




# Houston-Galveston Area Council: Air Quality Program Overview





# Presentation Overview

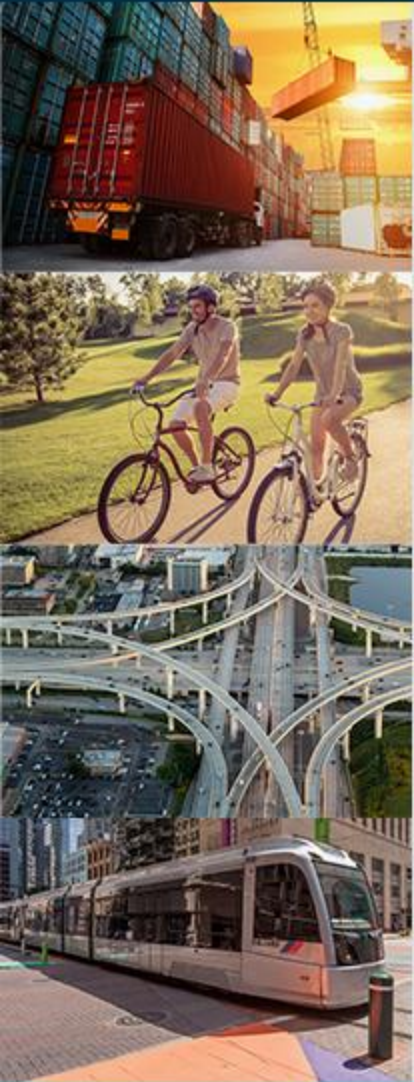
- 
- Regional Air Quality Overview
    - The Clean Air Act and H-GAC's Role Therein
  - Air Quality Efforts At H-GAC
    - H-GAC's ongoing and upcoming projects

# Part I

## The Clean Air Act and Regional Air Quality

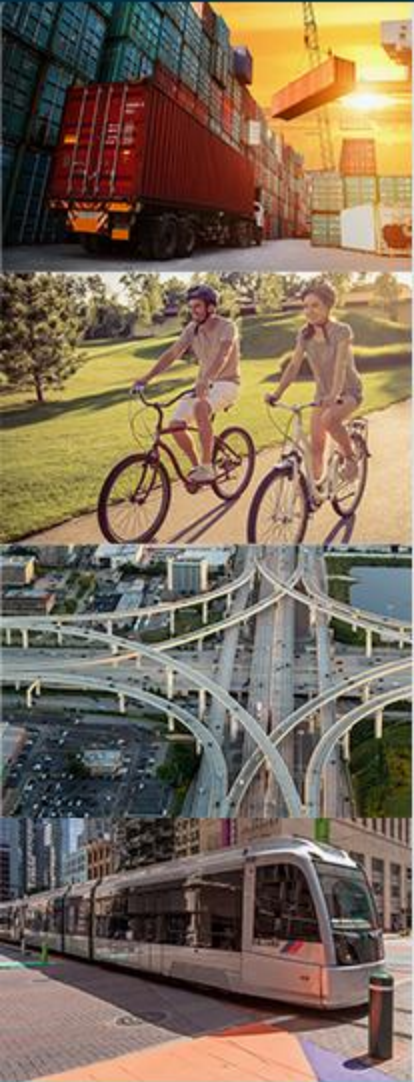
# Federal Clean Air Act

- Clean Air Act is the basis of all federal air quality rules
- Congress defined National Ambient Air Quality Standards (NAAQS) for six “criteria” pollutants, including ozone
  - Ozone, Particulate Matter (PM<sub>2.5</sub> and PM<sub>10</sub>), Lead, Carbon Monoxide, Sulfur Oxides, Nitrogen Oxides
- Defined process for nonattainment regions to meet the standard – the State Implementation Plan (SIP) process
  - State driven process, working with local agencies to model air quality, develop regional emissions budgets, and identify control strategies to meet those standards



# Federal Clean Air Act

- 1970 Clean Air Act (CAA)
  - Birth of modern air quality regulations in the US
  - Established National Ambient Air Quality Standards (NAAQS) for criteria pollutants
  - Set standards for each of these pollutants
- CAA was further amended in 1977 and 1990 to add provisions to link the standards to transportation and air quality improvement
- CAA requires that standards be revisited every five years and reassessed to ensure that they sufficiently protect public health





# National Ambient Air Quality Standards


- Classifies regions based on severity of nonattainment
  - Marginal, Moderate, Serious, Severe, Extreme
- Lays out process by which regions identify sources and take actions to reduce emissions and eventually attain
- Sets deadlines to meet standards based on severity
- Sets penalties for regions that do not comply with the process
- Requires that after attainment, regions must comply with rules for an additional 10-year maintenance period.



