



Houston Climate Action Plan

Texas Association of
Environmental Professionals (TAEP)

December 17, 2020



Why Houston is taking Climate Action



Hurricane Harvey



Source: World Bank Group

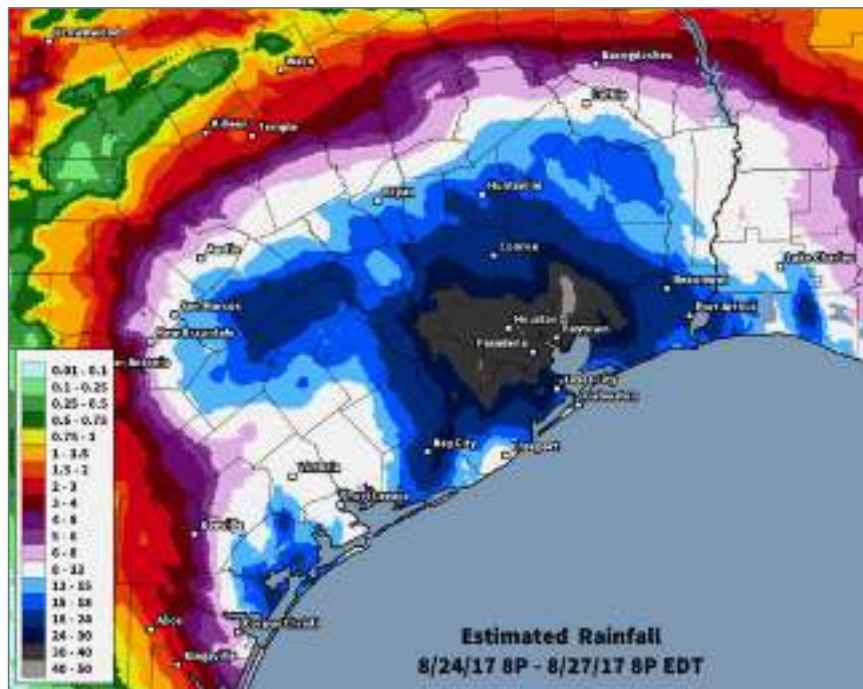
Climate change poses new threat to US cities' long-term creditworthiness

S&P Global
Market Intelligence

July 31, 2019



Why Houston is taking Climate Action



Low vs High Emission Climate Projections:

	1970-1990	2050	2100
High Temp	99	104 -106	104 -109
Days above 100	1 day	12-23 days	14-54 days
Nights above 80	.6 nights	20-50 nights	30-96 nights
Heat Wave Length	2.5 days	15 -27 days	19 -47 days
Annual RainFall	Average remains the same, but extremes range from 5 to 30 (Harvey level event)		

Source: Climate Impact Assessment for the City of Houston

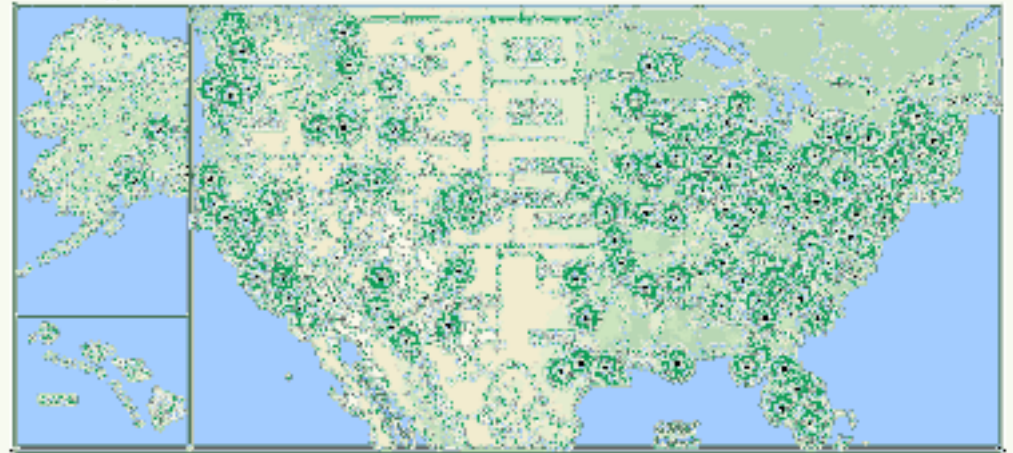
<http://www.greenhoustontx.gov/reports/Climate-Impact-Assessment-2020-August.pdf>

