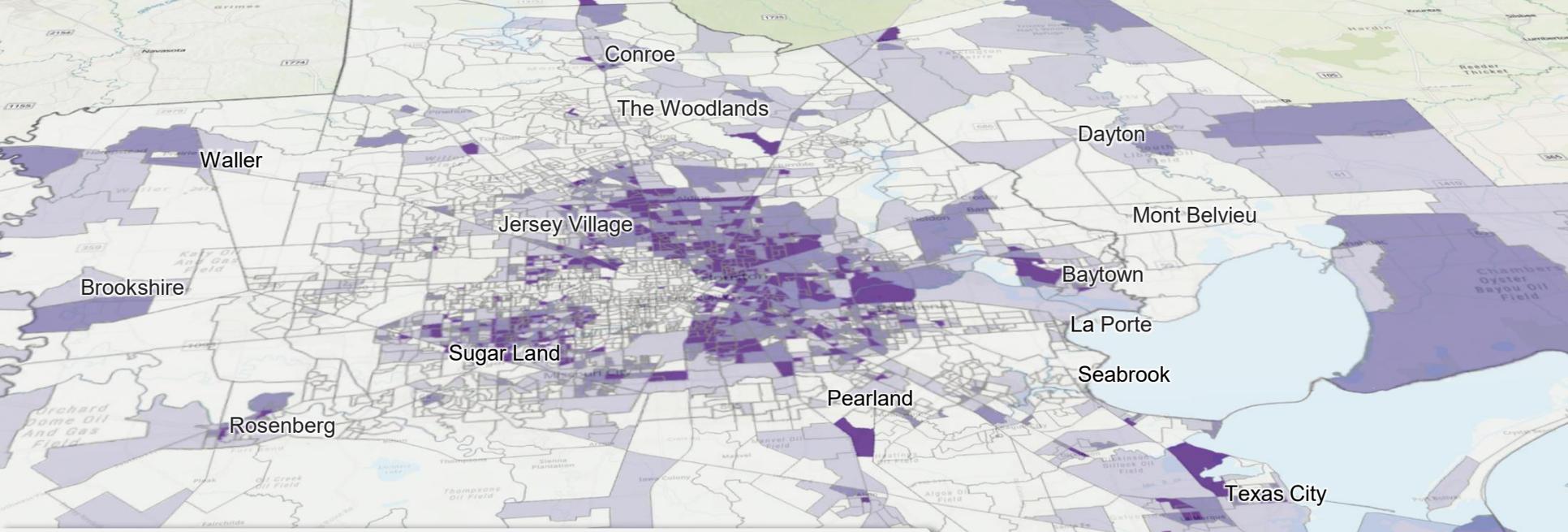


Map where **ACTIVITY CENTERS** are

**Data Source:** H-GAC population and employment and TAZ data for 2019 and 2045.

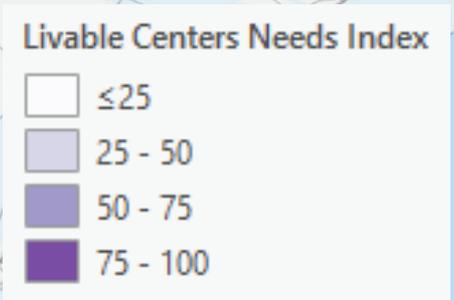
**Method:** High, medium to low activity population density clusters - current and 2045 projected activity population  
**Activity Center** – area of concentrated activities and/or opportunities.