# NAAQS Requirements

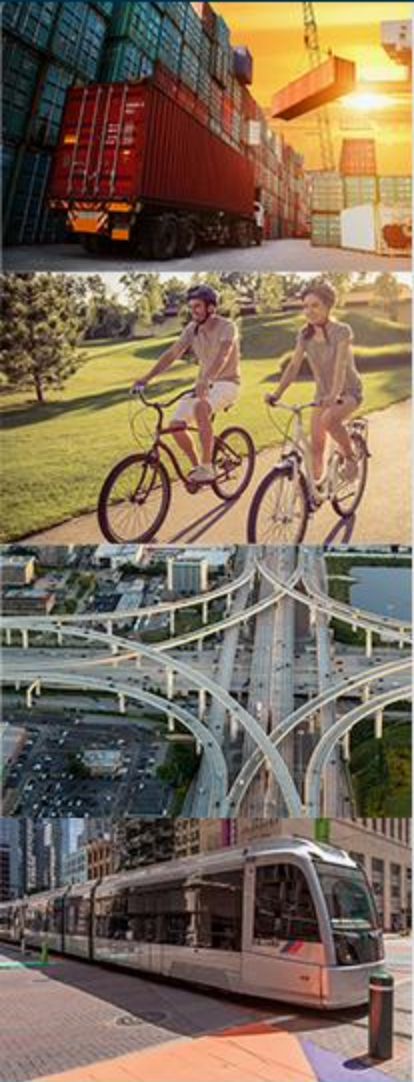
MARGINAL (3 Years)	MODERATE (6 Years)	SERIOUS (9 Years)	SEVERE (15-17 Years)	EXTREME (20 Years)
<p>Emissions Inventory</p> <p>Emissions Statements</p> <p>Nonattainment NSR Program &amp; Emissions Offsets</p> <p>RACT Fixups</p> <p>I/M Corrections</p>	<p>Basic I/M</p> <p>RACT &amp; RACM Emissions Reductions</p> <p>Attainment Demonstration</p> <p>Contingency Measures</p> <p>RFP - 15% VOC Reductions Within 6 Years</p>	<p>Enhanced Monitoring and I/M</p> <p>Modeled Attainment Demonstration</p> <p>3% per Year VOC Reductions After 6 Years</p> <p>RFP Milestone Contingency Measures</p> <p>Clean Fuels Program</p> <p>VMT Demonstration</p>	<p>VMT Growth Offset</p> <p>Major Source Fees for Failure to Attain (185 Fees)</p>	<p>Clean Fuels and Controls for Boilers</p> <p>Traffic Controls During Congestion</p>
100	100	50	25	10
1.1 : 1	1.15 : 1	1.2 : 1	1.3 : 1	1.5 : 1
Major Source Threshold (tpy)				
NSR Offset Ratios				

# Regional NAAQS Compliance

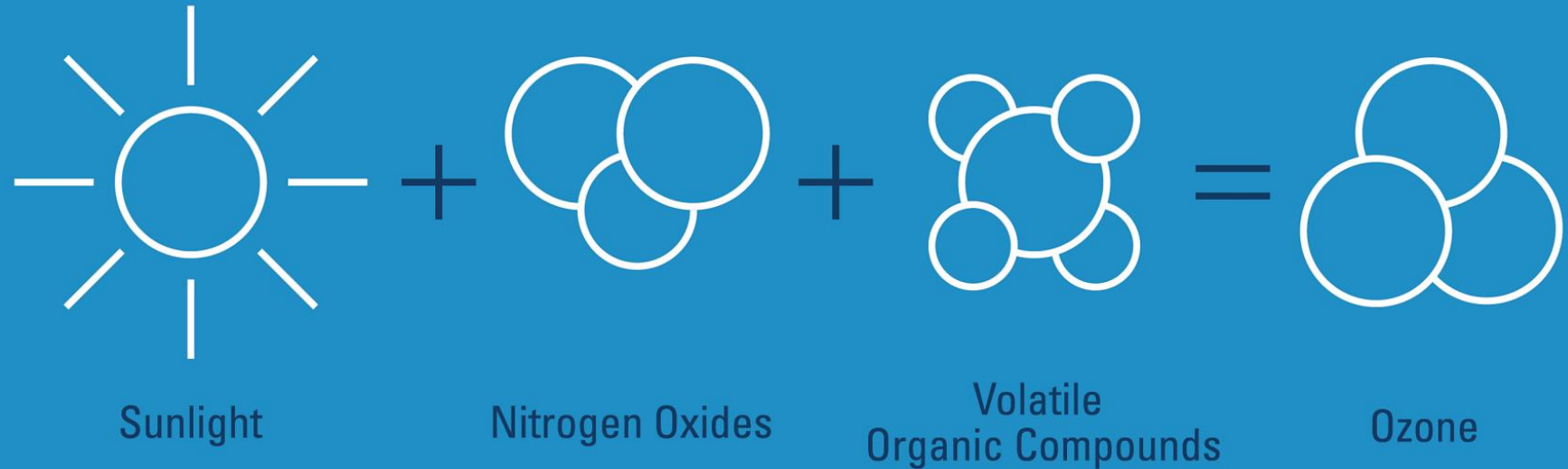
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- Two different ozone standards applicable to our region:
    - 2008 8-Hour Standard
      - 75 parts per billion (ppb) Design Value
      - Marginal Nonattainment; 2014 Attainment Date
      - Later Reclassified to Moderate, then Serious, now Severe (2026 AD)
      - Eight Counties: Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller
    - 2015 8-Hour Standard
      - 70 ppb Design Value
      - Marginal Nonattainment; 2021 Attainment Date
      - Later Reclassified to Moderate, now Serious (2026 AD)
      - Six Counties: Brazoria, Chambers, Fort Bend, Galveston, Harris, and Montgomery
  - 2024 PM<sub>2.5</sub> Standard
    - Reduced Primary Standard From 12.0  $\mu\text{g}/\text{m}^3$  to 9.0  $\mu\text{g}/\text{m}^3$
    - Harris County Likely Impacted by Revised Standard



