

Sustainability Department Update

May 2024

Sustainability Department

The City of Winston-Salem's Sustainability Department is committed to fostering sustainability by integrating social, environmental, and economic considerations into the City's daily practices. We define sustainability as the harmonious balance between these three pillars to guide the City's efforts to enhance quality, livable communities; create a healthy environment; and expand engagement within the community. We strive to serve as a role model to other departments, residents, and businesses and serve as a catalyst to inspire sustainable actions. Our focus areas encompass improving energy efficiency and the community's climate; developing food resiliency strategies; coordinating community beautification programs and enhancing green spaces. Through performance indicators, we aim to transparently illustrate our progress and inspire collective action toward a more sustainable future for the citizens of Winston-Salem.

Energy

City's Energy Use and GHG Emissions

SUSTAINABILITY	Actual CY 2021	Actual CY 2022	Estimated CY 2023	Projected CY 2024
Total City Carbon Dioxide Output (Excluding Utilities Department) - Tons Using 2.1 lbs/kWh	63,754	64,875	63,990	61,000
Total City Carbon Dioxide Output – Utilities Department - Tons Using 2.1 lbs/kWh	89,528	89,030	86,706	86,000
Total City Carbon Dioxide Output (Excluding Utilities Department) - Tons Using Duke's actual 0.8 lbs/kWh	36,512	37,044	36,777	36,100
Total City Carbon Dioxide Output – Utilities Department - Tons Using Duke's actual 0.8 lbs/kWh	40,283	39,553	38,044	38,000

GHG emissions the past ten years have remained somewhat consistent with a significant reduction during Covid due to reduced facility and vehicle use. A return to pre-covid levels resulted in 2023 and emissions were increased slightly due to the new in-house recycling plan requiring increased vehicle fuel use.

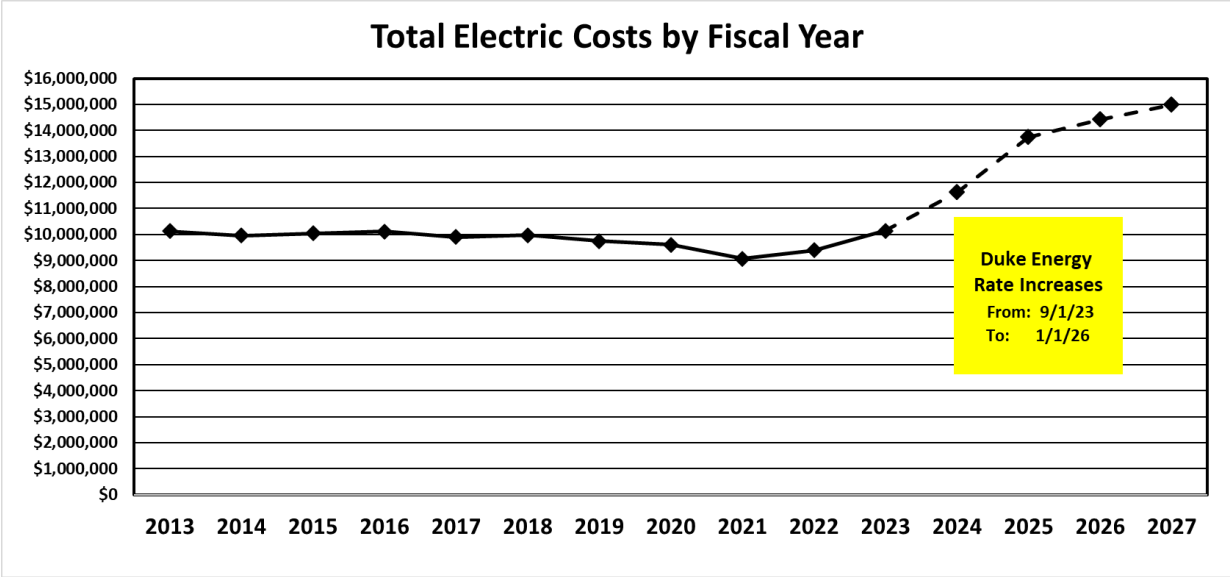
The City’s GHG emissions are being positively impacted by CO2 emissions reductions by Duke Energy which is providing the cleanest electricity in their history. The chart above shows the difference in the calculation based on these changes.

Total city-wide GHG emissions were reduced in 2023 and will be reduced in 2024 because the BioSolids Dryer is currently off-line (November 2023 through late 2024). GHG emissions levels will increase once the BioSolids Dryer begins using more natural gas; however, city-wide emissions in 2025 should be lower than previous years as a result of the streetlight conversion to LED’s; a full year’s use of the Solar PV system at Stuart building and a reduction of vehicle fuel consumption as the vehicle fleet becomes more efficient due to the purchase of hybrid and electric vehicles.