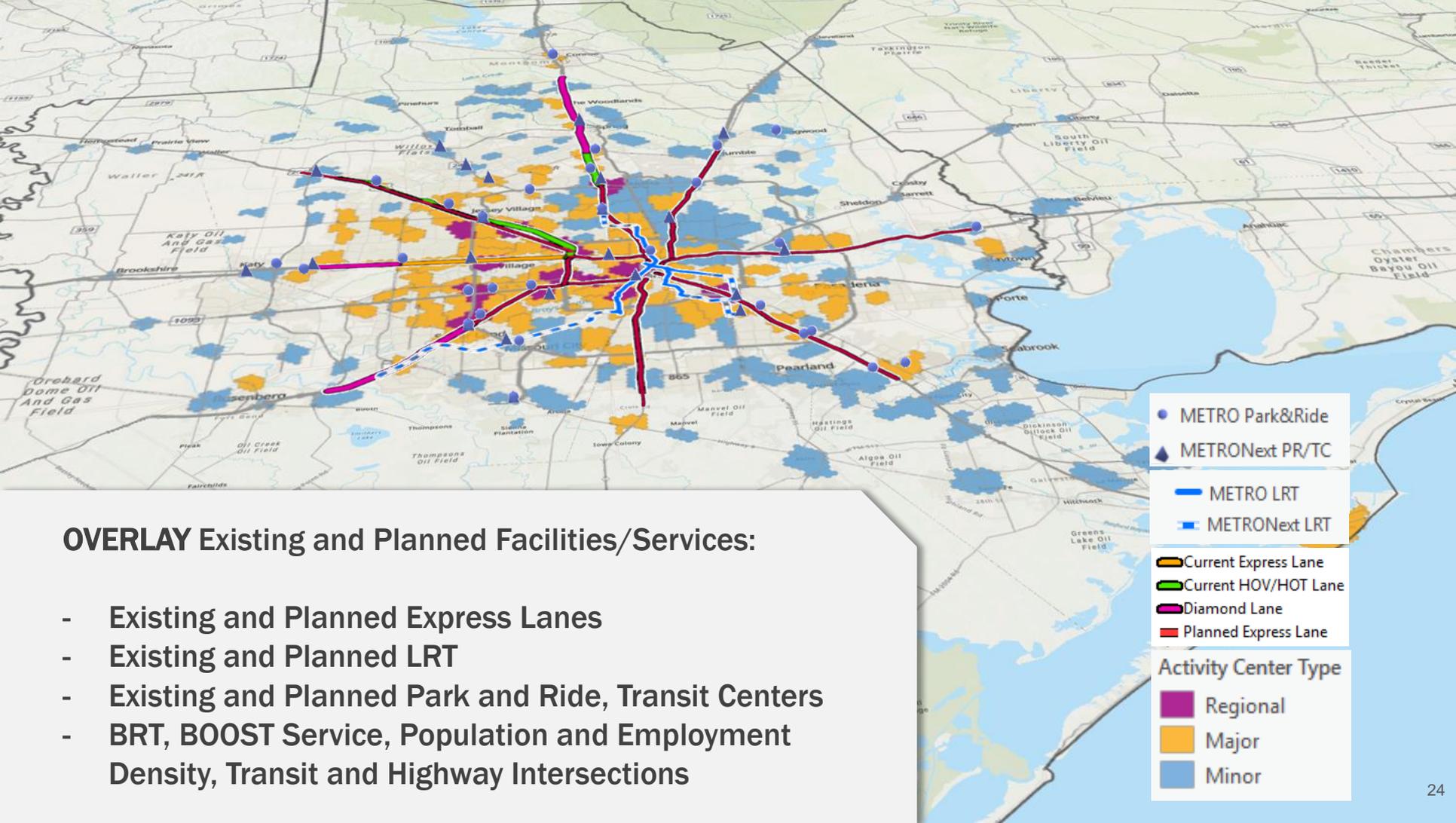




Map where **VULNERABLE COMMUNITIES** are

**Data Source: H-GAC Livable Centers Need Index, 2021**





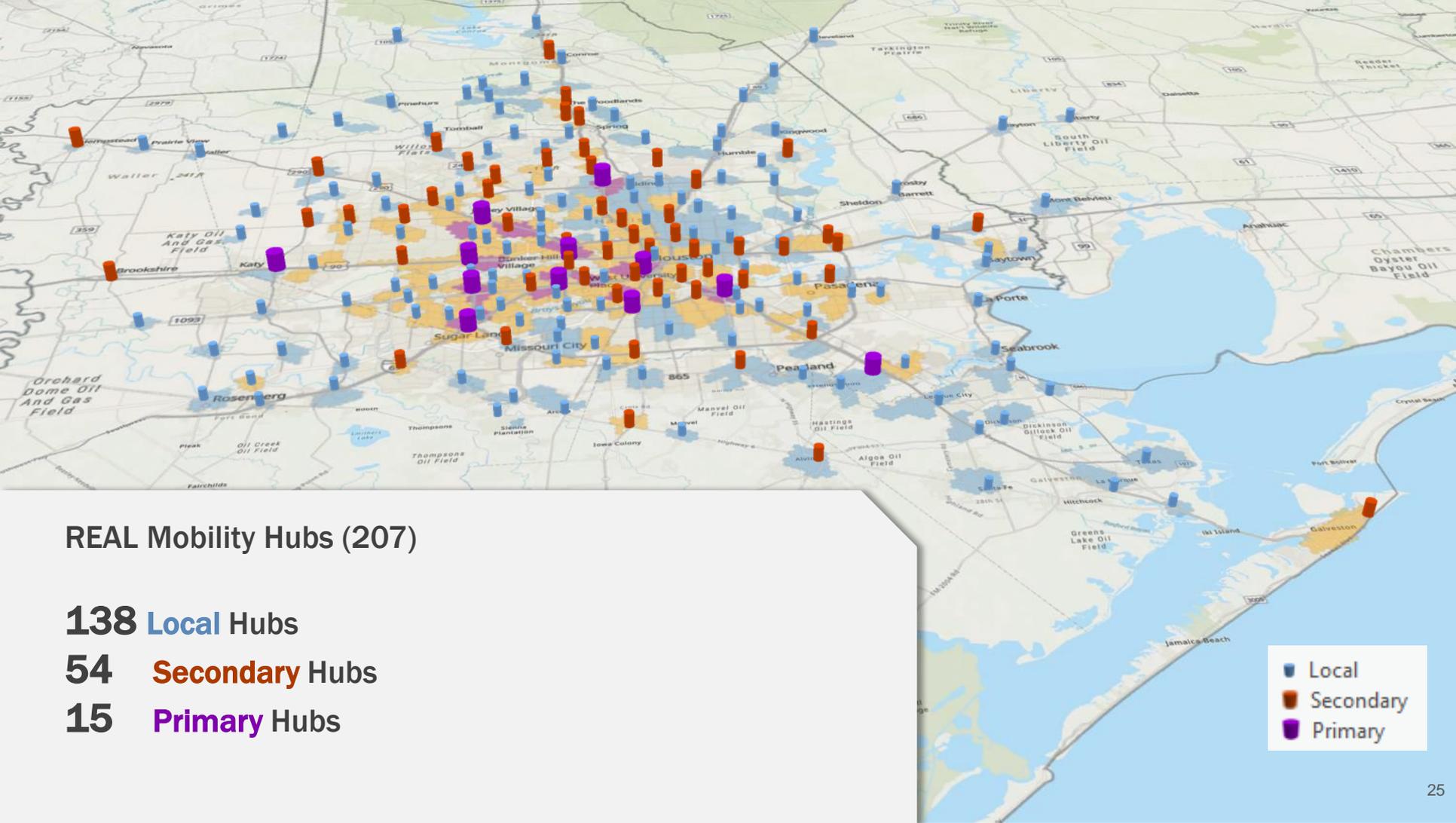
## OVERLAY Existing and Planned Facilities/Services:

- Existing and Planned Express Lanes
- Existing and Planned LRT
- Existing and Planned Park and Ride, Transit Centers
- BRT, BOOST Service, Population and Employment Density, Transit and Highway Intersections

● METRO Park&Ride  
▲ METRONext PR/TC  
— METRO LRT  
- - - METRONext LRT  
 Current Express Lane  
 Current HOV/HOT Lane  
 Diamond Lane  
 Planned Express Lane