# Ozone Formation

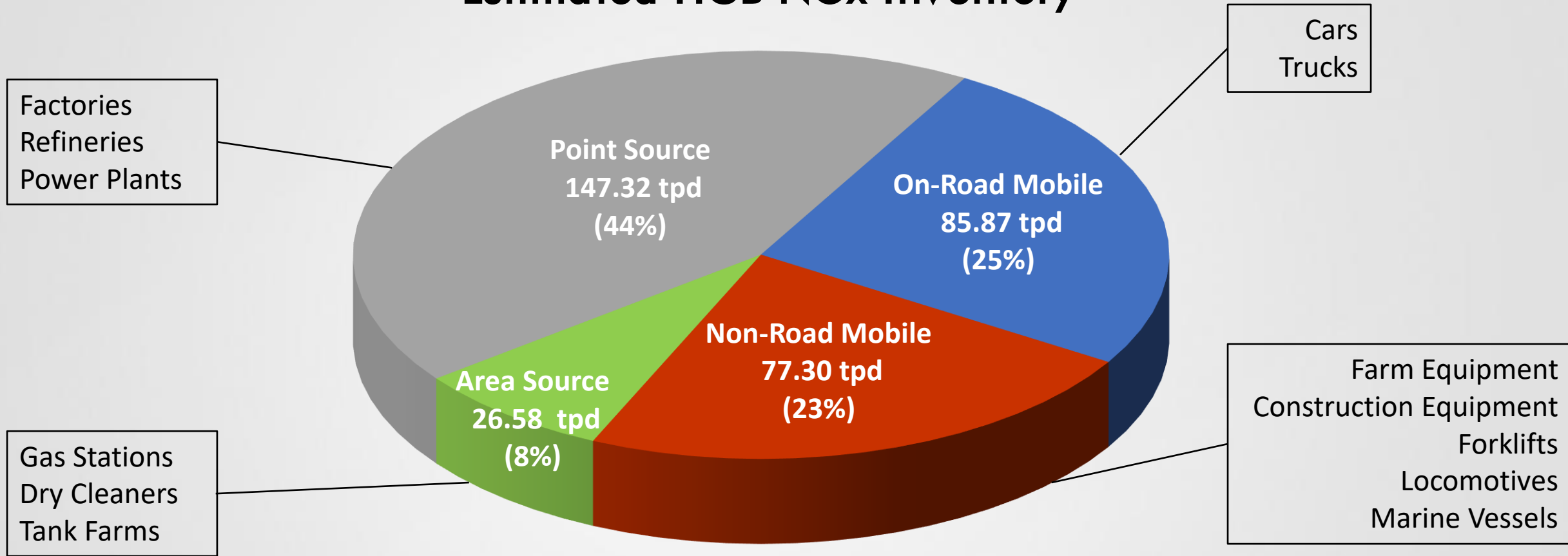


## Ozone Formation



# Regional Emissions Sources

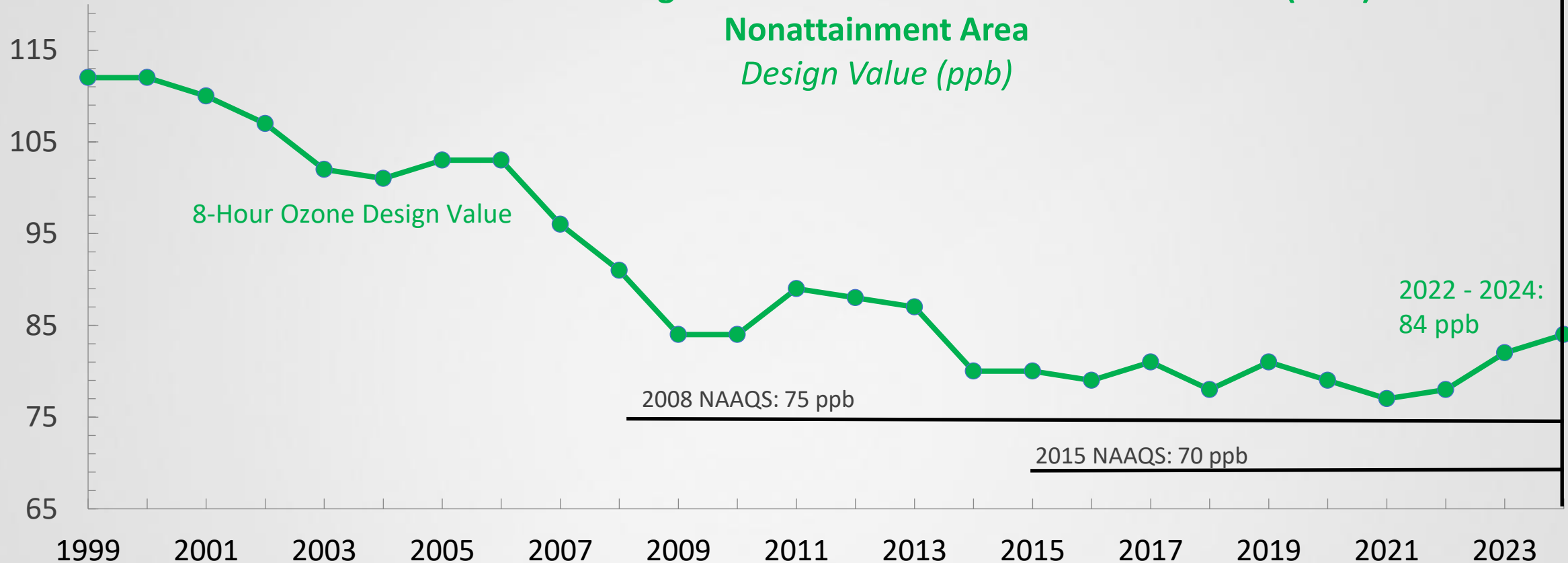
## Estimated HGB NOx Inventory



Source: Texas Commission on Environmental Quality

# Regional Air Quality Progress

## 8-Hour Ozone Design Values for Houston-Galveston-Brazoria (HGB) Nonattainment Area Design Value (ppb)



\*2008 NAAQS includes eight counties: Brazoria, Chambers, Fort Bend, Galveston, Harris Liberty, Montgomery, and Waller

