FAIRFIELD SUSTAINS

QUALITY OF LIFE ▸ ▸ ▸ ENVIRONMENT & NATURAL RESOURCES ▸ ▸ ▸ ECONOMIC VITALITY

SUSTAINABILITY ACTION PLAN

EXECUTIVE SUMMARY

FAIRFIELD SUSTAINS

EXECUTIVE SUMMARY

The City of Fairfield has developed this Sustainability Action Plan to ensure that Fairfield is maximizing its resources in a way that provides efficiency in City operations now and in the future. This Plan, 'Fairfield Sustains', will serve as a comprehensive roadmap for addressing environmental, economic, and liveability considerations in the City, and will be a catalyst for quality of life improvements for all residents. The Plan considers elements such as energy usage in the community, open space preservation, resource protection, and economic sustainability initiatives.

The City of Fairfield has made significant strides toward becoming a more sustainable community. Sustainability is already embedded in many aspects of municipal operations and community planning. Fairfield Sustains both acknowledges this foundational work and offers a renewed commitment to the continuation of these practices as a core aspect of Fairfield's future identity and ongoing approach to city planning. The Plan offers an ambitious vision as a City with sustainability as a core contributor to overall quality of life for Fairfield's residents, businesses and visitors, and aligns with sustainability policy goals outlined in integral planning documents including, Fairfield Forward (the City's current Comprehensive Plan), and Fairfield Connects (the City's current mobility and transportation connectivity plan). It calls on the City to lead by example through demonstration projects, efficient operations and targeted community assistance programs. Fairfield Sustains balances ambitious targets with realistic strategies and achievable actions grounded in localized data, community input, and proven best practices. Fairfield Sustains serves as an actionable roadmap to build upon the historical progress to date, and to further refine, enhance and accelerate previous and ongoing efforts for a more sustainable Fairfield.

EXECUTIVE SUMMARY

The City's recent Comprehensive Plan, Fairfield Forward, presents sustainability as one of seven core aspects of its community identity, guiding the City's planning efforts over the next two decades. Fairfield Forward calls on the city to be a leader in responsible stewardship, healthy environments, and reduced energy consumption on both public and private property. It further outlines key sustainability efforts to date and calls for the creation of a Sustainability Plan to detail and guide these efforts moving forward. Fairfield Sustains transforms that vision into action, by offering a strategic roadmap for the City to continue, enhance and further sustainability efforts in both municipal operations and across the community as a whole.

This Plan is built on a foundation of proven best practices, key themes and policy commitments from existing planning documents, and relevant federal, state and local policies. Upon this foundation, the Plan weaves together the combined contributions gathered through public engagement with Fairfield's residential and business community, stakeholders, Environmental Commission, as well as City staff, elected officials and leadership. It is a synthesis of community survey results, workshop ideation, City Council guidance, Environmental Commission input, and focus group refinement. This Plan is further grounded in a comprehensive data analysis of 2021 municipal operations and community-wide greenhouse gas (GHG) inventories, local policies, best practices in sustainability solutions, and opportunities unique to the City of Fairfield. While it considers emissions reductions as a key priority, it aims to support an improved quality of life for residents, businesses and visitors as its principal target, by championing economic vitality, efficiency in municipal operations, and smart resource utilization for a sustainable future. In communities across the country, increased sustainability measure adoption is often also associated with improved public health outcomes, reduced risk factors or exposure to pollutants, and higher community wellness potential.

EXECUTIVE SUMMARY

IMPROVED QUALITY OF LIFE

REDUCED GREENHOUSE GAS EMISSIONS

IMPROVED ECONOMIC VITALITY

EFFICIENCY IN MUNICIPAL OPERATIONS

SMART RESOURCE UTILIZATION

IMPROVED PUBLIC HEALTH AND COMMUNITY WELLNESS

Where emissions are considered, the Plan uses the year 2021 as the baseline for the greenhouse gas emissions inventories, as the most recent complete year of post-pandemic data available. Emissions targets contained herein will be compared against this baseline year (base year) to monitor and assess progress over time. Emissions are measured in metric tons of carbon dioxide equivalent (MT CO2e) to compare emissions from various sources against a common equivalency.

