



Mayor's Office of Resilience and Sustainability

TTI Committee

October 5, 2023

HOUSTON HAS GROWN TO 667 SQUARE MILES IN 175 YEARS

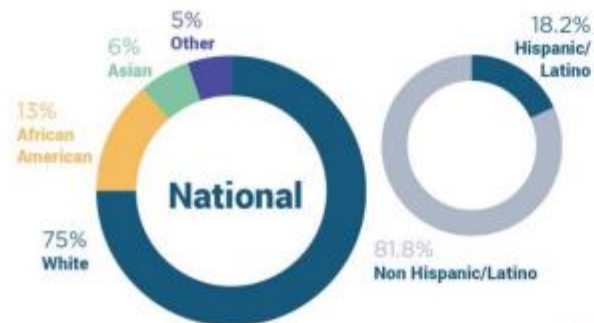
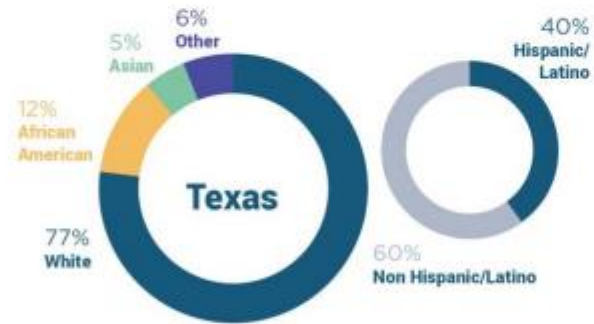


Houston – Denmark Collaboration, March 6, 2023

Source: City of Houston Planning & Development Department

A MULTICULTURAL METROPOLIS

One in four
Houstonians
were born
outside of the
United States.



145

Languages spoken
in Houston.

More than

one
third

of Houstonians over 5 years old speak a
language other than English at home *



Foreign Born

59%
In the Gulfton
Community



29%
Overall in Houston**



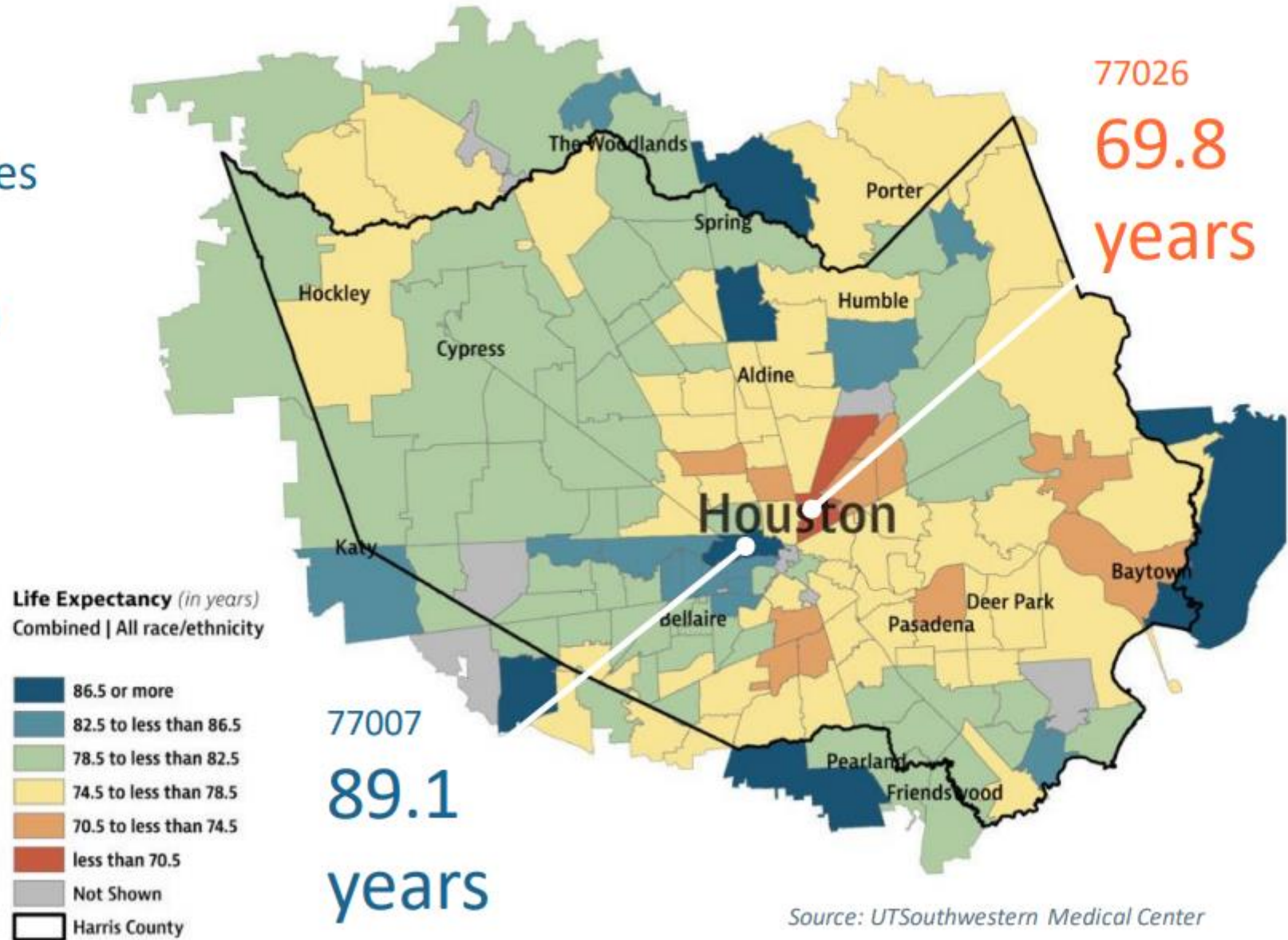
Source: U.S. Census Bureau. Hispanic or Latino Origin by Race. 2013-2017 American Community Survey 5-Year Estimates