Houston's Commitment to Climate Action

- June 1, 2017:
The U.S withdraws from
the 2015 Paris Agreement
- June 24, 2017:
Mayor Turner, co-chair of
Climate Mayors, commits
to adopt Paris Agreement
goals in Houston



427 Climate Mayors represent
nearly 20% of the U.S. population



Houston's Commitment to Climate Action

C40
CITIES

Houston is one of 96 “Mega-cities” committed to global climate action



Paris climate agreement: 54 cities on track to meet targets

December 10, 2020



Houston Climate Action Plan



What is the Climate Action Plan (CAP)?

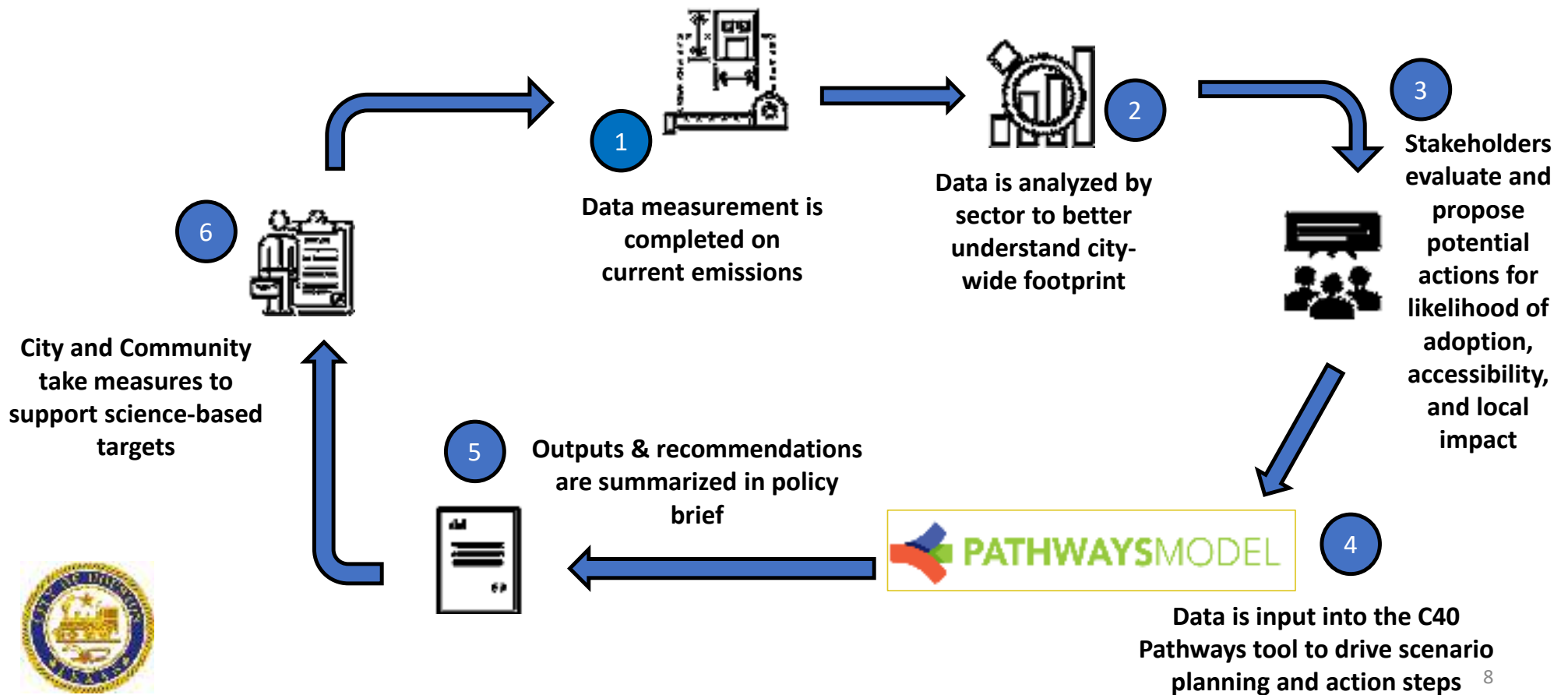
The CAP outlines goals, strategies, and actions that we as a City and community plan to take in order to reduce our greenhouse gas (GHG) emissions and help Houston prepare for a changing climate.

