

Office of Sustainability

2024

# Community Climate Action Plan (CCAP) Implementation Update

May 2024



Raleigh





Raleigh

# Climate Action takes the support of our community!

## Thank You to Our Partners!



Office of Sustainability



City of Raleigh  
Partner Departments



Community Partners





# Agenda

- CCAP and Greenhouse Gas Inventory Update
- 2024 Climate Implementation Report Highlights
- Climate Action Future Highlights



Raleigh

# Climate Action Background

- ❖ **2007:** Raleigh City Council endorsed the U.S. Conference of Mayors' *Climate Protection Agreement*
- ❖ **2010:** Sustainability initiated Raleigh's first GHG emissions inventory (municipal operations)
- ❖ **2012:** *Climate Energy Action Plan:* Raleigh's municipal operations  
First community-wide GHG emissions inventory
- ❖ **2016:** Updated municipal and community GHG emissions inventories
- ❖ **2018:** *Triangle Regional Resilience Assessment*
- ❖ **2019:** *Transportation Electrification Study*  
City Council *Greenhouse Gas Emissions Goal* set – 80% ↓ by 2050
- ❖ **2021:** *Community Climate Action Plan* adopted by City Council
- ❖ **2023:** *First Community Climate Action Plan Implementation Report* taken to City Council  
Updated Community GHG emissions inventory



Raleigh

# Community Climate Action Plan

## Objectives:

*Strategy categories aligned with high impact to address:*

- Reducing GHG emissions
- Addressing Equity and Environmental Justice
- Building Community Resilience

## Strategies:

*Implementation focused on Action and Impact:*

- Buildings & Energy
- Transportation & Land Use
- Resilience & Cross Cutting



# The Impacts of Climate Change

*The consequences are felt unevenly by people across our community*

## Building Community Resilience to the Impacts of Climate Change

- Extreme heat, longer heat waves, more warm nights
- Extreme precipitation, flooding
- More unpredictable winter weather
- Increase in ocean temps, more frequent hurricanes and tropical storms
- Longer, more severe droughts



## Climate Change is an Equity Problem

- The consequences of climate change will be felt most strongly by those with the least responsibility for GHG emissions, such as:
  - Low-income people
  - People living in the floodplain
  - People living in sub-standard housing
  - People who work outside
  - People with health sensitivities
- In Raleigh, as in most US cities, these are largely communities of color
- Past decisions made by government and others in power have caused many of the inequities we see today (including environmental justice issues, lack of investment and access to resources, etc.)



**80% reduction in  
GHG emissions  
by 2050**



# 2024 Greenhouse Gas Inventory Update



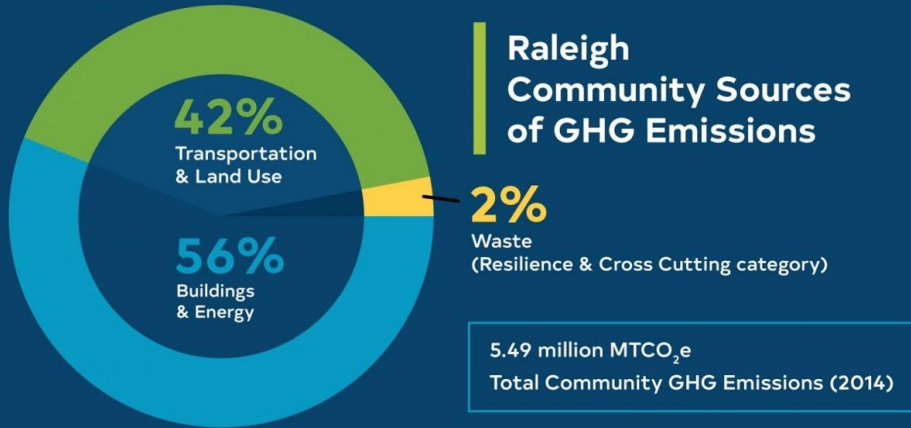
# Background: GHG Inventories

- Raleigh has a long history of tracking GHGs:
  - Raleigh's GHG goal: 80% reduction by 2050 (*baseline 2007*)
- Raleigh tracks community-wide GHG emissions:
  - **WHY:** Better understanding of GHG emissions trends in Raleigh helps:
    - prioritize strategies and assess
    - communicate progress/impacts of actions
  - **WHEN:** GHG Inventory is broad "check-in" on progress - done every 5-7 years; GHG inventories don't change quickly; data collection and computation is time and resource intensive
  - **WHAT:** Transportation, residential & commercial energy, wastewater treatment, decomposition of solid waste. CCAP strategies are designed for high impact GHG reduction.
  - **ANNUAL TRACKING:** progress of climate action strategies: CCAP Climate Action Dashboard, annual CCAP Climate Implementation Report, departmental and community progress metrics
- **COVID consideration:** used 2022 data to minimize COVID impacts
  - 2020-2021 not accurate reading: world interrupted by pandemic

