

Orange County Climate Action Plan



2024 ANNUAL REPORT

Together, with our community, we commit to taking urgent action on the climate emergency by creating and implementing an innovative, equitable, and just transition to carbon neutrality and climate resiliency.



Introduction

TOP 10 THINGS THE COUNTY SHOULD DO

- 1.** Expand County funding to include climate expenditures and additional full time sustainability and grant administrator staff
- 2.** Integrate sustainability as a framework within the overall County's planning process
- 3.** Identify and prioritize actions targeted to vulnerable populations within the County
- 4.** Be prepared for climate emergencies
- 5. TARGET**
Decrease vehicle miles traveled (VMT) 30% from a 2019 baseline by 2050

BASELINE
Establish annual reduction of 1.3 million miles using US Community Protocol¹
- 6. TARGET**
Increase community EV adoption to 50% by 2035 and 100% by 2050

BASELINE
Currently 9% of all vehicles in Orange County are electric
- 7. TARGET**
Achieve 50% emission reduction target of all Scope 1 and 2 emissions² by 2030 and 100% by 2050 using a 2005 baseline

BASELINE
Scope 1 and 2 emissions have dropped by 41.8% between 2005 and 2019
- 8. TARGET**
Achieve 100% renewable electricity by 2050 in municipal operation and community-wide

BASELINE
Currently ~13% of all electricity is coming from renewable sources³
- 9. TARGET**
Increase community-wide solar capacity to 33.66 MW by 2035; 25% above the 2023 baseline

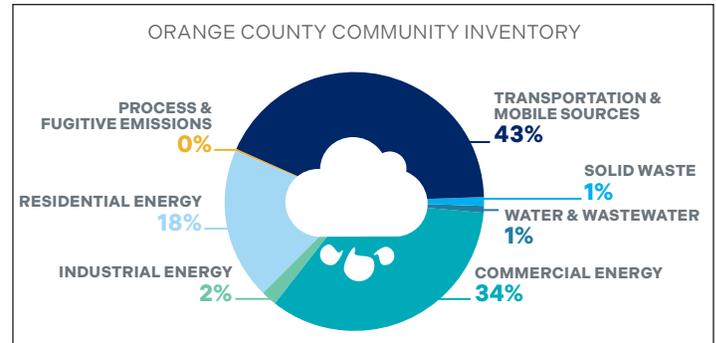
BASELINE
Current solar capacity within Orange County is 26.93 MW⁴
- 10. TARGET**
Complete an electrification study and establish a long-term implementation plan

BASELINE
Natural gas usage is currently at 156,670 MT CO_{2e}

Strategies 5-10 significantly reduce greenhouse gas emissions.

In November 2023, the Board of County Commissioners approved **Orange County's Climate Action Plan** (<https://www.orangecountync.gov/ImageRepository/Document?documentID=26112>), setting an ambitious course to **cut greenhouse gas emissions in half by 2030 and reach net-zero by 2050**.

To guide this effort, we began by identifying the sources of our emissions. The graph below shows the breakdown by sector, highlighting where we must focus our efforts to drive the greatest impact.



Using community input, expert analysis, and greenhouse gas data, we identified the Top 10 actions Orange County can take to cut emissions. These priorities will drive progress toward our climate goals and build a more resilient community.

With 70 targeted strategies across five key areas, the Climate Action Plan is already driving meaningful progress toward a healthier, more sustainable future. In just the first year of implementation, we've seen measurable achievements that reflect the collective effort of County staff, community partners, and residents.

The following pages highlight key accomplishments and progress made in each of the following focus areas:

- Transportation**
- Built Environment & Energy**
- Resource Conservation**
- Green Community**
- Resilient Community**



Transportation

Transportation is the largest source of emissions in Orange County, accounting for 43% of our community's carbon footprint. Cutting down on fossil fuel vehicle travel and transitioning to electric vehicles is a necessity to meet the targets set in our Climate Action Plan.