\*2015 NAAQS includes six counties: Brazoria, Chambers, Fort Bend, Galveston, Harris, and Montgomery

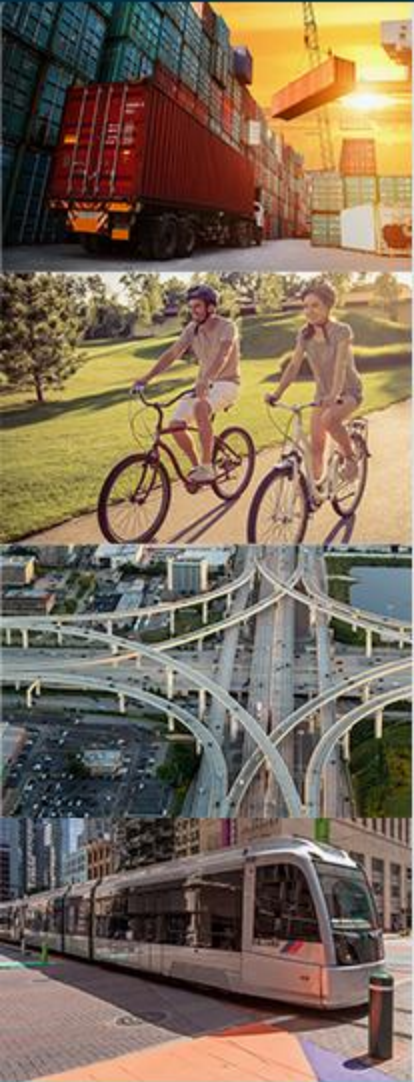


# Part II


## Air Quality Efforts At H-GAC

# H-GAC and Air Quality

- Ensure that regionally funded transportation projects do not increase emissions
- Work with stakeholders to develop and implement emission reduction programs
- Support and participate in research projects with local and statewide partners
- Develop funding sources for new air quality improvement programs
- Engage with citizens and stakeholders to educate and foster informed choices that support improved air quality and health



# H-GAC Regional Air Quality Efforts

- 
- Support Air Quality Planning Activities:
    - Regional Climate Efforts / CPRG
    - Zero Emission Vehicle Planning
    - Fine Particulate Matter / PM<sub>2.5</sub>
    - Health Impacts
  - Support Regional Air Quality Improvement:
    - Support Efforts to Meet Federal Air Quality Standards
    - Provide General Air Quality Guidance to Regional Stakeholders
    - Transportation Conformity
    - Clean Vehicles Program
    - Houston-Galveston Clean Cities Coalition
  - Support Local Government Efforts to Improve Air Quality



# Air Quality

HOUSTON REGIONAL SUMMIT



**SEPTEMBER 24, 2025 | HOUSTON, TEXAS**

9:00 a.m. – 4:00 p.m. | The Cullen Building at Baylor College of Medicine, 1 Baylor Plaza, Houston, TX 77030

## About the Summit

The 2025 Houston Regional Air Quality Summit will bring together community stakeholders, policymakers, industry leaders, and youth advocates to explore solutions for improving air quality across the Houston-Galveston region. Using the 2026 Houston World Cup as a platform for engagement, the summit will highlight innovative approaches to air quality monitoring, environmental justice, and public health.

This event will provide a dynamic space for meaningful dialogue, knowledge-sharing, and collaboration, while fostering ongoing efforts to address air quality challenges in the region. Our goal is to establish a framework for an annual summit that promotes sustained engagement and measurable improvements in environmental health and air quality.

## Key Topics

- **State of Air Quality in Houston**  
A keynote session providing an overview of current air quality trends and challenges.
- **Air Quality and Public Health**  
Insights on how air quality impacts health outcomes, featuring leading health experts.
- **Air Quality Monitoring Network**  
Learn about ongoing monitoring efforts and how they enhance community engagement.

