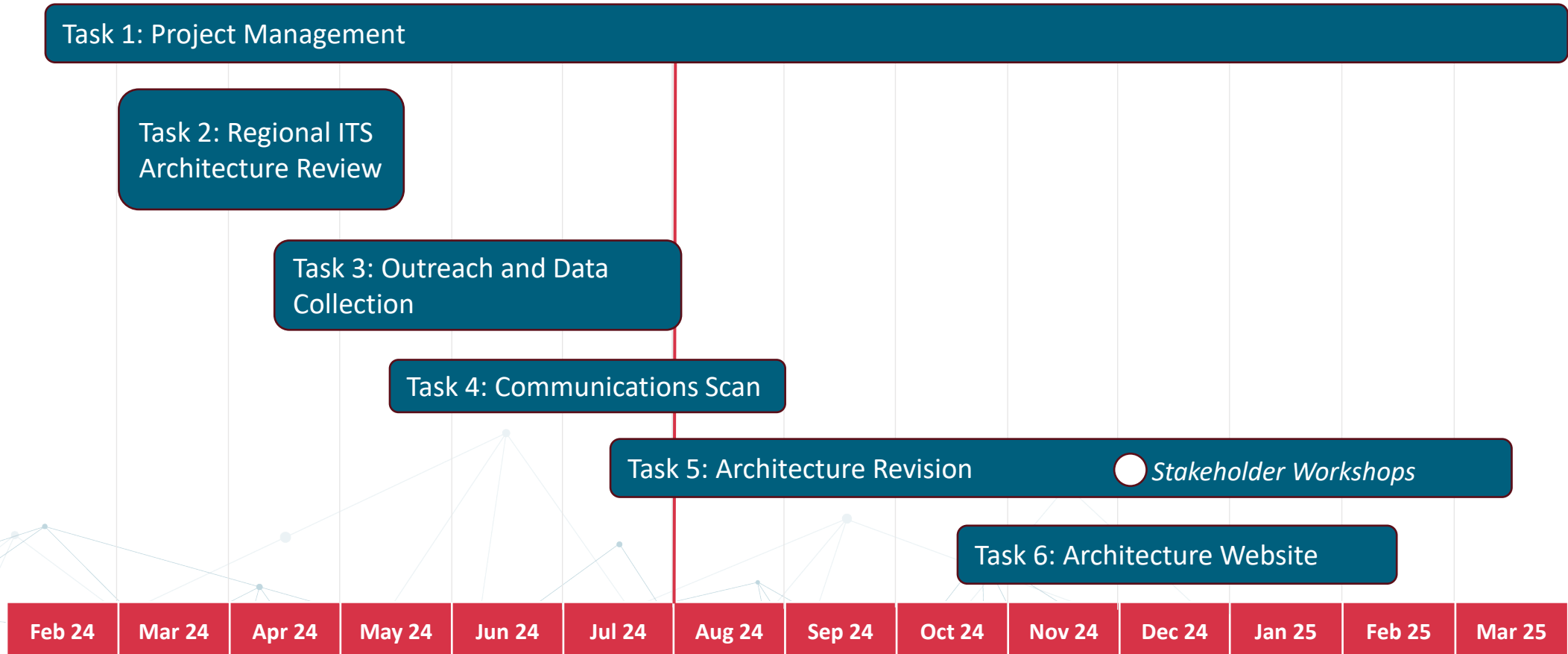# Project Goals

H-GAC ITS ARCHITECTURE AND WEBSITE UPDATE

1. Update the **existing H-GAC Regional ITS Architecture** to the current National ITS Architecture (Version 9.2)

2. Develop an ITS inventory software analysis tool that will **assist in transportation project prioritization**, benefit cost analysis, and economic impact analysis

3. Update and advance the existing Transportation Systems Management and Operations (TSMO) website

4. Create a **Geographic Information System (GIS) database of all ITS and signal fiber in the eight-county MPO**

5. Develop a standard method for collecting inventories and implementation plans from each stakeholder agency

6. Meet with all **eight counties and in the region (and cities)** to verify existing inventory and obtain plans for new ITS, signals, TMCs, and other deployments to be implemented over the next seven years