The county is "ON THE ROAD TO A GREENER ORANGE". Sharing this message with our new EV wraps increases visibility and community awareness.

Projects & Progress

Electric Vehicles (EV) & Charging Infrastructure for Orange County (as of October 2024)

2023	2024
2,894 Number of EV registrations	3,027 Number of EV registrations
7 Number of EVs purchased by County	17 Number of EVs purchased by County
36 Number of public EV charging stations <small>(6 County-owned stations with 23 Level II chargers)</small>	42 Number of public EV charging stations <small>(6 County-owned stations with 23 Level II chargers)</small>
0 Number of EV charging stations for County Vehicles	4 Number of EV charging stations for County Vehicles <small>(10 Level II chargers)</small>
0 Number of volunteer EV Ambassadors	18 Number of volunteer EV Ambassadors
0 Number of events for National Drive Electric Week	2 Number of events for National Drive Electric Week

Fleet Services continues to transition from gas to electric vehicles with **10 more electric vehicles in 2024**



Stephen Johnston, Environmental Health Specialist, with a 2023 Chevrolet Bolt. This Chevy is one of the County's electric vehicles.

In collaboration with Fleet Services, Sustainability developed a **new anti-idling policy for County staff** and a **new anti-idling graphic** that will be displayed in all gas-powered engines in the County fleet.



National Drive Electric Week

From September 27 to October 6, Orange County celebrated National Drive Electric Week (NDEW) with events in Chapel Hill and Hillsborough. Visitors explored EV models, spoke with local owners, and learned about charging, road trips, and maintenance. Thanks to these events, Orange County now has a dedicated group of EV ambassadors to share their knowledge year-round. (Watch a video of the Hillsborough event: <https://www.youtube.com/watch?v=812MANGtgGw>)



National Drive Electric Week event in Hillsborough



Built Environment & Energy

The second-largest source of emissions in Orange County comes from energy use in commercial buildings, making up 34% of our total emissions, with residential buildings following at 19%. The solution? Boosting energy efficiency, transitioning from gas to electric equipment and increasing solar adoption. By making smart upgrades, we can cut emissions, lower energy costs, and create healthier spaces for everyone.

Projects & Progress

DURHAM • GRANVILLE • ORANGE

EBERP

Energy Burden & Emissions Reduction Program

The NC Energy Burden & Emissions Reduction Program (EBERP) is a \$1.5 million Department of Energy grant dedicated to lowering energy costs and improving energy efficiency in under-resourced neighborhoods across Durham, Granville, and Orange County. This transformative 3-year grant-funded program will help communities in these regions save money, reduce emissions, and create a more sustainable, energy-efficient future!

Energy Efficiency through LEDs: Sustainability and Asset Management Services converted 4 buildings over to LED lighting.

LEDs LIGHT the Way to a Greener Orange!

Orange County is switching to LEDs in county facilities as part of our Climate Action Plan to help lower our energy use and reduce greenhouse gas emissions. LEDs can lower YOUR energy costs too! Swapping out LEDs for just five of your most used light bulbs can save \$75 a year on your electric bill!

Location	Kilowatts Saved	Savings Annually
Orange County Library	80,000	\$6,000
DSS/Hillsborough Commons	111,000	\$8,000
Southern Human Services Center	55,572	\$4,483
Seymour Center	56,587	\$4,786
TOTAL	303,159	\$23,269

Call 844-604-5510 to enroll in the Duke Energy Improve and Save program for a free home energy assessment. Call 844-788-0139 or visit shop-decmc.duke-energy.com/Lighting for discounted LEDs!

Sustainable Business Toolkit
<https://www.orangecountync.gov/DocumentCenter/View/27152/Sustainable-Business-Toolkit>: Our Sustainability Team created the Sustainable Business Toolkit to help businesses and organizations adopt more sustainable practices while saving money. This go-to guide covers key areas like energy, transportation, buildings, water, and waste—plus, it highlights valuable rebates and tax credits to support cost-effective upgrades. Whether businesses are just starting their sustainability journey or looking to take their efforts further, this toolkit provides the resources they need to make a lasting impact.



