

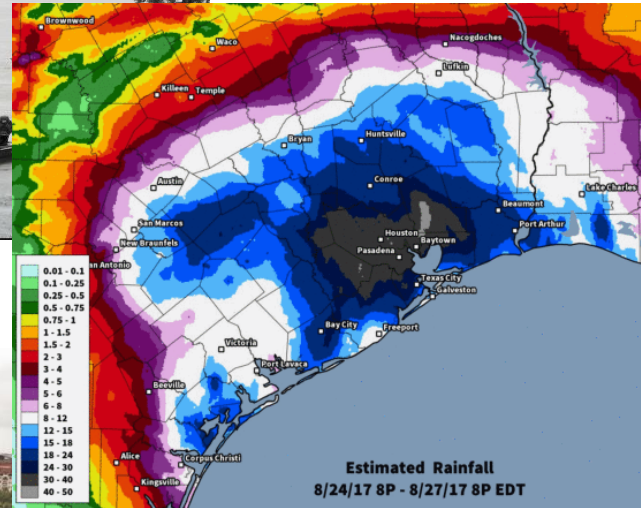


City of Houston Climate Action Plan

Denver Harbor Community Meeting

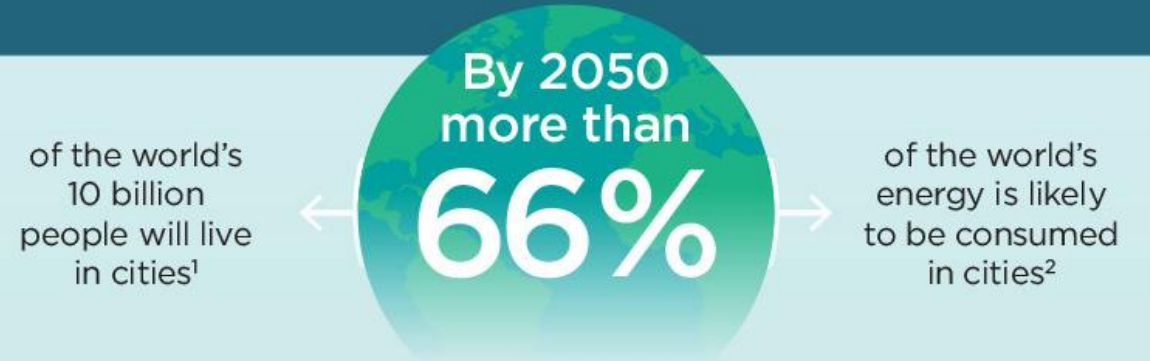
4/16/2019

Why Houston is taking Climate Action

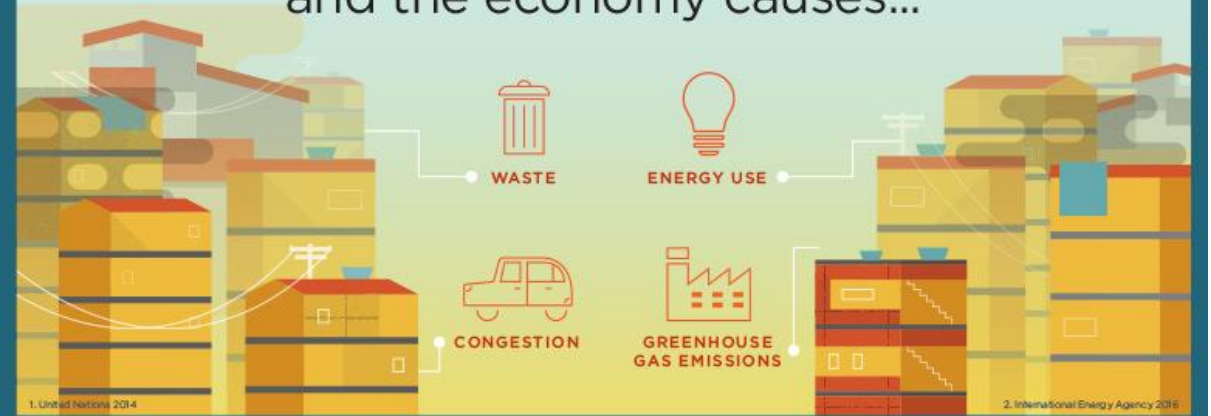


Hurricane Harvey

CITIES ARE BEING PUSHED TO THE LIMIT



Pressure on cities, their infrastructure and the economy causes...