7. Meet with the **TxDOT Houston and Beaumont Districts** to inventory all existing ITS, signal, and tolling facilities and document their implementation plans for the next seven to 10 years

8. Determine which **cities will potentially surpass 50,000 residents** in the 2030 Census **and meet with them** to document their existing ITS and signal inventories and implementation plans leading up to 2030

9. Meet with all **Toll Authorities** in the MPO to inventory all existing ITS, signal, and tolling facilities and document the implementation plans for each for the next seven to 10 years

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Key Tasks and Timeline

Task 1: Project Management

Task 2: Regional ITS Architecture Review

Task 3: Outreach and Data Collection

Task 4: Communications Scan

Task 5: Architecture Revision   ⬤ *Stakeholder Workshops*

Task 6: Architecture Website

| Feb 24 | Mar 24 | Apr 24 | May 24 | Jun 24 | Jul 24 | Aug 24 | Sep 24 | Oct 24 | Nov 24 | Dec 24 | Jan 25 | Feb 25 | Mar 25 |

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Stakeholder Agencies

H-GAC Counties	H-GAC Cities	Regional Agencies
Brazoria *(Includes Toll Road Authority)*	Baytown	Brazos Transit District
Chambers	Conroe	Harris County Regional Transit Authority
Fort Bend *(Includes Toll Road Authority and Transit)*	Galveston	Houston Metro
Galveston	Houston	Port of Freeport
Harris *(Includes Toll Road Authority)*	League City	Port of Houston
Liberty	Missouri City	TxDOT Beaumont District
Montgomery *(Includes Toll Road Authority)*	Pasadena	TxDOT Houston District
Waller	Pearland	Uptown TIRZ
	Sugar Land	The Woodlands Regional Transit Authority
	Texas City	

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Stakeholder Agencies Interviewed Thus Far

H-GAC Counties	H-GAC Cities	Regional Agencies
Brazoria *(Includes Toll Road Authority)*	Baytown	Brazos Transit District
Chambers	Conroe	Harris County Regional Transit Authority
Fort Bend *(Includes Toll Road Authority and Transit)*	Galveston	Houston Metro
Galveston	Houston	Port of Freeport
Harris *(Includes Toll Road Authority)*	League City	Port of Houston
Liberty	Missouri City	TxDOT Beaumont District
Montgomery *(Includes Toll Road Authority)*	Pasadena	TxDOT Houston District
Waller	Pearland	Uptown TIRZ
	Sugar Land	The Woodlands Regional Transit Authority
	Texas City	