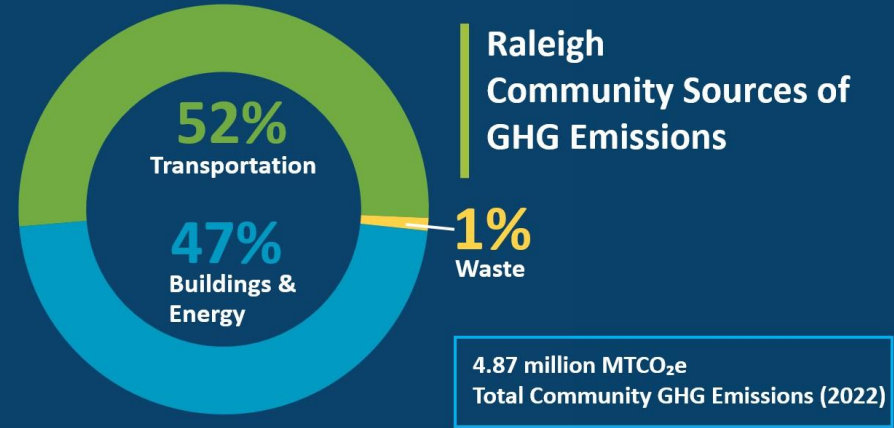


# Raleigh's GHG Emissions Sources

## 2014 Inventory



## 2022 Inventory

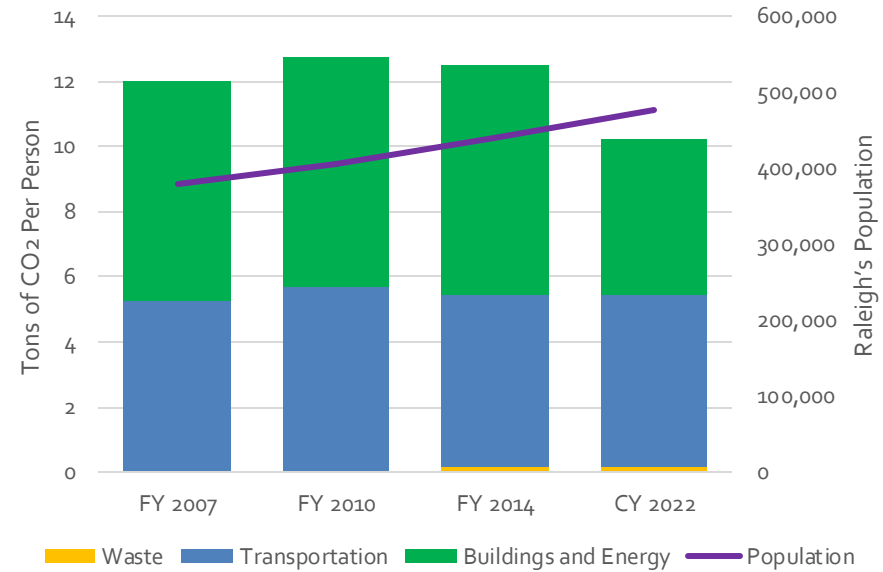
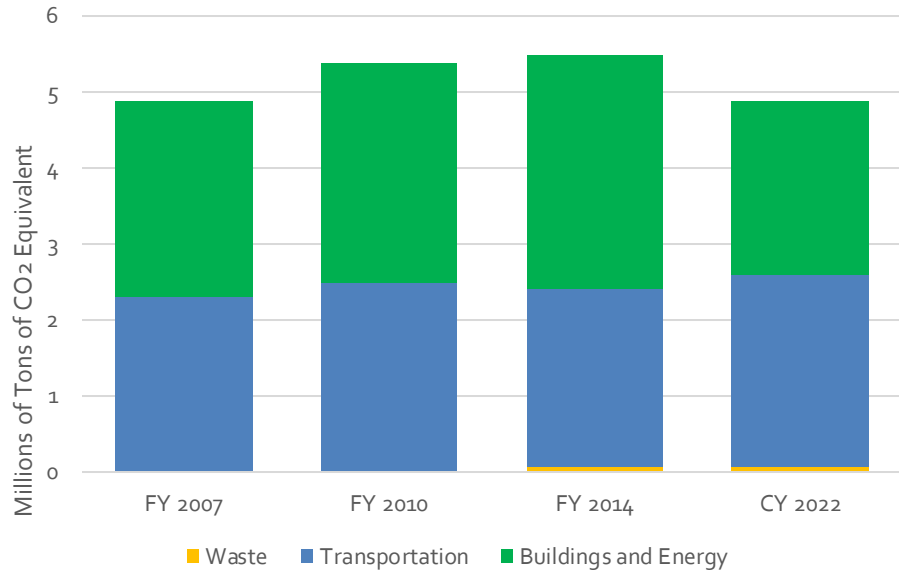