The Houston CAP is a living document that will evolve as new technologies, partnerships, and opportunities arise.

- The City of Houston will update the GHG emissions inventory every four years, starting in 2021.
- The CAP and progress report will be updated every five years, starting in 2025.



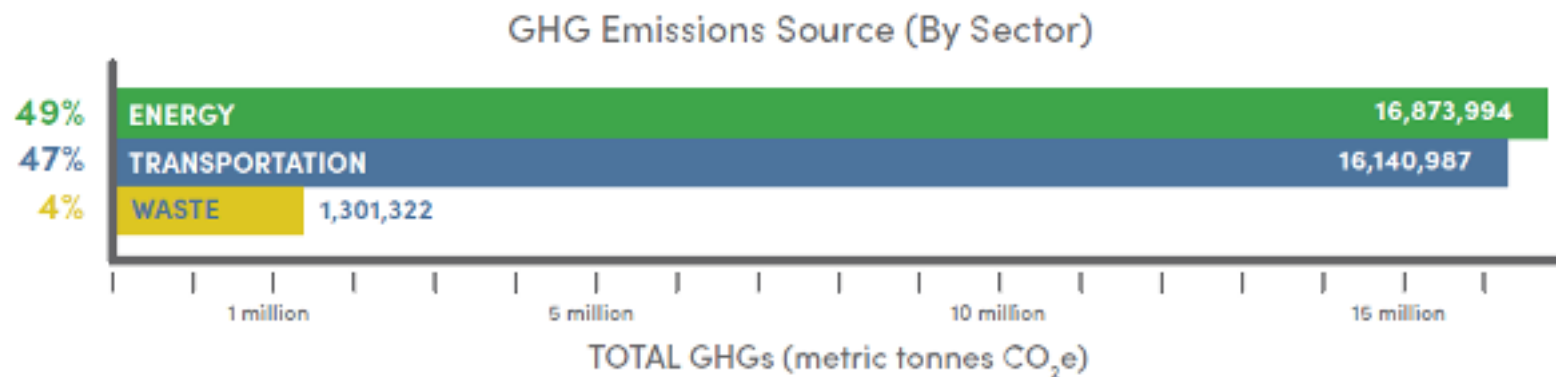
A Data and Stakeholder-Driven Process



Goal: Carbon Neutral by 2050

To meet the Paris Agreement, the Houston Climate Action Plan has set an ambitious goal of becoming **Carbon Neutral by 2050**, which means that we must **reduce** or **offset** any **carbon dioxide** that we release into the atmosphere.

Houston's Greenhouse Gas (GHG) Emissions Baseline (2014)