Powering Orange County with Solar Energy

Orange County continues to shine as a leader in solar energy adoption!

By the end of 2024

1,565

Solar installations were powering homes and businesses across the county

37,098 kW

Total capacity generated, a major step toward a cleaner, more resilient energy future



Solar rooftop installation for low-to-moderate income (LMI) solar program

Expanding Access to Solar – In 2023-2024, a dedicated low-to-moderate income (LMI) solar program helped bring the benefits of clean energy to more households, funding the installation of three additional rooftop solar systems for families who might not otherwise have access. Altogether, these new systems produce over 12,000 kWh of electricity and save over \$900 every year.



SOLARIZE THE TRIANGLE

Solar power and battery storage at crowdsourced prices

A community clean energy program for a cleaner and more resilient Triangle

ORANGE COUNTY

CAMPAIGN MILESTONES
2022-2023
AS OF JANUARY 4, 2024

-  **68** contracts signed
-  **617.8 kW** of new clean energy capacity
-  **859,427 kWh** produced annually
-  **\$111,725** in annual utility bill savings
-  **\$1.63 M** in clean energy development
-  **1.15 M lbs.** of CO2 avoided annually

Solarize the Triangle – This community-driven group-purchasing program made solar energy, battery storage, and other clean technologies more accessible and affordable. The program’s impact was recognized with the prestigious 2023 Cleantech Innovation Award for **Cleantech Impact: Local Government**, celebrating its success in leveraging partnerships to drive sustainable progress. Watch the award video here: <https://www.youtube.com/watch?v=CPByiurf0JE>



Efland EMS Station Solar Array

Advancing Solar Energy

Asset Management Services installed a **22 kW rooftop solar array on the Efland EMS station** (209 Mt. Willing Road, Efland).

The Planning and Inspections Department developed a **new solar array guide for residential uses** (<https://www.orangecountync.gov/DocumentCenter/View/28676/Solar-Array-Guide?bidId=>) that includes a checklist to help make the permitting process easier for residential solar energy installations.

Exploring Agrivoltaics in Orange County



Example of an agrivoltaics system with solar panels above crops

Imagine farms that grow food and generate clean energy—that’s agrivoltaics! By placing solar panels above crops, farmers can boost resiliency while advancing Orange County’s renewable energy goals.

In February 2024, we hosted an Agrivoltaics meeting to explore its potential locally. Now, we’re pursuing grant funding for a pilot project at Breeze Farm to study which crops thrive under solar panels and support farmers in adopting this innovative solution.

Agrivoltaics is a win-win for agriculture and sustainability, helping us cultivate a brighter, more resilient future! You Tube Video: <https://www.youtube.com/watch?v=C9CJOxeK50g>

Utility Advocacy

To advance our Climate Action goal of actively participating in utility programs and legislative proposals that impact clean energy adoption in Orange County, the Board of County Commissioners signed onto a letter in May 2024 advocating for a stronger, more sustainable vision in **Duke Energy’s Carbon Plan Integrated Resource Plan (CPIRP)**. This effort underscores our commitment to reducing greenhouse gas emissions and ensuring a cleaner energy future for our community.



Resource Conservation

The Resource Conservation section of our Climate Action Plan focuses on key actions to reduce waste, conserve natural resources, and cut greenhouse gas emissions.

Projects & Progress

Green Catering Vendor List

This list features restaurants and catering businesses that follow sustainable practices to help encourage and support events that generate less waste and source locally. (<https://www.orangecountync.gov/3310/Green-Catering-List>)

Sustainable Swag Resource

We've created the Sustainable Swag Resource to make it easier for County staff to choose eco-friendly, waste-reducing promotional items. This resource empowers our team to select swag that aligns with our sustainability goals, helping to minimize environmental impact while still offering meaningful giveaways. With this resource, we are making every item count—because sustainability should be at the heart of everything we do! (<https://www.orangecountync.gov/DocumentCenter/View/28521/Sustainable-Swag>)

Repair Café

On November 16, 2024, the Orange County Sustainability Team, Orange County Public Library, and Repair Café North Carolina came together to host a free Repair Café at the Whitted Human Services Center—

Let's Fix It At The REPAIR CAFÉ!

