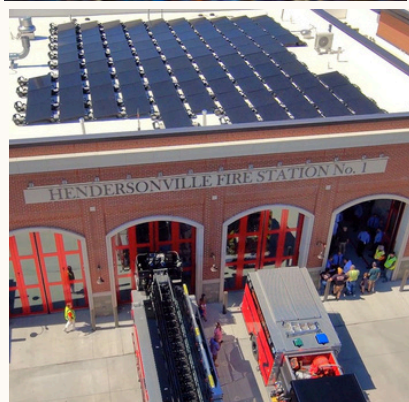
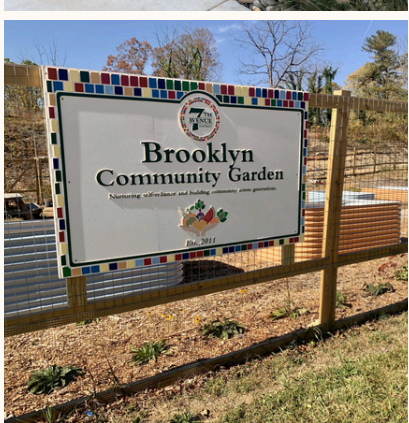


# CITY OF HENDERSONVILLE

## Sustainability Strategic Plan Annual Report



# 2023-2024



# Introduction

This report highlights the 2023-2024 progress made towards the City of Hendersonville's Sustainability Strategic Plan, adopted May 1, 2024 by City Council. The plan outlines actions within the focus areas of energy, transportation, waste management, land management and water to reach our goal of reducing greenhouse gas emissions by 30% by 2035. The plan includes five goals and 14 measurable actions. The plan is also meant to be a working document and kept updated as priorities, funding, and technologies change.

The City of Hendersonville has come a long way in advancing sustainability efforts with a few highlights including: approving a biosolids thermal dryer for wastewater treatment, installing a building automation system at City Hall, and the City's first on-site solar array. Multiple studies and test pilots were also completed to better analyze potential cost benefit and assist in implementation. A few examples include analyzing City building energy intensity and completing a propane vehicle test pilot.

What follows throughout this report is an account of what actions were taken to progress towards the City's greenhouse gas reduction goal while showing what to anticipate - and get excited for in the coming year.

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# Energy



**Goal:** Reduce energy demand from municipal buildings & increase amount of renewable energy utilized

## Highlights:

**\$13,500**

In Duke Energy rebates for energy efficiency projects



Solar projects: 1 installed and 1 approved

**500 kW**

Energy saved through new automation system at City hall

### Actions

### Progress

**Achieve 10% Energy Savings from Efficiency Upgrades**

#### **Building automation system at City Hall**

Initial cost: \$18,876

Rebate: \$11,176

Initial savings: \$4,607 (first 6 months of system)

#### **Insulation at fleet washbay**

Initial cost: \$10,740

Rebate: \$2,301.20

Initial savings:

#### **LED lighting at Whitmire Building**

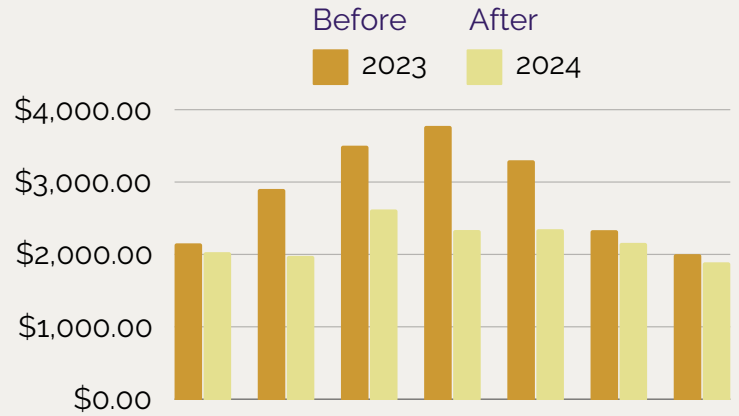
Initial cost: \$

Rebate: \$

Initial savings: \$

## City Hall Building Automation System

Within the first 7 months, compared to the same months a year prior before the system was installed, total electricity costs dropped by 23%.