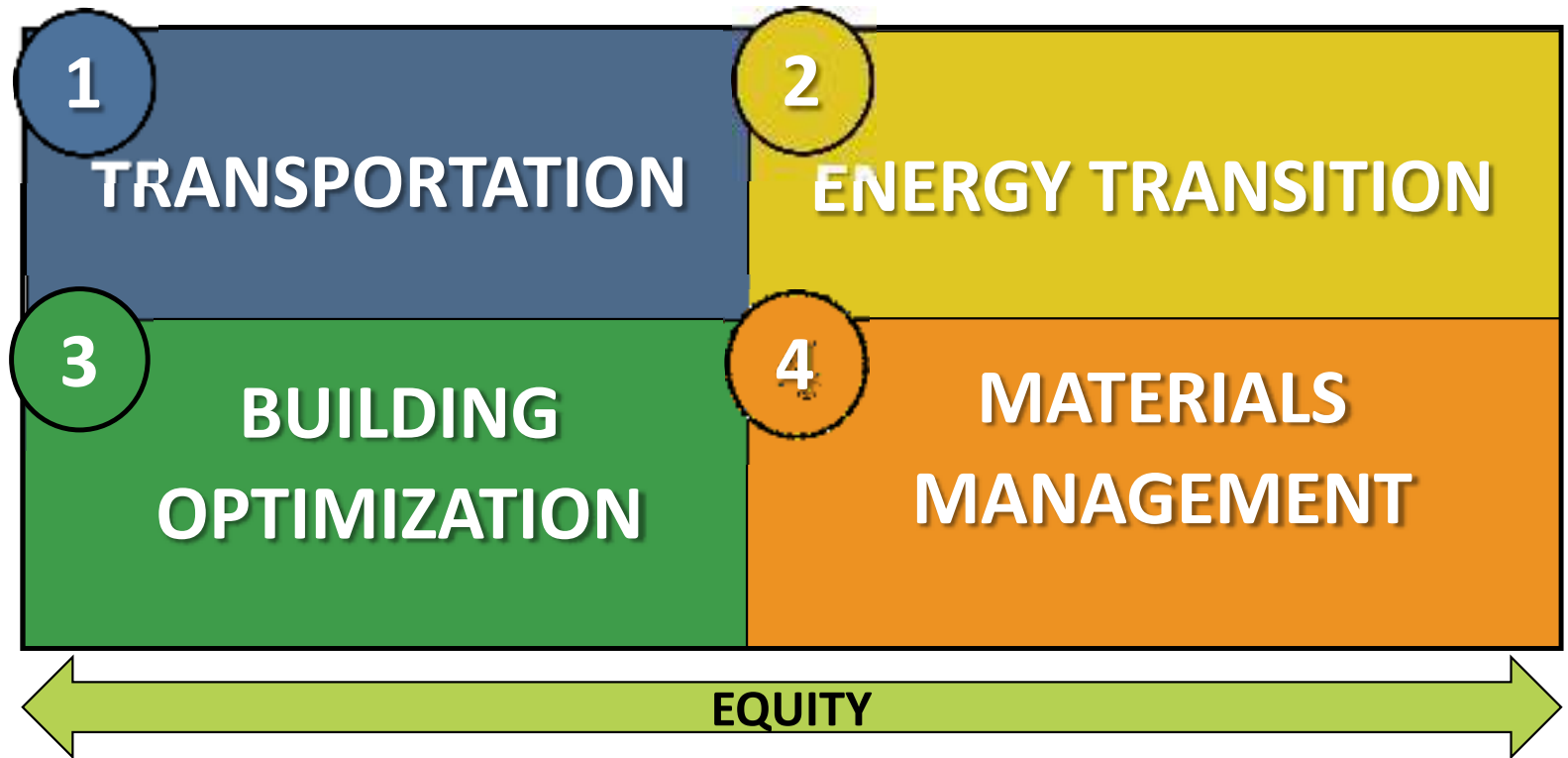
Co-benefits

- ✓ Accessibility
- ✓ Affordability
- ✓ Resilience
- ✓ Cost-savings
- ✓ Economic Growth
- ✓ Improved Environmental Quality
- ✓ Better Health and Well-being
- ✓ Workforce Development