Work with volunteer repair coaches to fix your broken items!

Gain new skills and keep trash out of the landfill, while saving money and having fun!

Saturday, March 15 1-5pm

Whitted Human Services Ctr.,
Donna S. Baker Meeting Room
300 W. Tryon St., Hillsborough

To register, volunteer or contribute, go to:
RepairCafeNC.org

Bring your clothes that need mending, as well as damaged electronics, furniture, jewelry, or small appliances!

REPAIR CAFE NORTH CAROLINA | ORANGE COUNTY SUSTAINABILITY | Orange County Public Library

and it was a huge success! Residents brought in everything from damaged electronics to furniture, jewelry, and small appliances, working side-by-side with volunteers to give them new life. (<https://youtu.be/wjg3SMYNaXw>)

With 69 guests, 58 repairs, and 33 coaches, the event exceeded expectations, so much so that we're excited to announce that Repair Café will be held twice in 2025! This allows us to keep even more items out of the landfill, save community members money, and continue building a culture of community care and repair. It's a win for sustainability, a win for savings, and a win for our community!



Repair Café in Hillsborough

Triangle Ecycling

In December 2023, we successfully e-cycled 572 computers, giving them a second chance to make an impact! These computers were donated to Triangle Ecycling, where they were either re-used, refurbished, or recycled for a meaningful purpose: providing hands-on learning experiences for local high school students through semester-long internships.

This initiative not only helps reduce electronic waste, but also empowers the next generation with valuable skills in tech and sustainability. It's a win for both the environment and our future leaders!



Triangle Ecycling helps the County e-cycle 572 computers



Green Community

A healthy environment supports the health and well-being of Orange County residents by improving air, land, and water quality. This section of the Climate Action Plan includes actions that promote environmental health and green our community.

Projects & Progress

Our **Leave Your Leaves** campaign, in partnership with the Towns, is making a big impact by encouraging residents to leave their fallen leaves where they are—on the ground! This simple action helps nourish our soil, protect local wildlife, and reduce unnecessary waste. Over three hundred County residents pledged to leave their leaves last season!! Together, we’re creating healthier ecosystems and a more sustainable community, one leaf at a time.



Leave Your Leaves yard sign



The 2024 Leave Your Leaves campaign had 317 total participants

Transitioning to Electric Landscaping

The Department of Environment, Agriculture, Parks and Recreation (DEAPR) began their transition to electric landscape equipment with 2 weed trimmers, 3 pruners, 1 hedge trimmer, 1 chainsaw, 1 riding lawn mower, and 1 solar-powered generator used at Blackwood Farm Park, Cedar Grove Park and by the mobile landscaping crew.

Switching to electric landscaping equipment comes with a lot of benefits! We’re cutting down on greenhouse gases, improving air quality, saving money on gas, spending less on maintenance, and making our parks quieter and more enjoyable for everyone.



Robert Robbins, Park Manager of Cedar Grove Park, with a new electric riding lawn mower

Sustainable Gardening

The Orange County Cooperative Extension along with its Master Gardener volunteers help the Orange County community garden sustainably by encouraging the use of native plants and avoiding invasive plants.