### GHG emissions change from 2014-2022:

26% decrease in *Buildings & Energy*; 8% increase in *Transportation*; 11% decrease in *Waste*

# Progress Towards GHG Goal – New Data (2022)

80% GHG reduction by 2050 (2007 baseline)



**Significant downward trend since 2014:**  
11% GHG reduction, despite continued population growth

Raleigh has **reduced community GHGs below 2007 levels** despite significant population growth  
**2007-2022:** 21% GHG reduction per person

# Key Findings

Per Capita GHG emissions decreased 18% from 2014 to 2022

## Buildings

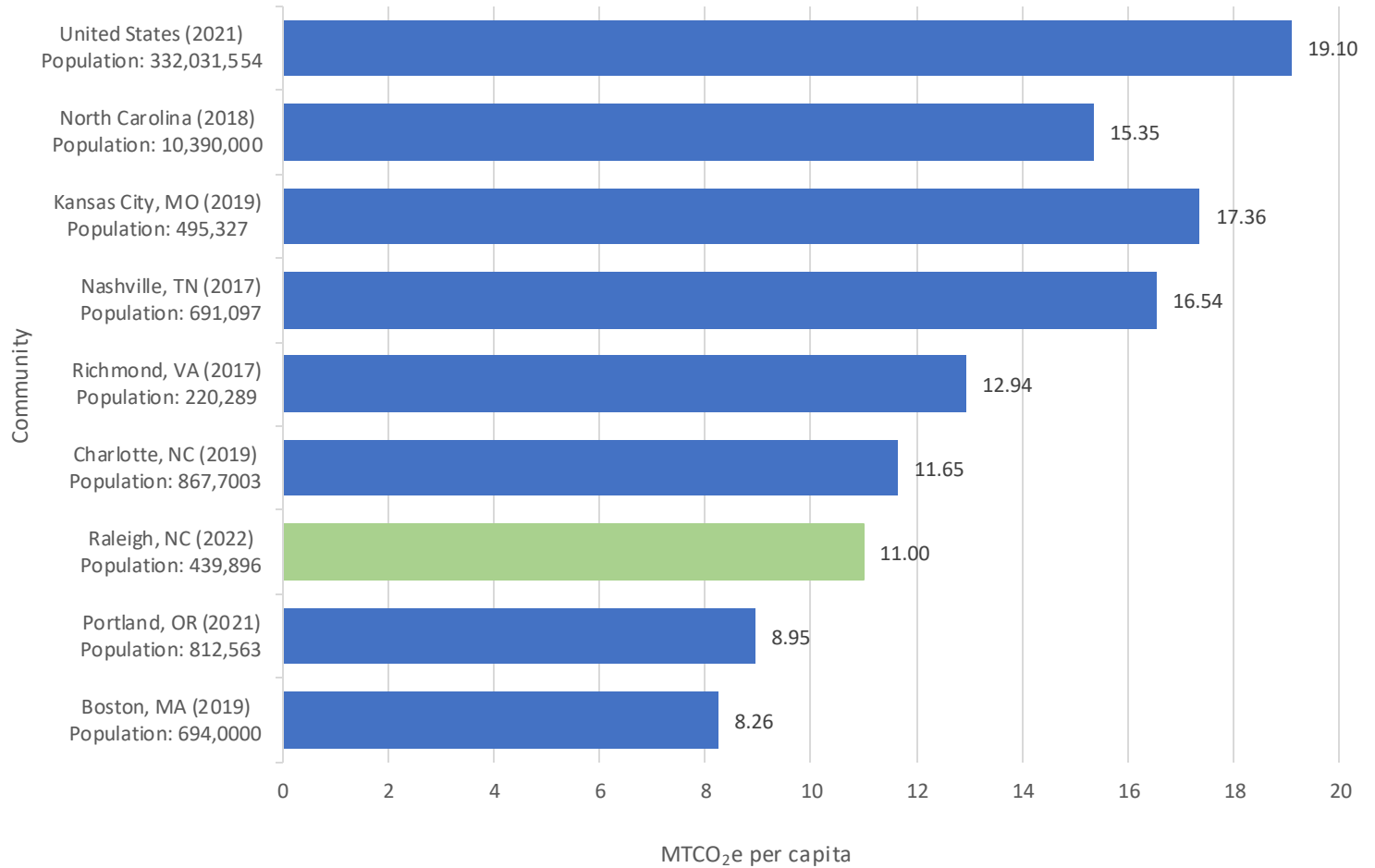
- Per capita electricity use in buildings dropped by 7% (total electricity use rose by 1%)
- Per capita building-related GHGs dropped 32% (due to cleaner grid and more energy efficiency, primarily lighting and HVAC)

## Transportation

- Per capita GHGs stayed flat, while total emissions increased by 8%
- Vehicle Miles Traveled (VMT) continues to increase
- Number of EVs is increasing, but growing percentage of larger vehicles cancels out those gains