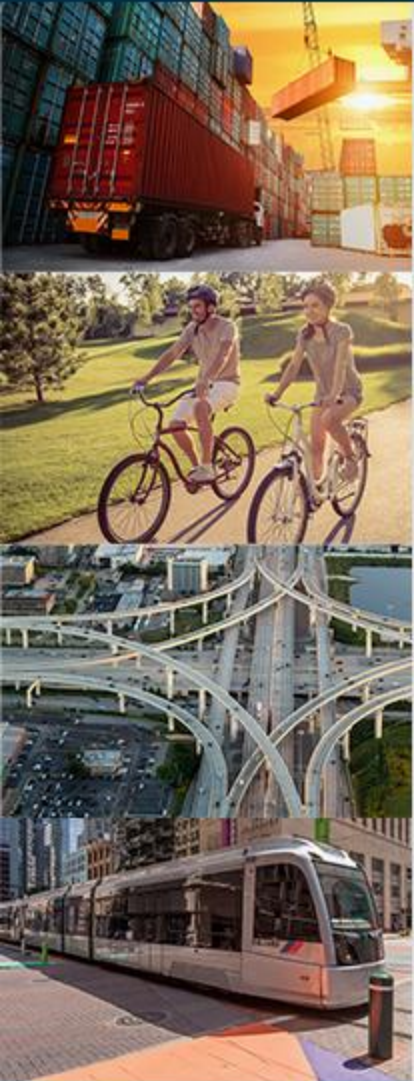
# CPRG Background

- Created by Section 60114 of the Inflation Reduction Act
- Purpose: Develop and implement plans for reducing greenhouse gas emissions and other harmful air pollutants
- Will be administered by EPA in two phases:
  - Phase 1: \$250 Million Non-Competitive Planning Grant
  - Phase 2: \$4.6 Billion in Competitive Implementation Grant
- H-GAC is administering a \$1 million CPRG grant to develop a plan with strong strategies for reducing greenhouse gas emissions and other harmful air pollutants





# CPRG Benefits





# CPRG Deliverables



## Priority Climate Action Plan (PCAP)

- Due **March 1, 2024**
- Near-term, implementation-ready, **priority greenhouse gas (GHG) reduction measures**
- **Prerequisite** for implementation grant



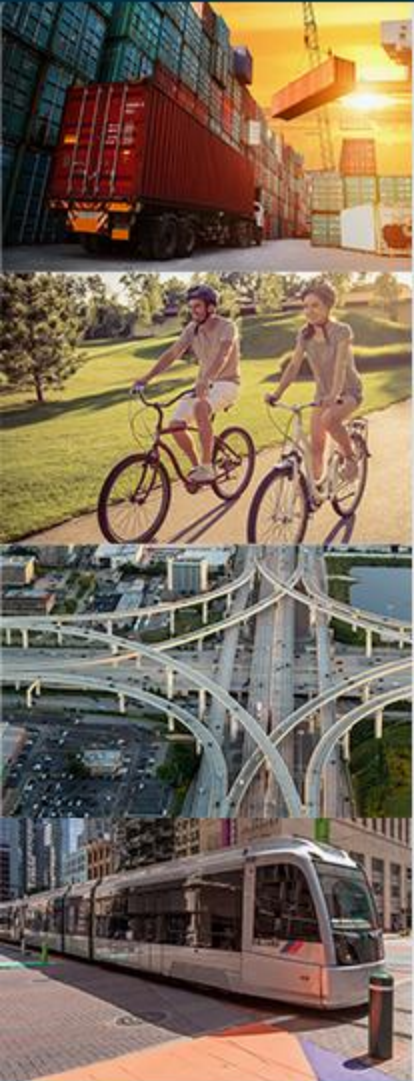
## Comprehensive Climate Action Plan (CCAP)

- Due in **2025** (later for tribes and territories)
- **All sectors** / significant GHG sources and sinks
- **Near- and long-term** GHG emission reduction goals and **strategies**



## Status Report

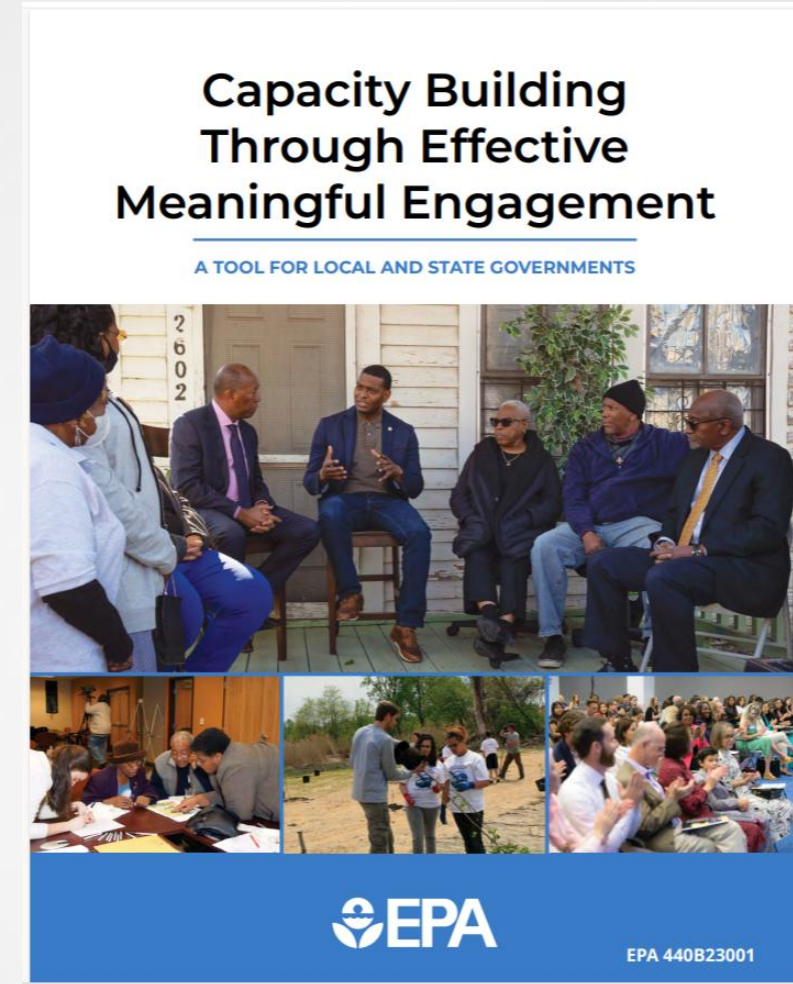
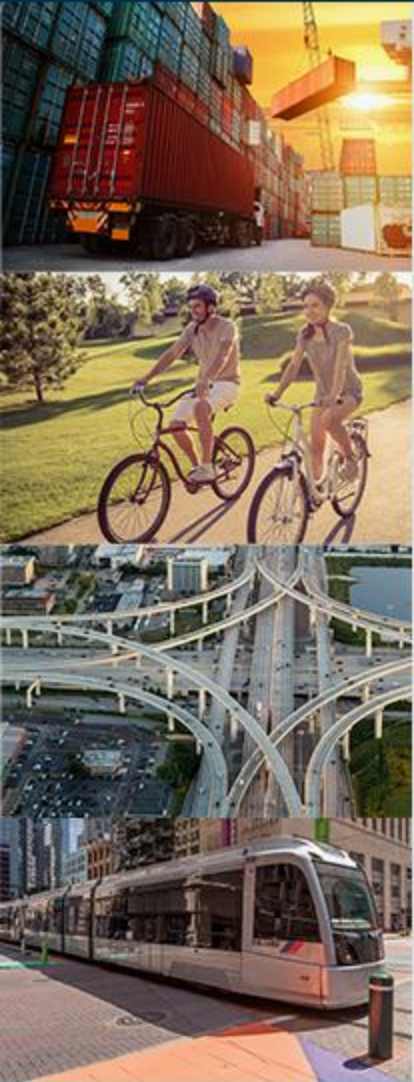
- Due in **2027** (N/A for tribes or territories)
- **Updated** analyses and plans
- **Progress and next steps** for key metrics