Strategic Areas of the Houston CAP


**LEADING BY
EXAMPLE**

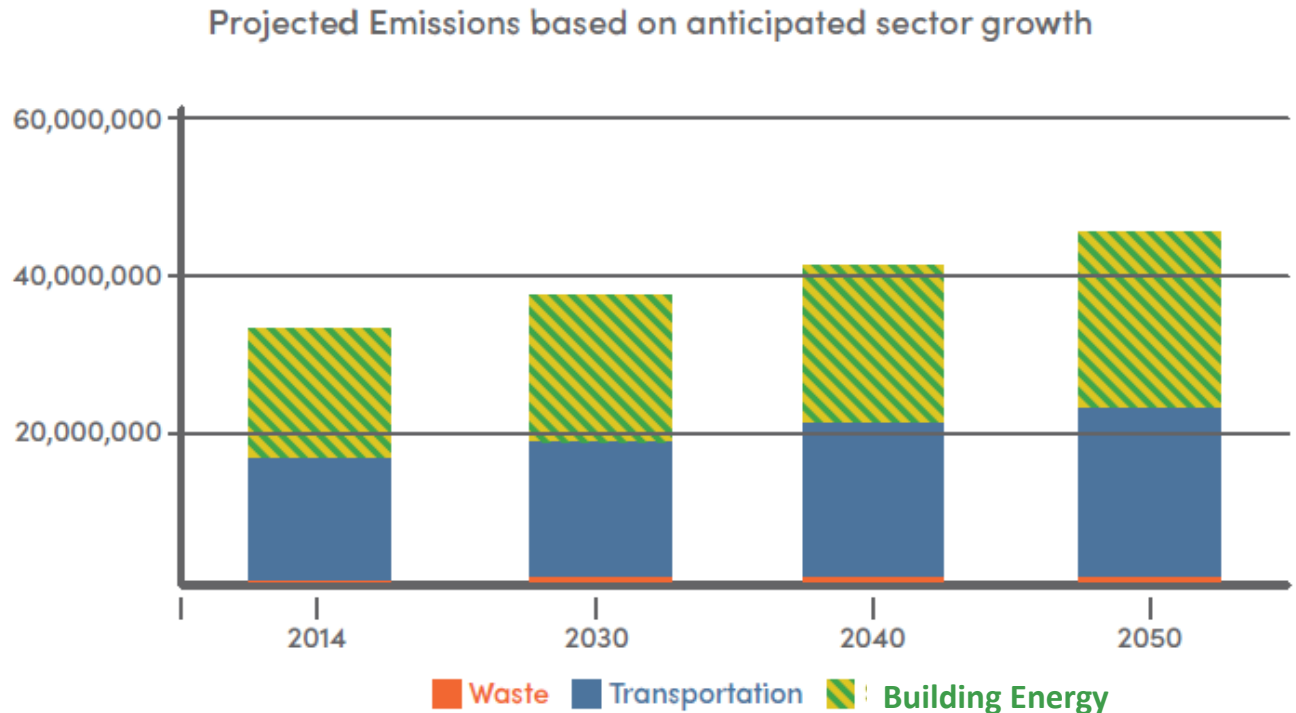


The Challenge: Business as Usual

**2014 Baseline:
34,316,303 tonnes CO₂e**

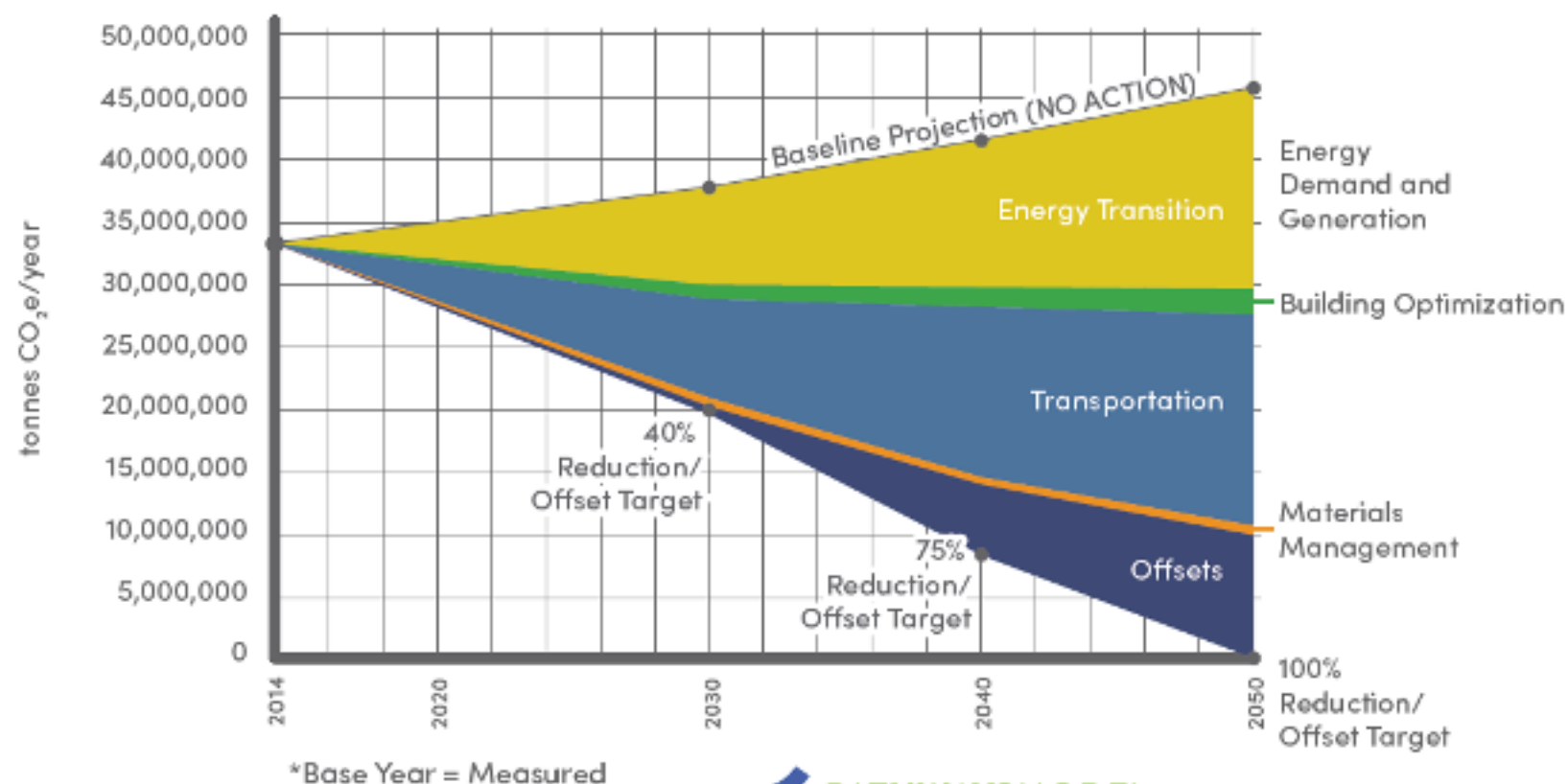
At 2030, 2040, 2050:

1. *Project emissions with **no action***
2. *Set emission reduction goals*
3. *Model emission reduction potential of actions and strategies*



If we do **nothing**, our baseline emissions will continue to grow as our population and energy demand grows.

Modeling Emissions Reduction Potential of CAP Actions



 **PATHWAYSMODEL**

Source: C40 Pathways



Many of the strategies and actions in the CAP are proven to enable the success of larger strategies or have indirect but positive cumulative impact. Remaining emissions from transportation, building, and waste sectors will be reduced through **carbon offsets** as new advances in clean energy technologies and ecosystem credit markets for carbon capture emerge.

Goals and Strategies



GOALS



TRANSPORTATION

1. Shift Regional Fleet to Electric and Low-Emission Vehicles.

T1.1 - Increase commercial and private sector infrastructure and incentives.

T1.2 - Convert 100% of the non-emergency, light-duty municipal fleet to EV technologies.



2. Reduce Vehicle Miles Traveled (VMT) Per Capita.

T2.1 - Implement integrated multi-modal transportation systems.

T2.2 - Build and retrofit complete, transit-oriented neighborhoods.



3. Provide Equitable and Safe Mobility Choices.

T3.1 - Reduce barriers for using multi-modal transportation.

T3.2 - Improve interconnectedness and safety of pedestrian and transit networks.

GOALS



ENERGY TRANSITION

1. **Grow Houston's Investment in Renewable and Resilient Energy Systems.**

E1.1 - Support and promote the use and development of renewable energy.

E1.2 - Support and promote retail renewable energy opportunities.

E1.3 - Advocate for renewable energy policies at the local, state and federal levels.

2. **Make Houston the Leader in Carbon Capture Technology and Energy Innovation.**

E2.1 - Promote Carbon Capture, Utilization and Storage (CCUS).

E2.2 - Develop an energy innovation ecosystem.

E2.3 - Prepare future generations for highly skilled jobs in the energy transition.

3. **Restore, Protect, and Enhance Houston's Natural Ability to Capture and Store Carbon.**

E3.1 - Implement nature-based solutions that increase carbon storage.

E3.2 - Protect, expand, and manage municipal park assets to maximize environment and recreational benefits.

