



Houston - Galveston Area Council: Regional Planning



What is H - GAC?

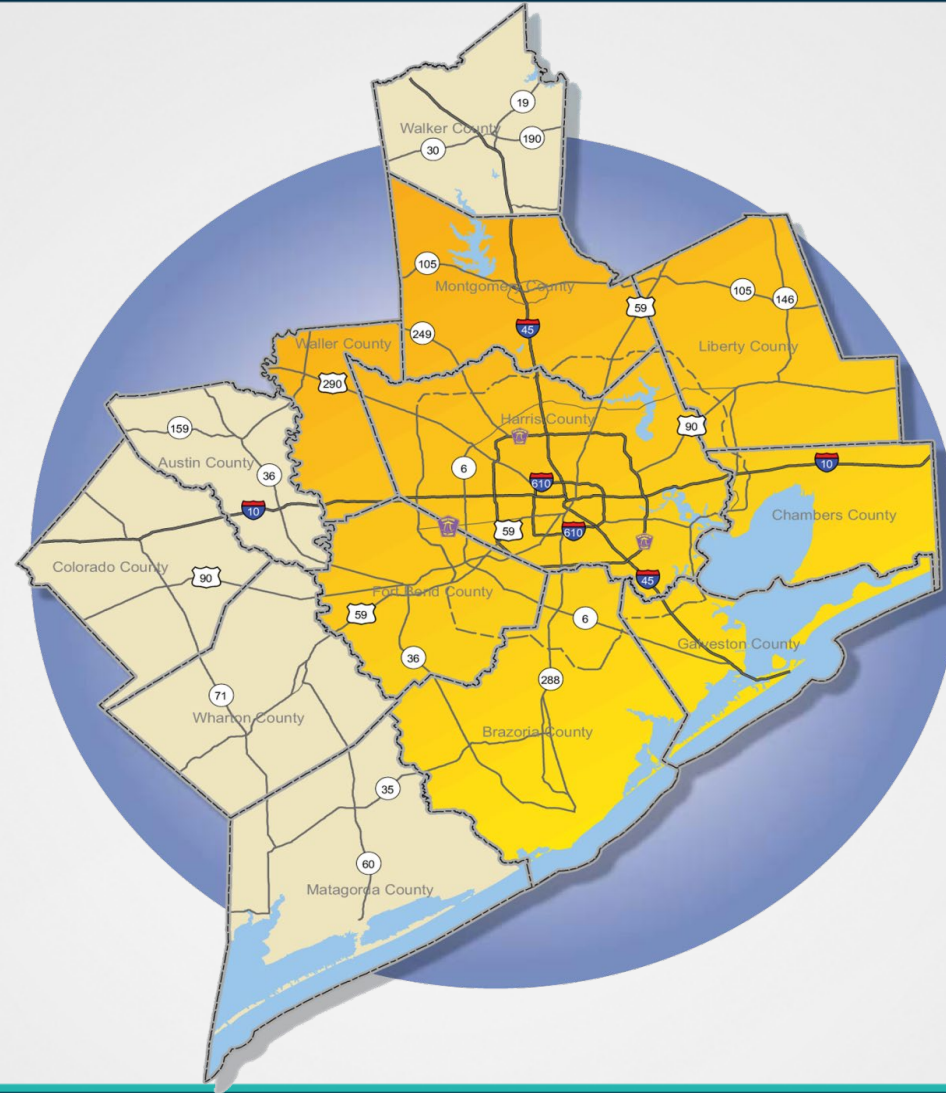


- Regional forum for cooperative action by local governments in 13 county region.
- Created by Texas, Functions Defined by State and Local Governments:
 - Area Agency on Aging (12 Counties)
 - Job Training (13 Counties)
 - Gulf Coast 911 District (8 counties)
 - HGACBuy; Energy Purchasing; SBA; and more.

Metropolitan Planning Area

MPO Counties

- Brazoria
- Fort Bend
- Waller
- Montgomery
- Liberty
- Chambers
- Galveston
- Harris



Additional COG Counties

- Austin
- Colorado
- Matagorda
- Walker
- Wharton

Metropolitan Planning Organization



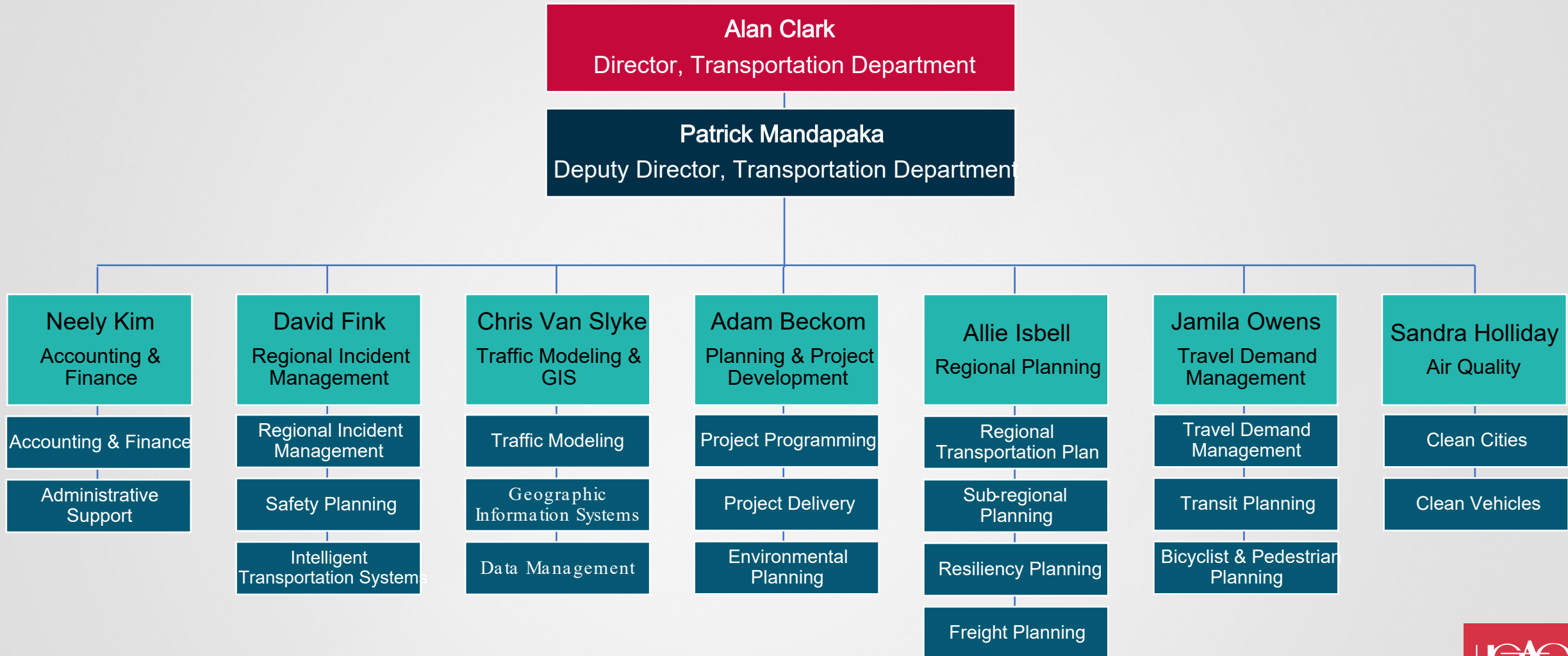
- Designated by Governor in 1974, includes:
- 8 H-GAC Counties with 6.7 million residents
- 2 Texas Dept. of Transportation Districts
- 120 local governments
- Largest ports on the Gulf Coast

Role of MPO Staff



- Support Transportation Policy Council and committees
 - Agenda and meeting logistics
 - Communication of TPC actions
 - Minutes and other records
- Prepare Transportation Plans
- Execute Air Quality Programs
- Provide Information & Technical Analyses
- Facilitate Public Participation

Transportation Department



RTP & Other Plans/Programs



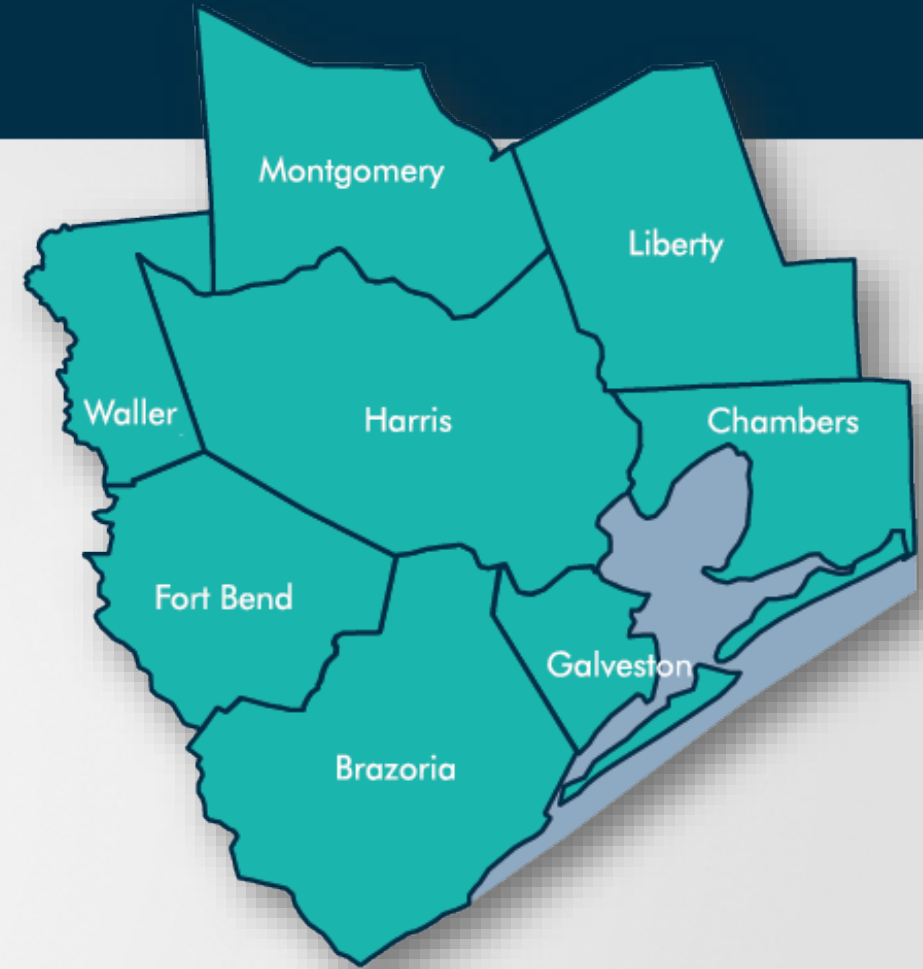
20+ Year Regional Transportation Plan
(2045 RTP)

**H-GAC Ten Year Plan/
TxDOT Unified Transportation Program**
(UTP)

4 Year TIP
(2019-2022 TIP)

What is the RTP?