**Activity Center Type**

Regional  
 Major  
 Minor



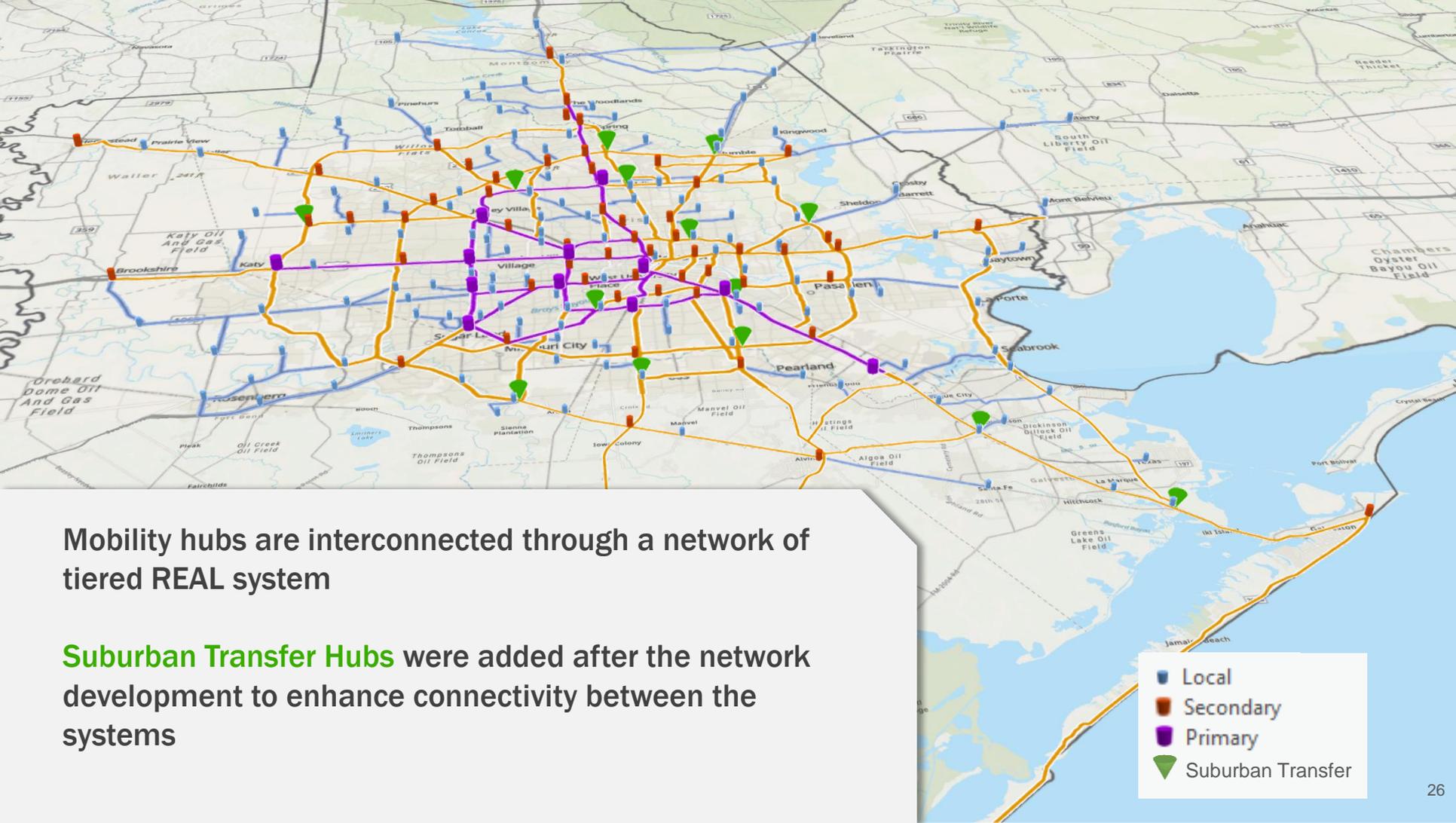
**REAL** Mobility Hubs (207)

**138** Local Hubs

**54** Secondary Hubs

**15** Primary Hubs

- Local
- Secondary
- Primary



Mobility hubs are interconnected through a network of tiered REAL system

**Suburban Transfer Hubs** were added after the network development to enhance connectivity between the systems

- Local
- Secondary
- Primary
- Suburban Transfer

**SECTION**

# ***Multimodal Hub Concepts***

# What is a Mobility Hub?

- It is an **integrated** platform of mobility services, amenities, that connects to the REAL lanes.
- A Mobility Hub serves as a **multi-modal** focal point connecting to the transportation network.
- There are **three levels** of hub depending on the demand:
  - Primary
  - Secondary
  - Local