Source: World Bank Group

Houston's Commitment to Climate Action

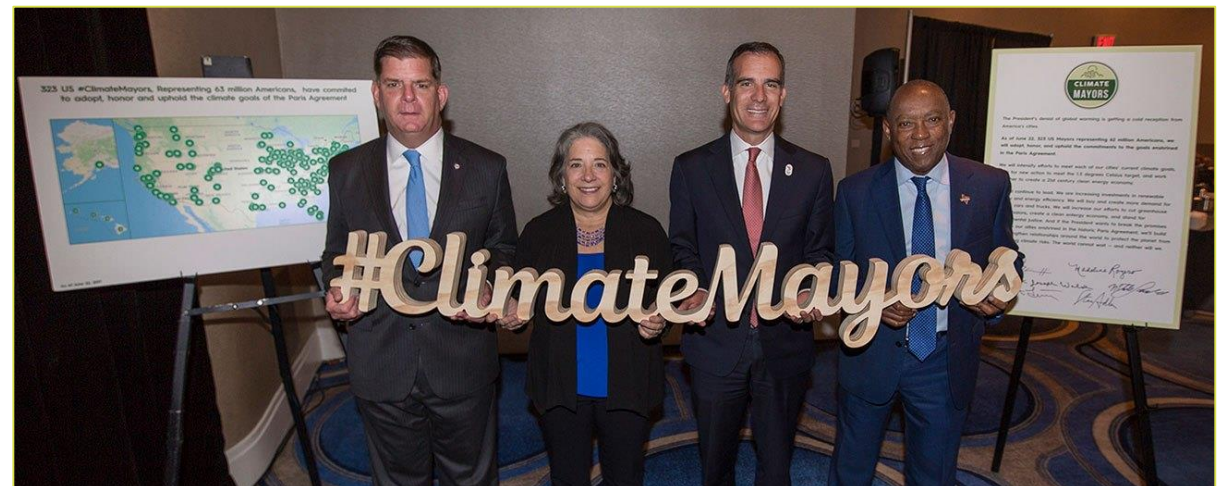


June 1, 2017: The U.S withdraws from the 2015 Paris Agreement

June 24, 2017: Mayor Turner, co-chair of Climate Mayors, commits to adopt Paris Agreement goals in Houston

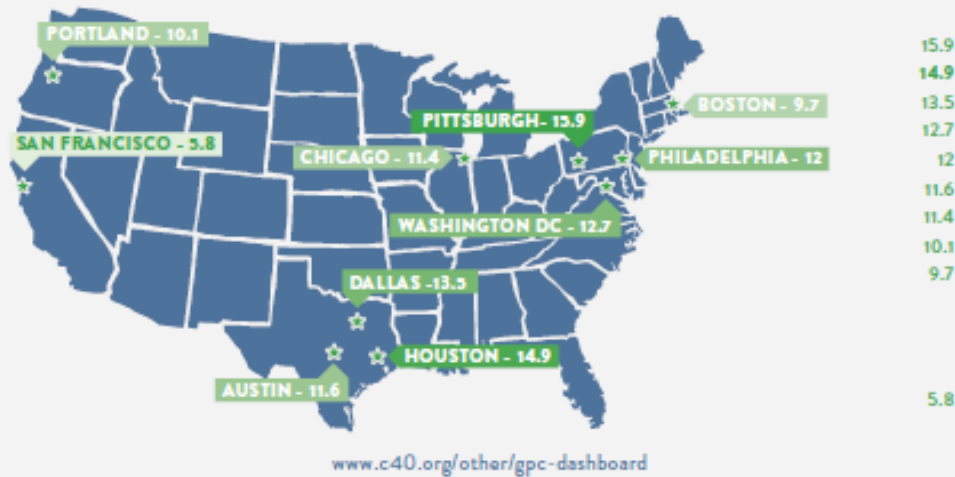


407 US #ClimateMayors, representing 70 million Americans, have committed to adopt, honor and uphold the climate goals of the Paris Agreement

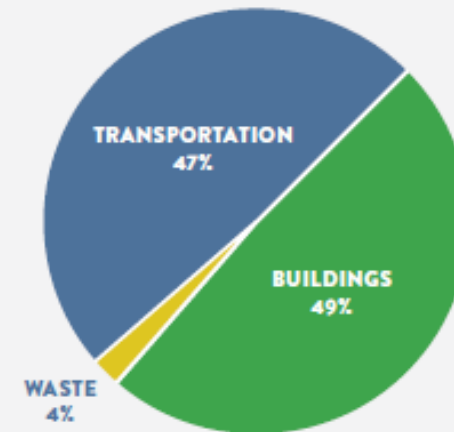


Houston Community Greenhouse Gas Emissions

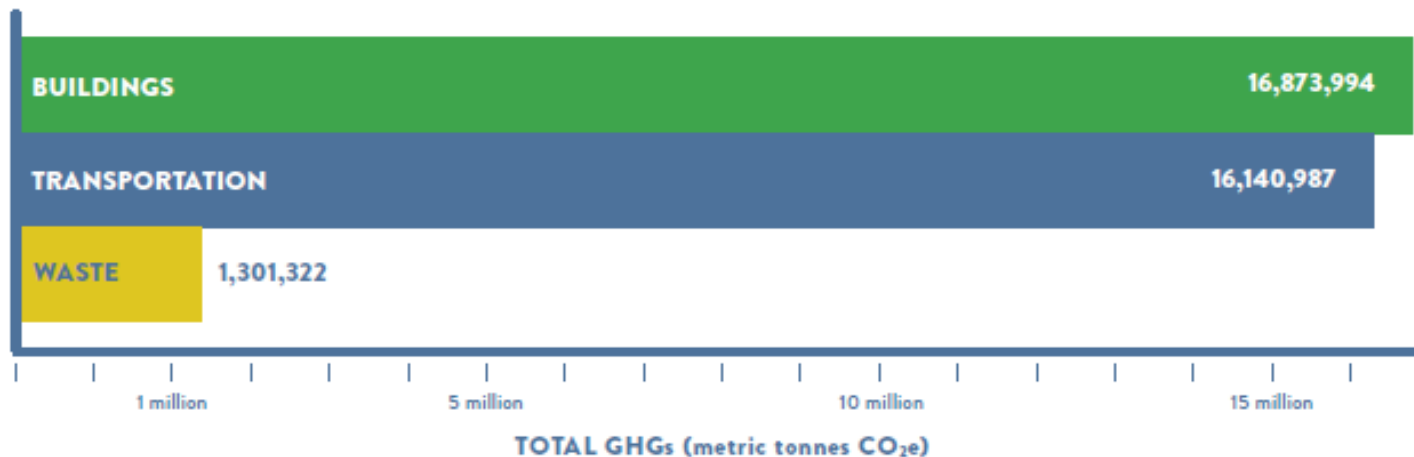
TOTAL ANNUAL EMISSIONS PER CAPITA
(Metric Tonnes CO₂e)