- Transportation Investment Framework
- Eight County Metropolitan Planning Area
- Performance Based Plan
- Needs Assessment
- Financially Constrained
- Priorities and Implementation Steps
- Updated Every Four Years



2045RTP
REGIONAL TRANSPORTATION PLAN

Subregional Planning



Enhances mobility by:

- Identifying needed improvements
- Promoting **coordinated** transportation project development
- Providing **guidance** for the future transportation needs

Subregional Planning

OBJECTIVES

- Improve Safety
- Achieve/Maintain State of Good Repair
- Move People and Goods Efficiently
- Strengthen Economic Competitiveness
- Conserve and Protect Natural and Cultural Resources

Subregional Planning

Thoroughfare Plans

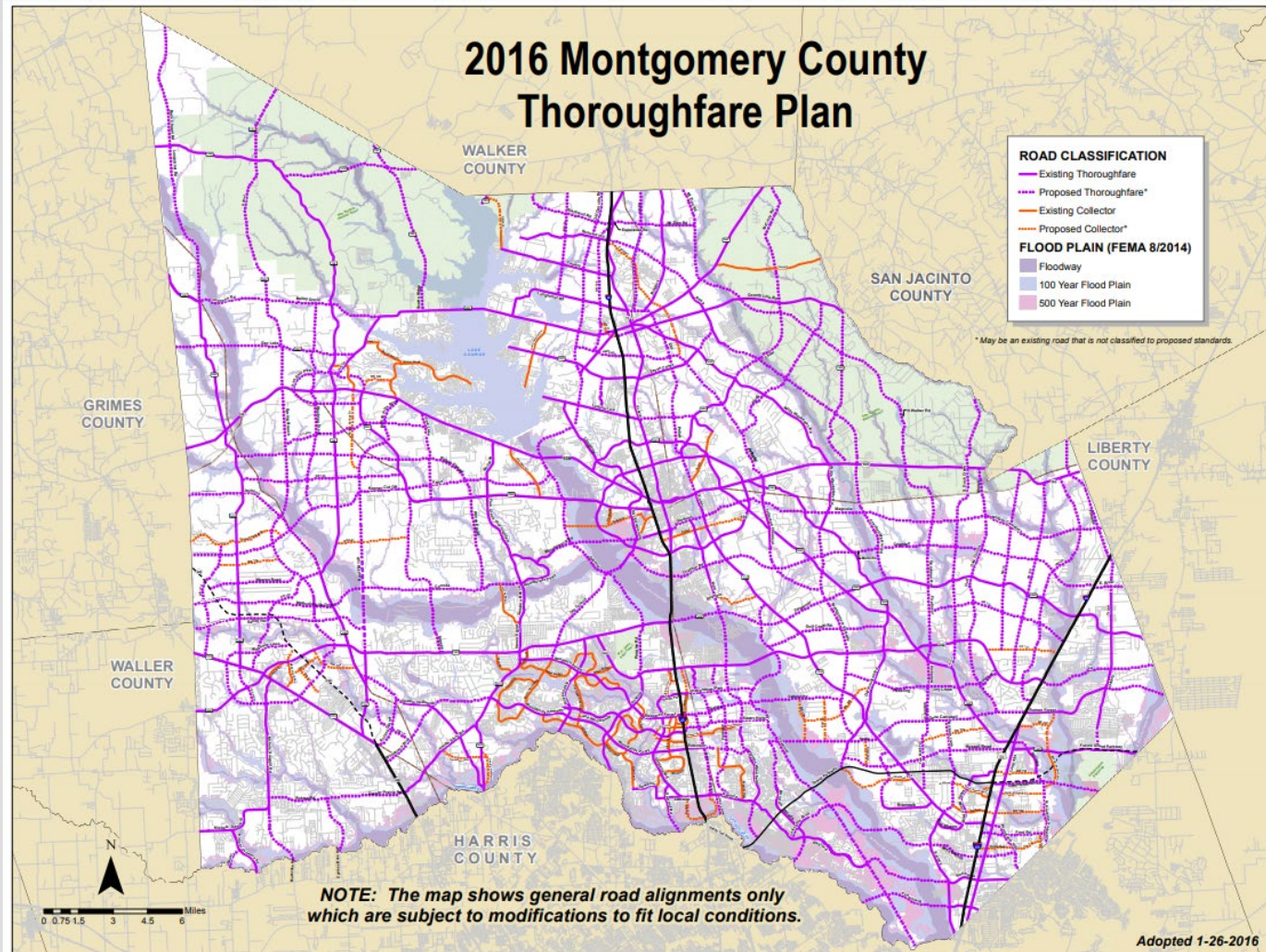
- Long-range (50+yrs)
- Preserves ROW
- Approximate location of future corridors

Mobility Plans

- Identifies existing and future mobility needs
- Short-, medium -, and long -range recommendations
- Multi -modal



Subregional Planning



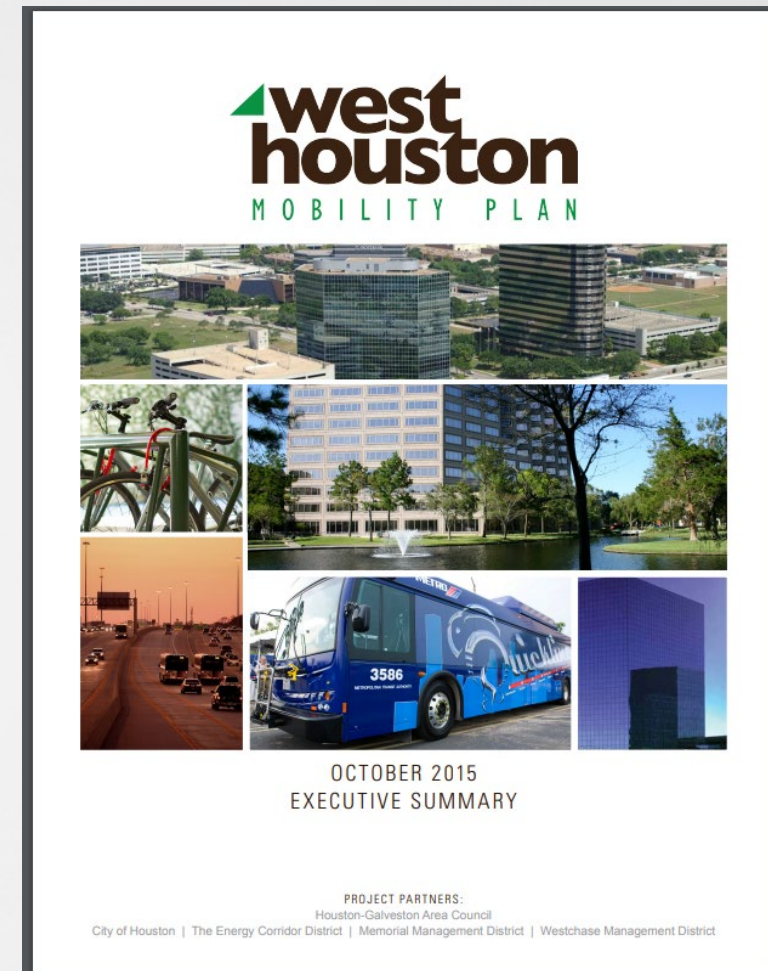
Thoroughfare Plans

- Preserve adequate rights-of-way
- Guide future investments
- Promotes regional roadway connectivity
- Promotes regional roadway design uniformity
- Informs public

Subregional Planning

Mobility Plans

- “Roadmap” for needed transportation improvements
- Considers needs of all users (not just a roadway plan)
- Collaborative effort between government entities in study area














South County Mobility Plan

Implemented Recommendations




- Rayford Road – widened, realigned, added median
- UPRR overpass on Rayford
- Research Forest- widened
- Sawdust - Access Management Treatments
- Gosling – bridge widening in design
- Woodlands Parkway at Kuykendahl added right turn lanes.
- Robinson Road – realignment study
- David Memorial – Extension proposed
- Installation of new signal equipment

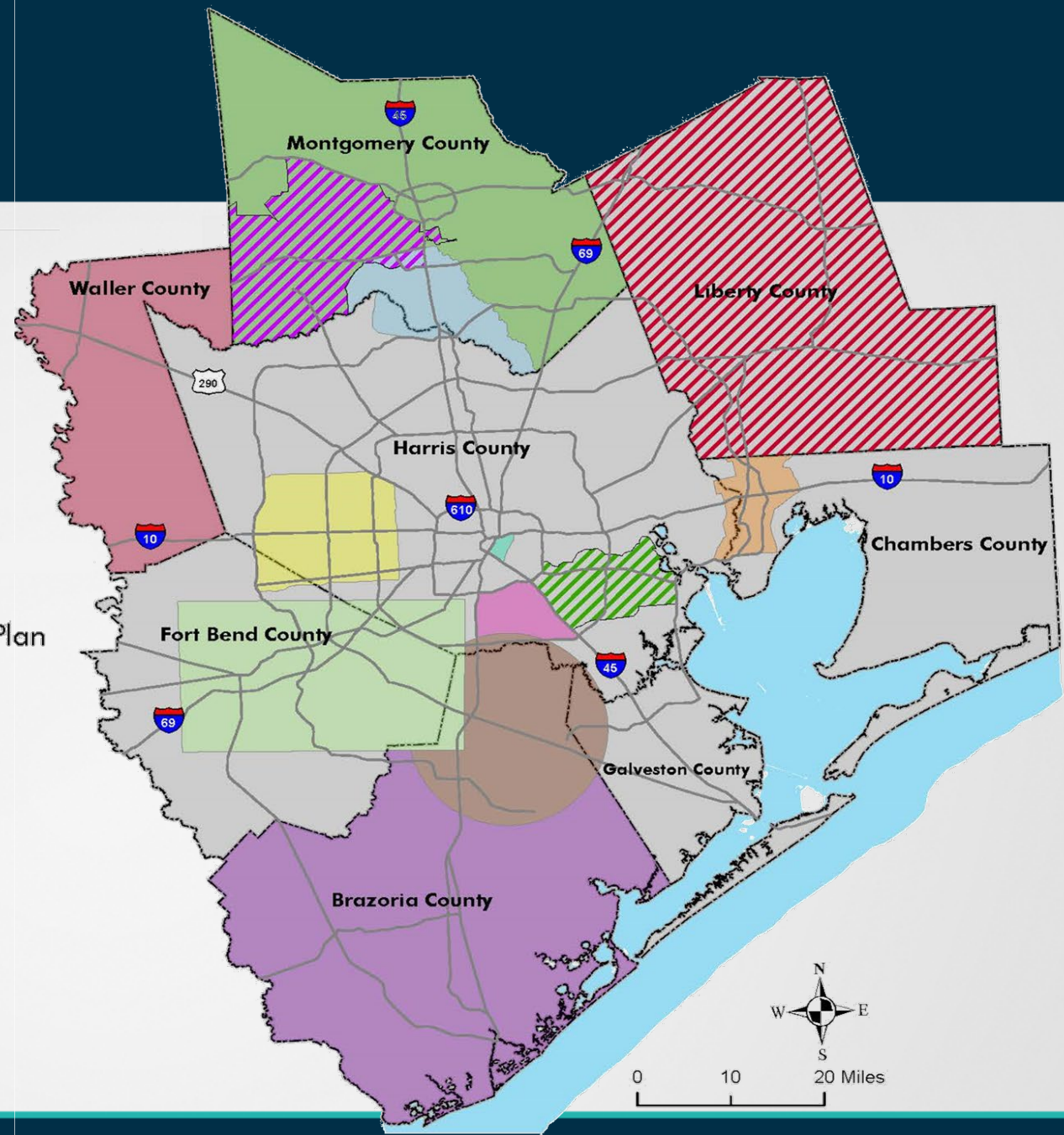
Study Locations

Completed

-  SH146 Sub-Regional Plan
-  Brazoria County Thoroughfare Plan
-  East End Mobility Plan
-  Fort Bend Sub-Regional Plan
-  Greater West Houston Mobility Plan
-  Montgomery County Thoroughfare Plan
-  Northern Brazoria County/Pearland Sub-Regional Plan
-  South County Mobility Plan
-  Southeast Houston Mobility Plan
-  Waller County Transportation Plan

