



TOWN OF CARRBORO

TRANSMITTAL

Manager's Office

DELIVERED VIA: *HAND* *MAIL* *FAX* *EMAIL*

To: David Andrews, Town Manager

From: Laura Janway, Environmental Planner
Patricia McGuire, Planning Director

Date: October 13, 2020

Subject: Implementation Update: Energy and Climate Protection Plan (2014)
& Community Climate Action Plan (2017)

Summary

The purpose of this memo is to provide the Board with a progress report on implementation of the Energy and Climate Protection Plan (ECPP), adopted May 28, 2014, and the Community Climate Action Plan (CCAP), adopted January 24, 2017. The ECPP concentrates on lowering municipal greenhouse gas (GHG) emissions and the CCAP has recently been updated with an 80% reduction goal in per capita greenhouse emissions by 2030. Town staff are examining and pursuing several initiatives to reach the emissions reductions goals.

Staff have continued to implement the ECPP by addressing renovation and rehabilitation of municipal buildings and examining building performance. Staff also worked with a contractor to retrofit all fluorescent lighting in the Century Center to LED lighting through Duke Energy's incentive program. Staff are also providing guidance to a graduate student who will update the Town's municipal and community GHG inventories.

Recent CCAP implementation measures include the final reporting from the CCAP implementation survey and the completion of the FY20-21 Environmental Sustainability Work Plan to inform the climate action budget. Staff are working to design a grant program for the Green Neighborhoods Initiative and continue to hold invasive species removal volunteer events. The Town has also received a grant to restore the riparian buffer of an intermittent stream in Anderson Park. Additionally, staff are working with a volunteer from the Environmental Advisory Board (EAB) to complete a baseline food emissions profile for the Town to inform future implementation of CCAP Food Choices recommendations.

Energy and Climate Protection Plan

LED Lighting in Town Buildings

- *Policy Connections:* ECPP Section 2.B.ii: Facility Energy Efficiency

Public Works staff utilized Lime Energy Services to provide an Energy Efficiency Proposal for lighting at the Century Center through the Duke Energy Small Business Energy Saver Program.

The proposal provided a Scope of Work to retrofit all fluorescent lighting in the building to LED lighting and provided an analysis of the resulting energy and GHG emissions savings. Duke Energy offers incentives through this program, which covered 52% of the total cost of the retrofits. This summer, Public Works staff moved forward with this project using the Town Facilities Rehabilitation Funding. The project was completed in July and replaced over 300 light fixtures in the Century Center, reducing energy consumption by 32,744 kwh per year and reducing GHG emissions by 23.2 metric tons. The estimated payback for this investment will be 34-months due to increased energy efficiency and lower utility bills.

Project Summary	
Total Cost to convert to LED:	\$15,371.51
Duke's Incentive:	\$8,491.06
Town's Cost:	\$6,880.45
Estimated Annual Cost Savings due to increased efficiency:	\$2,443.03 per year
Estimated Investment Payback	34 months
Estimated Annual Greenhouse Gas Emissions Reduction	23.2 Metric Tons of CO ₂ per year

Facilities Rehabilitation and Renovation

- *Policy Connections:* ECPP Section 2.B.i: Building Assessments and Ratings

Town staff are currently working to address rehabilitation of municipal buildings and will be examining building performance. Public Works staff have selected an Architectural and Engineering Firm to develop renovation plans for Carrboro's Town Hall and Century Center. The consultant is working to produce the following products:

- Task 1: Energy Analysis of Town Hall, Century Center, and Public Works buildings
- Task 2A: Documentation and Conceptual drawings for planned renovations and additions
- Task 2B: Discussion on Net Zero Buildings and potential solutions for existing buildings
- Presentation to Town staff and Town Council
- Task 3: Provide final recommended solutions to retrofit buildings to meet program requirements and energy goals
- Task 4: Provide construction drawings for specific renovations identified by Town staff

Public Works staff have organized internal meetings to discuss the progress of this initiative and have also recently worked to modify HVAC schedules in Town buildings due to new patterns of employee usage during 2020 as a result of COVID-19.

Municipal and Community Greenhouse Gas Inventories

- *Policy Connections:* ECPP Section 4 (Measurement, Inventory, Assessment, and Reporting). Pursuing these activities will inform actions and stakeholders and create transparency.