GREENHOUSE GAS EMISSIONS SOURCES
HOUSTON 2014



GHG EMISSIONS SOURCE (BY SECTOR)

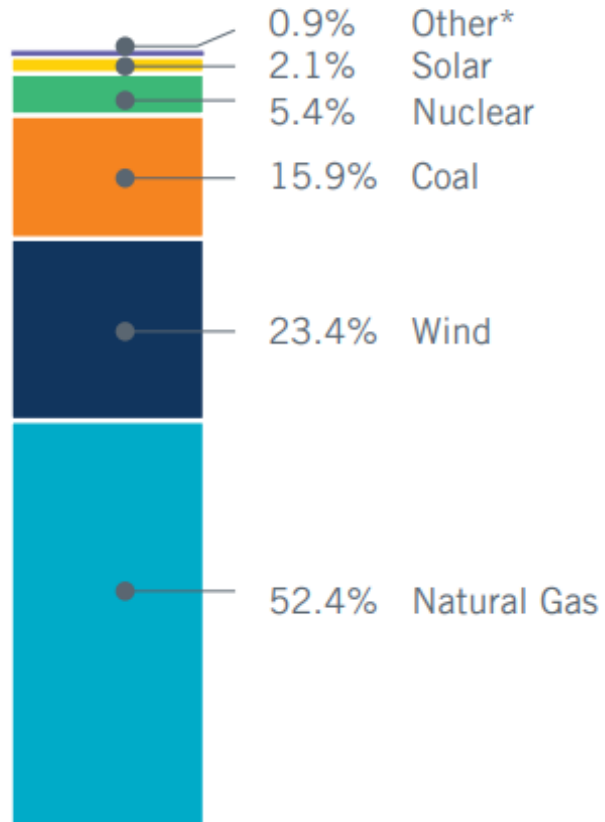


Texas Electric Grid Information

Annual Energy Information

2019 Generation Capacity

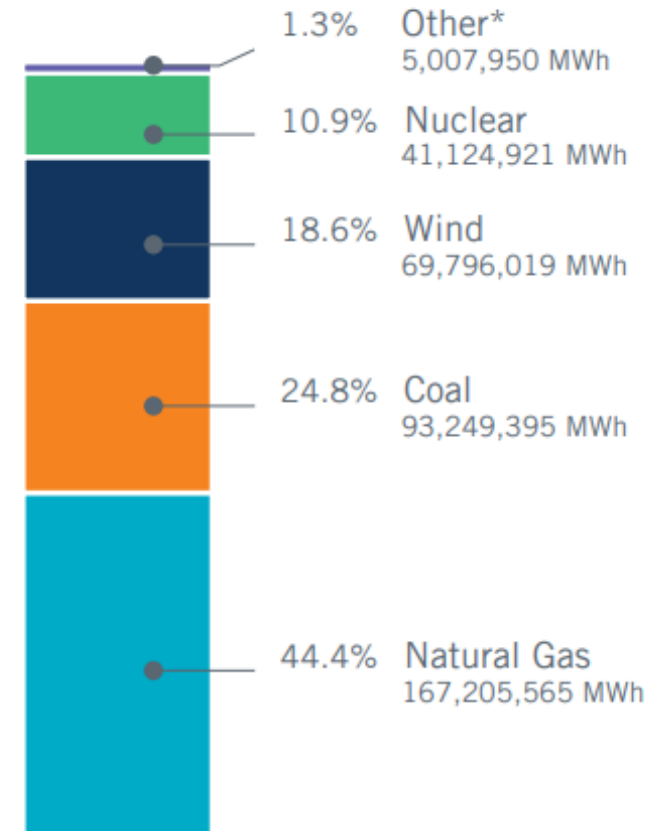
*Includes hydro, storage and biomass



2018 Energy Use

376 billion kilowatt-hours of energy used in 2018, a 5 percent increase compared to 2017.

*Includes solar, hydro, petroleum coke, biomass, landfill gas, distillate fuel oil, net DC-tie and Block Load Transfer imports/exports and an adjustment for wholesale storage load.