Future

-  Liberty County Mobility Plan
-  Montgomery County Precinct 2 Mobility Plan
-  Southeast Harris Sub-Region



Project Flow



Sub-Regional

- Mobility Plan
- Corridor Plan
- Thoroughfare Plan



Regional

- 2020-2024 Transportation Improvement Program
- 2045 Regional Transportation Plan
- Regional Coordinated Transit Plan



Statewide

- 2020 Unified Transportation Program



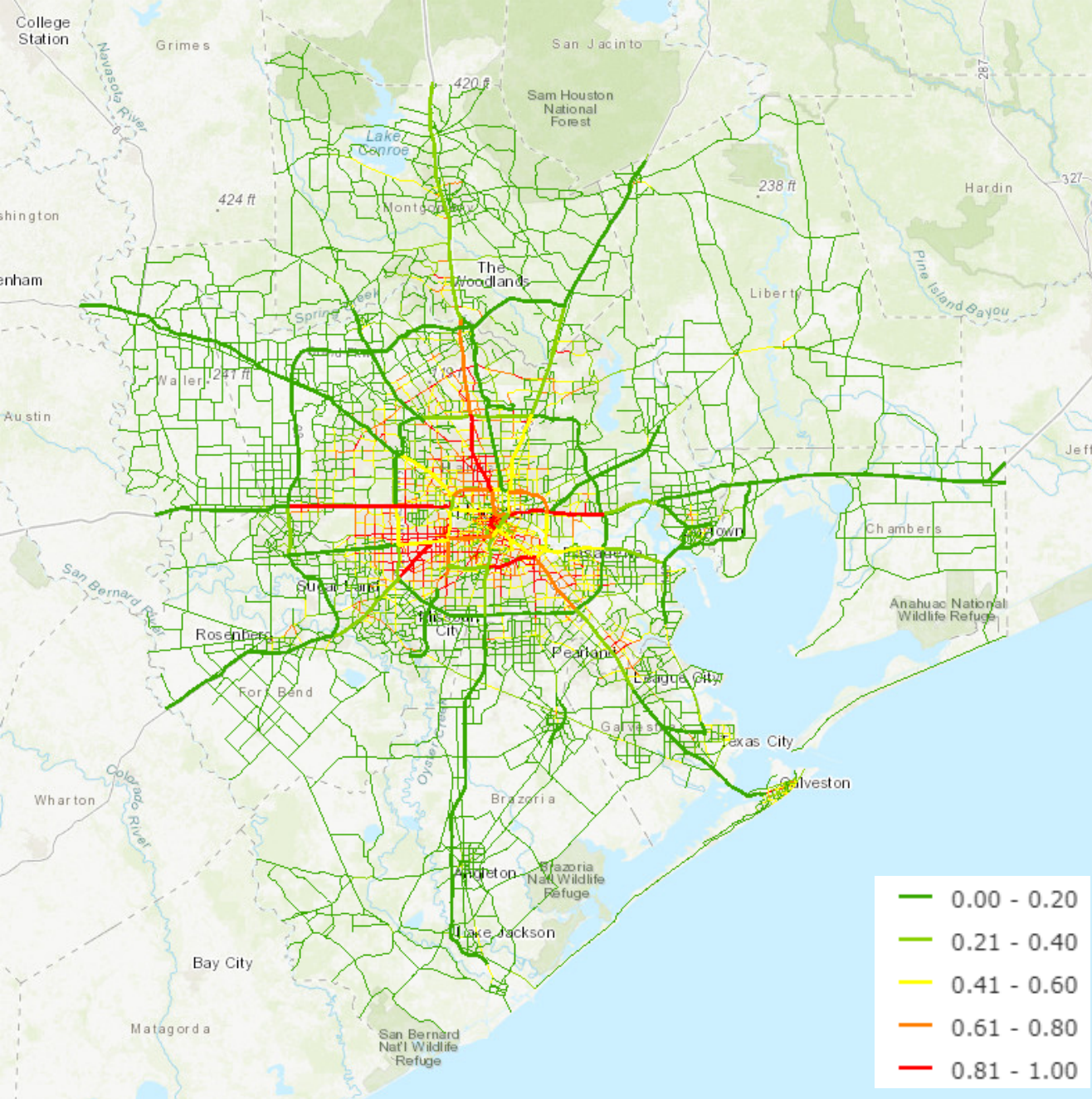
Resiliency



Resiliency & Durability Pilot

- Use USDOT's Vulnerability Assessment Scoring Tool (VAST) + economic analysis + risk analysis to identify most vulnerable assets/ road segments
- Develop recommendations for most vulnerable assets/ road segments
- Update H-GAC publications and project selection criteria

Criticality Assessment



- **Socio-economic importance (20%)**

link to airport; link to port; service to activity population

- **Operational & usage importance (40%)**

AADT; AADTtruck; transit ridership

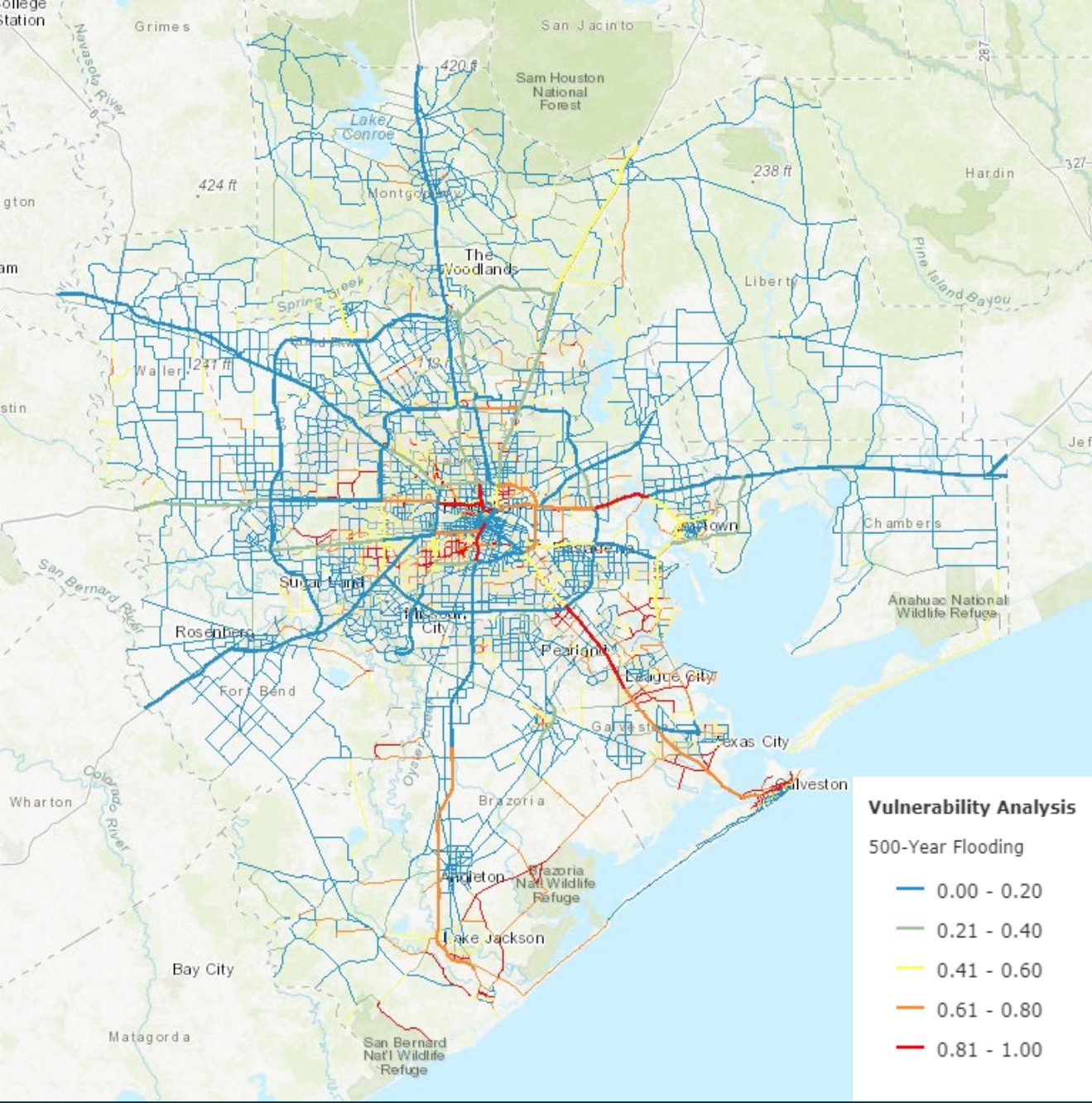
- **Health & safety importance (30%)**

link to hospitals; link to fire stations; service to vulnerable population

- **Emergency response importance (10%)**

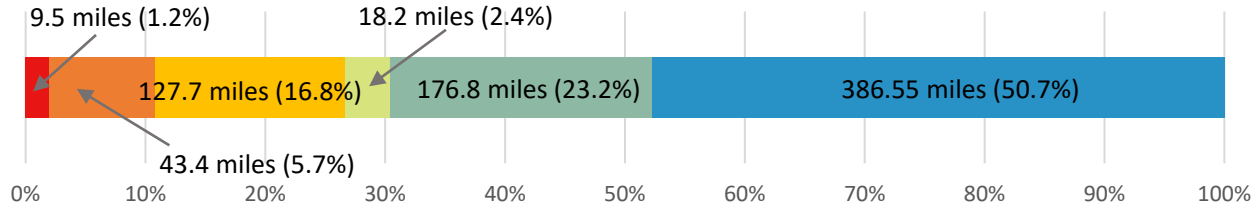
evacuation route; link to shelters; link to EOCs; military access

Vulnerability Assessment VAST Tool



- **Exposure Assessment (70%)**
 - Flooding (100-year, 500-year, & Harvey)
 - Storm Surge (Hurricane Category 1 - 5 and Ike)
 - Sea-Level Rise (4 & 5 feet)
- **Sensitivity Assessment (20%)**
 - Bridge Age
 - Structural Evaluation
 - Channel Conditions
 - Scour Ratings
 - Pavement Condition
 - Past Closure
- **Adaptive Capacity Assessment (10%)**
 - Detour Length
 - Repair Cost