*Source: Visit Houston. About Houston, Facts and Figures. Accessed March 20, 2019. <https://www.visithoustontexas.com/about-houston/facts-and-figures/>

** City of Houston. Gulfton, Complete Community Data Snapshot. http://www.houstontx.gov/completemcommunities/docs_pdfs/Gulfton/Gulfton-DataSnapshot.pdf

DISPARITIES IN QUALITY OF LIFE

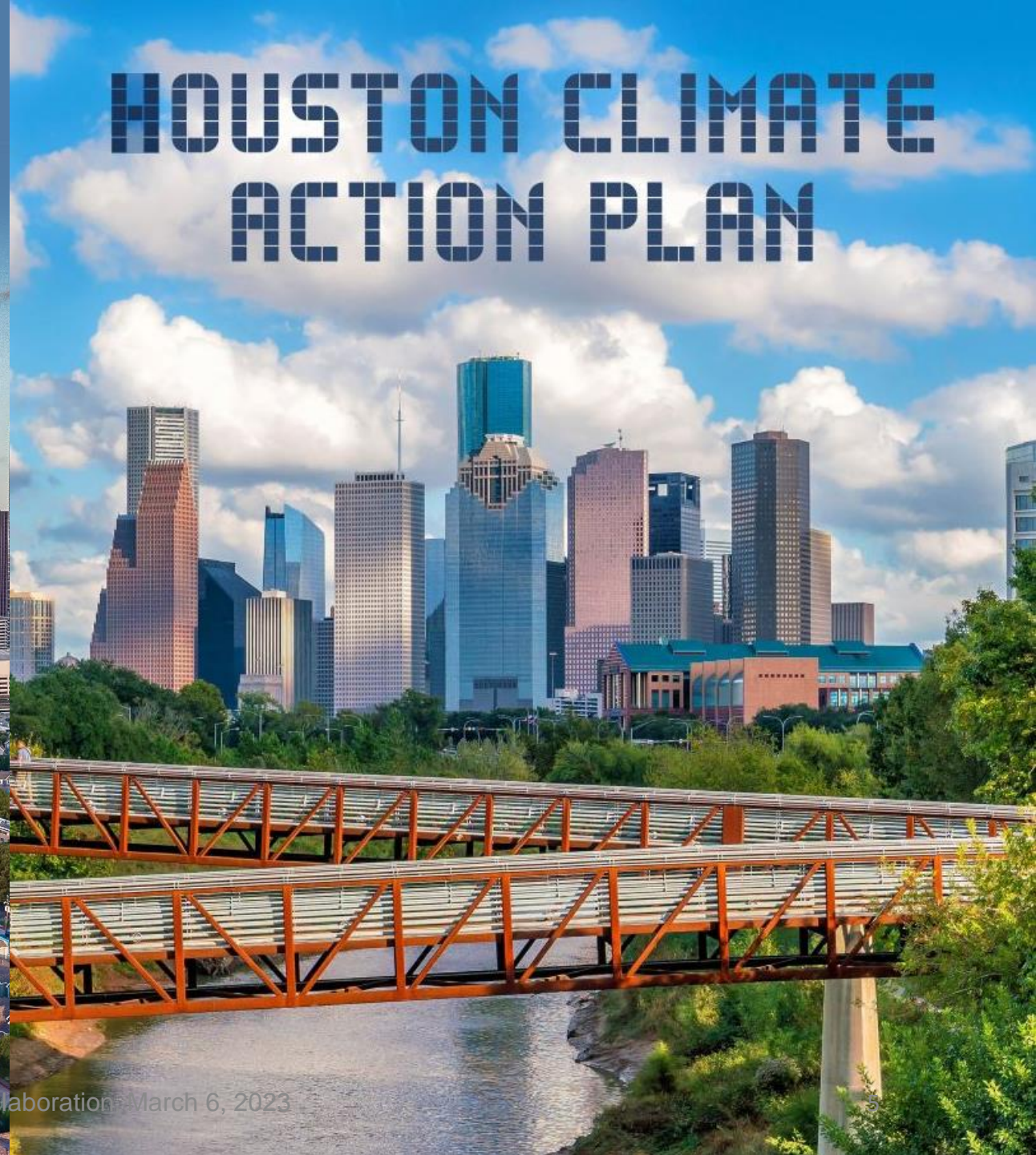
Life expectancy varies by as much as **20 years** between zip codes.



RESILIENT HOUSTON



HOUSTON CLIMATE ACTION PLAN



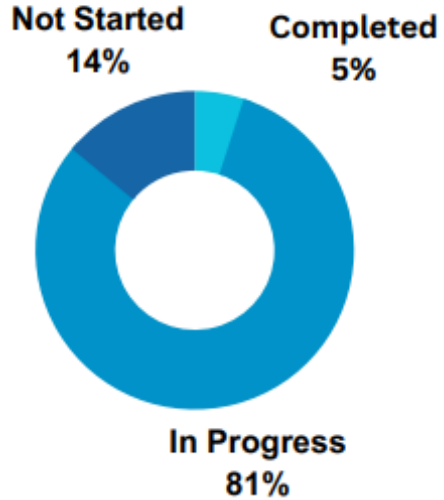
RESILIENT HOUSTON

HOUSTON CLIMATE ACTION PLAN

- 9 program areas
 - *Equity and opportunity*
 - *Mobility and land use*
 - *Buildings and energy*
 - *Water*
 - *Disaster management*
 - *Heat and nature*
 - *Materials management*
 - *Resilience coordination*
- Leverage implementation momentum
- Anchor partnerships
- Opportunistic vs. Intentional