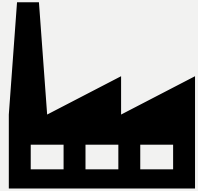


Transportation Greenhouse Gas Emissions

Gas Vehicles



3.3 Coal Plants



or

2.2 Million Homes



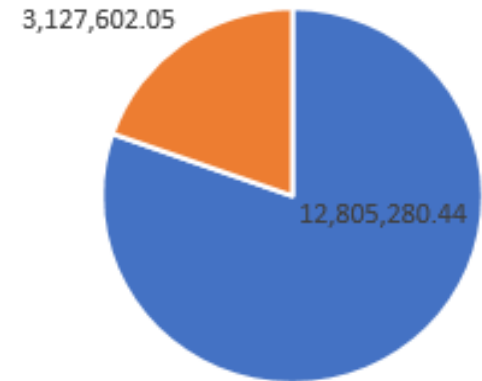
or

15 Million Acres

9% of Texas



2014 Transportation CO2e



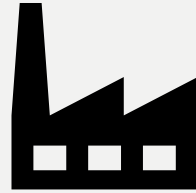
Gas Diesel



Source: EPA Greenhouse Gas Equivalencies Calculator

Building Greenhouse Gas Emissions

1.4 Coal Plants



or

610 M Barrels of Oil



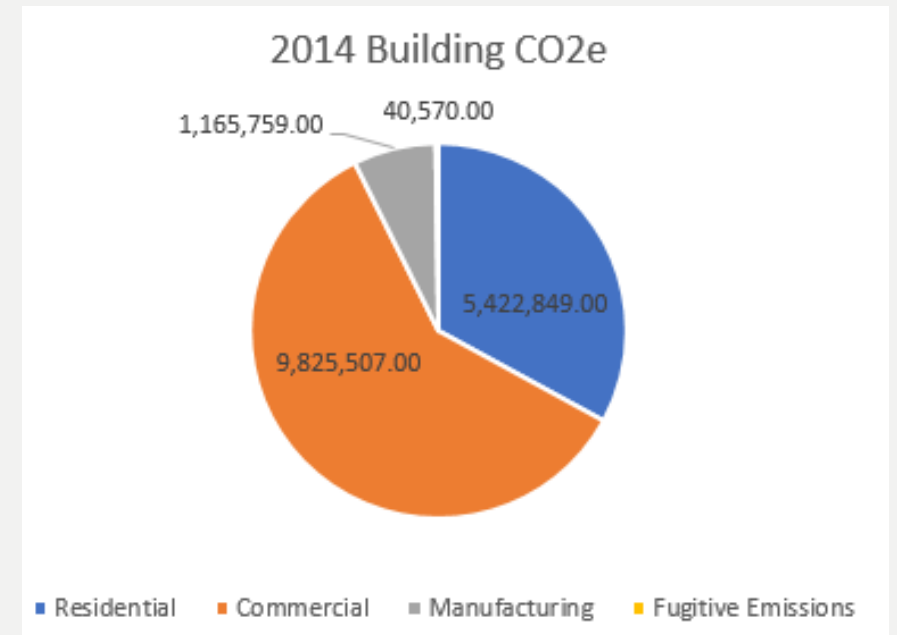
or

6.3 Million Acres

4% of Texas



Residential Buildings



Source: EPA Greenhouse Gas Equivalencies Calculator

Waste Greenhouse Gas Emissions

142 K Homes



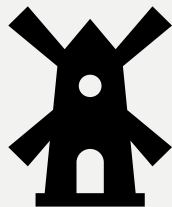
or

10 K Tankers of Gas

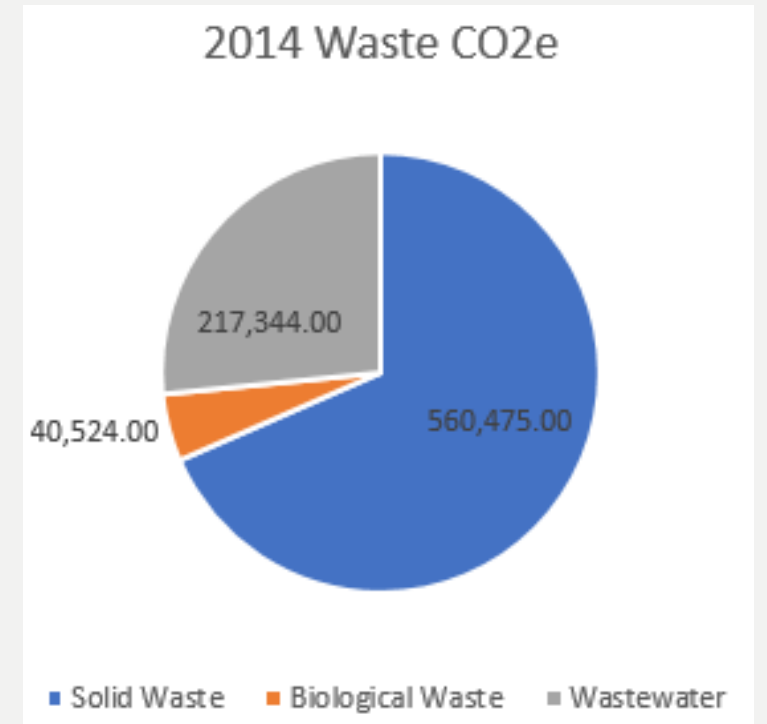
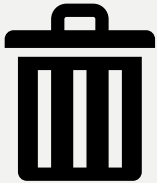