Vulnerability - Criticality Matrix



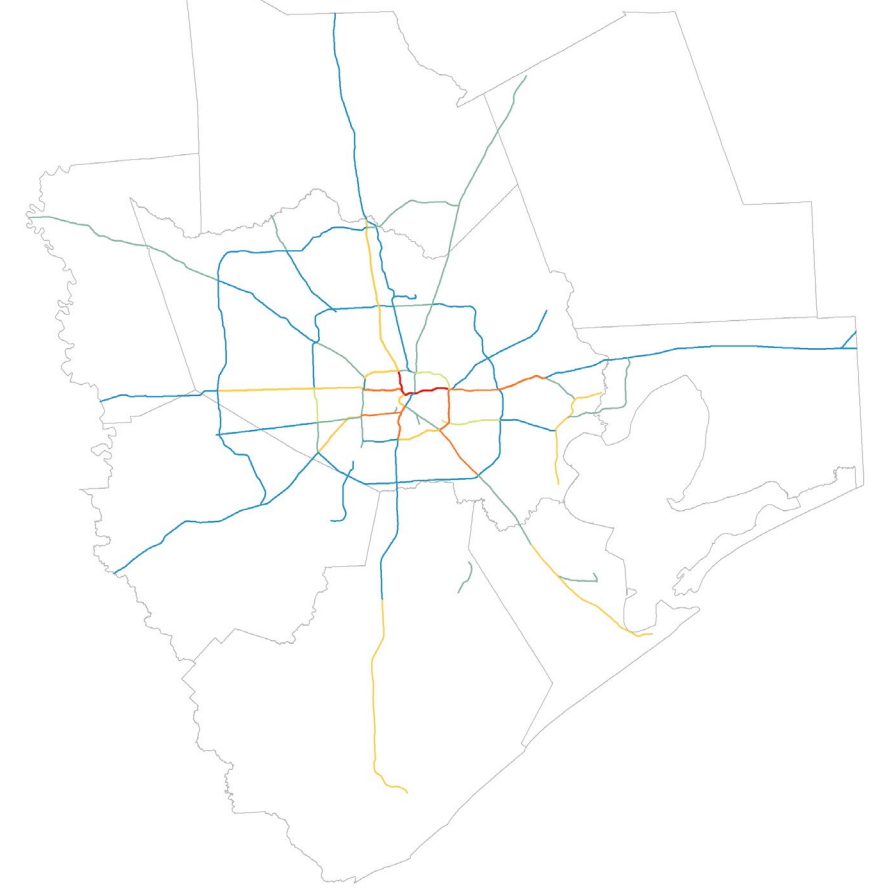
Matrix Summary

Matrix	Miles	%
Total	762.2	100.0%
High Criticality - High Vulnerability	9.5	1.2%
Moderate Criticality - High Vulnerability	23.2	3.0%
High Criticality - Moderate Vulnerability	20.2	2.6%
Low Criticality - High Vulnerability	66.2	8.7%
High Criticality - Low Vulnerability	61.5	8.1%
Moderate Criticality - Moderate Vulnerability	18.3	2.4%
Low Criticality - Moderate Vulnerability	113.7	14.9%
Moderate Criticality - Low Vulnerability	63.1	8.3%
Low Criticality - Low Vulnerability	386.5	50.7%

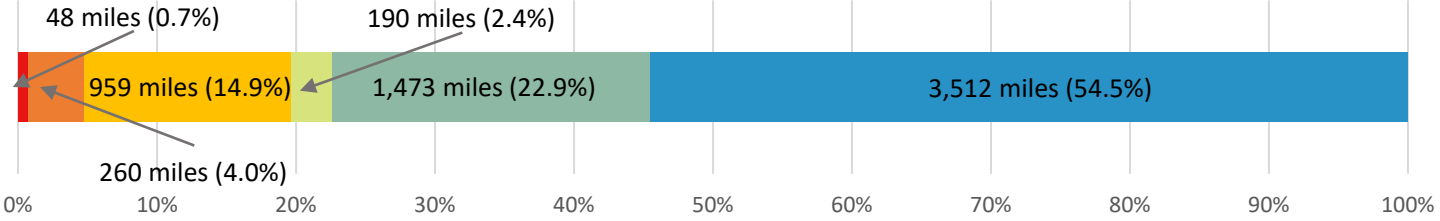
Freeways Details (excerpt)

Matrix	Name	Miles
High Criticality - High Vulnerability	I-45	3.11
	IH 10 E	6.37
High Criticality - Moderate Vulnerability	GULF FWY/IH 45	8.05
	IH 10 E	6.68
	IH 69	5.45
	IH 10 E	6.62
	IH 10 W	5.66
Moderate Criticality - High Vulnerability	IH 69	0.85
	SOUTH FWY/SH 288	3.89
	SOUTH LOOP E	6.14
High Criticality - Low Vulnerability	IH 10 W	19.50
	IH 45	2.39
	IH 69	7.84
	NORTH FWY/IH 45	21.01
	NORTH LOOP	4.90
Low Criticality - High Vulnerability	SOUTH LOOP E	5.83
	GULF FWY/IH 45	21.07
	SH 146	16.18
	SH 288	28.94

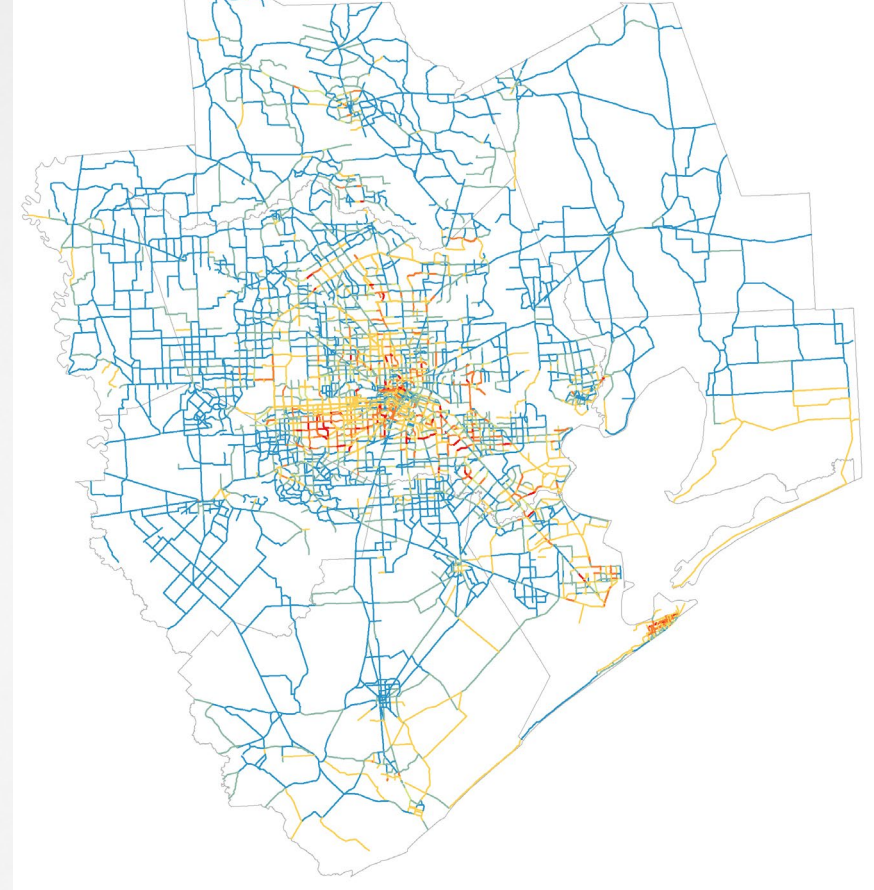
Freeways: 762 centerline miles



Vulnerability - Criticality Matrix



Major Streets: 6,442 centerline miles



Matrix Summary

Matrix	Miles	%
Total	6,442.0	100.0%
High Criticality - High Vulnerability	48	0.7%
Moderate Criticality - High Vulnerability	119	1.9%
High Criticality - Moderate Vulnerability	140	2.2%
Low Criticality - High Vulnerability	595	9.2%
High Criticality - Low Vulnerability	364	5.7%
Moderate Criticality - Moderate Vulnerability	191	3.0%
Low Criticality - Moderate Vulnerability	861	13.4%
Moderate Criticality - Low Vulnerability	611	9.5%
Low Criticality - Low Vulnerability	3,512	54.5%

Principal Arterials Details (excerpt)

Matrix	Name	Miles
High Criticality - High Vulnerability	BROADWAY (Galveston)	2.617
	SH 3	1.537
	BROADWAY (Houston)	0.777
	COLLEGE	1.199
	CULLEN	0.735
	FAIRMONT PKWY	1.021
	FEDERAL	0.462
	FM 1960	0.142
	KIRBY DR	0.635
	LOCKWOOD DR	0.620
	MEMORIAL DR	0.637
	MONROE	0.134
	NASA RD 1	1.237
	OLD SPANISH TRAIL	0.102
	SH 35	0.794
SH 146/LOOP 201	0.239	
SHAVER	0.437	
SPENCER HWY	0.463	
LOOP 336	0.119	

Economic Impact Analysis



GDP Loss (Million of Fixed Dollars in 2020) by Scenarios

Scenario	Description	Annual	Month	Week	Day
Scenario 1	IH 10 San Jacinto Bridge	206.9	17.2	4.0	0.6
Scenario 2	Gulf Freeway Galveston Causeway	599.2	49.9	11.5	1.7
Scenario 3	SH 146 Fred Hartman Bridge	205.6	17.1	4.0	0.6
Scenario 4	SH 225/Lawndale St.	191.5	16.0	3.7	0.5
Scenario 5	US 59	182.5	15.2	3.5	0.5
Scenario 6	FM 723 & FM 359	173.6	14.5	3.3	0.5
Scenario 7	IH 10	215.3	17.9	4.1	0.6
Scenario 8	North-South Connecters along Buffalo Bayou between Memorial Dr and Briar Forest	494.8	41.2	9.5	1.4
Scenario 1+3+4		431.0	35.9	8.3	1.2
Scenario 1-8		1,407.5	117.3	27.1	4.0

Source- H-GAC Travel Demand Data and REMITransight

Resilience Tools



Resilience Street Profile

CONTROL PANEL

Functional Classification (select item/s)

Freeway | Minor Arterial | Collector

Principal Arterial

Street Name

None

Overall Criticality (0-1)

0 | 1

Vulnerability (Low-Moderate-High)

None

Combined Matrix

None

Select a street segment to display resilience profile on the map using selection tool

Map | Street Elevation | 500-year Flooding | Harvey Flooding | CAT 4 Storm Surge | Ike Storm Surge | 5-ft Sea Level Rise

STREET NAME: HARDY TOLL ROAD

1 of 7364

STREET INFORMATION

Street ID: FsegID_10
 FHWA Classification: Freeway
 Center-line Mile: 13.09
 Network Redundancy: 1.20

CRITICALITY

Criticality Score : Low
 Detailed Scores (0-4):

- Linkage to airport: 3
- Linkage to port: 0
- Access to activity population: 0
- AADT: 0
- AADT-Truck: 0
- Transit Ridership: 0
- Linkage to hospital: 0
- Linkage to fire station: 0
- Access to vulnerable population: 0
- Evacuation Route: 0
- Linkage to shelter: 0
- Linkage to emergency operation: 0
- Military access: 0

VULNERABILITY

Vulnerability Score (Flooding) : Low
 Vulnerability Score (Storm Surge) : Low
 Vulnerability Score (Sea-Level Rise) : Low
 Detailed Scores:

- 500-Year: Moderate
- Harvey: Low
- CAT1 Storm Surge: Low
- CAT2 Storm Surge: Low
- CAT3 Storm Surge: Low
- CAT4 Storm Surge: Low
- CAT5 Storm Surge: Low
- Ike Storm Surge: Low
- 4-ft Sea-Level Rise: Low
- 5-ft Sea-Level Rise(R 5): Low

MATRIX

Criticality Overall (Low-Moderate-High): Low

Vulnerability Overall (Low-Moderate-High): Low

Overall Matrix: Low Criticality - Low Vulnerability

What is Matrix?