Municipal emissions are generated from internal activities and operations at the municipal scale related to the City of Fairfield's various departments, buildings, parks, and facilities. In base year 2021, Fairfield's emissions from municipal operations totaled 9,501 MT CO2e resulting from four primary sources: (1) the operation of water and wastewater treatment facilities; (2) municipal buildings and facilities; (3) City's fleet of vehicles; and (4) street lighting and traffic control systems.

EXECUTIVE SUMMARY

Base year 2021 Community emissions totaled 391,185 MT CO2e, of which municipal emissions comprise just 2%. At the community scale, Fairfield's emissions result from three major emissions sources: (1) Buildings & Energy, comprised of residential, commercial, and industrial sectors, respectively; (2) Mobility & Transportation; and (3) Other Resources - Solid Waste, Water, and Wastewater. Additionally, fugitive emissions, which include leaks and unintentional releases of natural gas within the community, contributed a minor fraction of less than 1%. Fairfield's per capita equivalent emissions are comparable to or slightly lower than cities of similar size, at approximately 8.87 MT CO2e per capita.

Sustainability targets presented in this Plan provide mid-term and long-term time horizons to guide progress over time. These targets further align with important City milestones, marking Fairfield's 75th anniversary in 2030 and Fairfield's centennial anniversary in 2055.

Goals, strategies, and actions in support of the targets are outlined herein and are presented in two categories: Foundational and Complementary.

A. **FOUNDATIONAL STRATEGIES:** Focus on three high-impact essential sectors—Mobility & Transportation, Buildings & Energy, and Resource Conservation—to drive economic vitality, improve well-being, and optimize resource use.

B. **COMPLEMENTARY STRATEGIES:** Embrace cornerstones of Fairfield's sustainability approach through two additional sectors–Nature & Green Community, plus Business & Community Resilience–strengthening the community connection to Fairfield's unique natural spaces and supporting visible sustainable solutions across all focus sectors.

Collectively, these components of Fairfield Sustains serve as a comprehensive roadmap to guide the City in achieving its sustainability targets and giving rise to a more sustainable, engaged and resilient community for generations to come.

FAIRFIELD SUSTAINS

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ACRONYMS

ABAU	Adjusted Business-As-Usual
ARPA	American Rescue Plan Act
BAU	Business-As-Usual (BAU)
BCRTA	Butler County Regional Transportation Agency
BCSWD	Butler County Solid Waste District
BMP	Best Management Practice
CAFE	Corporate Average Fuel Economy
CAP	Climate Action Plan
CO2	Carbon dioxide
EPA	Environmental Protection Agency
EPPP	Environmentally Preferable Purchasing Policy
ESIP	Energy Storage Installation Professional
EV	Electric Vehicle
GHG	Greenhouse Gas
HHV	High Heat Value
HHW	Household Hazardous Waste
HVAC	Heating, Ventilation, and Air Conditioning
IAC	Industrial Assessment Center
ICLEI	International Council for Local Environmental Initiatives
IES	Institute for the Environment and Sustainability
KPI	Key Performance Indicators
kW	kilowatt
kWh	kilowatt hour
LEED	Leadership in Energy & Environmental Design
MPO	Metropolitan Planning Organization
MT	metric ton
MT CO2e	Metric Ton of Carbon Dioxide equivalent
OKI	Ohio-Kentucky-Indiana Regional Council of Governments
PACE	Property Assessed Clean Energy
ROI	Return On Investment
REC	Renewable Energy Credit
SAP	Sustainability Action Plan
SOP	Standard Operating Procedure
SMART	Specific, Measurable, Achievable, Relevant and Timebound
TIF	Tax Increment Financing
UD	University of Dayton
UFAP	Urban Forestry Action Plan
VFD	Variable Frequency Drive
VMT	Vehicle Miles Traveled
WCS	Waste Characterization Study
ZEV	Zero Emission Vehicle

LETTER FROM THE COUNCIL CO-SPONSORS

In 2023 the elected officials of the City of Fairfield made sustainability a top strategic initiative now and into the future. The plan that follows, Fairfield Sustains, provides a comprehensive roadmap which will enable the City to achieve sustainability goals with a major focus on improved quality of life, thoughtful resource utilization, and robust economic vitality.