or

173 Wind Turbines



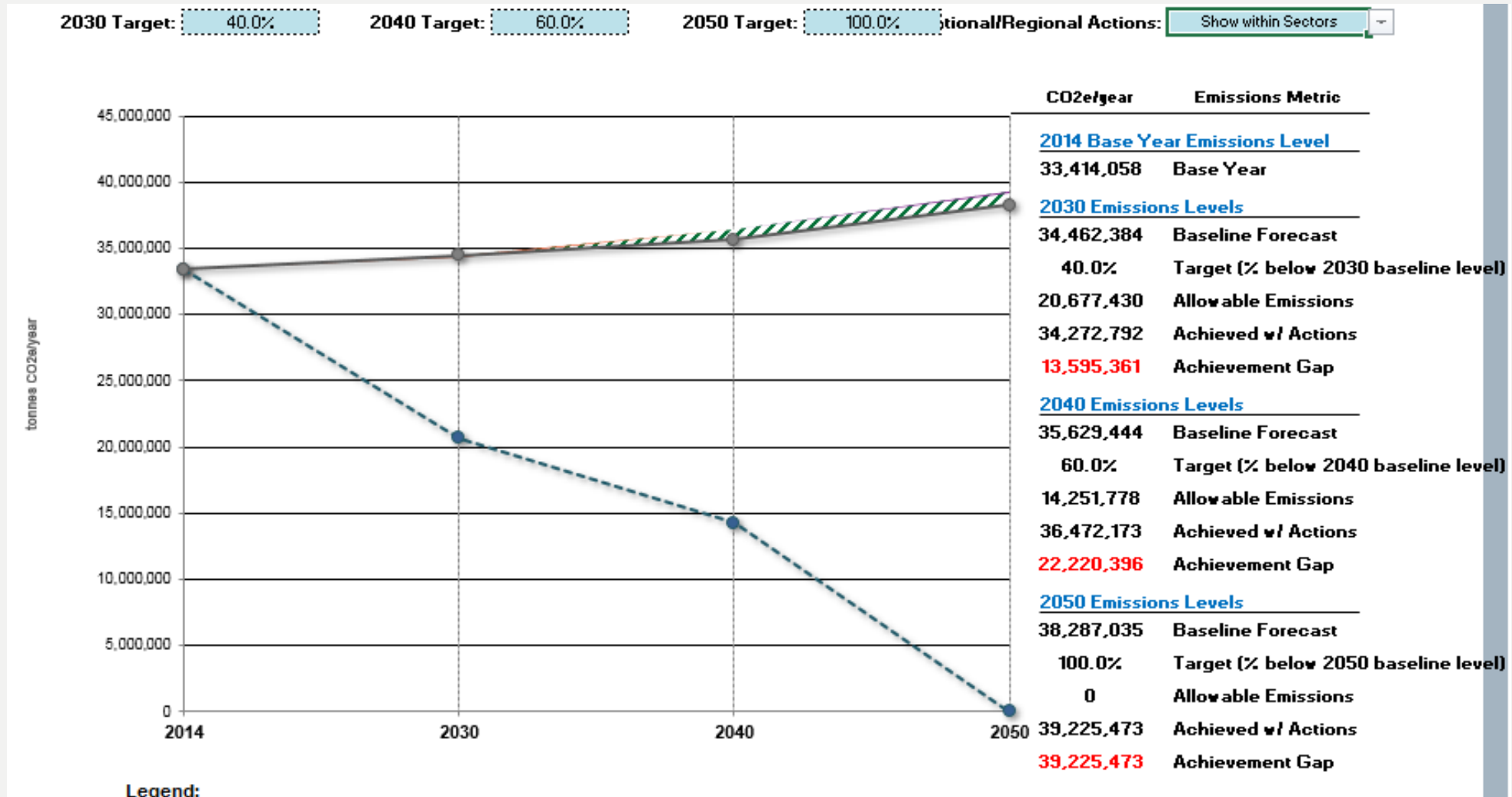
Waste



Source: EPA Greenhouse Gas Equivalencies Calculator

Goals of the Houston CAP

- **Goal:** Lay the foundation for actions that will make the City carbon-neutral by 2050.



Leading by Example

- **Renewable Energy:**

- The City is the largest municipal purchaser of renewable energy for city operations, receiving 92% of its power from renewable energy

- **Building Optimization:**

- Since 2004, the City has required all new buildings to be LEED Certified; currently have 37 LEED buildings
- Since 2007, the City has invested \$70 million in energy efficiency retrofits: 6 million square feet; achieving greenhouse gas emission reductions of 35%
- Converted ~175,000 streetlights to LED technology; reducing the City's streetlight energy usage by ~50%.

- **Transportation**

- 6.3% of the City's fleet is hybrid.
- Working to develop ambitious fleet electrification goals.



What is a Climate Action Plan?



What is a Climate Action Plan (CAP)?