High Criticality Low Vulnerability	High Criticality Moderate Vulnerability	High Criticality High Vulnerability
Moderate Criticality Low Vulnerability	Moderate Criticality Moderate Vulnerability	Moderate Criticality High Vulnerability
Low Criticality Low Vulnerability	Low Criticality Moderate Vulnerability	Low Criticality High Vulnerability

<https://datalab.h-gac.com/resilience/>

Freight Planning



Greater Houston Freight Committee

- Established by the Transportation Policy Council
- 2020 Co -Chairs: Judge Ed Emmett, Senior Fellow and Professor at Rice University & Brian Fielkow, CEO, JetCo Delivery
- Meets quarterly
- Prioritization and designation of Critical Urban Freight Corridors (FAST Act)– network of locally significant freight roads
- Participation in State Freight Plan
- Support of maritime ports' infrastructure needs

Freight Planning



Ports Area Mobility Study

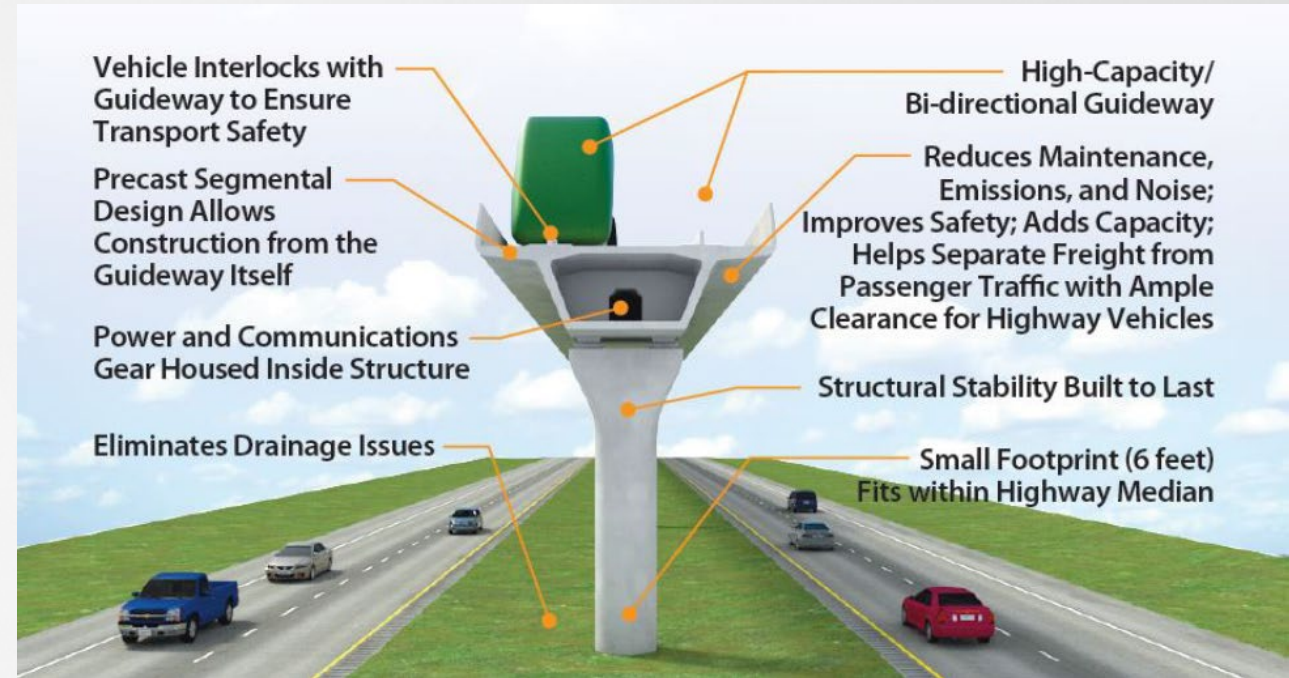
- Completed January 2020
- Recommendation from 2012 Regional Goods Movement Study
- Identify freight and goods supply chains that are dependent upon the region's port facilities
- Identify improvement alternatives to better facilitate port related freight mobility:
 - Infrastructure and facilities
 - Multimodal improvements
 - Operational strategies
 - Policy-level changes



Freight Planning

Ports Area Mobility Study Alternatives

- I-69 Bypass
- Container on Barge
- Alternative Bridge
- Freight Shuttle Concept
- Virtual Container Yard



Freight Planning



Upcoming: Regional Goods Movement Plan

- Understand freight movement impacts to the economy
- Analysis of freight movement, land use, and economic growth
- Changing production and consumption patterns
- Inform policymakers regarding goods movement issues and benefits

The Unified Planning Work Program (UPWP) 2020/2021



- Is a two year plan that runs 10/1/2019 -09/30/2021
- Describes the regions transportation plans and programs.
- Describes the transportation related air quality planning activities.
- Is the plan where changes in regional transportation planning priorities are identified.
- Accounts for the various funding streams related to planning projects.

Unified Planning Work Program (UPWP)

Task I: Program Management

Task II: Data Development and Maintenance

Task III: Short Range Planning

Task IV: Long Range Planning

Task V: Special Planning Studies



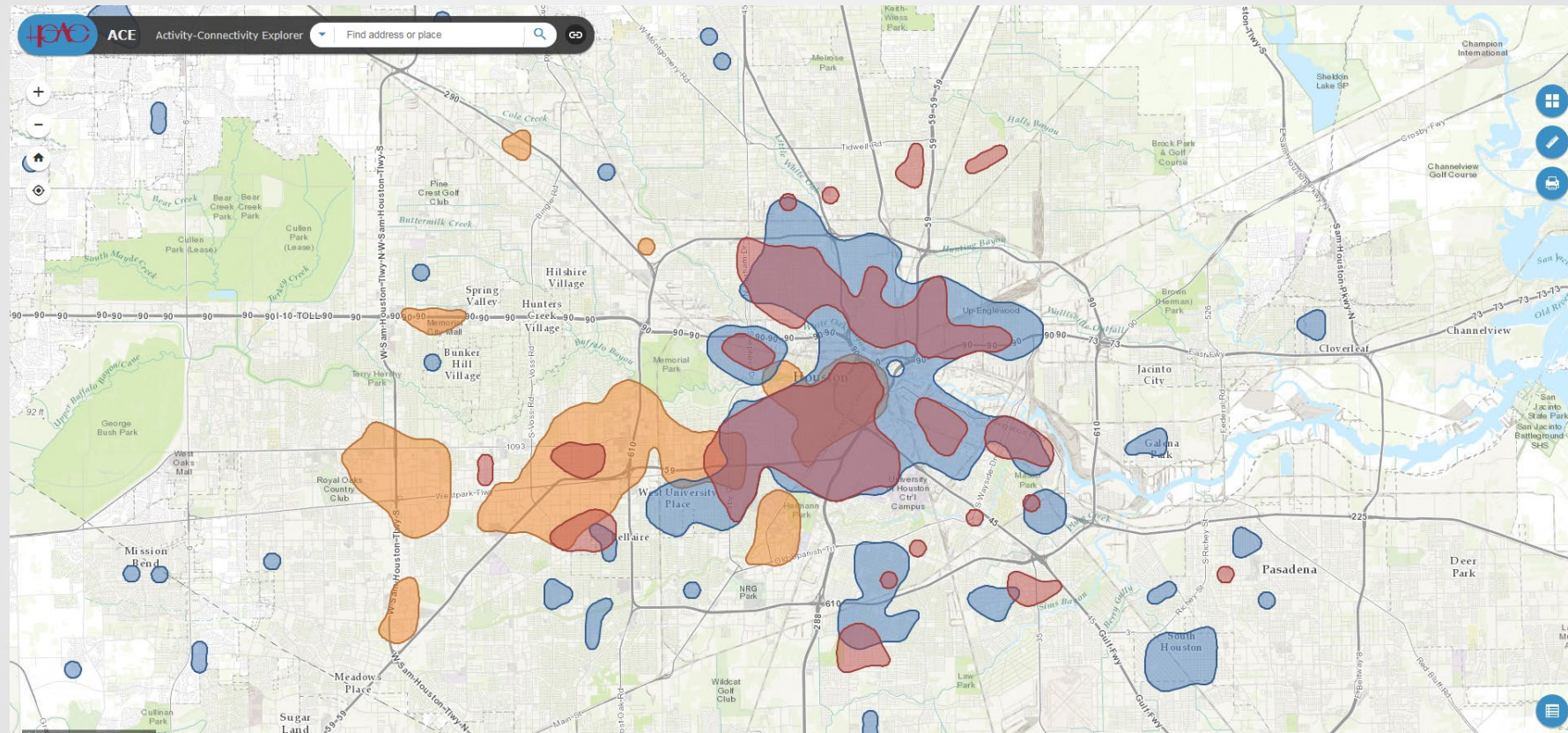
UPWP-Funding Sources

- Transportation Planning Funds (TPF)
- Surface Transportation Block Grant (STBG)
- TxDOT State Funds
- Federal Transit Administration (FTA)
- Other Local