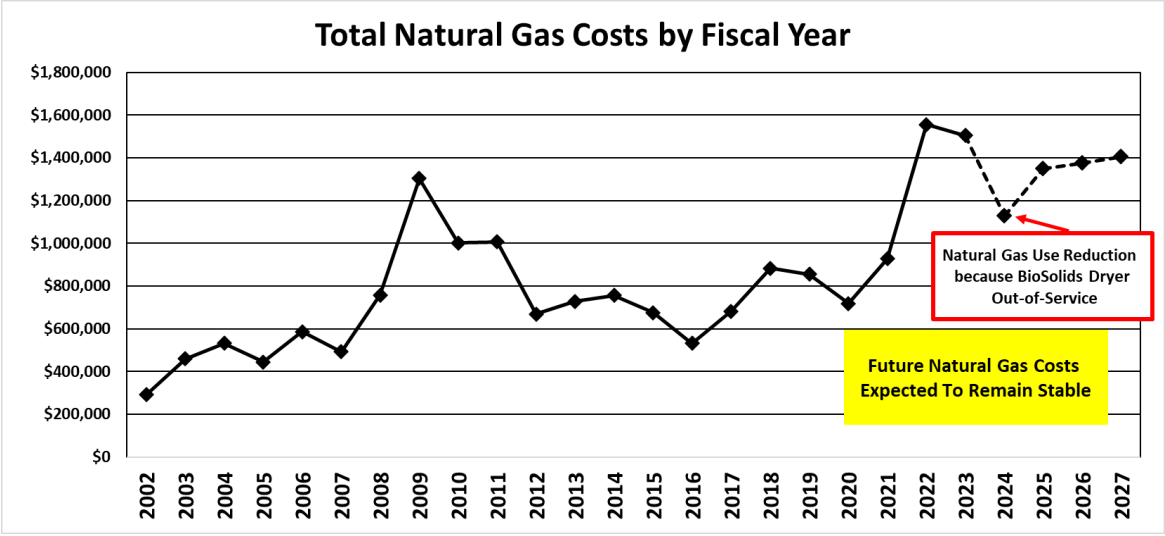
City’s total electric use the past ten years has ranged between 110 and 119 million kWh’s per year and was 115.6 million kWh in 2023.

City of Winston-Salem Electricity Use (kWh)				
Description	Before LED Upgrade		After LED Upgrade	
	Annual KWH	Percent of Total	Annual KWH	Percent of Total
DOT- Street Lights provided by Duke	19,394,270	16.6%	9,282,600	8.7%
Non-Utilities	21,503,880	18.4%	21,503,880	20.2%
Utilities	75,765,074	64.9%	75,765,074	71.1%
TOTAL	116,663,224	100.0%	106,551,554	100.0%

Streetlighting required 19 million kWh’s or 16% of the total electricity. Sustainability coordinated with City Manager’s office, Budget and DOT on a plan for Duke Energy to upgrade all streetlights to LED’s which will reduce streetlight energy by half. Upgrading to LED streetlights will reduce the City’s total annual electric use below 107 million kWh’s which will be a reduce the City’s total electricity requirements by 8.5%.



City’s total electric costs were under \$10 million from FY17 to FY22 and reached \$10.1 million in FY23. Duke’s extraordinary rate increases from September 2023 through January 2026 will increase the City’s total electric costs to \$11.5 million in FY24. The increases are primarily the result of Duke’s plans to close all remaining coal-fired power plants, improve the overall power system and increased natural gas fuel costs.



City’s total natural gas costs were generally less than \$1 million/year before dramatic cost increases in FY22 which increased annual costs to \$1.5 million. Natural gas costs have stabilized and annual costs are expected to remain below \$1.3 million/year with a possibility of further reductions due to increased domestic supply and improved transmission capacity into North Carolina.

Total natural gas use was 1,365,000 therms in 2023, with Utilities responsible for 73% of the consumption. 2024 consumption will be under 1 million therms; however, these reductions are mainly attributable to the Regional BioSolids Dryer being off-line since November 2023. Natural gas usage will

return to higher levels in 2025 after the Dryer is repaired. (Currently all sludge is being transported to the Hanes Mill Road landfill via multiple daily trips.)