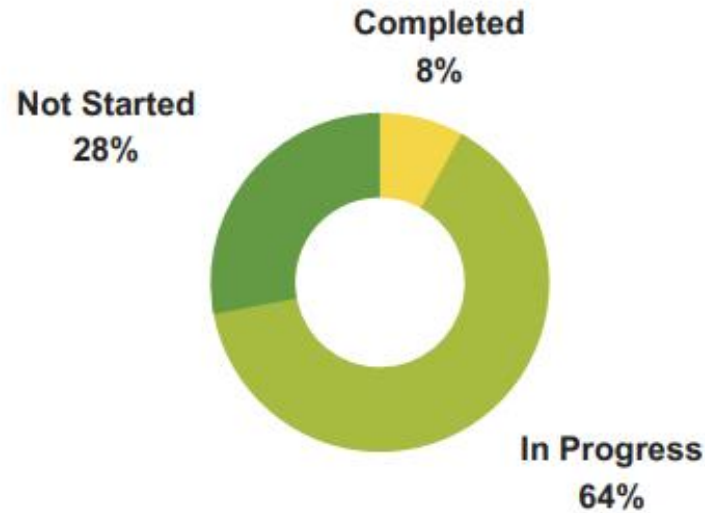
3 Year Report- By the Numbers

Resilient Houston



Out of 201 Sub-actions in Resilient Houston, 9 are completed, 163 are in progress, and 29 are considered not started.

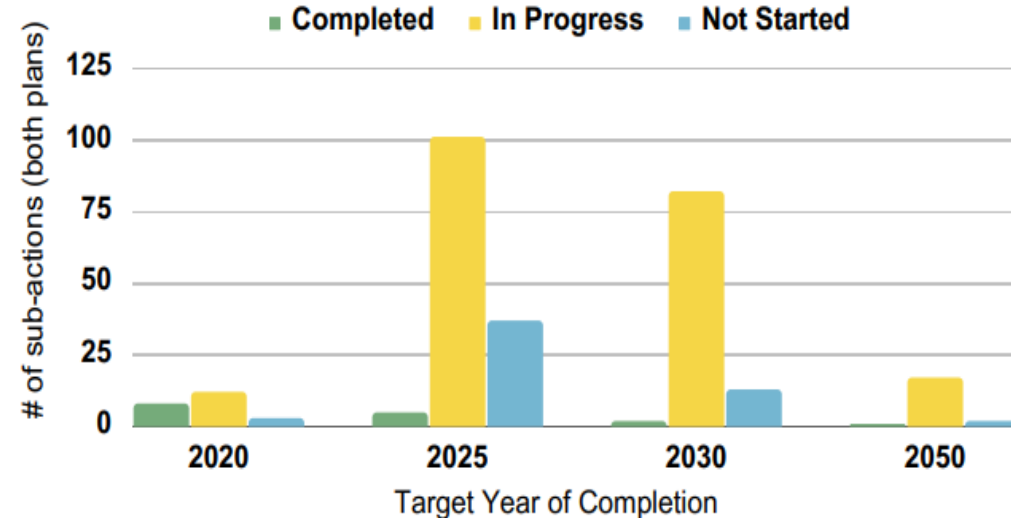
Climate Action Plan



Out of 96 Actions in the Climate Action Plan, 8 are completed, 61 are in progress, 27 are considered not started.

- 297 total sub-actions across both plans
- 80% are targeted for completion by 2030
- 30% can be completed by partners/public-private partnerships
- 90% actions – 12 departments

Implementation Status

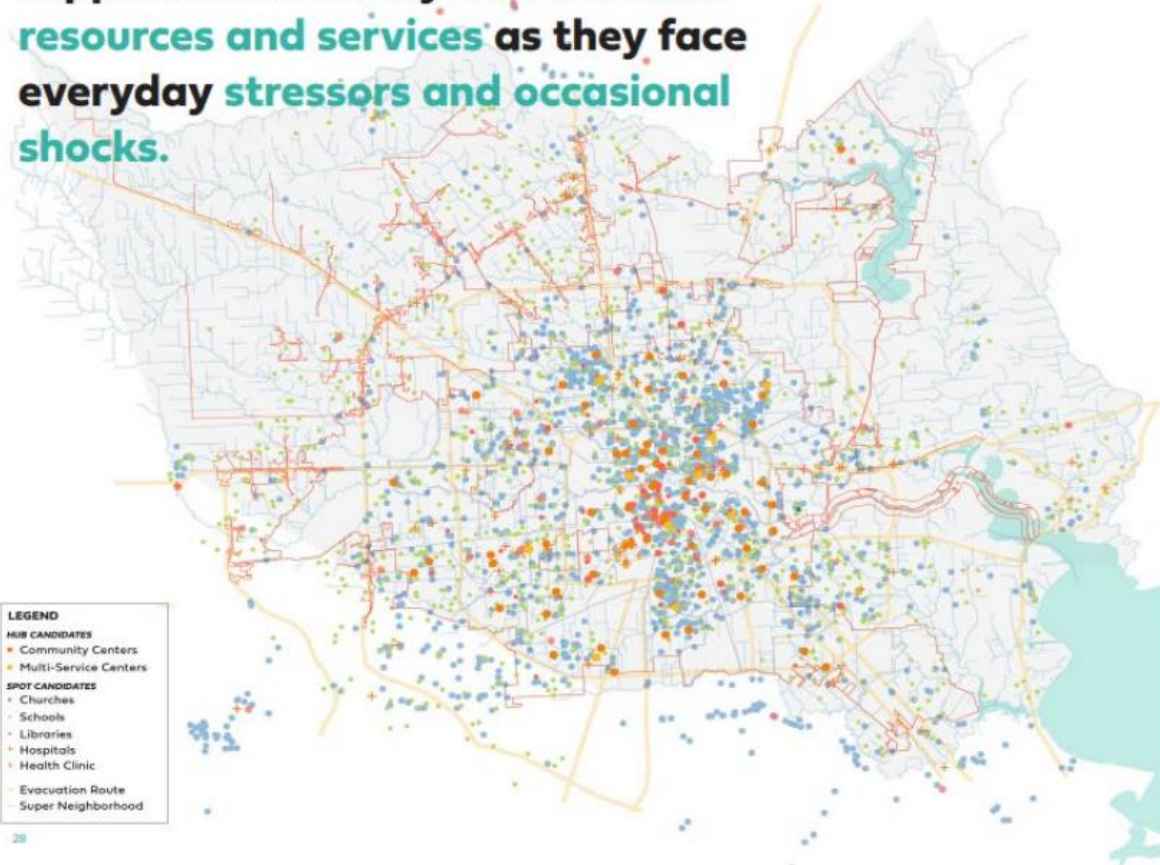


Program Area: Disaster Management/Resilience Coordination

What is a Resilience Hub?