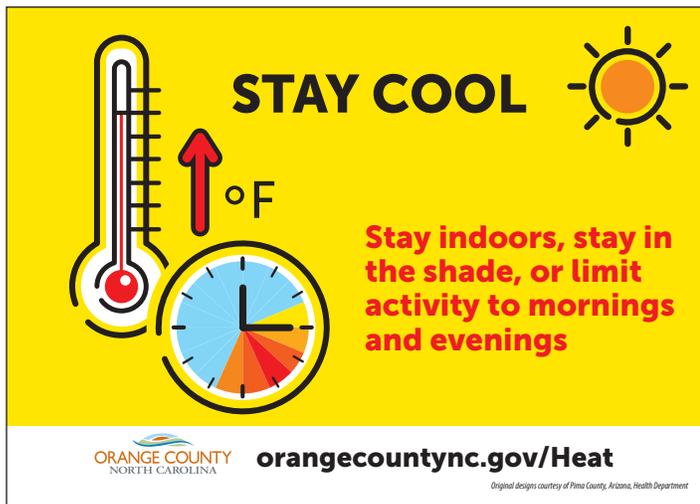
Annual PlantFest event on October 5, 2024 hosted by N.C. Cooperative Extension Service Master Gardeners



Resilient Community

The Resilient Community section of our Climate Action Plan focuses on building the County’s ability to withstand and recover from extreme weather events, from scorching heat to heavy flooding. With a combination of proactive strategies and adaptive solutions, we’re preparing to safeguard our homes, businesses, and public spaces.

Projects & Progress



STAY COOL

Stay indoors, stay in the shade, or limit activity to mornings and evenings

ORANGE COUNTY NORTH CAROLINA orangecountync.gov/Heat

Original designs courtesy of Pima County, Arizona, Health Department

Heat Messaging & Heat Action Plan

When heat came earlier than planned in June 2024, just after Governor Cooper announced Heat Action Week, Orange County formed a cross-departmental working group to develop a Heat Action Plan and a Beat The Heat social media campaign. In the fall, representatives from each municipality gathered forces to participate in the ReBuildNC Planning for Extreme Heat Cohort, so that the developing Heat Action Plan would work in all levels of local government throughout Orange County.

Department of Energy — Energy Futures Grant

Orange County is a proud partner in a \$500,000 Department of Energy Energy Futures Grant, a groundbreaking initiative to develop a network of energy resilience hubs across our region. This grant supports technical assessments and community-driven planning to strengthen our ability to withstand power disruptions and build a more sustainable and resilient future in the face of climate-related storm events.

Duke Energy Foundation Grant

The Orange County Sustainability Team was awarded a \$25,000 Duke Energy Foundation grant to launch a heat mapping analysis and tree planting project—a powerful step toward fighting extreme heat in historically under-recognized communities.

This initiative directly supports the county’s ambitious goal of planting 10,000 trees in 10 years, while also fostering strong community partnerships, educating residents about the vital role of trees in climate resilience, and delivering real relief from rising temperatures.

By strategically targeting the areas most impacted by extreme heat, this project advances equity, environmental sustainability, and bold, community-driven climate solutions. With every tree planted, we’re creating cooler, greener, and healthier neighborhoods for all.



Check from the Duke Energy Foundation for a heat mapping and tree planting project. Amy Eckberg, Ray Trapp, Karina Nabors, and Mel Gilles

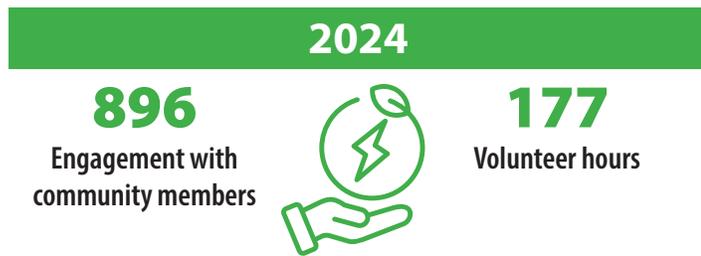


Duke Energy “Rally for Relief” event at the Raleigh Convention Center. Karina Nabors, Amy Eckberg, Mel Gilles and Commissioner Anna Richards

Impact through Community Outreach, Education and Investment

Our Sustainability team was spreading the word and inspiring action at public events like Earth Evening, the Orange County Agriculture Summit, and UNC Climate Action Day. We even talked to all the 8th graders at Orange Middle School, sharing our climate action plan and inspiring them to make positive changes in their own lives. For many of these events, incredible volunteers dedicated their time and energy to encourage sustainable choices in the County.