Solar PV on Bryce A. Stuart Building

In December 2023, Renu Energy installed a 70 KW solar PV system on the roof of the BAS building. The project is expected to produce 140,000 kWh's and save 6% of the building's annual electric energy and cost.



The project total cost was \$241,800, but the City received a \$52,500 Duke Energy rebate and will receive a 30% credit from the Inflation Reduction Act. In addition, the City applied for a 10% low-income community bonus; however, it was not granted. The total after these reductions is expected to be as low as \$108,320.

Fleet

In March 2024, Utilities was able to put the first Ford e-Transit van on the road in time for the Clean Fleet Demonstration Day held at the Fairgrounds. Utilities added an EV Charging station at the Manson Meads facility.



In April 2024, Finance Committee approved the purchase order of three Ford F-150 Lightning pick-up trucks to be used by Streets and Stormwater. 15 hybrid sedans were approved to add on to the eight currently in the City's fleet. Four hybrid Ford F-150s trucks will be used by the fire department.

Utilities and the Sustainability Department worked with Marketing and Communications to develop a logo for EV vehicles that will be affixed with the City's/Utilities logo.

Staff is working to install EV charging locations for the current electric vehicle order and planned purchases at City Yard, Fleet, and City Hall locations.



EECBG

The City received an Energy Efficiency and Conservation Block Grant award in March 2024 for four EV vehicles and three EV charging stations. The total grant award is \$274,010.

EDF Climate Fellow

The City received an approximately \$10,000 grant from the Environmental Defense Fund (EDF) to partially fund a summer position to aid Fleet and Sustainability in creating an EV Fleet Charging Infrastructure Plan. The fellow will work for the City for 10 weeks and provide a report of recommendations.

Greenspaces

Through the efforts of Keep Winston-Salem Beautiful, efforts for Bee City USA, the Sustainability Department, Recreation and Parks Department, Vegetation Management, and the efforts of 1,100 volunteers and partners, the City of Winston-Salem has contributed to positive habitat creation and/or management of 89.5 acres.

- 23,000 sq ft – KWSB Flower Bed Program & Vegetation Management Flower Beds
- 300,000 sq ft – KWSB Flower Bulb Give away – estimate 5 bulbs per sq ft. 1,500,000 bulbs donated in 2023. Bulbs are distributed across Winston-Salem and to neighboring cities (Greensboro, High Point, Rocky Mount NC).
- 1,900 sq ft - Bee City Pollinator Beds
 - 2 beds at Washington Park (10 X 20 sq foot)
 - 2 beds at Reynolds Park (25 X 30 Sq foot)
- 3,565,640 sq ft – Parks & Recreation habitat spaces
 - Long Creek Conservation Easement Meadow (75 acres – 3,267,000)
 - Pollinator Garden at Quarry Park (1 acre – 43,560 sqft)
 - Pollinator Garden at Washington Park (4 acres – 174,240 sqft), Pollinator Garden at Historic Bethabara Park (1.5 acres – 65,340sqft)
 - Flower Bed Gardens at Sedge Garden & William Anderson Centers (15,500 sqft)

Natural Landscape Area Ordinance

March 4, 2024, City Council approved an update to the Natural Landscape Area that reduced the required setback from 20 feet to 5 feet in addition to removing the restriction for the maximum size of the natural landscape area. Additions to the ordinance included a registration procedure for residents that that will add their resident to a GIS map. Once approved, code enforcement is able to use the GIS map to identify participating yards. Once registered, residents receive one free sign to identify the yard while educating neighbors.



Second Street Park

In connection to the Natural Landscape Area Ordinance (NLAO), volunteers have come together to build a demonstration native landscape garden at Second Street Park. This work is being funded by Forsyth Audubon, who donated \$3,500 for plant materials. Bashavia Gardens and Matthew Mayers are donating the expertise and labor to install and maintain the garden. The garden will demonstrate a positive way for residents to garden while providing an additional pollinator, native space.



Meadow at Happy Hill Park

This summer, Vegetation Management will begin killing the grass on approximately one acre of grass between Happy Hill Park and the Salem Creek Greenway in order to plan for the City's first wildflower meadow. The meadow will be planted in the spring of 2025. It has been planned in conjunction with Recreation and Parks, Vegetation Management, and Forsyth County Agricultural Extension Office. This project extends the chain of parks along the greenway with pollinator spaces that includes Washington and Grant Parks.