# Benchmarking



# Transportation

*Transportation GHG emissions have risen. Raleigh's high impact CCAP strategies are vital to future reductions.*

## High impact climate action strategies:

- Bus Rapid Transit implementation
- Clean Transportation Ordinance package
- Fleet and community EV transition
- Create more housing options
- Create more opportunities for people to live in walkable places near transit; focus on equitable access for everyone
- Adding sidewalks, bike lanes, greenway trails and other means of making it easier to get around without a car



# Buildings

*Building performance for energy has improved but is still a major GHG source. There have been improvements in cleaner energy supply, and continued work is needed.*

## High impact climate action strategies under way:

- Duke Energy continues to make generation cleaner
- Expanding community and City Solar and energy efficiency projects; and access for everyone
- Recent zoning changes allow more energy-efficient housing types and more density
- Energy efficiency improving, although the State Energy Code lags behind other states



# The Big Picture

## Planting Seeds for Big Impact to 2050!



Substantial GHG improvements overall –

*Keep taking action! CCAP strategies are designed for high impact*

Continue to identify means of reducing GHG emissions –

*technology, innovation, laws, societal/economic/growth changes*

Staff will continue to bring CCAP strategies to Council –

*high impact Climate Action Ordinance Packages, Bloomberg Program, pilots, etc.*

Continue to wrestle and think through tradeoffs –

*Example: land use decisions that reduce VMT and create opportunities for more infill housing - brings change to neighborhood, but also supports affordable housing and local businesses while reducing GHGs*

The same actions that improve GHG emissions can also improve equity, environmental justice and community health!





Raleigh

# 2nd Annual Climate Action Implementation Report



# Buildings & Energy Highlights

## CCAP Strategies in Action:

- *Energy Efficient buildings*
- *Greener energy supply options*
- *Renewable energy expansion and access*





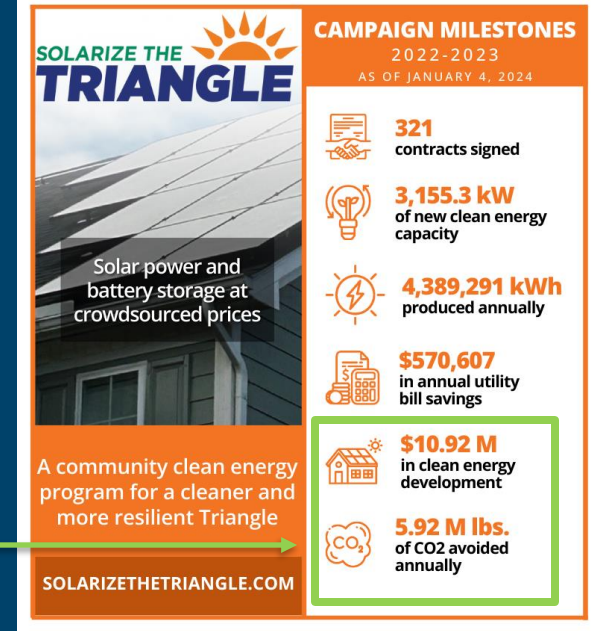
# Buildings & Energy: Community Solar

## Pilot Project: Incentivizing Solar for Affordable Housing:

- Incentivized solar for small-scale affordable housing projects on City Land
  - Energy Savings passed to residents
- Hosted a workshop: *Affordable Housing and Sustainability*
  - Over 40 developers, and partners across all sectors
  - Encouraged use of new federal solar tax credits, and Duke Energy / Utility Energy programs

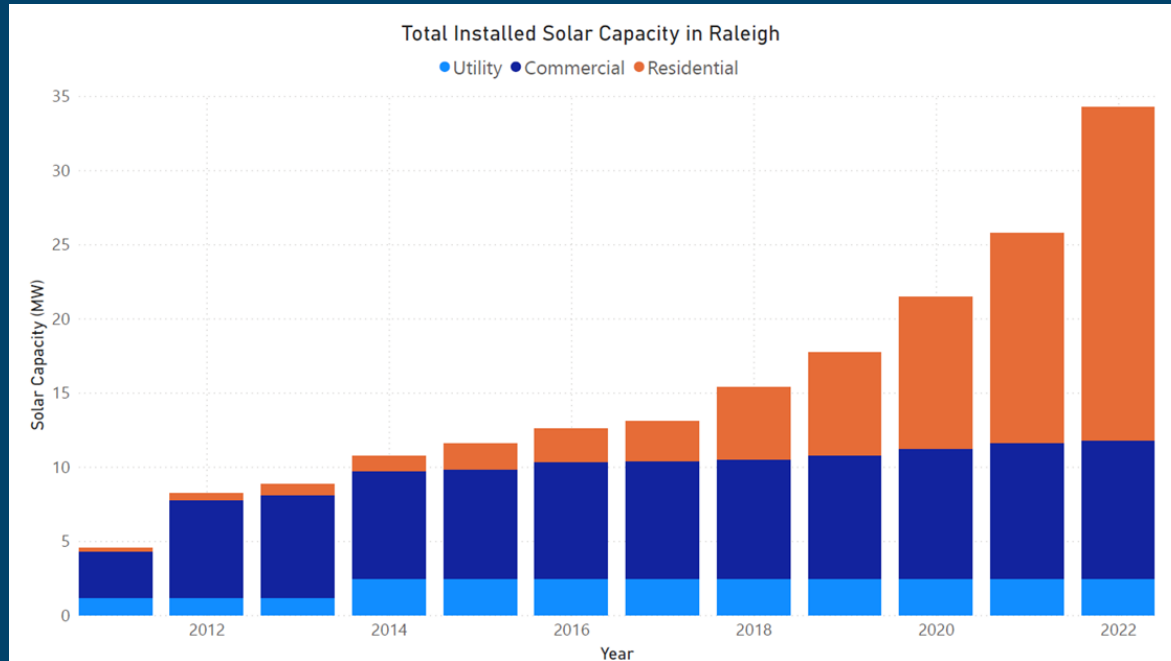
## Solarize the Triangle & Low-Income Solar:

- Won the “Cleantech Impact: Local Government” award from RTCC (2023) and Raleigh’s Climate Action Award (2024)
- Began 1<sup>st</sup> of its kind: low-income solar pilot addressing energy burden (2023)
- Partnerships: 12 Local Governments; over 20 partners, including numerous equity, housing and LMI community based non-profit organizations
- 2022-23: Significant economic and greenhouse gas reductions impact in the Triangle



# Buildings & Energy: Community Solar

## Total Installed Solar Capacity in Wake County



*Installed solar generation capacity has grown rapidly in Wake County over the last decade, with total capacity more than quadrupling over that span*

**As of February 2024, Raleigh has 452 buildings with solar!**



# Buildings & Energy: City Solar

## City Solar Funding

- \$2M in American Rescue Plan (ARPA) funds:
  - evaluation of a solar farm at the closed Wilder's Grove Landfill
  - solar installations on City facilities
  - solar EV charging, etc.
- City Council approved CIP funding for solar: totaling \$250K available currently, and current CIP budget request \$234K for solar pilots

## Solar Tax Credits Pilot

- Staff will pilot the new federal solar tax credits; reinvest savings into other climate action projects. Pilot will educate City departments and community groups on opportunities to use these new tax credits (1<sup>st</sup> identified project: *Dix Park All Faiths Chapel*)
- Tax credits include equity/community benefit criteria: use companies focusing on growing the clean energy workforce/ apprenticeships; projects in historically marginalized and environmental justice communities, etc.



# Transportation & Land Use Highlights

## CCAP Strategies in Action:

- *Alternative transportation options & VMT Reduction*
- *Equity and Transit Oriented Development*
- *EV infrastructure and innovative technology investments*



# Transportation & Land Use

## Active Transportation

- Scooter rides increased 35% in mileage from 2021 to 2023, with 420,640 miles ridden in 2023
- Bikeshare riders have taken more than 171,000 trips totaling 435,700 miles since 2019
- An additional 2 miles of bike lanes and 1 mile of sidewalk were added in 2023



## E-Bike Pilot

- Launch: summer 2024 with \$215,000 EECBG Funding
- Benefits: local economic impact, education programs, expand transportation accessibility, reduce VMT
- Equity focus: 75% of incentive funding will benefit community members 80% AMI or below
- Partnership with UNC: surveys & pilot evaluation

## E-bike Incentive Program



**Emissions Impacts:**  
Improve access to zero-emissions transportation across Raleigh's communities



**Economic Impacts:**  
Eligible retail partners must have brick-and-mortar locations in Raleigh, incentive funds stay in Raleigh



**Equity Impacts:**  
75% of incentive funds will benefit community members at or below 80% of AMI



# Transportation & Land Use Action Highlights



## Creating more options for homes near transit and walkable places

*Makes walking and transit more feasible and lessens the need to drive everywhere*

- TOD rezoning along New Bern BRT creates opportunity for more homes, incentives affordable homes, and improves walkability
- City investing directly in affordable housing along BRT corridors – more than 1,000 units in the pipeline along New Bern
- Planning for a new Comprehensive Plan: help improve walkability, housing choice, mitigation of climate impacts, and more
- More residents living in more energy-efficient and less costly housing types
- The City is supporting zoning changes and incentives (high impact Climate Action Ordinance Packages)