Interview Complete
Interview Being Scheduled
Formal Interview Declined

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Stakeholder Input

Inventory Needs
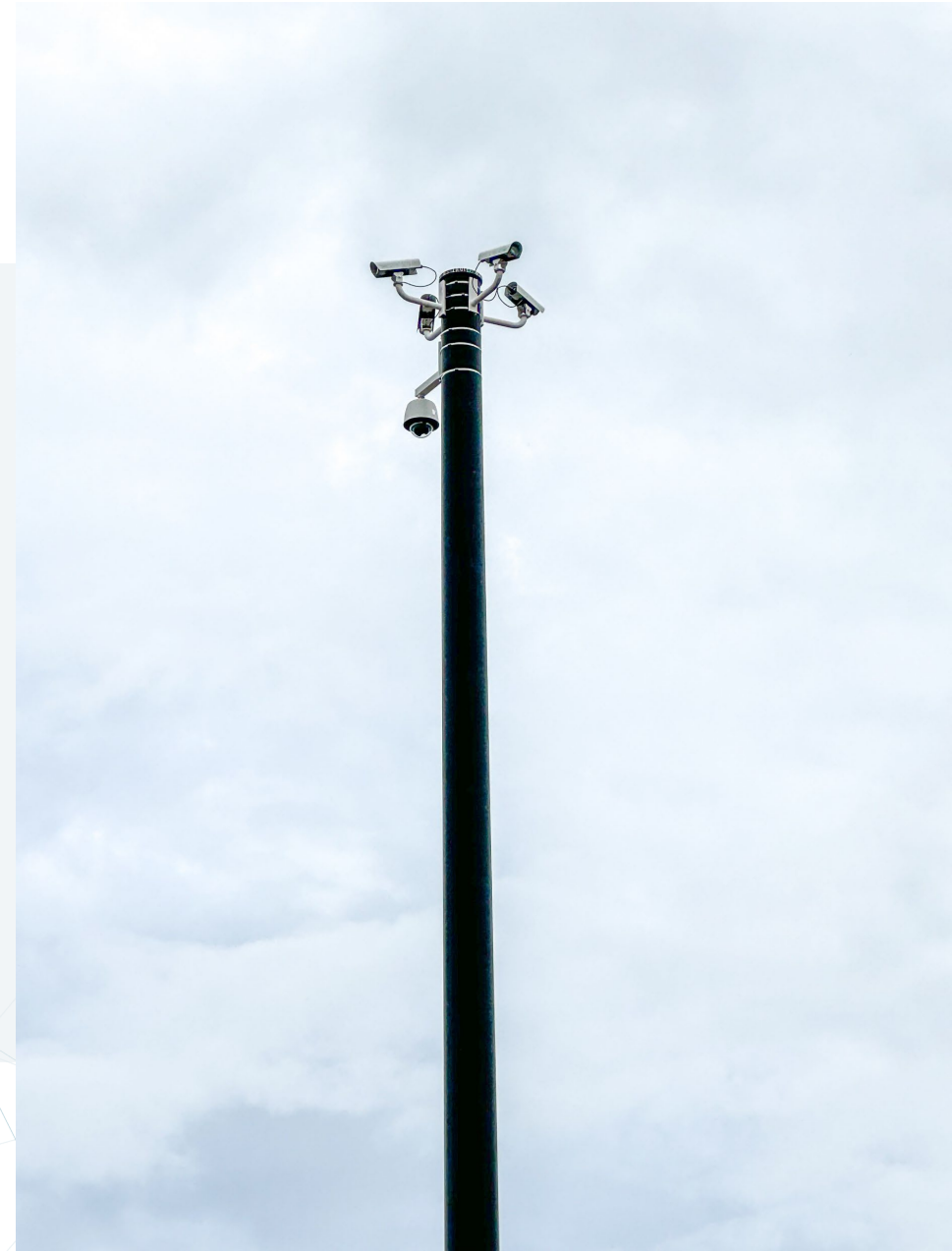
Inventory

Traffic Management

Closed Circuit Television Cameras

Dynamic Message Signs (Standard and Color)

Emergency Vehicle Preemption (GPS Based)

Freeway Safety Service Patrol

Ramp Metering

Smart Work Zones

Toll Lanes

Traffic Management Centers

Traffic Signal Operations

Truck Parking Availability Systems

Wrong-Way Driving Detection and Warning

Transit

AVL Systems

CCTV Security Cameras

Mobile Ticketing Application

Transit Signal Priority

Data/Information Mgmt

ConnectSmart

WAZE Integration

Claris Video Sharing

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Regional Needs

| COMMON REGIONAL NEEDS |
|---|
| **Data and Information Management** |
| Develop data sharing agreements and expand data sharing capabilities |
| Improve utilization of data through dashboards, notification, and automation |
| Develop CCTV camera sharing network to share live video feeds |
| Expand fiber communications network |
| Share fiber network where appropriate |
| **Traffic Management** |
| Improve traffic signal timing and coordination between jurisdictions |
| Expand the CCTV camera network |
| Expand the DMS network (Including color and arterial DMS) |
| Deploy railroad monitoring system that provides notification of blockages |
| **Weather** |
| Deploy road weather information systems (RWIS) for flood monitoring |