Definition

Houston Neighborhood Resilience Hubs are trusted community-serving facilities that are augmented to support residents by coordination resources and services as they face everyday stressors and occasional shocks.



Resilience Hub Master Plan

- Plan completed in August 2023
 - Toolkit for Communities
 - Pilot Study
 - Alief MSC
 - Bibleway Baptist Church (Edgebrook Spot)
- Four MSC site assessments are on going
 - Working with several departments to identify retrofits and programming gaps

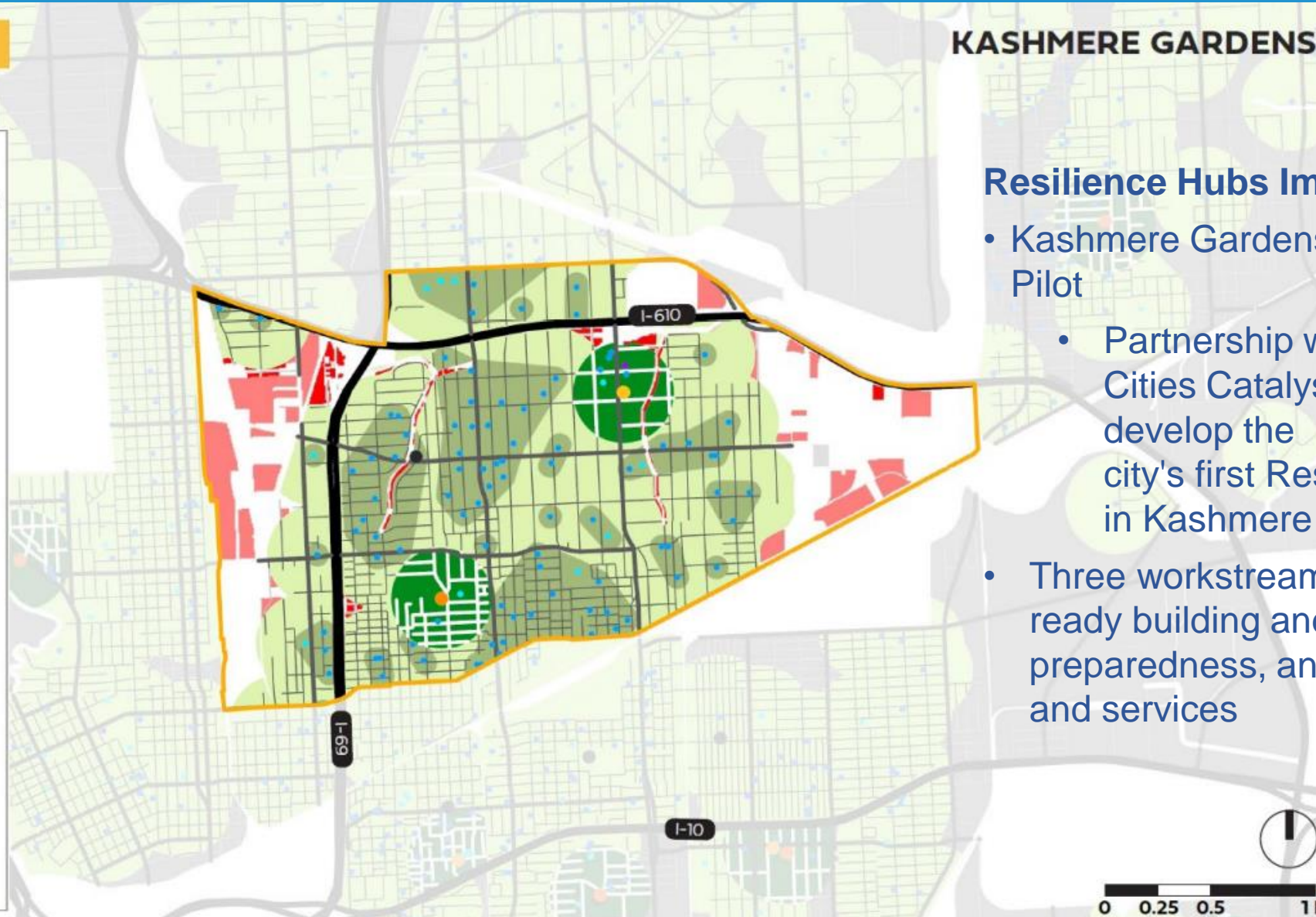


Program Area: Disaster Management/Resilience Coordination

RESILIENCE HUB NETWORK

LEGEND

- Complete Communities
- Major Highway
- Street Spokes
- Hub Primary Street Spokes
- HUB CANDIDATES**
- Community Centers
- Multi-Service Centers
- SPOT CANDIDATES**
- Churches
- Schools
- Libraries
- 1/4 Mile Walking Distance from Hubs
- 300 ft Walking Distance from Spot Clusters
- 1/4 Mile Walking Distance from Spot Clusters
- RHMP Service Desert Residential Area
- RHMP Service Desert Mixed Use Area



KASHMERE GARDENS

Resilience Hubs Implementation


- Kashmere Gardens Resilience Hub Pilot
 - Partnership with Resilient Cities Catalyst (RCC), to develop the city's first Resilience Hub in Kashmere Gardens
- Three workstreams: climate-ready building and site, community preparedness, and programming and services


Program Area: Buildings and Energy

Municipal Building Decarbonization and Benchmarking Policy

- Policy signed in April 2022
- Addresses the emissions associated with the City's 550+ buildings, by:
 - Shift away from onsite combustion of fossil fuels
 - Target a 5% annual reduction in energy and water consumption
- Current status
 - 2022 building benchmark is complete, preparing for 2023 benchmark
 - Implementing building audits for noncompliant buildings
 - 50 buildings audited through SECO
 - Additional buildings through NRG program
 - Disclosure Report
 - Uploaded disclosure report and committee forms on SharePoint site