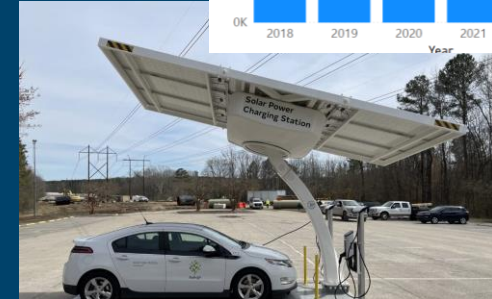
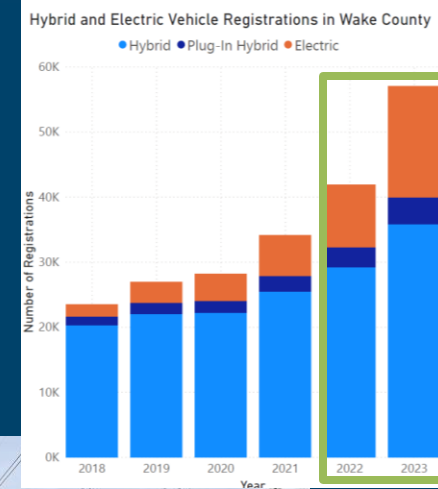
# Transportation & Land Use

## Raleigh Community: EV & Infrastructure Expansion

- 400% increase in EV charging stations since 2012
- 15,000+ growth in new electric and hybrid vehicles in Wake County since 2022
- Public Private Partnerships; Park and Rides with EVs

## City of Raleigh Fleet EV and Clean Transportation

- Raleigh fleet named 2023 **#1 fleet** in the U.S.
- Ribbon-cutting: Raleigh 1st in NC to adopt clean renewable propane
- Raleigh's EV Implementation Rollout completion
- 2,500+ vehicles in city's fleet, 76% of fleet uses clean alternative fuels (2024); 37 EVs in fleet, 32 pieces of electric equipment (April 2024)
- 12 grants/funding awarded for over \$2.9 million since 2022. Upcoming application for CFI grant for community and fleet EV charging



# Resilience & Cross-Cutting Highlights

## CCAP Strategies in Action:

- *Reduce waste and create efficiency*
- *Preserve and grow natural space & habitat*
- *Install green infrastructure*
- *Address equity & environmental justice*
- *Build resilience to climate change impacts*
- *Seek creative funding opportunities & partnerships*
- *Conduct community engagement & outreach*
- *Innovate and pilot new ideas & technologies*



# Resilience & Cross Cutting Action Highlights

## Waste Reduction & Creating Efficiencies:

- Raleigh Yard Waste Center wins 2023 *Large-Scale Compost Manufacturer of the Year*
- New yard waste carts: 39% increase in yard waste pickup from July '22 to July '23
- Composting study to be completed in Fall '24

## The Workforce- Great Raleigh Cleanup and City of Raleigh Beautification Program (launch 2024)

- **Partners:** City of Raleigh, Great Raleigh Cleanup, Place at the Table, over 10 City departments
- **Pilot:** 15 residents employed, 292 hours of living wage labor paid (\$18/hour), 5,000 pounds of litter removed, and 74 shopping carts returned

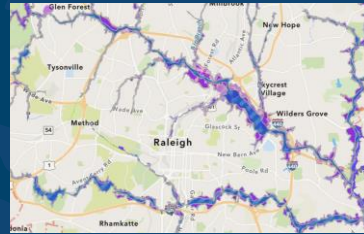




# Resilience & Cross Cutting

## Stormwater Green Infrastructure (GSI) Projects & Programs:

- Rainwater Rewards 2023: 263 consults, 37 projects approved totaling \$530,000
- New City GSI policy



## Community Climate Education for a Resilient Raleigh:

- \$440,000 NOAA Grant Partners: City of Raleigh, Partners for Environmental Justice, State NC Climate Office and more
- Gathered 40+ stakeholders for community workshop in Fall '23
- Launching expanded heat and flooding learning networks across Raleigh

## Community Climate Education for a Resilient Raleigh



**Education and Outreach**  
To develop cohorts of Raleigh residents informed about climate resilience, civic engagement and environmental justice



**Capacity Building**  
To increase community capacity for autonomous resilience action in vulnerable communities.



**Planning**  
To support the City of Raleigh's climate resilience planning efforts.

# Resilience & Cross Cutting

## Green Space, Pollinator Habitat, & Food Security



- **Urban Tree Canopy:** 700 street trees planted (April 2024); Grant: \$1 million for tree plantings; Tree Canopy Study
- **Food Security & Community Gardens:** 26,000 meals for kids in summer '23; 1<sup>st</sup> PPP community garden in City park
- **Biophilic City:** 6,209 acres of parkland, and 118 miles of greenways present in Raleigh creating biophilia
- **Monarch Waystations:** 30+ sites
- **BeeCity USA:** Wake County Swarm
- **Lights Out Raleigh:** bird migration