GOALS



BUILDING OPTIMIZATION

- 1. Reduce Building Energy Use and Maximize Savings.**
 - B1.1** – Update energy code and increase compliance.
 - B1.2** – Develop programs that improve energy efficiency.
 - B1.3** – Reduce water and wastewater consumption by 10% through optimization of facility operations and water conservation.
- 2. Expand Investment in Energy Efficiency.**
 - B2.1** – Promote clean energy finance programs.
 - B2.2** – Expand participation in utility energy incentive programs.
- 3. Optimize Building Operations through Investing in Skilled Local Jobs.**
 - B3.1** – Provide training in the operation, management and maintenance of relevant building systems.

GOALS



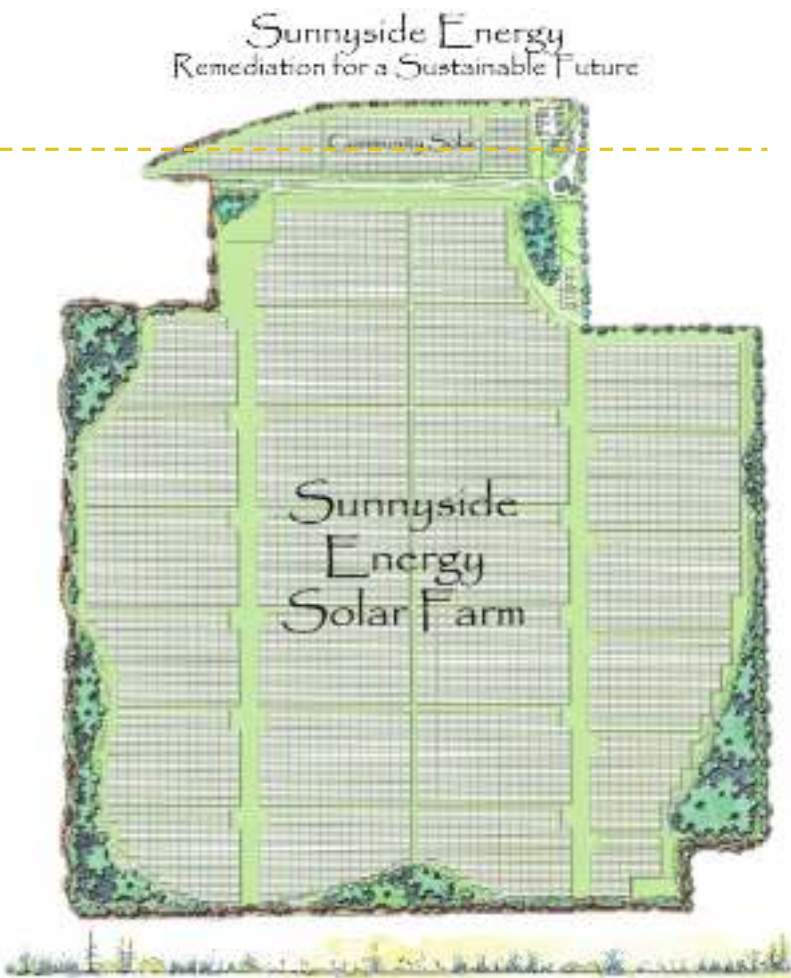
MATERIALS MANAGEMENT

- 1. Reduce waste and transform the circular economy.**
 - M1.1** – Engage public on upstream solutions for waste reduction.
 - M1.2** – Support organizations that expand capacity for waste reduction through entrepreneurship.
 - M1.3** – Strengthen and support efforts to collect and compost food organics.
- 2. Optimize waste operations and create power from waste.**
 - M2.1** – Optimize waste collection and transfer.
 - M2.2** – Increase landfill gas capture and opportunities for waste conversion.
- 3. Ensure safe and cost-effective long-term disposal capacity.**
 - M3.1** – Increase long-term landfill sustainability.
 - M3.2** – Advance multi-family and commercial recycling.
 - M3.3** – Promote upstream solutions to reduce disaster debris.