## City Building Energy Use Intensity Benchmark

As part of strategizing what energy efficiency projects to implement, the City had an energy benchmark report completed to show how our buildings rank in terms of Energy Use Intensity (EUI). EUI is calculated by dividing the total energy consumed by a building by the total square feet of floor area per year. This shows how efficient a building is using energy. The lower the EUI, the more energy efficient the building is. The chart to the below shows how each building ranks from highest to lowest EUI. Overall, Hendersonville's buildings absorb less than the national average for energy with the exception of City Hall and the Police Department. These are two buildings that future funds should be devoted towards for energy efficiency improvements.

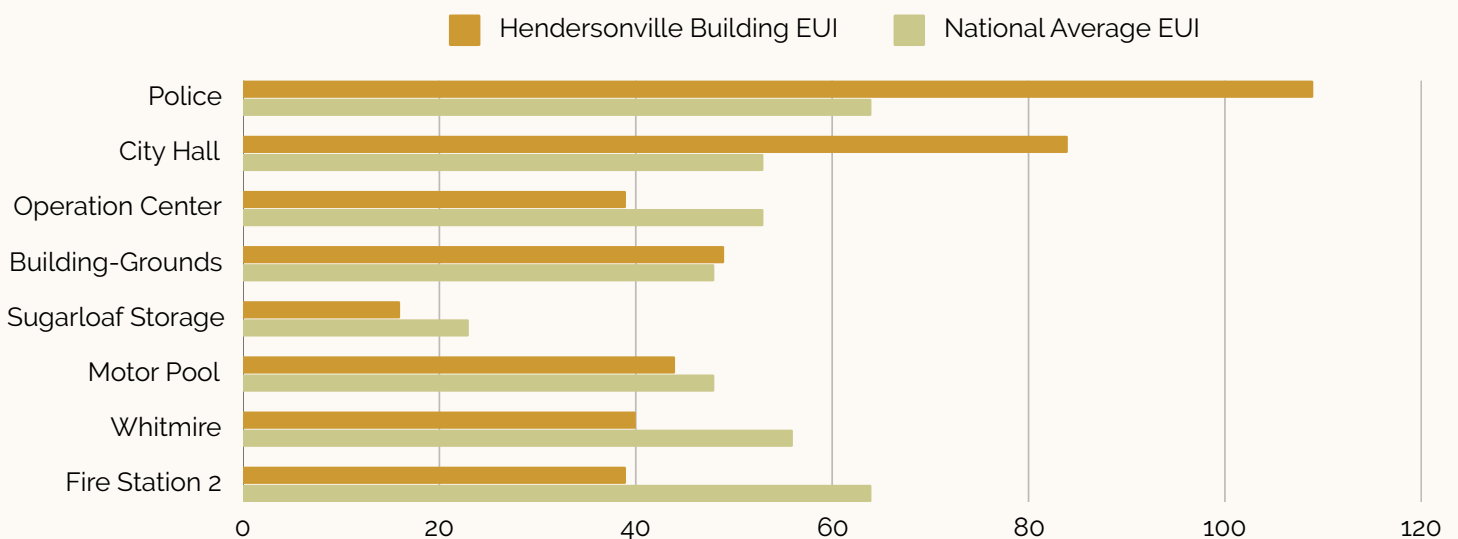


Figure 1: EUI of City of Hendersonville buildings against natural average EUI



## Actions

## Progress

### **Establish sustainable building policy**

Hendersonville's first Sustainable Facilities Policy, R-24-31 was approved by City Council May 2, 2024. The policy includes requirements for all new construction and renovation ranging from electric vehicle ready parking lots and solar capabilities, permeable pavement, LED lighting, HVAC equipment, and more.

To view a full copy of the Sustainable Facilities Policy, visit \_\_\_\_\_.



### **Receive 30% of electricity from renewable energy sources.**

The City's first solar installment was completed July 2024 which will create an estimated 48,000kWh of renewable energy each year.

A second rooftop solar installation was approved for the new Water & Sewer biosolids dryer facility slated to be completed in 2025 which will create an estimated XXkWh of renewable energy each year.