# Resilience & Cross Cutting

## Funding, Innovation, Pilots, Education:

- Sustainable Neighborhood Toolkit (launch) & Sustainable Business Toolkit (expansion)
- Earth Day & Environmental Awards (2024: 2000+ attendees, record breaking nominations)
- Awards:
  - *American Planning Association Sustainable Communities Award for CCAP (2024)*
  - *2 CleanTech Awards (2023)*
  - *#2 Most Resilient City by Architectural Digest (2024)*
- Over \$9M in ARPA funds to climate action
- **Climate Action Fund:** Clean Energy Mural, Neighborhood Climate Action Fund, Rainwater Rewards, Pollinator Protection Outreach, Durant Nature Preserve Boat House Solar, Anti-idling Training, and more! (Totaling over \$160K in 2023 to date)



# Climate Action: Future Highlights

- Staff continues to partner with the community to identify climate actions: to address climate, equity, environmental justice, health and resilience
- High impact “Levers” Climate Action Ordinance packages
- Solar investments and efficiency improvements
  - Wilder’s Grove closed Landfill: Community benefits work to begin this year, including study of utility-scale solar
- EV transitions: fleet, transit, and public
- 3 year grants and initiatives:
  - Bloomberg Grant: Raleigh first of 25 cities to welcome iTeam Director, address climate change and racial wealth equity
  - NOAA Community Resilience Grant: Working with neighborhoods across Raleigh



# High Impact Climate, Equity and Health “Levers”

## Issues

- Support for **emerging walkable places** and EV transition
- Reducing VMT is dependent on **creating more housing opportunities in existing and new walkable places** with nearby destinations
- Creating more energy-efficient housing types, like **apartments** reduces GHG emissions
- **Mitigate consequences of climate change** that are felt unevenly across our community



## Actions

### Transportation

- Reducing VMT- Create options for more people to live and work in walkable areas; Improve alternatives to driving
- Support expansion of EVs

### Buildings and Energy

- Create options for more energy-efficient buildings (apartments, townhouses)
- Incentivizing and investing in efficiency and renewables

### Resilience

- Mitigate heat, flooding and other impacts

# Clean Transportation Ordinance TC-3-23

- Unanimous approval from Planning Commission (April 2024), will appear on next week's Planning Commission Report to City Council.
- Ordinance will:
  - Improve pedestrian connectivity
  - Prohibit new (not existing) drive-thru's in walkable places
  - Require EV infrastructure in new development
- Above-and-beyond outreach
- Support from other Boards and Commissions
  - *Environmental Advisory Board and Bicycle Pedestrian and Advisory Commission. Reviewed with Development Services Advisory Committee multiple times, adjustments made in response to feedback*





# Climate Action happens thanks to Raleigh's Community and Partners!



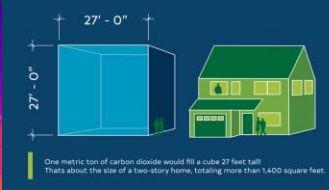
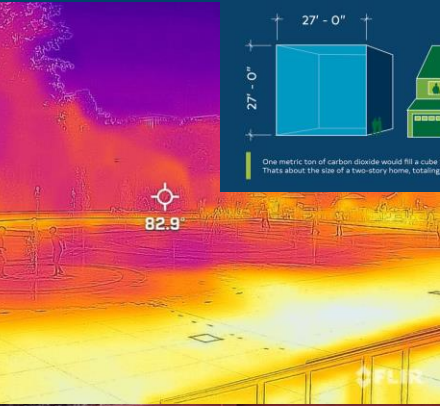
Building & Energy



Transportation & Land Use



Resilience & Cross Cutting



Bioretention Area on Glenwood Avenue Protects Crabtree Creek

**Glenwood Bioretention Area**

The area at the intersection of Glenwood Ave. and St. Mary's St. helps protect Crabtree Creek from water pollution.