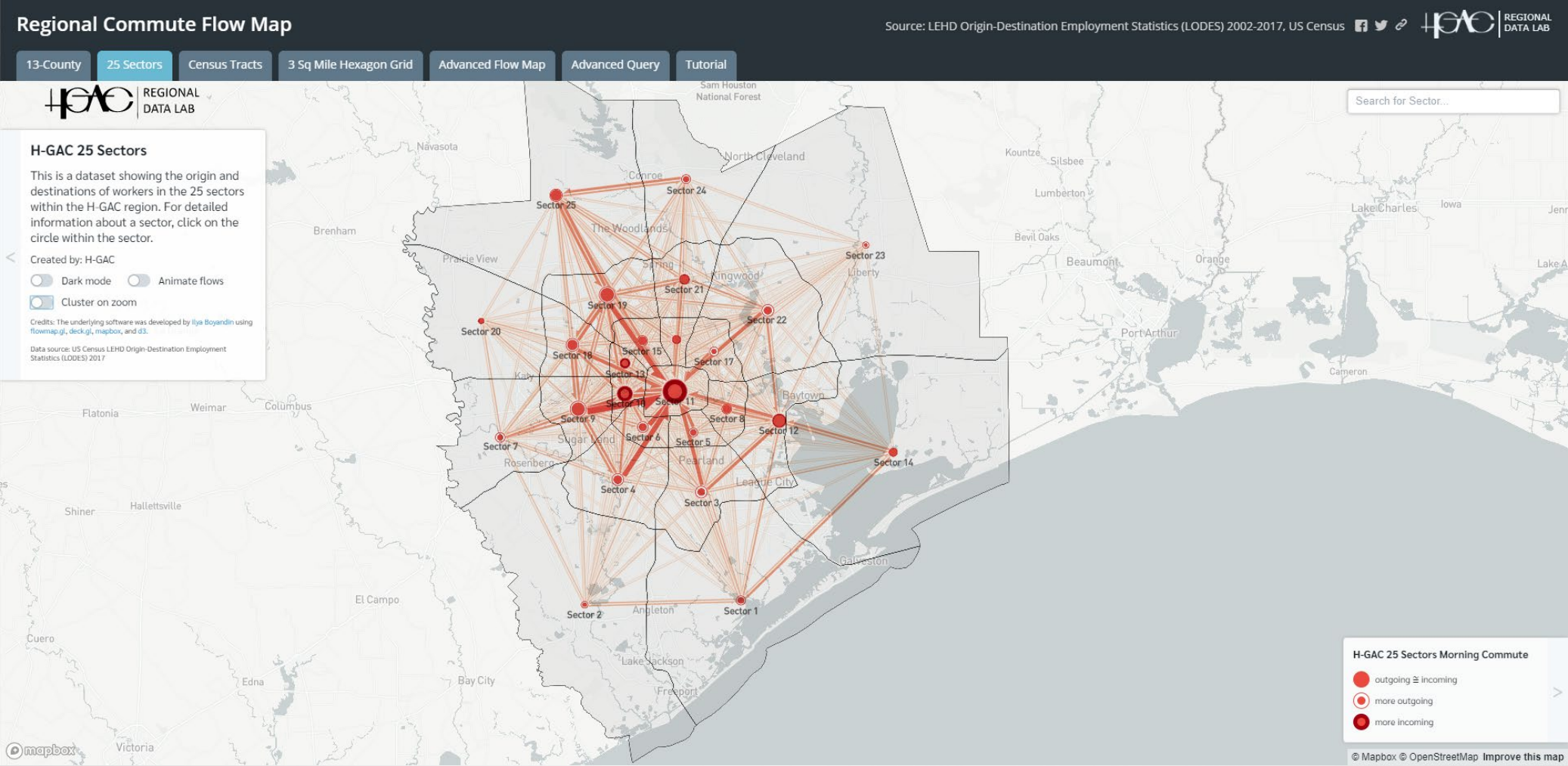


Activity - Connectivity Explore (ACE)

- Top 10% Connectivity
- Top 10% Amenity Concentration
- Top 10% Activity

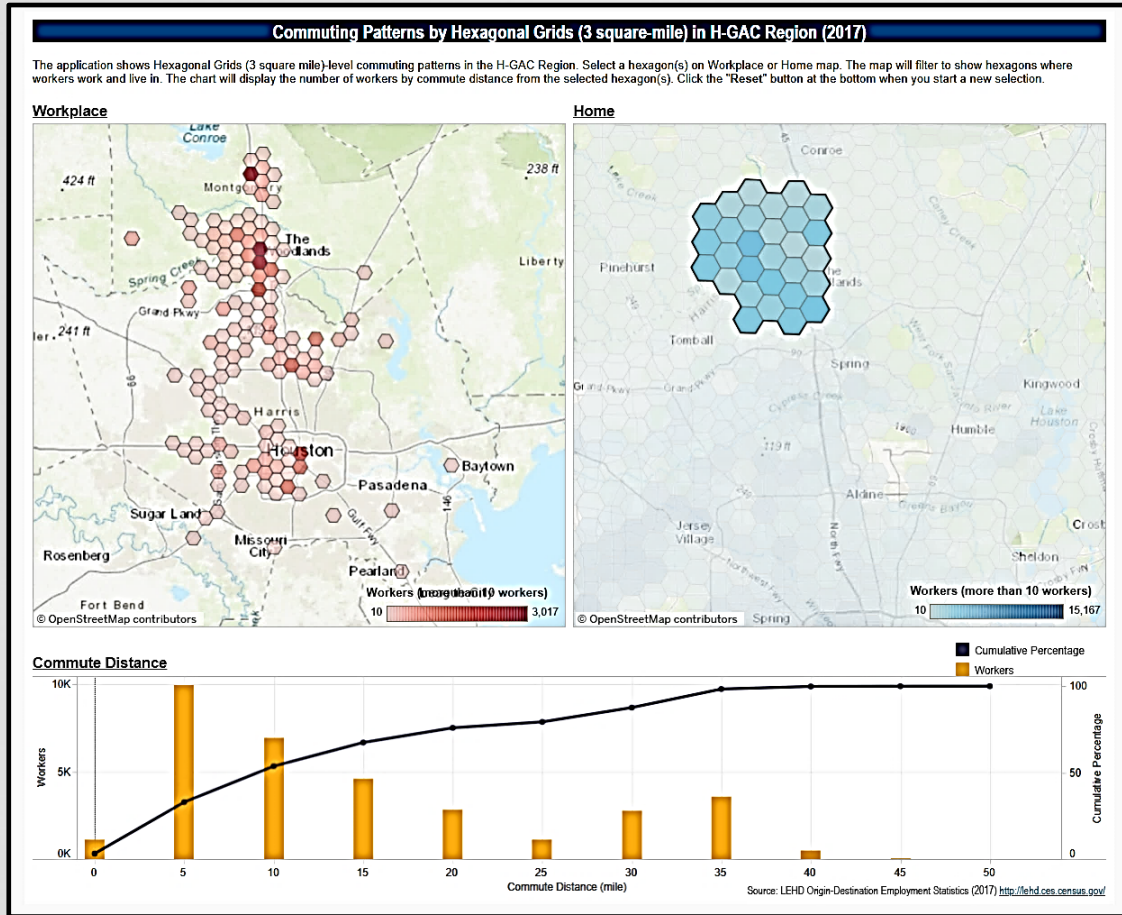


Regional Commute Flows

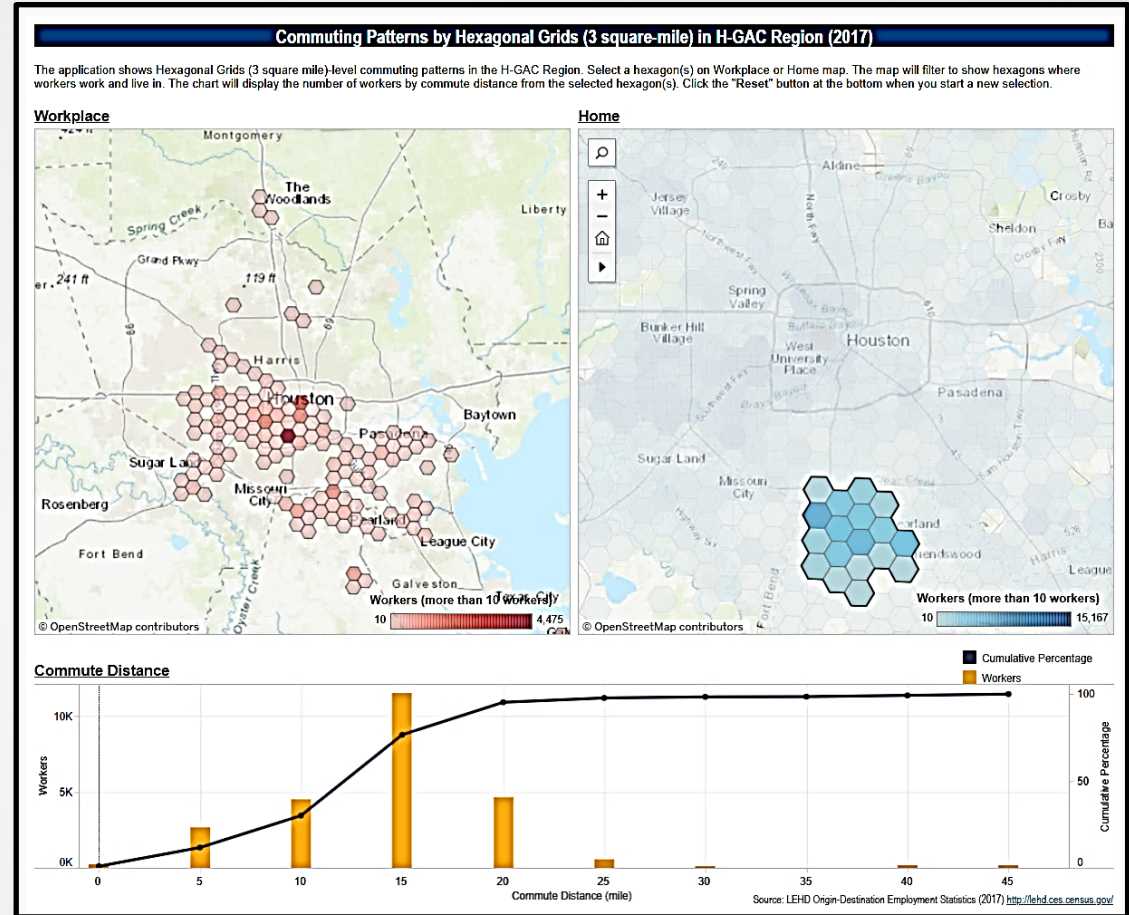


Regional Commute Patterns

The Woodlands



Pearland



Regional Demographic Snapshot

Regional Demographic Snapshot

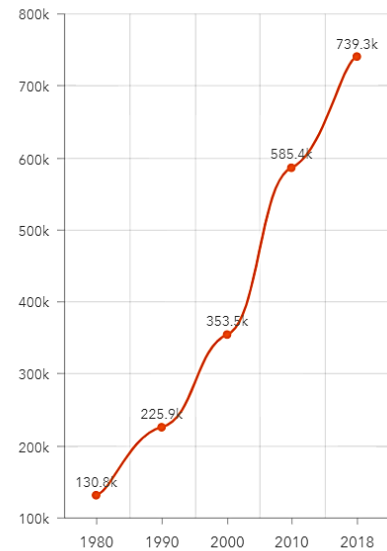


- 13-Counties
- 8-Counties (MPO)
- Cities/Places
- ISDs
- Congressional Districts
- Zip Codes
- Tracts
- Block Groups
- Opportunity Zones
- Summary Map
- More Info.