**Primary**



**Secondary**



**Local**



## Most Intensive

Large-scale hubs that act as focal points for the regional mobility network

## Medium Intensity

Medium-sized hubs connecting regional transportation network and dispersing users onto more local modes

## Least Intensive

Small-scale hubs that focus on neighborhood-level transportation solutions.

# What is a Freight Hub?

- A freight hub is a **collection of infrastructure** designed to support industrial, manufacturing and logistics activities.
- Infrastructure could support roadway, rail, and waterborne modes or the **intermodal movement of goods**
- There are two levels **depending on the type of activity**:
  - Freight Villages
  - Unified Distribution Districts



Freight Village



Unified Distribution District



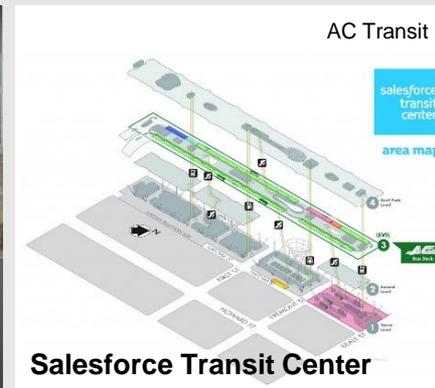
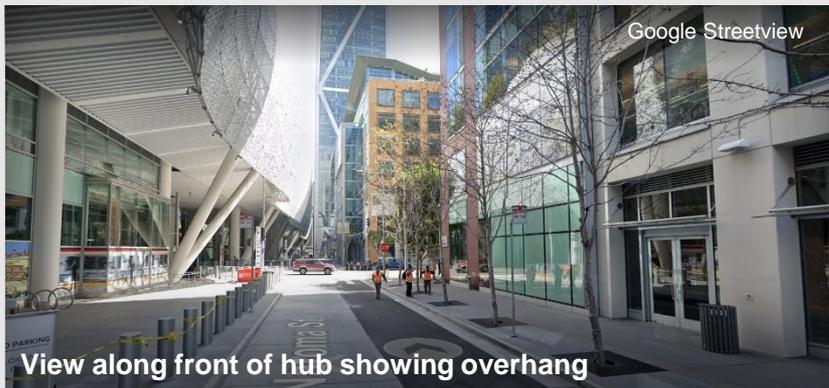
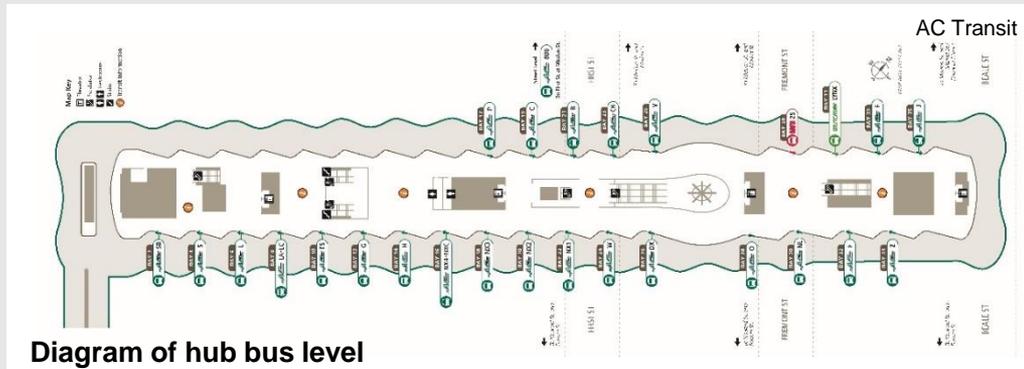
## More Industrial Use

Activities relating to transport, logistics and the distribution of goods, both for national and international transit, are carried out by various operators