People Power



Volunteers

Volunteers are helping sustainability topics reach more people. Without their help, events like Repair Café would not have been possible (See page 6 for more information). One group of volunteers are the EV ambassadors. They are passionate community members who attend events with their electric vehicles to engage the public, answer questions, and showcase all the different features of their EVs.



EV ambassador sharing about electric vehicles at Earth Evening

Interns

The **University of North Carolina-Chapel Hill EcoStudio** interns provide important support for our sustainability efforts, and our team is passionate about mentoring them by offering real-world opportunities to develop creative solutions, engage with the community, and make lasting impacts in the fight against climate change. Providing these hands-on experiences inspires and prepares the next generation of leaders to pursue careers in climate action.



Emma Hedinger (intern) tabling at UNC Climate Action Day

In 2024, we had the privilege of hosting the following exceptional EcoStudio interns:



Emma Hedinger (Spring 2024):

Emma made a big impact by leading community outreach for the Climate Action Plan and creating a staff resource for purchasing sustainable swag, helping to align the County's efforts with our sustainability goals.



Valeria Rico (Summer 2024):

Valeria took on the challenge of spearheading an anti-idling campaign, which included drafting a policy and collaborating with the County's graphic designer to create impactful visuals for the campaign.



Madison Buschek (Fall 2024):

Madison played a central role in organizing two National Drive Electric Week events, supported the Leave Your Leaves campaign, and designed graphics for our annual sustainability events, helping to bring these initiatives to life.

Staff



Mel Gilles joined the Sustainability Team as our full-time Sustainability Projects Analyst on Earth Day 2024, bringing valuable expertise to our efforts.



Karina Nabors, our part-time Sustainability Specialist, plays a vital role in supporting initiatives and ensuring bilingual access to sustainability programs, helping us reach and engage more of our community.

Boards & Commissions

The Commission for the Environment and the Human Relations Commission support and elevate the County's Sustainability work. In particular, these volunteers dedicate their time and energy to score our Community Climate Action Grant applications every year, which help us fund projects to reduce greenhouse gases (Read more about this program on the next page).



Commission for the Environment chair Regina Baratta and member Kristie Mather doing outreach at the 2024 Earth Evening event in Hillsborough.

Partners & Collaborators

Sustainability requires all of us working together to create lasting change. We cannot underestimate the power of partnerships in driving progress, expanding our reach, and achieving our climate goals. We are grateful for all of our partnerships—from our regional local governments, the Central Pines Regional Council, and the Towns to UNC-Chapel Hill, community-based organizations, the agricultural community, local businesses, and County departments.

Collaboration is at the heart of everything we do. These partnerships—and many more—are essential to building a more resilient, sustainable future for Orange County. We're always expanding our network because real change happens when we work together!

Climate Council

The Orange County Climate Council unites leaders from the County, Towns, school boards, and other stakeholders to drive climate action through collaboration. In 2024, we came together twice to exchange ideas, align on climate campaigns, and coordinate impactful community outreach and education efforts.

Outreach & Education

1.5° Art Exhibition

In April 2024, the Eno Arts Mill hosted 1.5°C, a powerful exhibition exploring our region's connection to the environment and climate change. Featuring works from over 60 local visual artists, the month-long gallery showcase was a collaboration between the Orange County Arts Commission and the Office of Sustainability. This innovative fusion of art and education provided a unique platform to engage the community and deepen awareness of climate change's impacts.



1.5° Art Exhibition



"Emergent Tides" by Amy Wetsch. Artwork purchased by Orange County Sustainability and the Arts Commission that is now on display in Orange County's Whitted Human Services Building in Hillsborough.