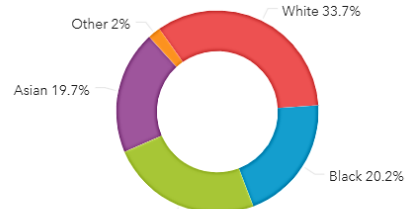
Total Population (2018):
739,342

- Population
- Households
- Housing Units

Historical Population Change (1980-2018)

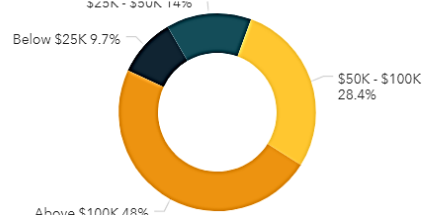


Race (2018)



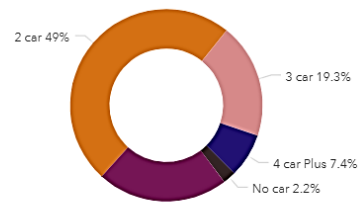
- Race
- Age
- Language
- Education

Incomes (2018)



- Incomes
- Home Ownership
- Poverty

Vehicle Ownership (2018)

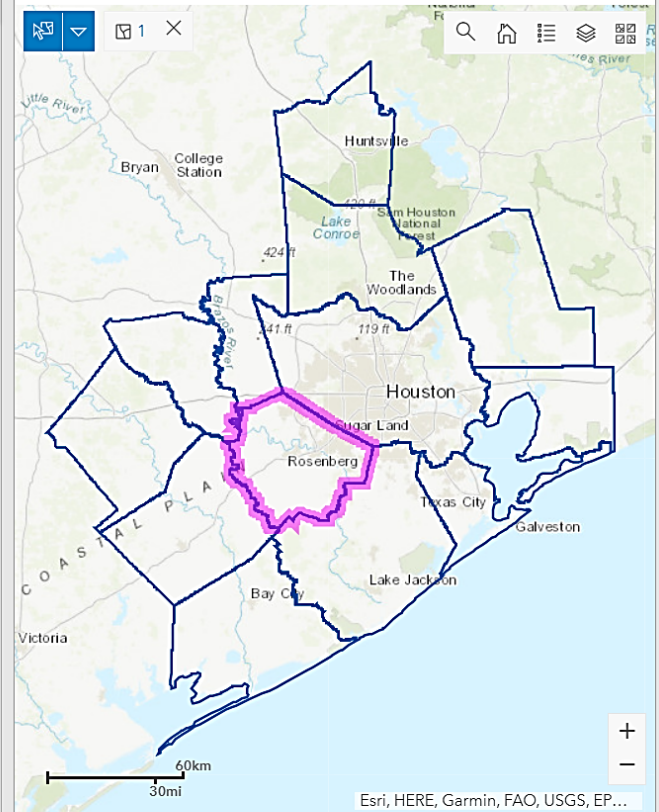


- Vehicle Ownership
- Travel Mode
- Travel Time

Select a county (click again to deselect)

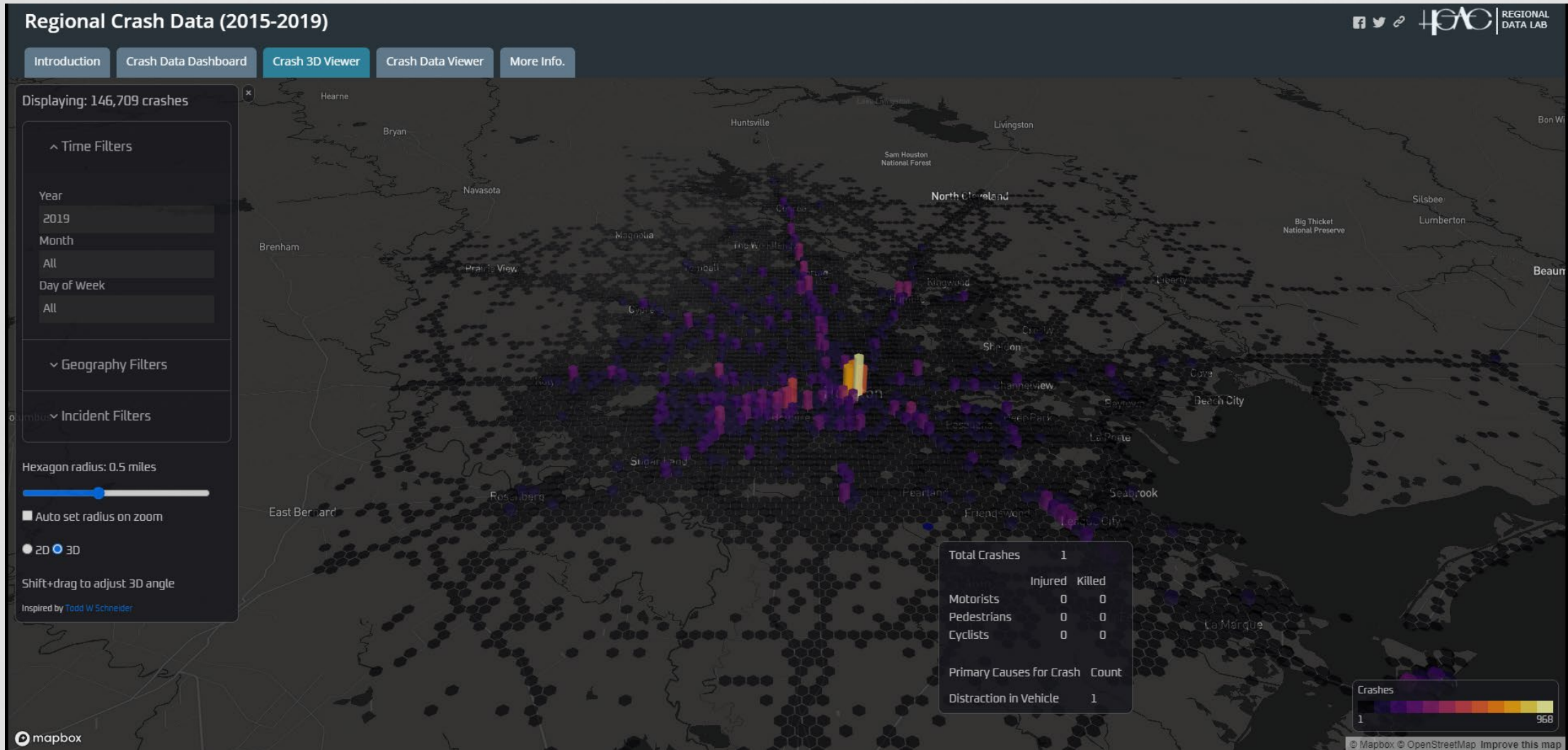
- Austin County
- Brazoria County
- Chambers County
- Colorado County
- Fort Bend County
- Galveston County
- Harris County
- Liberty County
- Matagorda County
- Montgomery County
- Walker County
- Waller County
- Wharton County

Counties (select a county/counties using select tool below)



Please, select a county on the map and [Click for More Information](#) to find more detailed information.

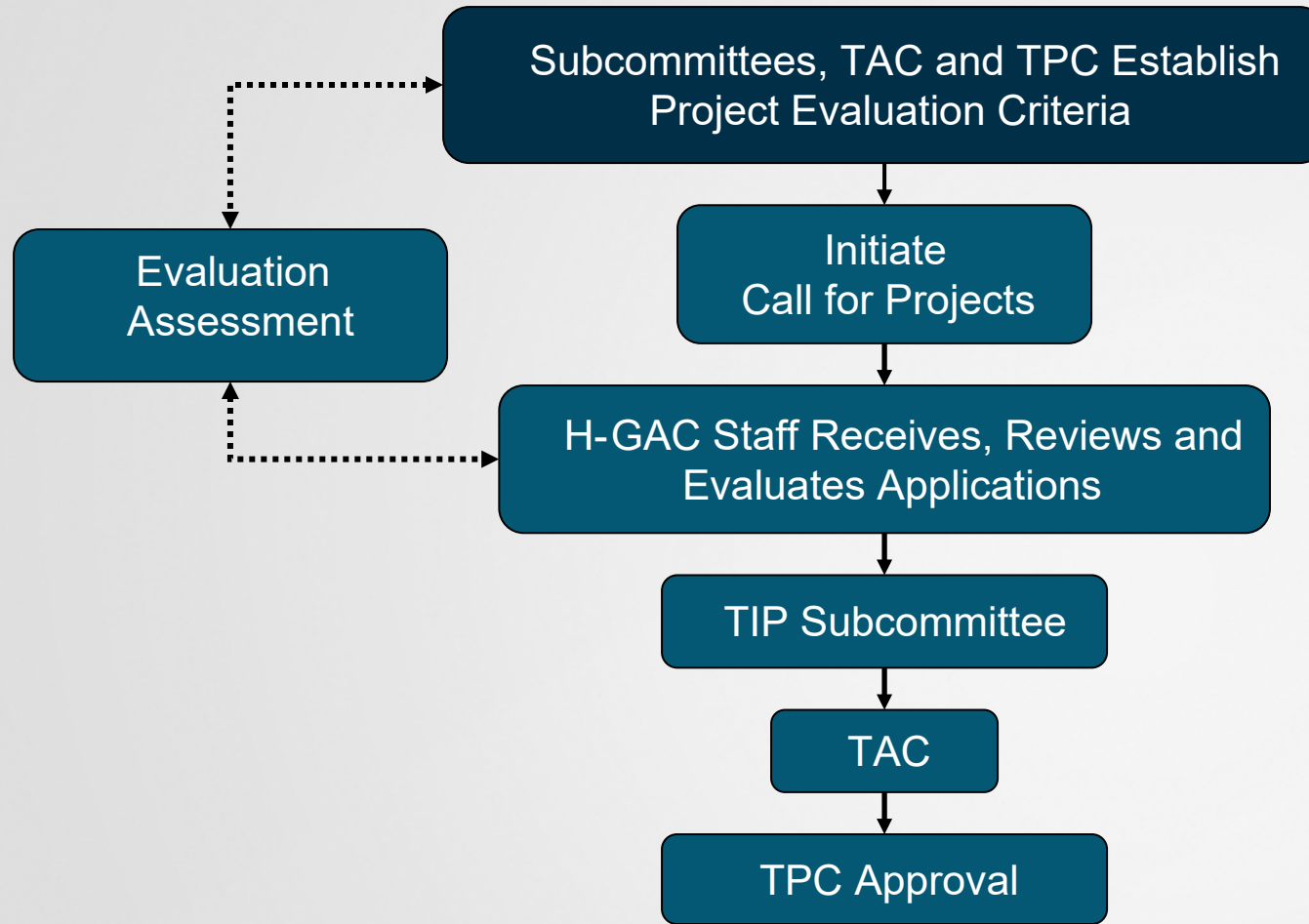
Regional Crash Data



Transportation Improvement Program (TIP)

- Federal and State mandated program of transportation projects
- Contains projects funded with local, State, and federal funding sources
- Covers four years of available funding
- Updated on a monthly basis and submitted to the State quarterly
- Re-developed every two years
- The TIP must be consistent with the Regional Transportation Plan and the latest Conformity Determination