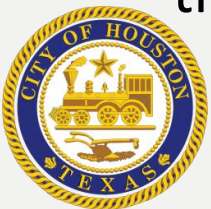
- A climate action plan should address the need to reduce greenhouse gas emissions, adapt to the impacts of climate change and deliver wider social, environmental, and economic benefits.
- **Objectives of plan are to:**
 - ❖ Decrease traffic congestion
 - ❖ Improve air quality
 - ❖ Provide better access to green space
 - ❖ Improve quality of life for all
 - ❖ **Be Equitable - all people will have the opportunity to benefit equally from the climate solutions, while also not having to take on an un-equal burden of climate impacts**
 - ❖ Reduce energy costs through energy efficiency and renewable energy
 - ❖ Increase resilience



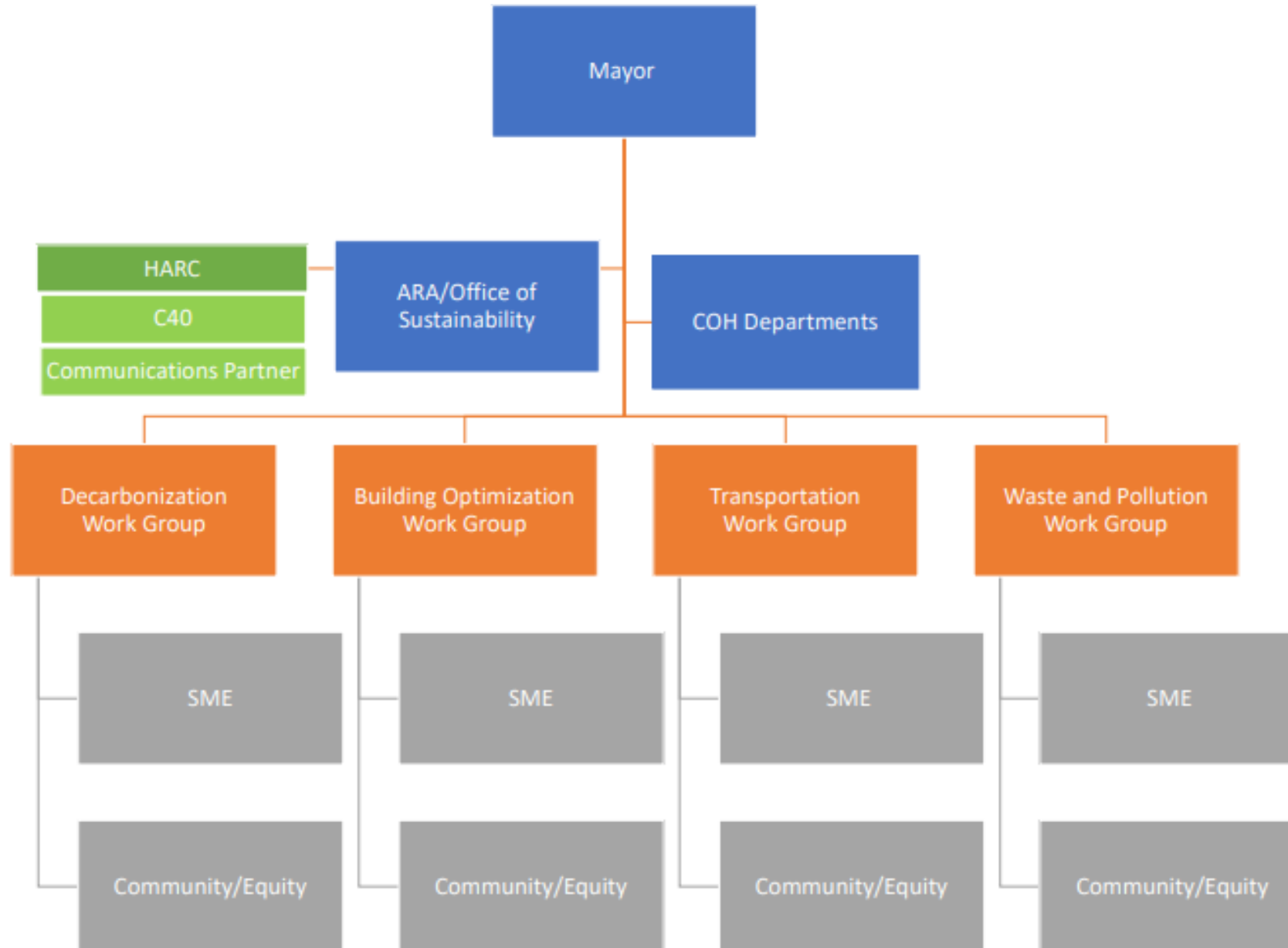
What are the focus areas of the plan?

There are four distinct areas the City is looking to decrease community greenhouse gas emissions. They include:

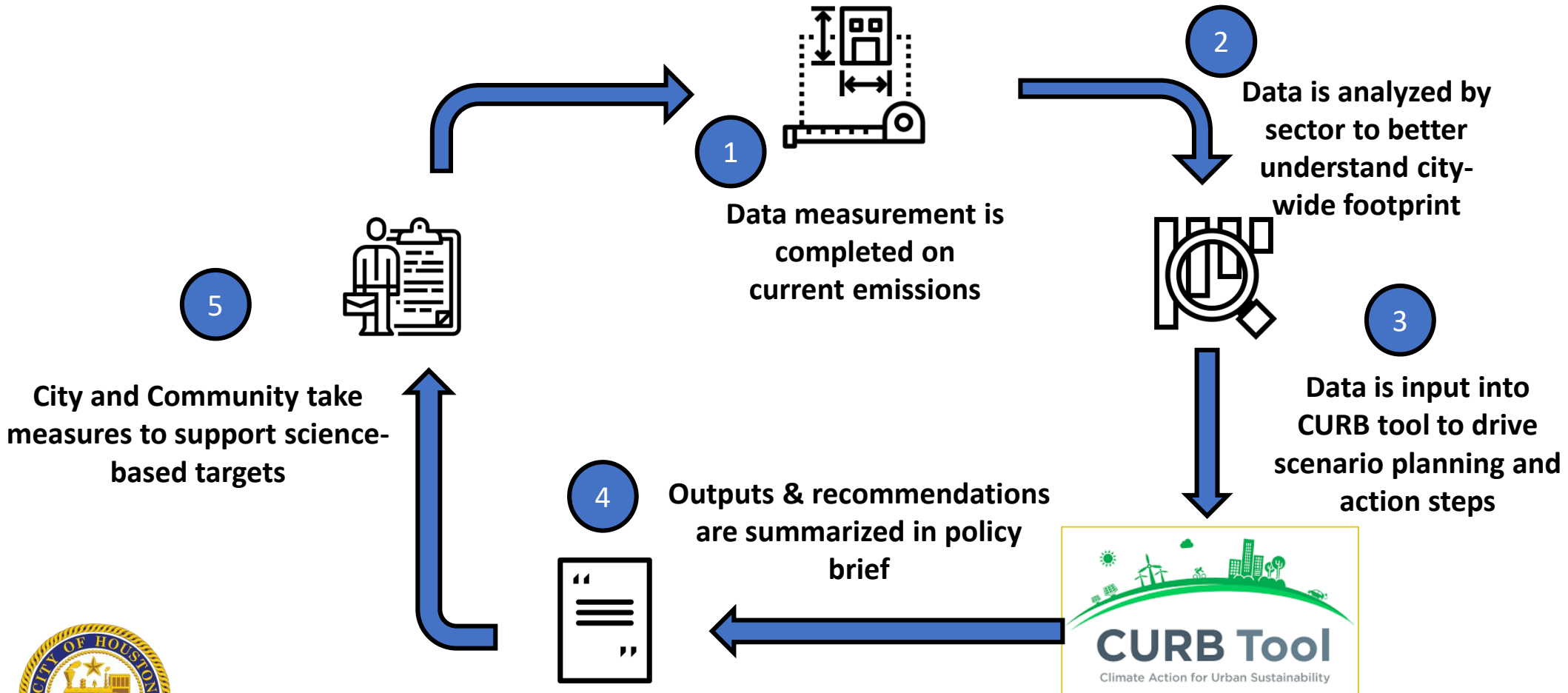
- **Building Optimization** – improving energy efficiency of residential, commercial and industrial operations
- **Decarbonization** – increasing the amount of renewable energy; using carbon capture and sequestration to reduce amount of greenhouse gases in the atmosphere
- **Waste** – reducing the amount of waste and trash to the landfill by reducing material consumption, recycling, up-cycling and composting
- **Transportation** – identifying transportation options and implementing land-use practices that promote opportunities for multiple, equitable transportation options, movement to electric vehicles and reducing the number of vehicle trips and miles traveled.



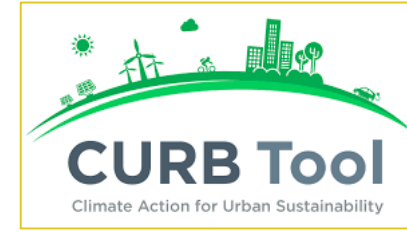
Climate Action Planning: Organizational Structure



Using Scenario Planning to Drive Policy



Overview of CURB Model



- **The CURB tool** is an integrated model that measures GHG emissions among 6 different sectors



Private Building Energy



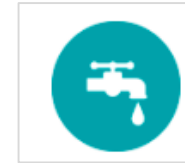
Municipal Buildings & Lighting



Electricity Generation



Solid Waste



Water & Wastewater



Transportation

- ❖ Model is **data-driven and city-specific** with 500+ data fields to complete
- ❖ CURB uses population growth, GDP growth or International Energy Agency's methodology to estimate future emissions
- ❖ 100+ cities have adopted the CURB model, allowing for comparability and benchmarking



CAP Example Policies and Programs

Policy/Program	Sector	Sub-sector
Deploy City-wide EV charging network	Transportation	Electric Personal Vehicles
Procurement of buses take into account air quality and GHG improvements of electric buses	Transportation	Electric Buses
Adjust parking fees (congestion pricing) or adjust availability of parking to reduce traffic congestion	Transportation	Parking Management
Ensure building codes are continually improved and updated over time	Building Optimization	Codes
Develop voluntary building benchmarking and energy auditing program that complements utility incentive programs	Building Optimization and Decarbonization	Clean Energy
Expand single stream recycling program for Houston residents	Waste	Solid Waste
Continuous improvement of building codes and permitting for solar + battery installations in residential and commercial properties; solar ready homes	Decarbonization	Renewable Energy
Work with community partners to increase rate of tree planting	Decarbonization	Green Infrastructure
Implement residential and commercial water conservation program	Building Optimization	Water