For more information on current and past energy efforts, please visit [hendersonvillenc.gov/sustainability/energy](https://hendersonvillenc.gov/sustainability/energy).



# Transportation



**Goal:** Transition to electric and low emission vehicles and fuel while ensuring there is a robust and safe walkable and bikeable city.

## Highlights:

**8** Metric tons of greenhouse gas emissions reduced from the 6 City owned public electric vehicle parking spaces

**32%** Average cost savings from switching to hybrid or propane for City vehicles

### Actions

### Progress

**Increase amount of Level 2 EV charging stations both publicly & for municipal operations**

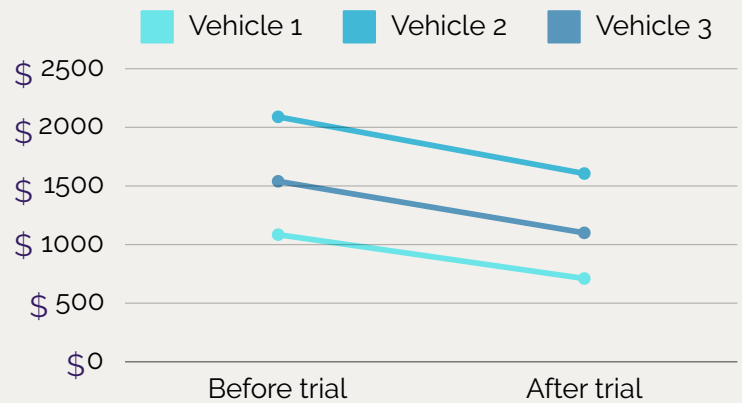
Currently, grant opportunities are being pursued to provide more charging stations for the community. One charging station is available for City fleet vehicles, installed this year with 8 electric vehicle parking spaces available for public use.

**Reduce City fleet fuel usage by 40%**

The City has tested alternative vehicles including hybrid, electric, and propane fueled which have shown significant cost savings ranging from 39-50% for police pursuit and Water & Sewer vehicles. Currently, the City is focusing on incorporating more energy efficient vehicles for administrative uses while considering a formal sustainable fleet transition policy.

## Propane Vehicle Pilot

This year, the City participated in a propane vehicle pilot program. Three vehicles, two from our Water & Sewer Department and one from our Police Department participated with vehicles upfitted with a propane tank. Over the course of five months, vehicles saw a decrease in fuel cost ranging from 29%-34% resulting in significant savings.



### Actions

### Progress

#### Implement alternative transportation plans

#### Committee assembled

This year, the City formed a Bicycle and Pedestrian Infrastructure Staff Committee with a goal to advance the implementation of Bicycle & Pedestrian Infrastructure in the City of Hendersonville.

#### 7th Ave Streetscape Project

The Seventh Avenue Streetscape Project, completed in December of this year is an investment in pedestrian, water, sewer and stormwater infrastructure, lighting and landscaping in the business district. It aims to improve walkability, improve connections to the Main Street Municipal Service District, and highlight the character of the historic district.

#### Sidewalk improvements

As of August 2023 which is the most recent sidewalk inventory recording, the City of Hendersonville has installed approximately 340,000 linear feet or 64 miles of sidewalk within City limits.

For more information on current and past energy efforts, please visit [hendersonvillenc.gov/sustainability/transportation](https://hendersonvillenc.gov/sustainability/transportation).

# Waste Management



## Goal:

Reduce the amount of solid waste sent to the landfill through recycling, composting, and other waste reduction efforts

## Highlights:

**\$40,000**

Waste reduction grant awarded

**1st**

Compost demonstration station and pilot drop off location created



### Actions

### Progress

**Decrease City-wide Solid Waste by 15%**

Delayed - Earlier this year, the City received a grant from the N.C. Department of Environmental Quality to install RFID tags to improve data collection on recycling and contamination rates so that the City is able to improve educational efforts to curtail waste. Due to Hurricane Helene, this grant is postponed until spring/summer 2025.

**Establish City compost initiatives**

Compost demonstration site and pilot drop-off

The City's Environmental Sustainability Board spearheaded the creation of the first Sustainability Demonstration Station located on Maple St. The station hosts multiple different compost bin systems and is a small-scale compost drop-off location.