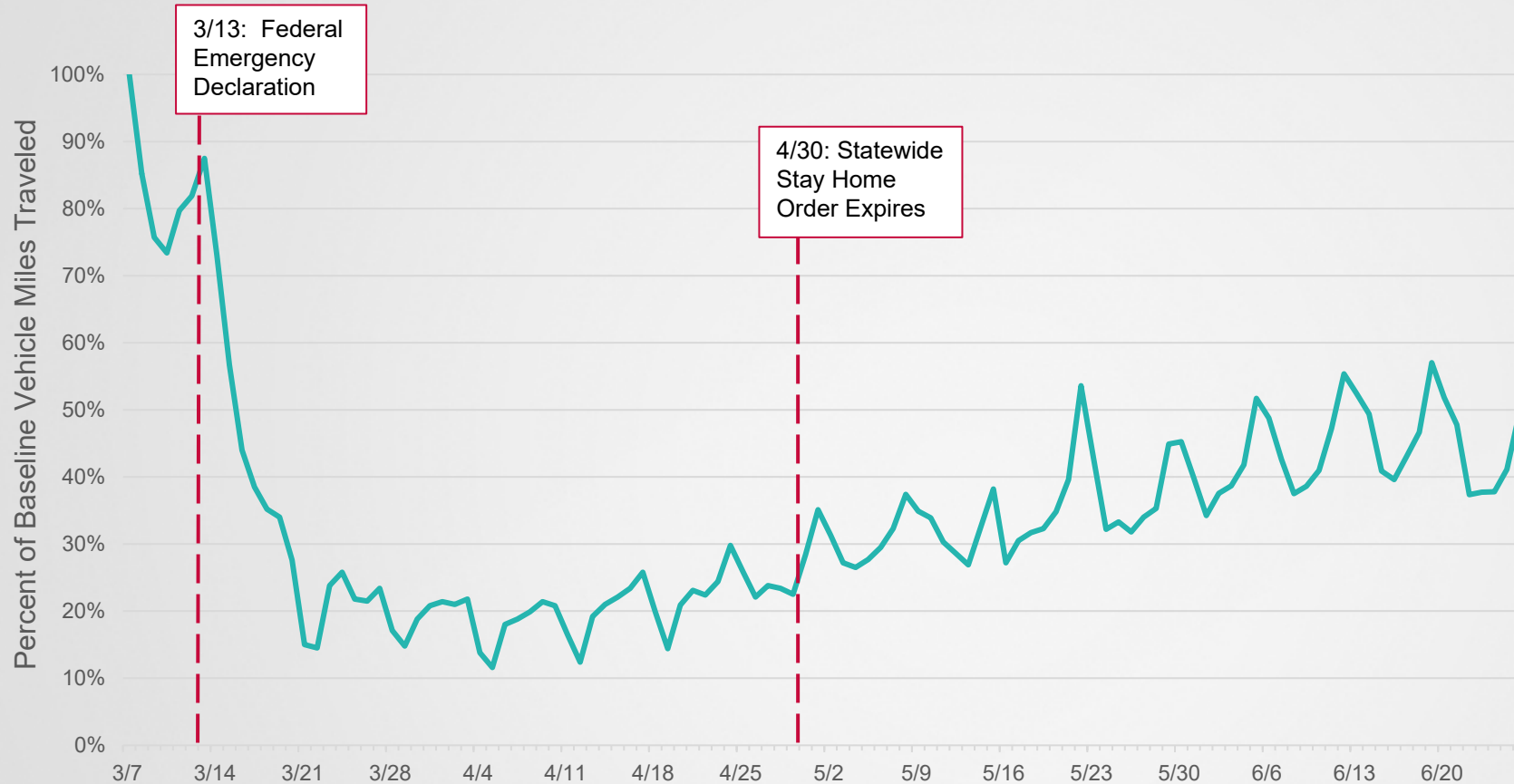
Call For Projects Process



COVID - 19 Impacts

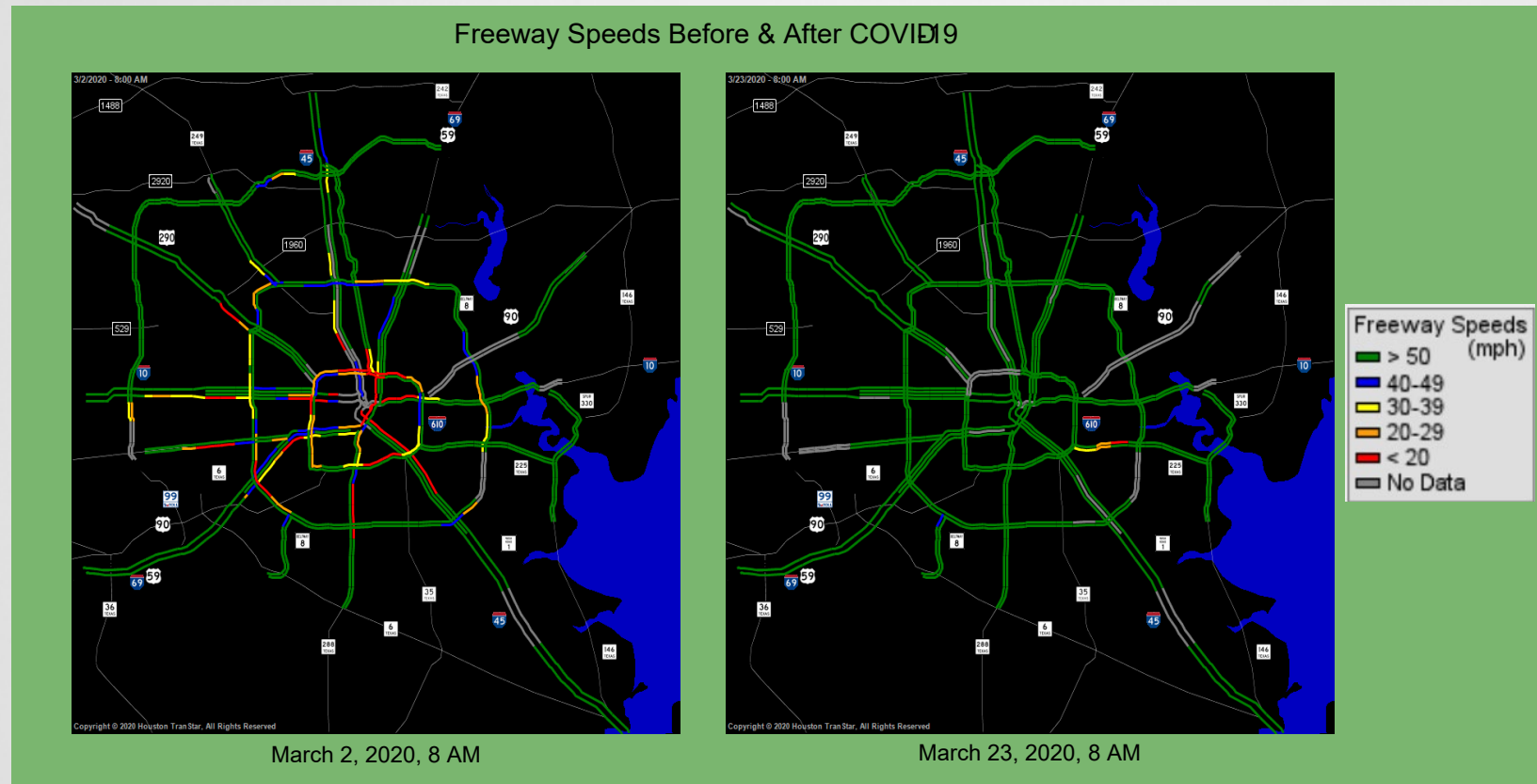


Percent of Baseline Vehicle Miles Traveled



StreetLight www.streelightdata.com July 2020

COVID - 19 Impacts

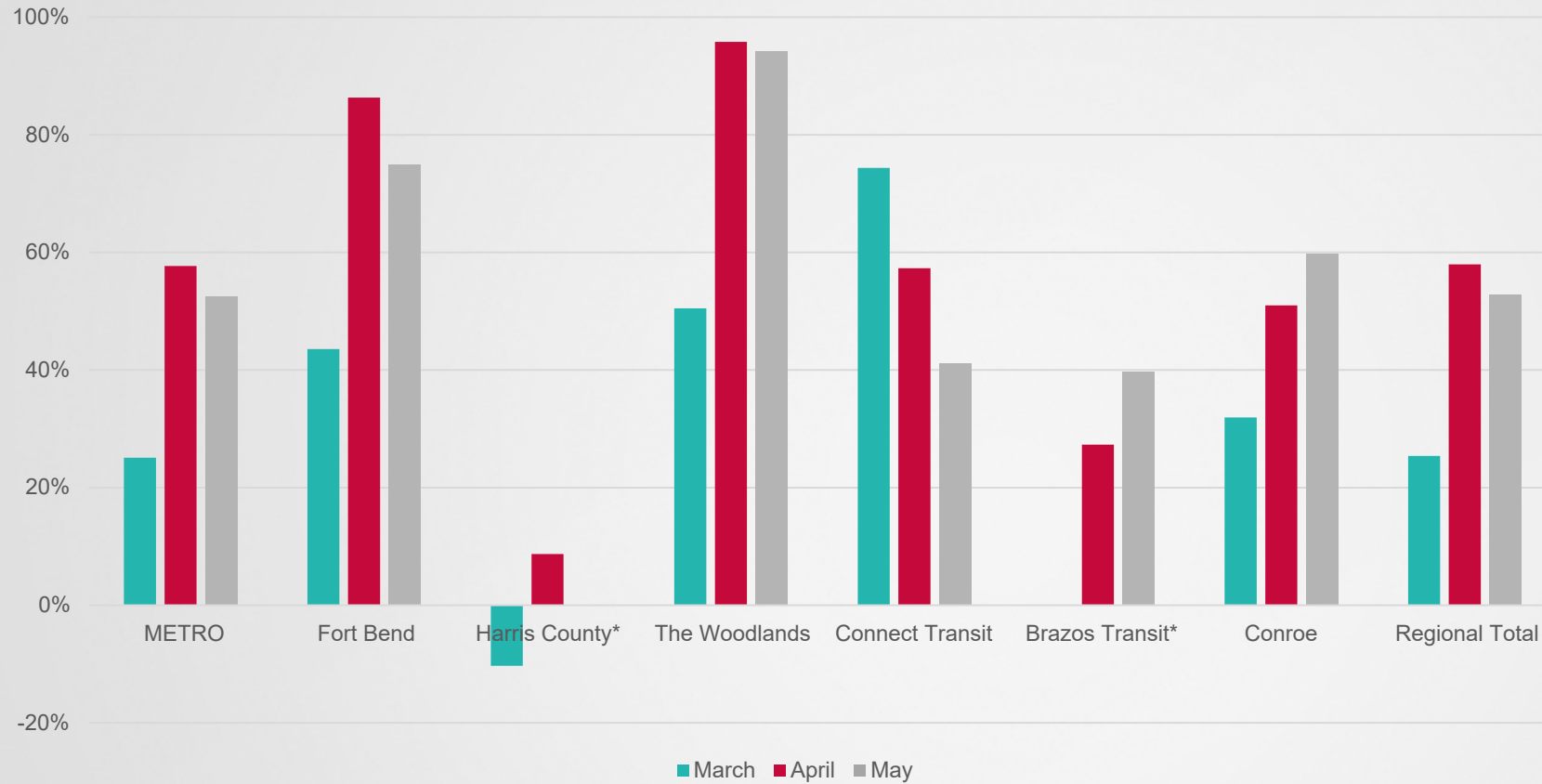


Houston TranStar http://traffic.houstontranstar.org/map_archive/ May 2020

COVID - 19 Impacts



Percent Decrease in Transit Ridership 2019 to 2020



*Data unavailable for Harris County Transit (May), Brazos Transit District (March)

Thank You!



Allie Isbell, AICP

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