Potential ITS Focus Areas within the Region
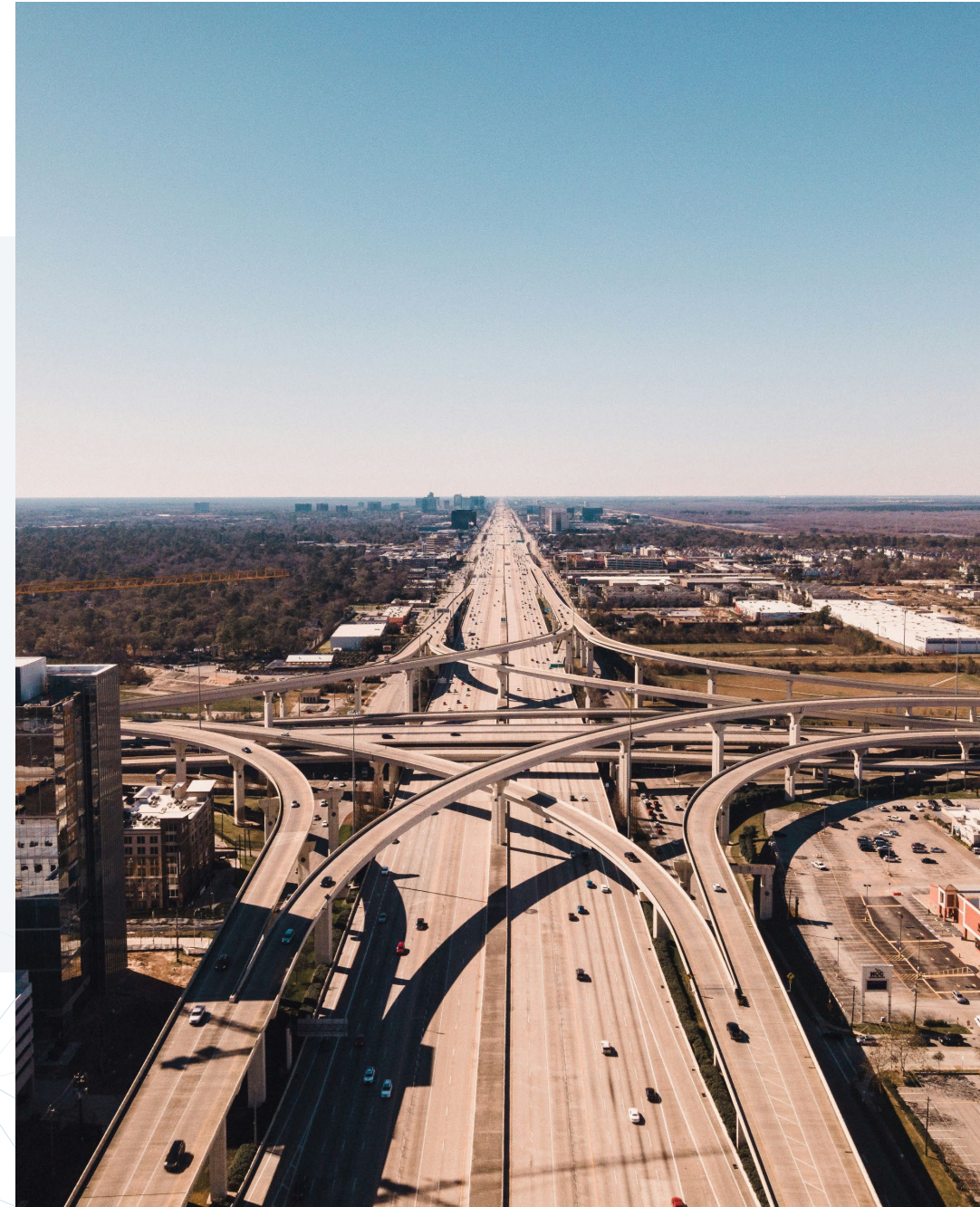
Potential ITS Focus Areas