Mr. Jacob Becker, a student at UNC- Chapel Hill pursuing a Master of City and Regional Planning and a Master of Environmental Science and Engineering, will be working to update Carrboro's municipal and community greenhouse gas inventories for his Master's Project. Mr. Becker began working with the Town Environmental Sustainability Coordinator in June 2020 and will complete the project by Spring 2021. The project will have three goals:

- Explore the effectiveness of Carrboro's policies in decreasing greenhouse gas emissions from the Town's most recent municipal and community greenhouse gas inventories.
- Quantify the impact of fugitive methane on GHG inventories.
- Recommend additional policies to meet Carrboro's goal of 80% carbon reduction by 2030 compared to 2010 levels.

International Council for Local Environmental Initiatives (ICLEI) Membership

In March 2020, staff renewed the Town's membership to ICLEI. Staff are working to use tools provided by ICLEI to track ECPP and CCAP emissions reduction progress.

Climate Action Budget

In early 2020, Town staff worked to develop a climate action budget and Environmental Sustainability Work Plan for the FY20-21 fiscal year. The work plan was reviewed by the EAB in May 2020. In future years, the climate advisory board will be given the opportunity to provide input on the annual work plan.

Town Council 6/25/19 Resolution Regarding Climate Action Goals and Budget Plan

The 6/25/19 Resolution directed staff and the Environmental Advisory Board (EAB) to review the carbon reduction goals in the ECPP and CCAP and recommend changes as may be needed to achieve goals defined in the Town of Carrboro's 2009 climate resolution, recognizing the latest science and historical responsibilities for climate change.

The Town Council also directed the Town Manager to charge staff to work with the EAB to identify substitutions to or additional activities or projects and their estimated CO₂ reductions.

The updated carbon reduction goals and project recommendations were presented to the Town Council in January 2020 (Attachment C) and were incorporated into the ECPP and CCAP (Attachments D and E). Pending the Town Council's discussion and directions, the EAB's recommendation regarding the Bolin Creek Greenway was not included in the updated plans.

Community Integration

Climate Advisory Board

- *Policy Connections:* CCAP Community Integration Recommendation #5: Expand Capacity

Town staff are working to draft the Town Code Amendment to create a climate advisory board using the proposal presented to the Town Council on September 8, 2020. The Environmental Advisory Board held a Special Meeting on October 8, 2020 to finalize recommendations for integrating the climate advisory board's work into the FY20-21 Environmental Sustainability Work Plan. This Town Code Amendment will be presented to the Town Council in Fall 2020.

Green Neighborhoods Initiative

- *Policy Connections:* CCAP Community Integration Recommendation #3: Create Participatory Green Neighborhood Budgeting Program to Reduce Carbon Emissions, Build Community, Save Money, and Reallocate Savings to New Green Project Initiatives

In late 2019, staff began to hold the first Green Neighborhoods Outreach Meetings. These meetings were paused due to COVID-19 precautions. Staff are pursuing the possibilities of holding virtual meetings and are also working to design a Green Neighborhoods grant program as outlined in the FY20-21 Environmental Sustainability Work Plan, which will provide financial assistance to neighborhoods to complete projects which reduce greenhouse gas emissions or contribute to ecosystem resiliency. CCAP Community Integration Recommendation #5 recommends pursuing a community grant program in order to expand the Town's capacity to pursue sustainability initiatives. Town staff plan to incorporate opportunities to apply for two specific pilot programs, the every-other-week garbage collection pilot program and a multifamily composting pilot program. Staff are working to present the program to the Town Council in late 2020.

Modules Project

- *Policy Connections:* CCAP Community Integration Recommendation #5: Expand Capacity

The Community Climate Action Plan Modules Project is a community-driven outreach initiative aimed to educate and engage Carrboro residents in climate action. The initiative involves designing materials for Carrboro residents to educate others about specific climate action topics. The materials will be organized into modules, which will act as templates for residents to customize for presentations or demonstrations. Staff are currently working to implement the project as directed by the Town Council at the June 9, 2020 meeting.

Orange County Climate Council

- *Policy Connections:* CCAP Community Integration Recommendation #2: Community Integration Recommendation #2: Expand Public Partnerships to More Explicitly Consider Climate Action.