# CPRG Next Steps: Stakeholder Engagement

## GOALS:

- Enhance community buy-in
- Generate Solutions
- Empower and integrate community
- Build local network
- Increase transparency
- Create opportunities



# Transportation Conformity

- A Federal requirement to ensure that air quality in nonattainment regions like ours is not negatively impacted by transportation planning efforts
- Nonattainment areas must conduct air quality analyses on projects, programs, and policies identified in RTP, TIP, or other projects requiring federal approval
- The region must demonstrate that emissions related to projects do not exceed limits established in the state's air quality State Implementation Plan (SIP)
- Because Houston-Galveston is not in attainment for ozone, H-GAC must update RTP every 4 years instead of 5 years for areas in attainment.



# What Does Conformity Tell Us?

- Demonstrates compliance with the latest emission budgets based on the current SIP
- Determines if transportation dollars (federal or non-federal) dollars will contribute to worsening air quality conditions, further contributing to our regions' nonattainment status
- There are consequences if conformity is not completed

# Conformity Process

- Two step process:

- 1. the MPO develops an initial transportation conformity analysis at the local level, then works with stakeholders and the public to determine conformity
- 2. Federal Highway Administration (FHWA) and conformity partners from the regional, state, and federal levels review and make a joint transportation conformity determination at the federal level



# Rider 7 Program Background

- Rider 7 – Air Quality Planning Grant for near non-attainment areas
- Texas Commission on Environmental Quality's Legislative Appropriation from 88<sup>th</sup> Legislature
- H-GAC was awarded \$450,000 for 2024-2025
- Funded activities are limited to:
  - Inventorying emissions
  - Monitoring of pollution levels
  - Air Pollution and data analysis
  - Modeling pollution levels
  - Project administration



# Rider 7 Speciation Study

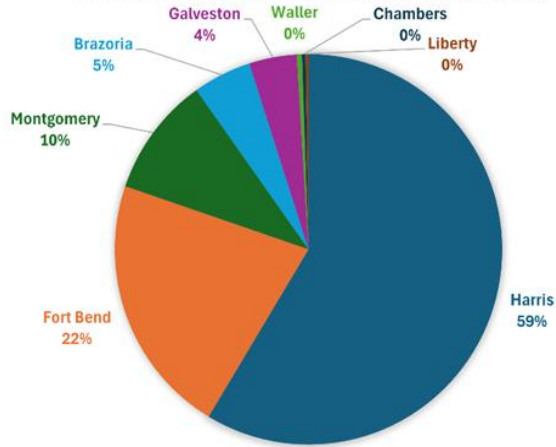
- H-GAC has developed a speciation study to analyze the components of PM<sub>2.5</sub> in our region to better understand the impact on human health
- Built on previous studies, such as TCEQ's North Wayside report, for further analysis of PM<sub>2.5</sub> composition and sources
- Will not undertake any new monitoring – will analyze existing datasets
- When possible, will focus on near-road locations, industrial areas, sites, or locations with heavy truck traffic.

# Zero Emission Vehicle Infrastructure Study

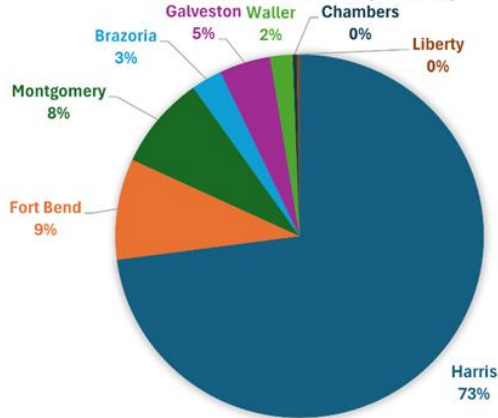
- Battery Electric Vehicles (BEVs), Plug-in Hybrid Electric Vehicles (PHEVs), and Fuel Cell Electric Vehicles (FCEVs)
- The H-GAC region accounts for over a quarter of Texas EVs, with 87,000+ in the 8-county region
- **Initial study topics:** thorough exploration of each vehicle type, national and state industry trends, federal investments, analysis of current conditions, i.e., county-level profiles (registrations over time and infrastructure benchmarking)
- Webpage and one-pager documents for each technology type
- Developing a scope of work and procurement process to begin a full regional planning process