Watch Later Share

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# Extra Slides





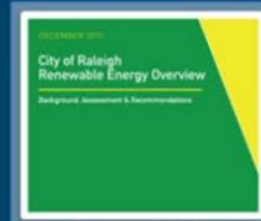
Strategic Plan



Business Plans



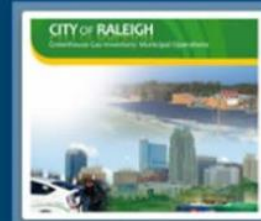
Comprehensive Plan



Renewable Energy



Climate Energy Action Plan



Greenhouse Gas Inventory 2007



Greenh



Fuel & Fleet



Electrification



ENVIRONMENTAL



Triangle Regional Resilience Partnership Resilience Assessment

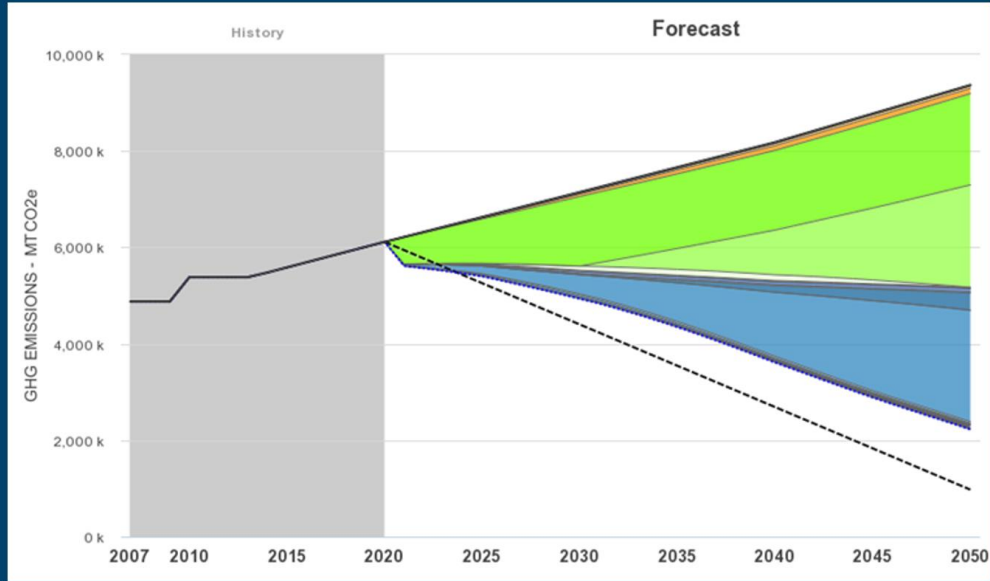
# Community Climate Action Guiding Work

CCAP is a “living document” and designed to continually integrate best practices and adapt as the City and community develop more strategies and solutions for tackling *climate change, equity, environmental justice, community health* and *building community resilience*



# Community Climate Plan

## Largest opportunities for emissions reduction



*Cumulative GHG emission reductions from all strategies relative to business-as-usual projections*

Energy Strategies

Transportation Strategies

# Per person vs. total GHG emissions

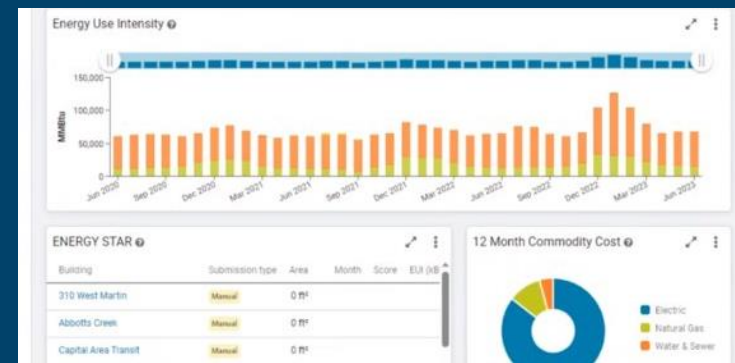
- Both matter – bringing down total GHGs in Raleigh is an important goal. Improving the performance of our existing transportation and building systems is important!
- Focusing *only* on total GHG emissions can create unintended consequences – and emissions don't care about lines on a map
- Density: Raleigh is lower in GHGs than suburbs, because driving trips are shorter, walking and transit are more common, and more homes are energy-efficient housing types (apartments and townhouses)



# Buildings & Energy

## Implementation of EnergyCAP

- Best practice data software: tracks energy and utility usage, benchmarks buildings, captures utility bill data, monitor meter readings, identify areas for potential energy savings.
- Staff have analyzed data for accuracy and began training facility managers on how to use data to identify energy efficiency opportunities.
- Rollout: Department Energy Data Dashboards



## Build on Existing Pilots for Energy, and Data

- March 2024: Raleigh was selected as new *Bloomberg American Sustainable City*: “Turbocharge resources to tackle climate change and closing the racial wealth gap.”
- Build on pilots and existing community work: sustainability features on affordable housing, Resilience Hubs, support programs for minority owned business, entrepreneurs and non-profits
- May 2024: *Smart Cities Connect* and Triangle Sustainability Partnership smart city collaboration

**BLOOMBERG AMERICAN SUSTAINABLE CITIES** aims to equip these cities with innovation capacity and dedicated staff to implement solutions together with community partners.



# Transportation & Land Use

## Bus Rapid Transit (BRT):

- 19 solar panels on BRT stations
- 5 electric buses and growing; 14 electric bus charging capacity
- 70% of bus fleet is clean fuel: avoiding 14,612 metric tons GHG
- Transit frequency has been restored to pre-pandemic levels

## Neuse River Recovery Center BioEnergy Project

- Innovation: The BioEnergy Project will soon turn Raleigh's wastewater into renewable fuel to run the GoRaleigh bus fleet!



Rendering of a BRT shelter



Rendering of Bioenergy Facility



GoRaleigh Electric Buses Charging





# CCAP: Climate Action “Levers” Ordinance Packages

- Clean Transportation Package
  - Planning Commission recommended approval in April
- Sustainable Buildings Package
  - Staff developing options- consider more affordable, energy efficient, and accessible housing types
- Resilience Package
  - Staff developing options- consider flooding and heat mitigation, Green Growth Toolbox, food security, etc.