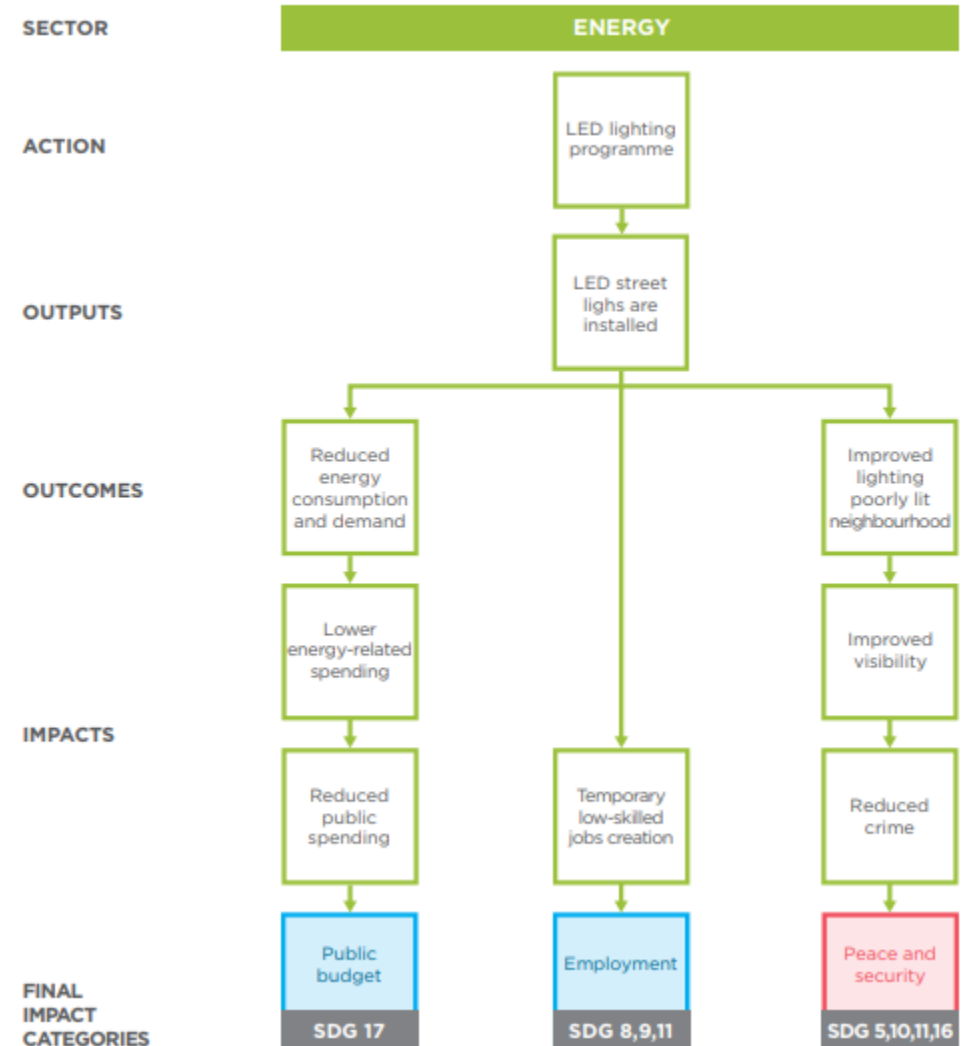


Thinking Through Climate Action Planning

- This is an example used by C40 to help structure thinking around the Outputs, Outcomes and Impacts of each Action.
- An action is the policy/program in place that will lead to a GHG reduction

Click to add text

Source: C40 Climate Actions Impact Framework



Schedule



Timeline



Schedule of Planned Events

- **Sunnyside, March 19, 2019**
- **Acres Home, April 1, 2019**
- **Southwest Multiservice Center, April 6, 2019**

- **Date: April 16, 2019**
Event Name: Climate Action Plan Community Meeting
Location: Denver Harbor Multiservice Center / 6402 Market Street / Houston, TX 77020
Time: 6:00 pm – 08:00 pm

- **Date: May 2, 2019**
Event Name: Climate Action Plan Community Meeting
Location: Northeast Multiservice Center / 9720 Spaulding / Houston, TX 77016
Time: 6:00 pm – 08:00 pm



Previous and Upcoming Events can be found at <http://greenhoustontx.gov/climateactionplan/events.html>

Other Ways to Engage

- Take the Climate Action Plan Survey
 - <https://www.surveymonkey.com/r/HoustonCAP>
- **Host a Meeting** – Engage your friends and family - You can host your own CAP meeting
 - <http://greenhoustontx.gov/climateactionplan/host-a-meeting.html>



Climate Action Plan Breakout Session

- Purpose
 - Get participants to discuss programs and policies being considered.
 - Prioritize policies and programs that will have the greatest impact.
 - Discuss the equity issues that may arise with the program and policy ideas.
- Activity Instruction
 - Please use the provided markers, sticky notes and dots to provide comments and prioritize the policies and programs listed on the table matrix.
 - Use the sticky notes and the table matrix to provide comments for each policy and program based on the listed criteria found on the matrix.
 - Use the colored dots to vote on the policies and programs that participants see as the best approach for the climate action plan.



Thank you! Questions?

Contact Information:

Lara Cottingham

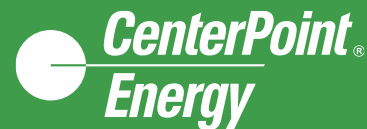
Chief Sustainability Officer

Lara.Cottingham@houstontx.gov

832-393-8503



Learn more:
<http://bit.ly/Houston-CAP>



HARC