Food Resilience

Hydroponics

H.O.P.E. of Winston-Salem was awarded the contract for the Kimberly Park Hydroponic Farm effective July 28, 2023. In the first month of operation, the team deep cleaned the facility, prepared soil and beds, and participated in hydroponic training, and began seeding. By the end of December, the facility produced 1,341 pounds of food, with their first harvest near Thanksgiving. In Q1 of 2024, they produced 1,998 pounds of food and planted 16,346 seeds. The value of food for Q1 alone was \$10,337.79, which H.O.P.E. of Winston-Salem uses to feed 445 families on a weekly basis.



In addition, H.O.P.E. and the facility have hosted a variety of tours including H.O.P.E. Cooking Class instructors, the Forsyth Food Chats Group, and the Master Gardener Association of Forsyth County.

Liberty Street Food Market

In 2023, the Liberty Street Farmers Market operated a total of 11 market events on Tuesday afternoons.

LIBERTY ST. URBAN FARMERS MARKET

Dates of Operations in 2023

Every Tuesday from 2PM-4PM | Closed July 4th and August 8th

June 6th, 2023	June 27th, 2023	July 25th, 2023	August 22nd, 2023
June 13th, 2023	July 11th, 2023	August 1st, 2023	
June 20th, 2023	July 18th, 2023	August 15th 2023	August 29th 2023

The Market included a \$5 per customer match for SNAP/EBT program users to create an incentive program to shop at the market. While the program provided \$60 in matched funds in 2022, in 2023, the program was not used.

Unfortunately, despite increased programming, including family activities and live music, the Market continued to face challenges. The most any one vendor reported earning during the whole season was \$450 for an average of \$25/market. Therefore, City Management made the decision to cancel the market for the 2024 season.

Triad Food System Symposium

The Food Resilience Coordinator co-planned “Cultivate Resilience” A Triad Food System Symposium in September 2023. The event convened stakeholders from North Carolina's Piedmont region to discuss building resilient food systems.



Organized by the Piedmont Triad Regional Food Council and the City of Winston-Salem Urban Food Council, the event aimed to enhance collaboration between local growers and communities. Findings emphasized the pivotal role of food hubs as a convener for local and small-scale growers goods, ensuring products are effectively aggregated and overall providing greater capacity to grow economic value by streamlining logistics for institutional buying. Discussions included supporting local growers, addressing barriers such as logistical challenges, funding limitations, and the need for inclusive strategies to prioritize BIPOC, women, and rural communities in developing resilient food infrastructure.

Food Resilience Planning Project

Beginning in January, the Sustainability Department began to prepare for data collection for Food Resilience Planning. The goal of the project is to better understand the food assets and gaps in Winston-Salem. In addition, the project is examining residents' experiences and needs in its food deserts while also considering the case for food resilience during possible hazard situations.

The base process is based on a tool for municipalities to do this type of planning from John Hopkins University. This base process includes gathering partner information from all stakeholders in food work in the City. We began with a form to gather our partners in March: [Community Partner Assessment Survey – City of Winston-Salem Food Resilience Asset Mapping](#)

In May and June, we will be using Forsyth Food Chats and the Piedmont Environmental Alliance Roundtable as spaces to gather partner feedback. In addition, there will be one online roundtable in June. Based on the data collected in these meetings, we will prepare a follow-up survey for partners to clarify particular areas of work.

In addition to the partner piece, the department has added a resident outreach section. The department launched an online survey April 20 at Earth Day. The survey is available at <https://wsfoodsurvey.mysocialpinpoint.com>, and will be collecting data until the end of June. It includes questions about where people currently get groceries and what challenges they may face. It also asks some questions regarding solutions that other communities are using. There is a map where people can drop pins to locate where they think resources should be located.

In addition to the online survey, there will be residential community meetings in 3 locations within the food desert areas, one in City Hall, and a last one online.

Wake Forest University has granted us two summer interns, which the university will pay a stipend for, who will be assisting the department with the work of food resilience and sustainability.



CITY OF WINSTON-SALEM
DEPARTMENT OF SUSTAINABILITY
RESIDENT FOOD RESILIENCE SURVEY &
COMMUNITY MEETINGS

Are you a Winston-Salem Resident? The City needs your feedback! Let us know where and how you access groceries. What is important to you about food resources?

Scan the QR Code or visit
wsfoodsurvey.mysocialpinpoint.com



June 14th at 4PM at Hanes Hosiery Community Center
June 20th at 12PM at Rupert Bell Neighborhood Center
June 26th at 7PM at Sprague Street Park Community Center
July 11th at 6PM at City Hall Committee Room
July 15th at 5:30PM - VIRTUAL over Zoom



Winston-Salem

Visit the City of Winston-Salem website for more information at www.cityofws.org/870/Sustainability

Our hope is to have a report ready by September.