Community Resources

Residents can explore our community resources to stay informed and get involved in Orange County's sustainability efforts! Our Sustainability Web Pages (<https://www.orangecountync.gov/477/Sustainability>) and quarterly Climate Connection (<https://www.orangecountync.gov/2946/Climate-Connection-Quarterly-Sustainabil>), provide information about our programs and initiatives and ways for the community to take action.



Community Climate Action Grant Program

The **Community Climate Action Grant Program** is driving impactful projects that reduce greenhouse gas emissions and make a lasting positive impact in our community. Open to all public and nonprofit entities, as well as small businesses, this program is key to engaging local groups in climate action and maximizing Orange County's efforts to combat climate change.

In 2024, we saw a record-breaking 25 applications, showcasing the growing enthusiasm for sustainability across the County. This year, \$262,500 was awarded to seven incredible projects in the 2024-2025 fiscal year, each helping to move us closer to a greener, more sustainable future.

By supporting these initiatives, the grant program empowers community groups to take action, creating a more significant collective impact on our climate goals. We're thrilled to be a part of these exciting projects and can't wait to see the positive changes they bring to our community.



Club Nova Garden, a Community Climate Action Grant Project



Tree Planting in Town of Chapel Hill, a Community Climate Action Grant Project

Community Climate Action Grant Program

The **Community Climate Action Grant Program** is dedicated to accelerating climate change mitigation actions in Orange County.

We are looking for great project ideas that help reduce greenhouse gas emissions and make a positive impact in our community.

Who Can Apply?

- Public & Non-Profit Entities
- Small Businesses



Habitat for Humanity Solar Roof Installation, a Community Climate Action Grant Award

FISCAL YEAR	NUMBER OF PROJECTS	AWARD AMOUNT
2019-2020	4	\$469,272
2020-2021	6	\$478,657
2021-2022	7	\$536,665
2022-2023	7	\$550,150
2023-2024	8	\$564,085
2024-2025	7	\$262,500

So far, the program has awarded **\$2,861,329** to **46 projects**. These projects reduce greenhouse gas emissions by over **1,130 metric tons** every year!



Daniel Pate, Karina Nabors, Amy Eckberg, and Mel Gilles at the Cleantech Innovation Awards where Sustainability's Community Climate Action Grant Program was nominated for the Cleantech Impact: Local Government award.

Looking Ahead

Green Team

Sustainability is looking forward to launching a dynamic, cross-departmental Green Team. This team of County employees will make the County more sustainable through peer outreach and the implementation of environmentally-friendly workplace practices. Acting as sustainability ambassadors within their departments, each Green Team member will champion efforts like recycling and energy-saving initiatives to help foster a culture of sustainability.

Electrify Marketing Campaign with UNC students

The Orange County Climate Council is excited to engage in a “Year of Electrification” campaign to inspire residents and businesses across the County to embrace electrification—whether it’s through electric vehicles, bikes, landscaping equipment, fleets, appliances, or buildings. To ensure the campaign’s success, we are collaborating with a social marketing class at UNC–Chapel Hill to design a compelling marketing campaign that resonates with our community based on research and analysis.

In addition to the above, here are some other programs and initiatives we are excited about:

- **Electrify Program:** Regional program to help reduce greenhouse gases by transitioning over to electric
- **Art and Sustainability Exhibit** in collaboration with the ArtsCenter March-April 2025
- **No Mow March**
- **Clothing & Art Supply Swap**
- **Tree Giveaway**
- County staff **electric vehicle guide and video**
- Updated **Greenhouse Gas Inventory** for Orange County
- **Solar Feasibility Study**
- **Heat Action Plan** for Orange County
- More **National Drive Electric Week** events
- More **Repair Café** events
- Updates to solar and electric vehicle regulations in Orange County’s **Unified Development Ordinance (UDO)**
- New more accessible portal coming for Community Climate Action Grant Program applications submissions and processing
- Applying for more Grants!