# Zero Emission Vehicle Infrastructure Study

EV REGISTRATION COUNT (JANUARY 2025)



CHARGING PORTS (L2&L3)

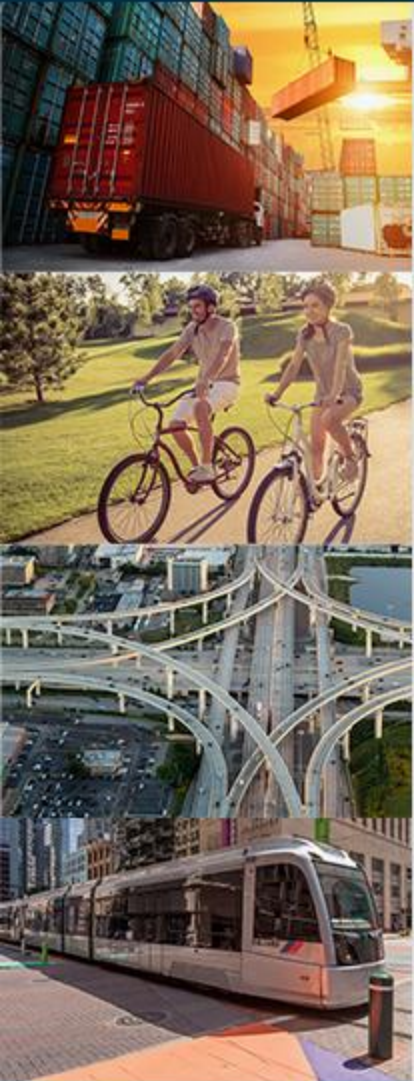


County	Current EV Totals (December 2024)	Average Annual Percent Change (2019-2024)
Harris	45,680	+ 57%
Fort Bend	16,697	+ 65%
Montgomery	7,761	+ 60%
Brazoria	3,777	+57%
Galveston	3,108	+ 57%
Waller	337	+ 114%
Chambers	233	+118%
Liberty	176	+ 78%

- High, sustained growth over past 5 years
- Chargers and vehicles concentrated in Harris and Fort Bend counties, but infrastructure overrepresented in Harris

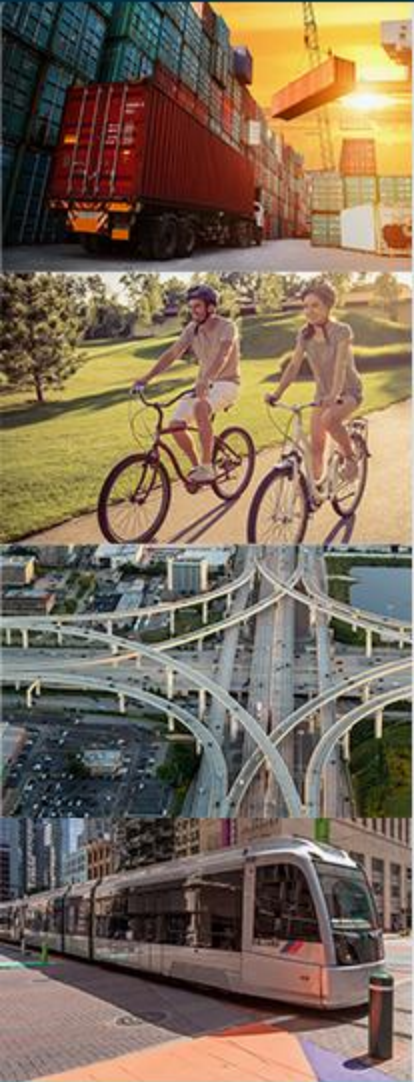


# Clean Vehicles Programs



- **Separate but related air quality grant programs:**
  - Clean Vehicles Program (CVP) – Congestion Mitigation and Air Quality (CMAQ) funded through USDOT
    - Heavy duty on-road vehicles
    - School bus
  - Heavy Duty Diesel Replacement Program (HDDRP) – EPA Funded
    - Drayage trucks\*
    - Heavy duty on-road vehicles
    - School bus
    - Non-road equipment
  - Area Emission Reduction Credit Organization (AERCO) – Supplemental Environmental Project (SEP) funded
    - School bus
- Replaces older heavy-duty vehicles operating within the non-attainment region with new, cleaner models
- Traditionally focused on diesel-to-diesel replacements, but will give incentives to replacing with alternative fuels
- Significantly constrained by Buy America regulations

# Clean Vehicles Program (2010 to March 2025)



Grant Program	Vehicles	Grant Amount	Tons of NOx Reduction (Documented)	Funding / Reduction
CVP	429	\$34,723,365.80	1,217	\$28,531.94
Third Party TERP*	81	\$4,139,115.50	382	\$10,835.38
HDDRP	69	\$4,696,290.29	124	\$37,873.31
AERCO / SEP	84	\$5,234,757.42	44	\$118,971.76
Total	663	\$48,793,529.01	1,767	\$27,613.77

It takes 74 trucks to haul 1,767 tons!