	Administrative Policy Municipal Building Decarbonization and Benchmarking Policy	
	AP No.	AP 3-40
	Effective Date:	Upon Approval
1. POLICY STATEMENT The City of Houston City Council passed the Houston Climate Action Plan Resolution on October 21, 2020. The Climate Action Plan (CAP) is the basis for the goals, strategies, actions, and policies to be used by the City of Houston to mitigate greenhouse gas (GHG) emissions and the associated climate impacts. The CAP includes goals to reduce building energy use and maximize savings, to expand investment in energy efficiency, and to invest in skilled local jobs to optimize building operations. The CAP also sets targets to reduce community-wide emissions 40% by 2030, 75% by 2040, and 100% by 2050. As City building energy use accounted for over 40% of emissions from City facilities and operations in 2019, the City of Houston (City) is committed to operating, maintaining, and improving its building stock and facilities responsibly and sustainably.		
2. POLICY PURPOSE 2.1 Greenhouse gas emissions from City buildings stem from both onsite combustion of fossil fuels (primarily natural gas) and consumption of electric power from the grid. Reducing these emissions requires a combination of avoiding onsite combustion of fossil fuels in buildings, reducing building energy consumption, and increasing the installation of onsite zero-emission power generation. This policy offers flexible procedures to reduce City building energy consumption, costs, air emissions, and greenhouse gases, by: 2.1.1 Reducing electric power and natural gas consumption in non-airport City buildings, targeting a 5% reduction year-over-year. This will be accomplished by: 2.1.1.1 Implementing cost-effective measures to increase energy efficiency and decrease		

	Administrative Procedure Municipal Building Decarbonization and Benchmarking Procedure	
	AP No.	AP 3-41
	Effective Date:	Upon Approval
1. PROCEDURE PURPOSE This Procedure provides further technical and process details to guide the Administration and Regulatory Affairs Department, as well as city operating departments, in achieving the high-level targets and requirements in the Municipal Building Decarbonization and Benchmarking Policy (the "Policy").		
2. SCOPE This Procedure applies to all Covered City Buildings, with benchmarking measures (\$5.4) applicable to those properties with sufficient operational history for benchmarking. The Administration and Regulatory Affairs Department is responsible for coordinating benchmarking and reporting efforts, and all Operating Departments are responsible for implementing the requirements of this Procedure among the buildings and facilities they operate, maintain, design, renovate, or otherwise manage.		
3. DEFINITIONS Capitalized terms in this document have the meanings ascribed to them in AP 3-40, Municipal Building Decarbonization and Benchmarking Policy. Aggregated, whole-building data: energy, water, or waste data that has been summed for an entire property Enhanced commissioning: investigating, analyzing, and monitoring the performance of building systems to verify a building's performance is in line with design specifications post-occupancy. Design and construction project teams may refer to LEED BD+C v4 EA Enhanced commissioning credit requirements for more detail. EVSE Installed: the installation of a Level 2 or higher electric vehicle charging station, as defined by the US Department of Energy. EVSE Ready: including sufficient electrical components to facilitate the installation of a Level 2 or higher electric vehicle charging station (i.e., including a full circuit installation near parking spaces: 208/240V, 40-amp panel capacity, raceway, wiring, receptacle, and overprotection devices). Knowledge exchange: leading efforts (including presentations, trainings, or written reports) to share knowledge with and educate fellow City buildings staff on topics relevant to the Policy and this Procedure. Net-zero Energy Building: a building designed and constructed to be highly energy efficient and to produce enough onsite zero-emission energy to offset its energy consumption on an annual basis. Net-zero Energy Ready Building: a building designed and constructed to be highly energy efficient, such that		

Program Area: Equity & Opportunity/Heat & Nature

Resilience for Communities (R4C)

- Partnership with Resilient Cities network and Z Zurich Foundation
- Understand barriers to achieving urban resilience in Trinity Houston Gardens and Alief
- Pilot the Climate Resilience Measurement for Communities (CRMC) tool
- Team hosted workshops in September 2023 to identify, prioritize, and select interventions in both communities
- **\$250,000 in funds for interventions**



Program Area: Heat & Nature

Green Infrastructure for Affordable Housing

- Partnership with New Hope Housing and Star of Hope
- Develop an **urban prairie** onsite their affordable housing community
- Integrate principles of resilience
 - Access to green spaces
 - Workforce development/ Youth programs
 - Food and nutrition education

Pocket Prairie

- Develop a preliminary design for pocket prairies and GSI
- Establish a model that can be replicated city-wide
- Assess sites based on:
 - lack of greenspace,
 - habitat degradation,
 - heat, LMI communities, and watershed location.



Program Area: Heat & Nature

Tree Equity Portal

- Tree tracking software (PlantGeo) to track the planting of 4.6 million trees, will link from COH website
- Educational tool on tree planting decision – overlay Houston urban heat island mapping, American Forests Tree Equity score
- Organizations, residents, and businesses can register and map tree plantings on portal
- Training
 - Earth Day 2023
 - Houston Area Urban Forestry Council (HAUFC)