The Town Environmental Sustainability Coordinator, Town Council Member Sammy Slade, and

Carrboro at-large representative Kathy Kaufman have attended monthly virtual meetings of the Orange County Climate Council throughout 2020. The Council is currently working to finalize plans for a virtual public event on October 22 at 7:00 pm. At the event, Council members will introduce themselves to the public and present subcommittee work on a climate action reporting database, communication, and climate policy. There will also be a question and answer session for the public.

Building Energy Efficiency Measures

Energy Efficiency Revolving Loan Fund (EERLF)

- *Policy Connections:* Buildings Recommendation #1, #2: Reduce Emissions Attributed to Carrboro Buildings by 50% by 2025; Energy Audit/Performance Rating; Community Integration Recommendation #4, #6: Integrate Climate Action with Local Living Economy; Facilitate Low Cost Financing for Energy Efficiency and Renewable Energy Projects

Town staff are currently working to discuss how this program can be utilized moving forward as outlined in the FY20-21 Environmental Sustainability Work Plan.

Transportation

Volkswagen (VW) Settlement Phase 1 – Diesel and Bus Program

- *Policy Connections:* ECPP Goals; CCAP Transportation Recommendation #1: Reduce Greenhouse Gas Emissions from Motor Vehicle Use by 50% by 2025.

In September 2019, Town staff submitted a proposal for two newer, more-efficient diesel refuse trucks and two compressed natural gas vehicles as part of a pilot project with Orange Water and Sewer Authority (OWASA) for a potential biogas-to-fuel project. In July 2020, staff were notified that the Town was not chosen as a recipient for funding in Phase 1. Staff will discuss the possibility of applying for funds during Phase 2 of this program and will also examine other funding opportunities to reduce emissions from the municipal fleet.

Transportation Demand Management (TDM) Grant

- *Policy Connections:* CCAP Transportation Recommendation #4: Further Promote Walking, Biking, Transit

The Center for Advanced Hindsight partnered with the Town to submit a proposal to the Triangle J Council of Governments (TJCOG) Transportation Demand Management (TDM) Program to design welcome packets for Carrboro residents outlining alternative transportation options to reduce single-occupant vehicle (SOV) trips.

In May 2020, Town staff were notified of the proposal's status by the Center for Advanced Hindsight. The proposal's funding request was approved, however, the TDM funding is currently

not available due to the NC Department of Transportation's need to reconsider funding allocations due to the impacts of COVID-19. The Center for Advanced Hindsight will notify staff when more information is available and whether the funding will be available this year.

Land Use Ordinance Amendments –Electric Vehicle (EV) Charging Stations

- *Policy Connections:* Reduce GHG Emissions from Motor Vehicle Use by 50% by 2025.

Staff are currently working to draft amendments to the Land Use Ordinance to incorporate the EV charging station requirements for parking lots proposed by the EAB. These amendments were included in the January 2020 ECPP and CCAP Implementation Update presented to the Town Council. Staff will work to bring the draft amendments to the Town Council for approval.

Ecosystem Protection and Enhancement

NC Urban Forest Council Grant

- *Policy Connections:* Ecosystem Recommendation #4: Tree Preservation, Protection and Conservation; Ecosystem Recommendation #6: Pursue Watershed Restoration Actions to Protect Local Streams from Changes in Rainfall Due to Climate Change

In May 2020, Town staff applied for a grant from the North Carolina Urban Forest Council Legacy Tree Fund to plant trees and restore the riparian buffer of an intermittent stream in Anderson Park. In August, staff were notified that the NC Urban Forest Council had chosen to fund the project. Through this project, the Town will host volunteer events to plant trees as part of a larger-scale project to create pollinator habitat, improve water quality, install stormwater control measures, and provide education and outreach to Carrboro residents.

Restoring the riparian buffer on the stream will create habitat for pollinators and other wildlife. The Town plans to increase the tree canopy and fulfill Bee City USA commitments using trees planted with this funding.

This project will also address stormwater concerns in Carrboro. Trees along the intermittent stream will slow overland flow and improve infiltration, which will help reduce flooding downstream. The Town also plans to expand this project by incorporating additional stormwater control measures, including a dissipation pad and to slow the flow of storm runoff. The stream within the project area falls within the University Lake watershed. University Lake is one of the primary water supplies for Carrboro residents. Restoring the riparian buffer will filter pollutants and nutrients entering the lake and reduce water treatment needs.