Project Deployments

Expand CCTV Camera and DMS Coverage on Freeways and Arterials

Develop Regional CCTV Camera Video Sharing System

Deploy Railroad Crossing Detection and Notification Systems

Develop Regional Transit Rider Application

Expand Fiber Optic Communication Network

Operations and Staffing

Improve Signal Timing on Arterials and Across Jurisdictional Boundaries

Automate Operational Capabilities (Includes Data Sharing)

Increase Staffing for ITS

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CCTV Camera and DMS Coverage on Freeways and Arterials

Expand CCTV camera and DMS coverage on freeways and arterials. Provide advanced information on traffic conditions prior to freeways. Use full color DMS.

Chambers County
TxDOT Beaumont

Project Deployment

CCTV Camera Video Sharing System

Develop regional system to share full-motion high resolution video between all transportation agencies in the region.

League City
Brazoria County | Chambers County
TxDOT Beaumont | TxDOT Houston

Project Deployment

Railroad Crossing Detection and Notification System

Improve rail detection systems and provide capability to notify drivers and emergency personnel of blockages cause by rail.

Missouri City | Pearland | Sugarland
Fort Bend County

Project Deployment

Regional Transit Rider Application

Regional transit application that hosts all transit information and fare payment within the H-GAC Region.
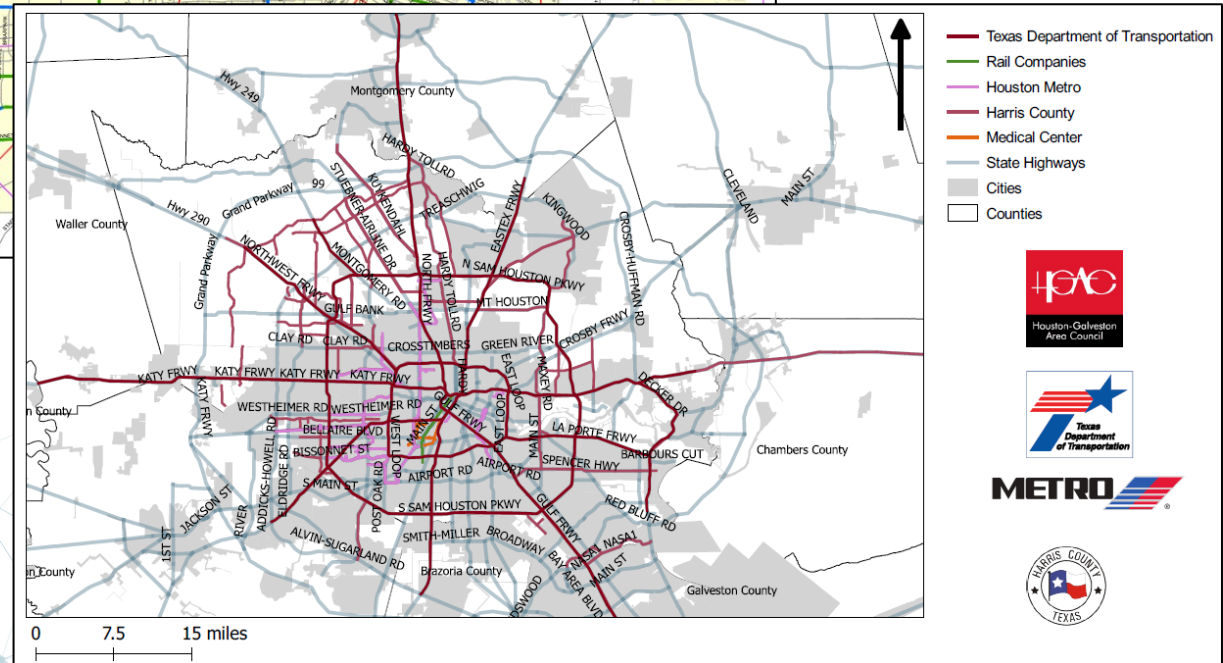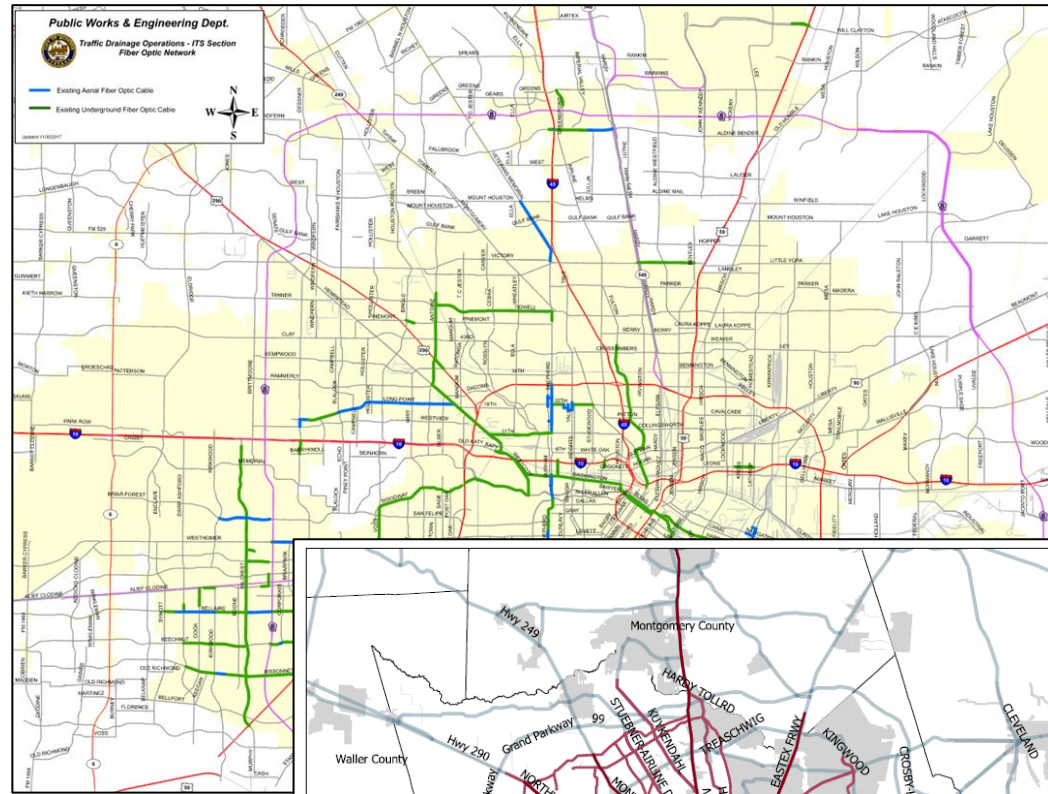
The Woodlands Regional Transit Authority

Fiber Optic Communications Network

Expand fiber optic network in the region to support high-bandwidth data needs of existing and future ITS deployments. Consider fiber sharing where feasible.

League City | Missouri City | Pearland | Sugarland
TxDOT Beaumont

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Signal Timing and Coordination

Improve signal timing on arterials and coordination across jurisdictional boundaries.