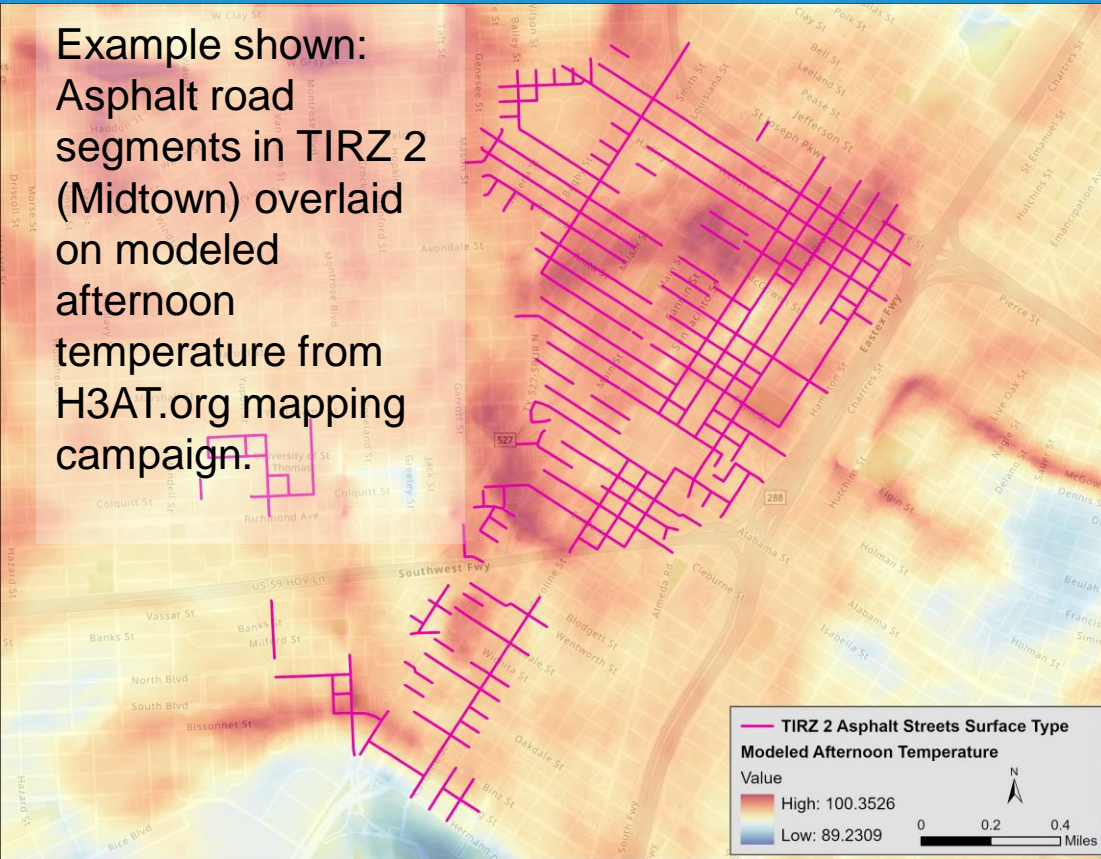
The screenshot displays the 'TREEPLOTTER INVENTORY' web application. The interface includes a navigation menu (HOME, HUB, DATA, SUPPORT), a 'HOME' banner with a tree image, and a main map area showing Houston with a red dashed line indicating a specific geographic boundary. A legend on the right lists tree species with their counts, such as American Beautyberry (485) and American elm (2,549). Below the map, the 'ECO BENEFITS' section provides monetary values for various environmental metrics.

Metric	Value
Total	\$12,994.92
Carbon Monetary	\$5,551.18
Air Quality Monetary	\$2,491.32
Stormwater Monetary	\$4,952.44

Additional text on the page states: 'Houston's urban forest plays a significant role in reducing heat, improving air and water quality, capturing stormwater, and supporting native wildlife. The City of Houston is tracking the 4.6 million tree planting goal established in Resilient Houston through this portal. City departments, partners, and individuals can upload their tree planting locations and species to help Houston meet this goal of increasing trees throughout the City.'

Program Area: Heat & Nature

Example shown:
Asphalt road
segments in TIRZ 2
(Midtown)
overlaid
on modeled
afternoon
temperature from
H3AT.org mapping
campaign.



NLC Mayor's Institute work plan focused on heat resilience

- Explore and design implementation partnership model to support Greener Gulfton Initiative as a potential model for working with other neighborhoods to demonstrate implementation partnerships.
- Implement awareness and education events to promote use of tree tracking portal for strategic and equitable tree planting.
- Showcase tree tracking portal / tree planting events for upcoming season
- Incorporate heat mitigation discussions in the new round Neighborhood Resilience Plans
- Incorporate CRMC results to deploy cooling/green infrastructure (Alief and Trinity Houston Gardens)
- Identify funding sources for neighborhood resilience hubs
- Engage Health Dept to share heat surveillance reports with DRISO network
- Establish mechanism for proactive and continuous review of heat data to inform collaboration and strategy

Program Area: Materials Management

Neighborhood Drop off Expansion to “all-plastics” collection

- In December 2022, the Houston Recycling Collaboration (HRC), in collaboration with SWD, launched “Bag It & Bring It,” an all-plastics” collection pilot program, at the Kingwood Neighborhood Depository.
- The pilot has now been expanded to the North Main Neighborhood Depository.
- Both locations are collecting increasing volumes of plastics, week after week, and the Kingwood location announced a cumulative milestone of 100,000 lbs in June.

Recycling and “all-plastics” programs at HISD schools

- The HRC is partnering with HISD to help increase recycling at HISD schools.
- In February, HRC members, ExxonMobil, and LyondellBasell each presented HISD with \$100,000. Charitable partner Tricon Energy also donated \$100,000 to help facilitate the program's success.
- The HRC is currently working with HISD to implement all-plastics collection at 20 pilot campuses.
- During Earth Week, the HRC ran a successful “Stuff The Bus” contest, 400 lbs. of plastics. The HRC hopes to make this a yearly contest. This year’s winner was West University Elementary.