By sequestering carbon and restoring the stream's riparian buffer, the trees planted with this funding will help Carrboro reach the climate action and ecosystem protection goals outlined in the CCAP to conserve trees, increase the Town's tree canopy, and pursue restoration projects along local streams from changes in rainfall due to climate change.

Public education and outreach about the benefits of trees and their role in providing ecosystem services will be a significant focus of the project. The site will contain interactive outreach stations and opportunities for Carrboro residents to collect data as citizen scientists. Staff will create informative signs to describe the benefits of trees and the ecosystem services they provide. Signs will discuss topics including water quality buffers and pollinators. Staff also plan for the outreach to include an interactive element involving citizen science and photographs.

Bee City USA

In March 2020, Town staff worked to finalize the Town's annual accomplishment report for 2019 and renew the Town's participation in the initiative for 2020. In June 2020, Town staff organized a free virtual screening of the film, *The Flight of the Butterflies* to celebrate National Pollinator Week.

Invasive Species Volunteer Events

- *Policy Connections:* Ecosystem Recommendation #5: Improve Regulations and Community Capacity to Discourage Invasive Plants and Encourage Native Plants

To continue this projects momentum, the Town Environmental Sustainability Coordinator worked to coordinate a large invasive species removal volunteer event in Wilson Park in February 2020. These events were temporarily halted in March due to COVID-19 precautions. In June, Town staff began to work with small, socially-distanced groups in the Adams Tract in Wilson Park to continue removing invasive species while following COVID-19 precautions. Staff have continued to supervise these small meet-ups once month since June and hope to continue through the fall.

Composting Bin Sales

- *Policy Connections:* Ecosystem Recommendation #3: Accelerate/Expand Organic Waste Collection/Composting

Town staff are working to launch sales of composting bins. Carrboro residents will be able to purchase compost bins by mailing an order form and check to Town Hall and staff will provide contactless bin delivery. Staff will work to provide additional purchasing options, including in-person purchasing, when COVID-19 precautions no longer need to be in place.

Managed Natural Landscape Ordinance

- *Policy Connections:* Ecosystem Recommendation #5: Improve Regulations and Community Capacity to Discourage Invasive Plants and Encourage Native Plants

Town staff are currently working on continued revisions on a draft of amendments to the Town Code to allow for managed natural landscapes. Managed natural landscapes offer critical wildlife habitat, result in decreased use of petroleum-based fertilizers and pesticides, more effectively capture stormwater runoff, and reduce the heat island effect. The draft will be presented to the

Town Council in Fall 2020.

Food Choice Measures

CCAP Survey

- *Policy Connections:* CCAP Food Choice Recommendation #2: Develop Local Dietary Consumption and Associated GHG Profile

During Fall 2019, a research team worked to interview 400 Carrboro residents over age 18 for the Town's first CCAP Survey. The research team analyzed the data and provided results to the Town in March 2020. The final report, including cross-tabulated data, is provided as Attachment F.

Build Dietary Greenhouse Gas (GHG) Emissions Profile

- *Policy Connections:* CCAP Food Choice Recommendation #2: Develop Local Dietary Consumption and Associated GHG Profile

The Town Environmental Sustainability Coordinator is working with Ms. Chrissie Schalkoff, a Doctoral Student at UNC Gillings School of Global Public Health and member of the EAB, to build the Town's dietary GHG emissions profile using data from the CCAP survey.

This profile will allow the Town to begin benchmarking and tracking progress towards emissions-reduction goals. The Environmental Sustainability Coordinator and Ms. Schalkoff are also working to develop outreach material to educate Carrboro residents about dietary choices and related GHG emissions. The educational material will compare the emissions from consumption of different types of food and will provide residents with specific, measureable ways to reduce personal dietary emissions by consuming different food types or selecting organic or local foods.

After completing the profile, staff will move forward with guidance from the FY20-21 Environmental Sustainability Work Plan to hold events to promote plant-based food choices in Carrboro and hire an intern to support the Environmental Sustainability Coordinator with management of the Green Neighborhoods Program and assist with the organization, coordination, and promotion of the food choices events and outreach program