## Stream debris collection

Two stream debris pickup events were hosted by the City's Stormwater Division which resulted in XX pounds of trash removed from our waterways.



### Actions

### Progress

**Reduce biosolids landfill waste by 67%**

Ongoing - City Council approved construction of the biosolids thermal dryer system for wastewater treatment in November of this year with an estimated construction to start in fiscal year 2025.

Total solid waste tonnage per year has remained fairly consistent for the last 4 years with 2924 solid waste disposal coming to 5,845 tons.

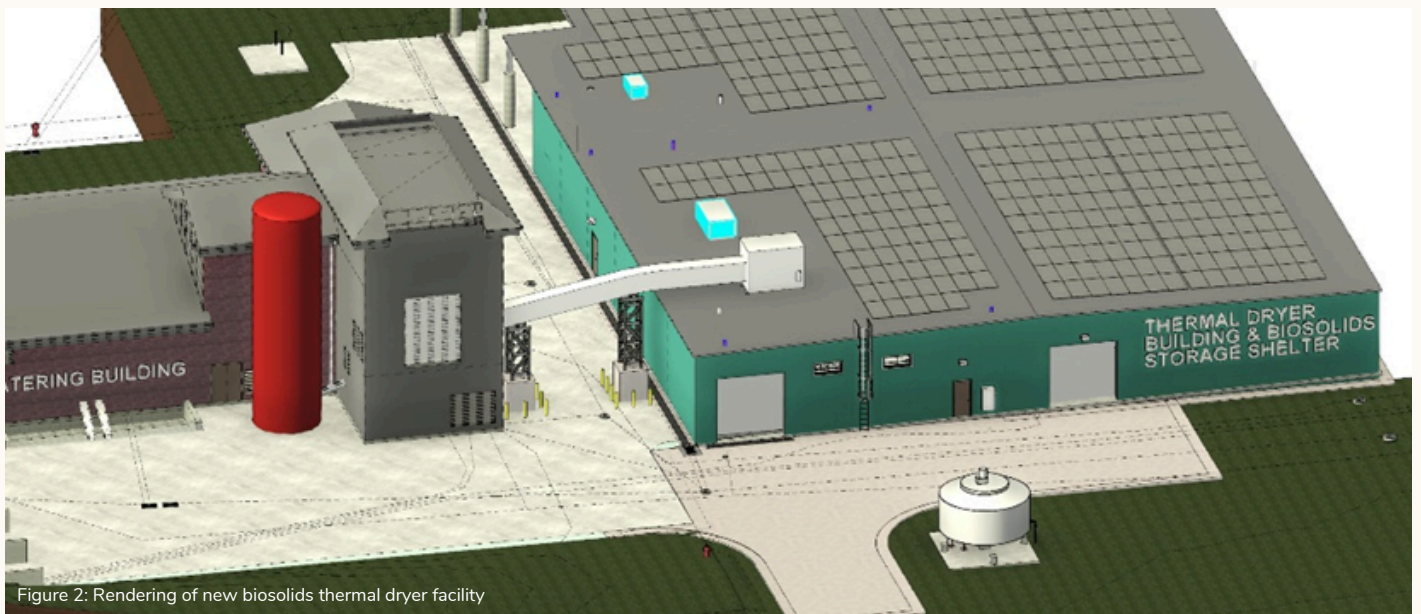


Figure 2: Rendering of new biosolids thermal dryer facility

For more information on current and past energy efforts, please visit [hendersonvillenc.gov/sustainability/waste-management](https://hendersonvillenc.gov/sustainability/waste-management)

# Land Management



## Goal:

Increase and enhance Hendersonville's green spaces while improving tree canopy cover, protecting biodiversity, promoting outdoor recreation, and improving the overall health and character of our City.

## Highlights:

- 10** Years as a Tree City USA member
- 6** Years as a Bee City USA member
- 1** Years as a Caregivers of Mother Earth member

**\$50,000**

In grant and City funds devoted to the Brooklyn Community Garden

### Actions

### Progress

Increase tree canopy on City property to 50%

Maintain and expand Citywide tree canopy

Adopted earlier this year, the amended Tree Canopy Ordinance establishes additional requirements for the protection of street trees within the City limits. In addition, the City's Tree Board donated 62 to various residential properties in an effort to increase the City's tree canopy community-wide.