League City | Missouri City | Pearland
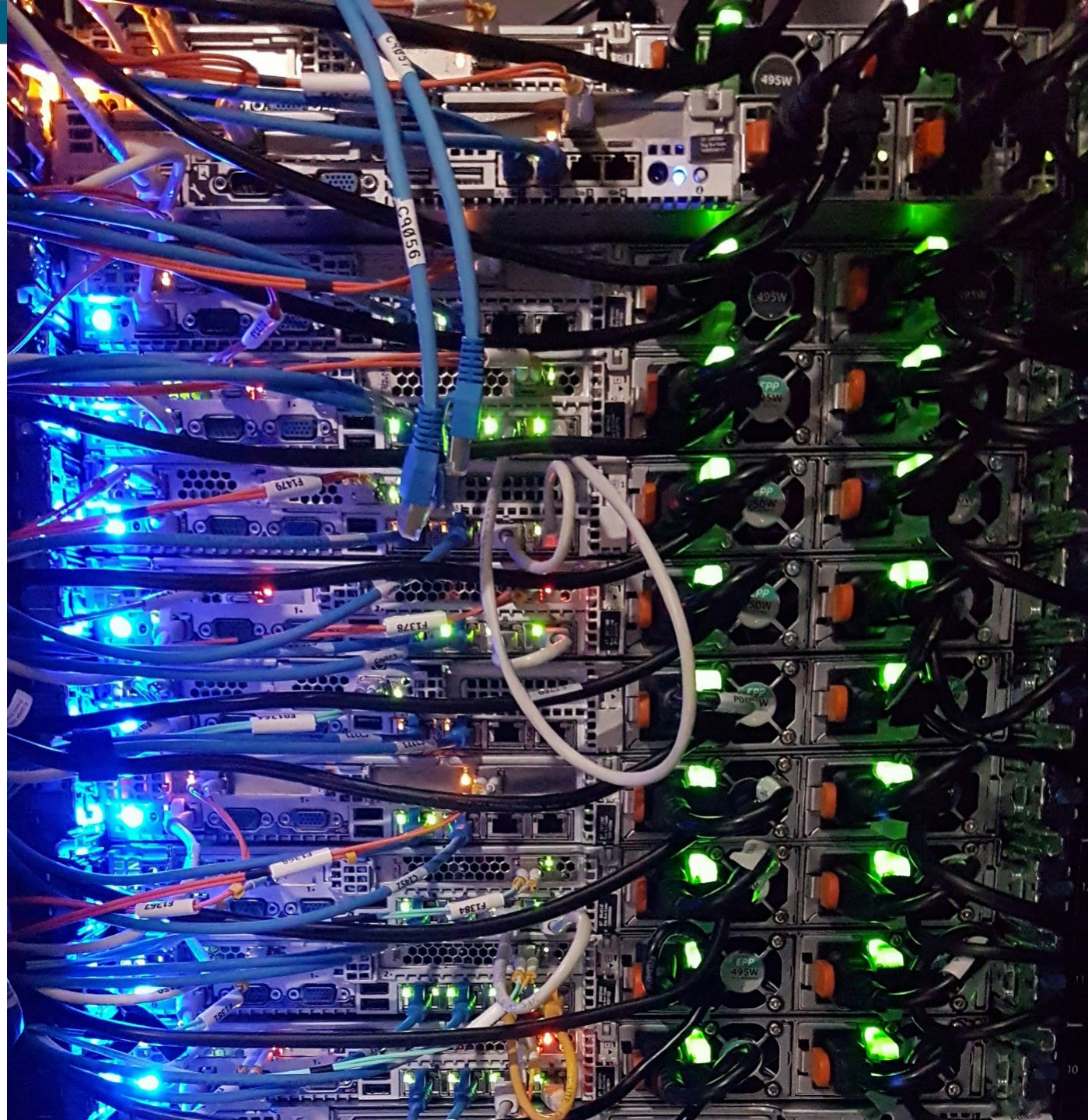Port of Freeport | Port of Houston

Operations and Staffing

Automate Operational Capabilities

Expand use of data dashboards, automation, data sharing, and AI to more actively manage transportation network.

Missouri City | Sugarland
Chambers County
Port of Freeport
TxDOT Beaumont

Operations and Staffing

10

Increase Staffing for ITS

Increase funding to add additional staffing for operations and maintenance of ITS.

Pearland | League City
TxDOT Houston

Operations and Staffing

Next Steps

- Complete Stakeholder Interviews and Communications Scan

- Begin Update to the Regional ITS Architecture

- Conduct Stakeholder Workshop

- Develop Training Classes for the Regional ITS Architecture

Contacts

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Thank You

Kimley»Horn