Initiatives Already in Action

- Evolve Houston
- *METRONext Plan*
- *Resilient Houston*
- Electric Vehicle RFI
- Walkable Places and Transit-Oriented Development Amendment
- HPARD Riparian Restoration Initiative
- Reinventing Cities: Sunnyside Landfill Solar Farm
- 100% Renewable Energy Contract
- Climate Impact Assessment
- Long Range Solid Waste Plan
- Living With Water Plan
- Green Fleet Study
- Vision Zero Houston





Complimentary Initiatives

CROSS-CUTTING (City of Houston)

- *Resilient Houston*
- Smart Cities
- Green Building Resource Center
- Climate Mayors

TRANSPORTATION

- EVolve Houston
- Green Fleet Study (COH)
- METRONext (METRO)
- Bike Plan (COH)
- Vision Zero (COH)
- Walkable Places
- Complete Communities (COH)
- Livable Centers (H-GAC)
- Houston ConnectSmart project (TxDOT)

BUILDING OPTIMIZATION

- Green Building Advisory Council
- City Energy Efficiency Policy
- Houston Green Office Challenge
- *Regional Water Plan*
- TX-PACE

ENERGY TRANSITION

- Solarize Houston/Solarize United Neighbors
- Green Power Program (COH)
- 50-for-50 initiative (COH)
- TREES Program (COH)
- Houston Parks Board
- Petranova CCS
- Baker Institute and Mitchell Foundation CCUS Initiative
- Rice Carbon Hub
- UH Carbon Management Program

MATERIALS MANAGEMENT

- Long Range Solid Waste Plan (COH)
- H-GAC Composting Study



Implementation





Implementation

Action and Strategy Development

- City will reconvene CAP working groups for the implementation phase.

WE NEED YOU!

- Working groups will be a space where industry, government, non-profit organizations, Houstonians, and Houston's youth will collaborate to implement the Houston Climate Action Plan goals through projects, sharing information, and resources.

Sign-up at:

<http://www.greenhoustontx.gov/climateactionplan/cap-implementation.html>





TIMEFRAMES:

Immediate 2020

Near Term by 2025

Medium Term by 2030

Long Term by 2050

TYPES OF ACTIONS:

A. City Policies and Operations

B. City Codes and Ordinances

C. City Partnerships and Incentives

D. Community-Led Initiatives

E. State and Federal Lobbying



CAP Implementation Working Groups

Transportation

- Electric Vehicles
- Bike lanes/sidewalks
- Multi-modal Transit

Energy Transition

- Community/rooftop solar
- Carbon Capture & Hydrogen
- Energy 2.0 Companies

Building Optimization

- PACE Projects
- Retrofits
- Job training

Materials Management

- Recycling Education
- Composting pilot
- Waste to Energy

Equity

- Focus on vulnerable populations and Complete Communities
- Climate equity training
- Climate Impact Assessment

Youth Engagement

- Focus on community and education projects
- Community engagement
- Youth CAP Ambassadors



Sign-up link: <http://www.greenhoustontx.gov/climateactionplan/cap-implementation.html>



Implementation Partners

- Advocacy Groups
- Buffalo Bayou Partnership
- Building Owners and Managers Association
- CenterPoint Energy
- COH Administration and Regulatory Affairs
- COH Chief Resilience Officer
- COH Finance Department
- COH Fleet Management Department
- COH General Services Department
- COH Health Department
- COH Housing Authority
- COH Mayors Office
- COH Mayor's Office of Complete Communities
- COH Mayor's Office of Economic Development
- COH Mayor's Office of Education
- COH Mayor's Recovery Office
- COH Office of Emergency Management
- COH Parks and Recreation Department
- COH Planning and Development Department
- COH Public Library
- COH Public Works Department
- COH Solid Waste Department
- COH Strategic Procurement Division



- Community Based Organizations
- Electricity Providers
- Environmental Protection Agency
- Harris County
- Higher Educational Institutions
- Homeowner's Association
- Houston Airport System
- Houston Independent School District
- Houston Parks Board
- Houston-Galveston Area Council
- Katy Prairie Conservancy
- Metropolitan Transit Authority of Harris County
- Municipal Utility Districts
- Nonprofit Organizations
- Port of Houston
- Private Sector
- Regional Water Providers
- Research Institutions
- Texas Commission on Environmental Quality
- Texas Department of Transportation
- Texas PACE Authority
- The Nature Conservancy
- TxDOT
- ... *AND MORE TO COME!*

Questions?

Contact:

The Office of Sustainability

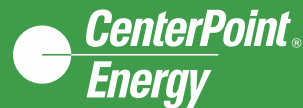
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Thank you!



Learn more:
<http://www.greenhoustontx.gov/index.html>



HARC