(Just over a mile long)



# Department of Energy (DOE) Clean Cities and Communities Partnership

- More than 75 coalitions across the United States
  - Texas has 5 coalitions
- Efforts support a broad set of approaches that improve transportation efficiency at the local, state, and national levels
- The Houston-Galveston Coalition remains a "Fuel Neutral" program





# Houston-Galveston Clean Cities Coalition

## ■ 2022-2025 Activities:

- Work with partners to promote federal funding initiatives and related programs
- Help regional fleets understand and apply for federal, state, and local funding opportunities
- Develop education events: stakeholder meetings, webinars, workshops, podcasts\*
- Developing workforce training

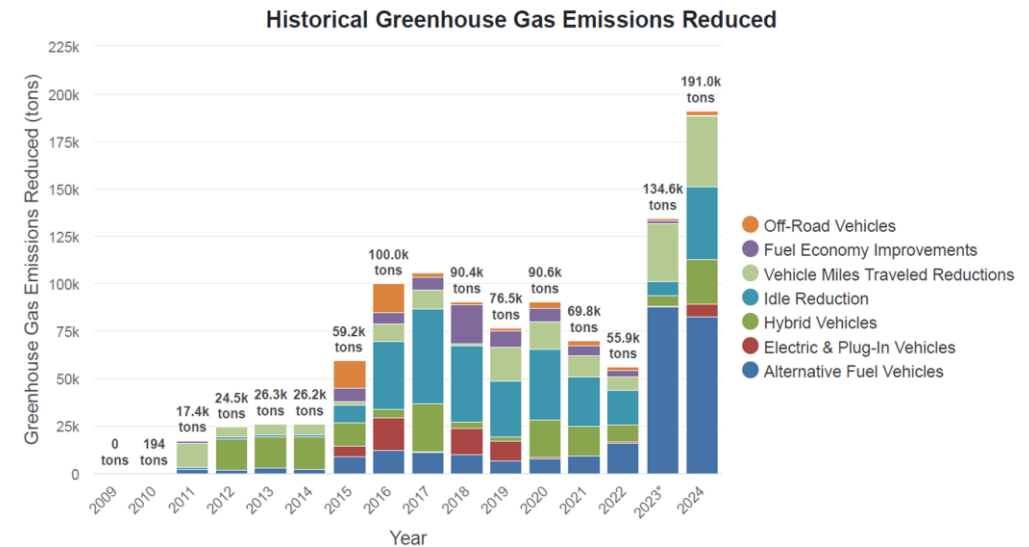
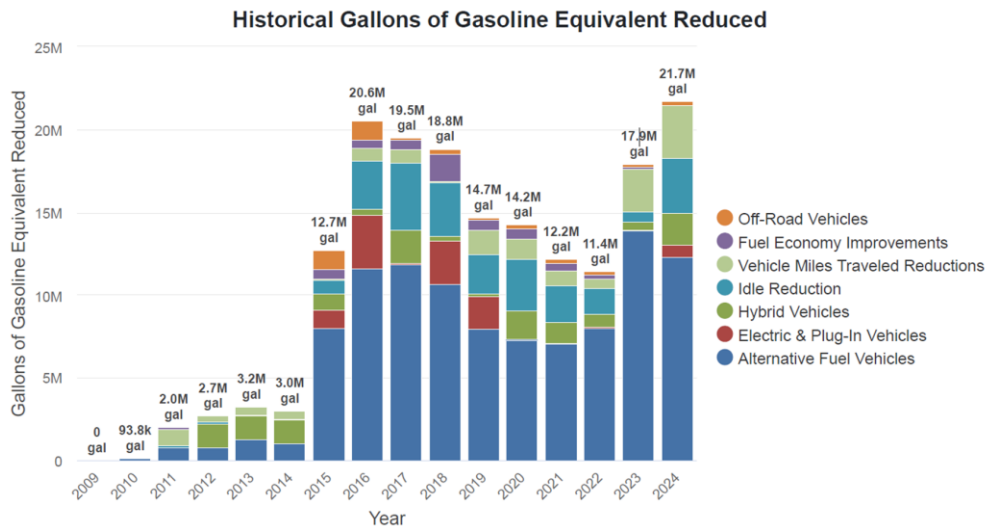


# Houston-Galveston Clean Cities Coalition

## ■ The Annual Report

- Canvass the region to document:

- Yearly alternative fuel usage
- Other yearly transportation strategies used to conserve petroleum



# Houston-Galveston Clean Cities Coalition



E-Mail: [ben.finley@h-gac.com](mailto:ben.finley@h-gac.com)  
for invitations to coalition events

Visit [houston-cleanities.org](http://houston-cleanities.org)  
for Partnership Agreement



# H-GAC Air Quality Team

Andrew DeCandis  
Program Manager

[Andrew.DeCandis@h-gac.com](mailto:Andrew.DeCandis@h-gac.com)  
832-681-2589

Pharr Andrews  
Principal Planner

[Pharr.Andrew@h-gac.com](mailto:Pharr.Andrew@h-gac.com)  
832-681-2587

Maggie Isied  
Principal Planner

[margaret.isied@h-gac.com](mailto:margaret.isied@h-gac.com)  
713-499-6695

Vinny Polignano  
Planner

[vincent.polignano@h-gac.com](mailto:vincent.polignano@h-gac.com)  
713-499-6662

Ben Finley  
Principal Program Coordinator

[ben.finley@h-gac.com](mailto:ben.finley@h-gac.com)  
713-993-4556

Carlos Lugo  
Program Coordinator

[carlos.lugo@h-gac.com](mailto:carlos.lugo@h-gac.com)  
832-681-2560

# Questions?