Program Area: Equity & Opportunity



Youth Climate Ambassadors 2023

- Focused on engaging with Complete Communities
- Goal this summer is to empower communities and drive change
- 500 lbs. of carbon saved by carpooling and using alternative modes of transportation

66% in Complete Communities
843 Houstonians reached
7 districts visited

Total of Events Attended	Total of Adults (engagement)	Total of Children (engagement)
12	546	297

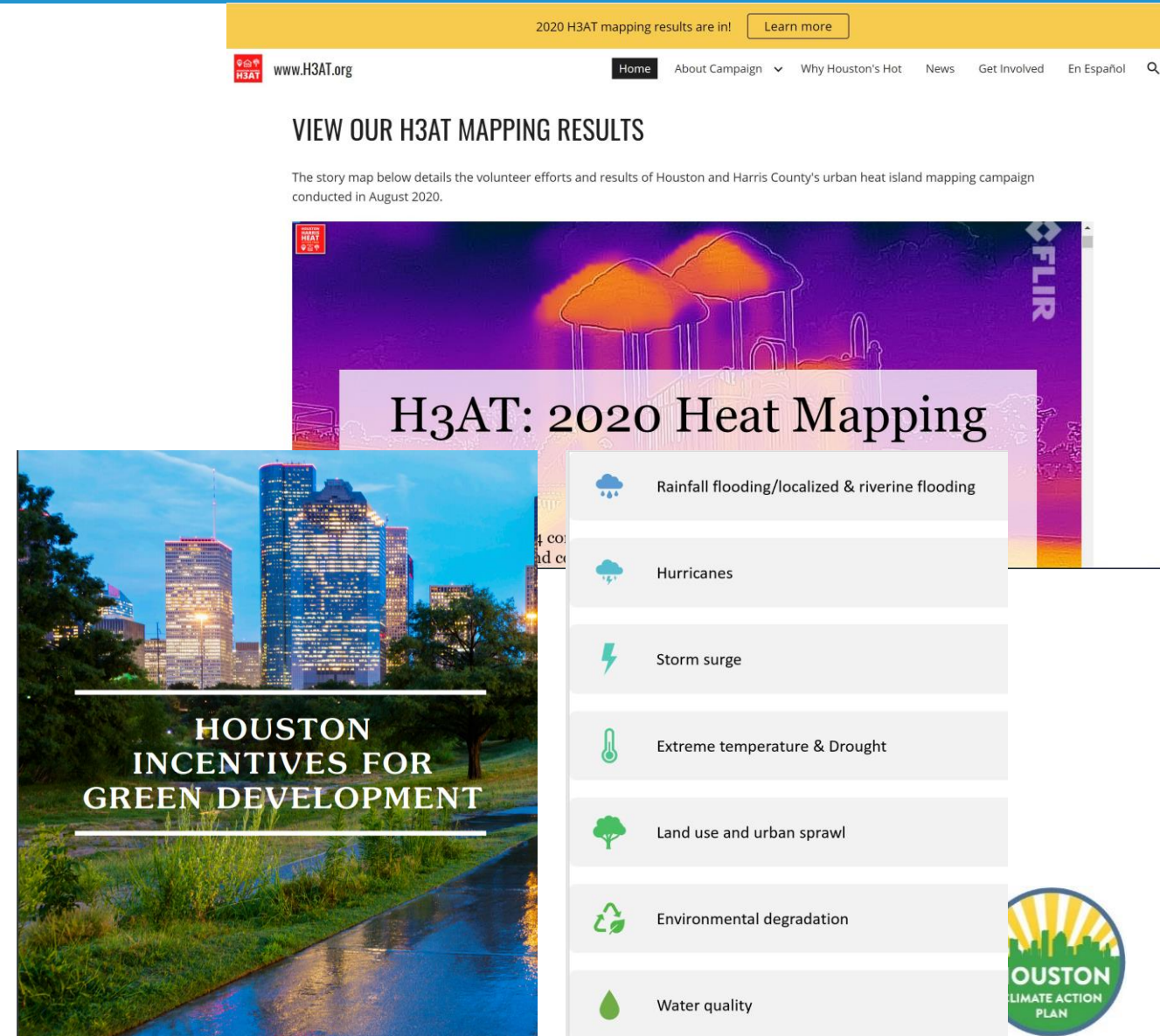
Projects, Programs and Partnerships 2023

- Sunnyside Solar Farm (2023)
- Solar United Neighbors February 2023
- RCN Board Meeting/ UN Water Week March 2023
- Earth Day April 2023
- Tree Equity Platform April 2023
- National League of Cities (NLC) May 2023
- Resilience Hubs Masterplan July 2023
- Youth Climate Ambassadors June/ July 2023
- C40 Velasco Site
- Building Decarbonization (ongoing)
- Urban Prairie at Reed Road - National Fish and Wildlife Foundation
- Houston Recycling Collaborative (2023)



Projects, Programs and Partnerships 2023

- Department of Energy Sponsored Carbon Management Community Summit Houston (November 2023)
- COP 28 (December 2023)
- IIJA/ IRA
 - Climate Pollution Reduction Grant
 - Community Fueling Infrastructure Grant
 - USDA Forestry Grant (\$15 Million for the regional coalition received)
 - Solar For All – in progress