Build on existing efforts to reduce pesticide & herbicide use

At this time, the City remains diligent in utilizing pesticides and herbicides only when necessary and is primarily used for sidewalks and invasive species. Natural methods of weed maintenance includes using mulch and hand weeding. The City also continues to encourage reducing herbicide use by offering free mulch pickup in the spring for residential use.

## Actions

## Progress

### Enhance & restore City-owned natural areas and parks

### **Pollinator Planting, wildlife habitat improvements & Invasive species removal**

- Approximately 100,000 square feet of invasive species removal including a project on Ridgeview Drive and Patton Park;
- ¼ acre pollinator garden on Four Seasons Boulevard;
- Continuation of garden maintenance for Bearcat Loop, downtown pollinator beds, and Oklawaha Greenway pollinator beds; and
- Sponsored creation of Brooklyn Creek Bird Sanctuary

### **Brooklyn Community Garden**

What started as a small community garden in 2011 by a few dedicated community members and the City of Hendersonville has grown into a project which has gained more than \$50,000 in City and grant funds for an expansion and revitalization. Progress this year included grading, fencing, garden beds, including ADA beds, landscaping, and more. Estimated groundbreaking will be held spring 2025.



Note: Reports are available for more details on Tree City, Bee City, and Caregivers of Mother Earth commitments. For more information, please visit [hendersonvillenc.gov/sustainability/land-management](https://hendersonvillenc.gov/sustainability/land-management)

# Water



**Goal:** Ensure safe and reliable drinking water supply for all citizens while preserving and protect natural aquatic resources.

## Highlights:

**18,761**

Gallons of water/year saved in water conservation rebates

**300**

Pounds of trash collected through stream cleanups

**\$1.4 million**

In stream restoration grant funds awarded

### Actions

### Progress

**Increase water efficiency in all buildings and infrastructure**

The City rolled out a new water conservation rebate program to offset the cost to our customers for choosing a more energy efficient toilet, dishwasher, washing machine, and customer side shut off valve. Since the program started back up in July 2024, we have given \$3,800 in credits and are saving an estimated 13,601 gallons of water/year in washing machine rebates and 5,160 gallons of water/year in dishwasher rebates.

**Protect and enhance the water quality of the City's streams and wetlands**

#### **Green infrastructure on 7th Ave**

- Bioswales included which are shallow ditches that collect, filter, and direct stormwater for reduced erosion
- soil cells included which are systems that provide space for tree roots to allow proper water filtration

#### **Outreach efforts**

330 students participated in educational program  
8 new educational signs installed throughout City  
30 stream cleanups  
73 staff members trained on stormwater management

For more information on current and past energy efforts, please visit [hendersonvillenc.gov/sustainability/water](https://hendersonvillenc.gov/sustainability/water).



# What's next?

# 2025 projects

## Transportation

Upcoming projects include investigating additional building automation systems at City buildings, headway on biosolids dryer solar installation, and other energy efficiency projects.

## Land Management

Upcoming projects include investigating additional building automation systems at City buildings, headway on biosolids dryer solar installation, and other energy efficiency projects.

## Water

Slated for the new year is construction of a rainwater harvesting system at fleet maintenance which is estimated to save more than \$1,302-\$3,472/year. Plans are underway for the Lower Mud Creek Floodplain restoration, submitted for approval. This project will include 2000+ linear feet of stream restoration and construction/restoration of 8+ acres of wetlands,

## Energy

Upcoming projects include investigating additional building automation systems at City buildings, headway on biosolids dryer solar installation, and other energy efficiency projects.

## Waste Management

Work will begin on the Department of Environmental Quality waste reduction grant analyzing recycling rates and curtailing contamination rates

Expansion of composting programs and opportunities



Want to learn more? Visit us online at  
[hvlnc.gov/sustainability](http://hvlnc.gov/sustainability)



Energy



Transportation



Waste Management



Land Management



Water