## More Commercial / Residential Use

Freight accessing residential and retail properties, consolidation of deliveries, promotion of alternative delivery methods and delivery infrastructure

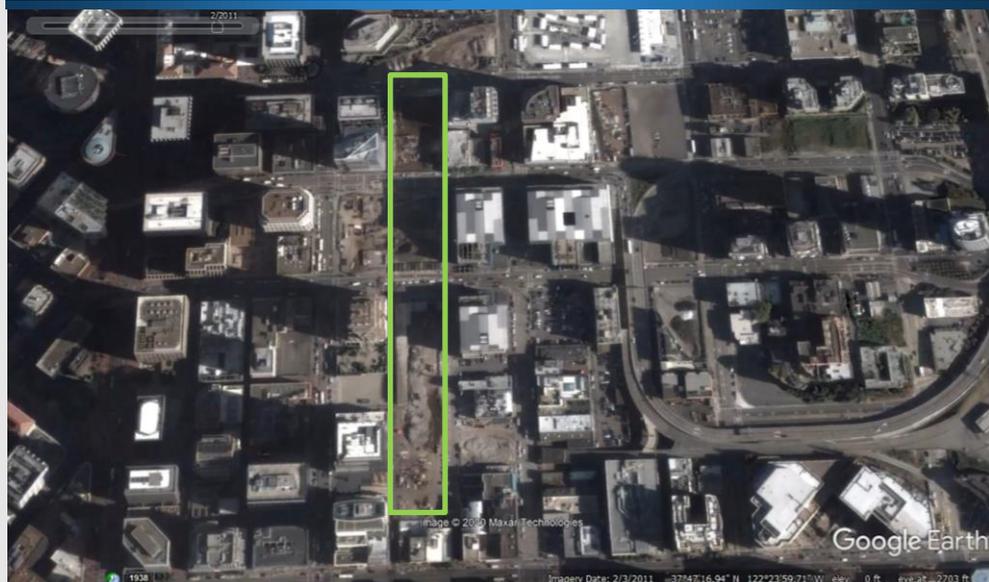
# Example Hub: Salesforce Transit Center, San Francisco



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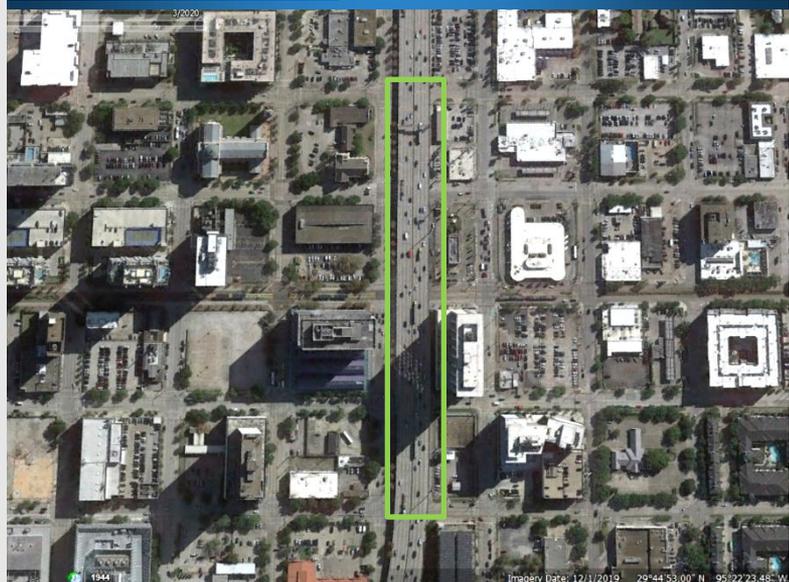


## San Francisco



Google Earth

## Houston



Google Earth



# Downtown Hub Rendering



# Downtown Hub Animation



<https://www.houstonconnectsmart.com/>

# A Better Way, Every Day.





# Thank You

For more information: [TxDOT.gov](http://TxDOT.gov) and Search: [The REAL Plan](http://TheREALPlan)  
[HoustonConnectSmart.com](http://HoustonConnectSmart.com)

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