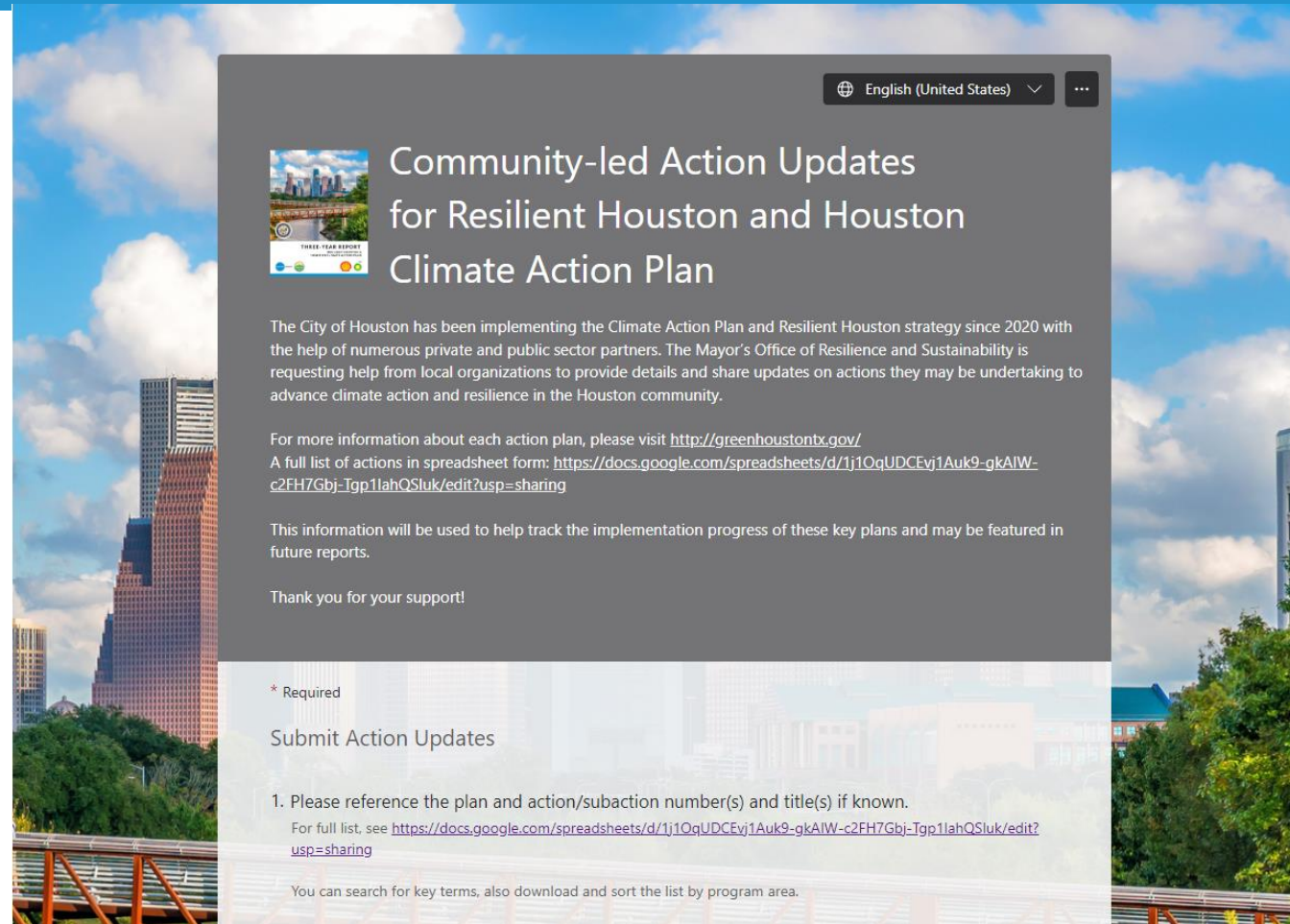
The screenshot displays the H3AT website interface. At the top, a yellow banner reads "2020 H3AT mapping results are in!" with a "Learn more" button. The navigation bar includes "Home", "About Campaign", "Why Houston's Hot", "News", "Get Involved", and "En Español". The main heading is "VIEW OUR H3AT MAPPING RESULTS". Below this, a text block states: "The story map below details the volunteer efforts and results of Houston and Harris County's urban heat island mapping campaign conducted in August 2020." The central image is a heatmap titled "H3AT: 2020 Heat Mapping" with a "FLIR" logo on the right. A sidebar on the right lists climate impacts with corresponding icons:

- Rainfall flooding/localized & riverine flooding
- Hurricanes
- Storm surge
- Extreme temperature & Drought
- Land use and urban sprawl
- Environmental degradation
- Water quality

At the bottom left, there is a separate image of a city skyline at night with the text "HOUSTON INCENTIVES FOR GREEN DEVELOPMENT". At the bottom right, the "HOUSTON CLIMATE ACTION PLAN" logo is visible.

Reporting Progress

- Local organizations championing actions to advance climate action and resilience can report their progress
- Progress can be shared through **October 31, 2023**
- The information will be used to help track the implementation progress of Resilient Houston and Climate Action Plan
- Updates may be featured in future reports
- Form can be found on **www.greenhoustontx.gov**



The screenshot shows a web form for reporting progress. At the top right, there is a language dropdown menu set to 'English (United States)'. Below this is a header image of a city skyline with a 'THREE-YEAR REPORT' badge. The main title is 'Community-led Action Updates for Resilient Houston and Houston Climate Action Plan'. The text explains that the City of Houston has been implementing the Climate Action Plan and Resilient Houston strategy since 2020 and is requesting help from local organizations to provide details and share updates on actions they are undertaking. It provides a link to <http://greenhoustontx.gov/> for more information and a link to a Google spreadsheet for a full list of actions: <https://docs.google.com/spreadsheets/d/1j1OqUDCEvj1Auk9-gkAIW-c2FH7Gbj-Tgp1lahQSluk/edit?usp=sharing>. It states that the information will be used to track progress and may be featured in future reports. A 'Thank you for your support!' message is followed by a section for submitting updates, which includes a required field for action updates and a list of instructions for reporting progress.

English (United States) ▾

Community-led Action Updates for Resilient Houston and Houston Climate Action Plan

The City of Houston has been implementing the Climate Action Plan and Resilient Houston strategy since 2020 with the help of numerous private and public sector partners. The Mayor's Office of Resilience and Sustainability is requesting help from local organizations to provide details and share updates on actions they may be undertaking to advance climate action and resilience in the Houston community.

For more information about each action plan, please visit <http://greenhoustontx.gov/>
A full list of actions in spreadsheet form: <https://docs.google.com/spreadsheets/d/1j1OqUDCEvj1Auk9-gkAIW-c2FH7Gbj-Tgp1lahQSluk/edit?usp=sharing>

This information will be used to help track the implementation progress of these key plans and may be featured in future reports.

Thank you for your support!

* Required

Submit Action Updates

1. Please reference the plan and action/subaction number(s) and title(s) if known.
For full list, see <https://docs.google.com/spreadsheets/d/1j1OqUDCEvj1Auk9-gkAIW-c2FH7Gbj-Tgp1lahQSluk/edit?usp=sharing>

You can search for key terms, also download and sort the list by program area.



RESILIENT HOUSTON

HOUSTON CLIMATE
ACTION PLAN

Questions