Fairfield developed this plan in an effort to be a leader in the sustainability space – attracting a strong residential and business base, maximizing efficiencies in municipal operations, and protecting and enhancing our local environment.

Fairfield Sustains is a holistic plan constructed around five broad frameworks:

- Mobility and transportation;
- Buildings and energy;
- Resource conservation;
- Nature and green community; and
- Business and community resilience.

The City of Fairfield has grown and thrived since its inception in 1955. Fairfield Sustains provides an actionable roadmap to enable the City to continue on this trajectory, reaffirming its identity as a desirable place in which to live, play and work.

We extend our gratitude to all those who contributed to the development of this plan and express our unwavering commitment to its implementation.

Sincerely,

Tim Meyers, Council-member At-Large
(Fairfield Sustains Co-Sponsor)

Gwen Brill, Council-member At-Large
(Fairfield Sustains Co-Sponsor)

SECTION 1
INTRODUCTION

FAIRFIELD SUSTAINS

MISSION STATEMENT

"Implement a sustainable strategy into the founding tenets of quality of life within the City of Fairfield. The strategy will support and promote infrastructure innovation and programming while improving livability within the city by reducing the impact of city operations on natural resources and the environment."

–Adopted by Fairfield City Council 2022

BACKGROUND

The City of Fairfield, Ohio, located about 20 miles from Cincinnati and just north of I-275, is a community that offers quality of life, safety, and lush green spaces typically found in small towns, alongside the benefits of regional accessibility. With 87.3% of its 20-square-mile area developed, Fairfield offers limited space for new growth, highlighting the opportunity for increased adoption of smart-growth and sustainability principles in current and future planning and development. Fairfield's expansive natural systems include 935 acres of preserved open space and parks, which form a defining characteristic of the City's identity.

Fairfield, home to approximately 44,900 residents, is a City focusing on economic growth, quality of life, and sustainable development. The City is committed to understanding its environmental impact to enhance quality of life, promoting business vitality and resilience, and nurturing fairness in public policy. This approach positions Fairfield as a forward-thinking community, dedicated to maintaining its charm while fostering a balanced and sustainable future.

SUSTAINABILITY

Sustainable actions support, maintain, conserve, and enhance the environmental, economic, and social systems on which communities depend to ensure these critical resources continue to be available for future generations. The City of Fairfield will be a leader in responsible stewardship, healthy environments, and reduced energy consumption on both public and private property. Fairfield has implemented sustainable initiatives such as curbside recycling, urban forestry, an environmental commission, a farmer's market, and groundwater resource protection. In order to reduce the carbon footprint at city-owned facilities, efficient lighting and mechanical systems are being installed, street lights are being replaced with energy efficient LEDs, and the City is investigating applying for grants to install electric vehicle charging stations.

Key sustainable implementation strategies include exploring alternative energy technology to power city-owned properties; revising the zoning code to require landscaping on private property when it develops or redevelops; encouraging the preservation of mature trees and planting of new trees; exploring incentives for sustainable site and building design; increasing pedestrian and bicycle infrastructure; pursuing Greenroads certification status for eligible transportation projects; and creating a sustainability plan to detail and guide these efforts.

– Fairfield Forward, 2019

SECTION 1 **INTRODUCTION**

GOALS & FRAMEWORKS

Fairfield's Sustainability Action Plan, (hereafter, 'Fairfield Sustains,' or 'Plan'), encompasses a variety of key elements to promote environmental stewardship and sustainable economic development across the City. Collectively these elements represent the guiding framework utilized to structure the Plan's development.

- ✔ **Business Sustainability and Support of Sustainable Business Practices:** Fairfield Sustains encourages businesses to adopt sustainable practices, aiding them in their transition towards a more resilient and economically vibrant model. This shift not only bolsters the City's sustainability profile but also strengthens its overall economic vitality.

- ✔ **Residential Sustainability:** Fairfield Sustains focuses on increasing sustainability in residential areas by increasing walkability and bikeability, promoting energy aggregation and renewable energy as well as recycling and waste reduction, and incorporating cost-saving measures to make sustainable living economically accessible to all residents.

- ✔ **Decarbonization Goals:** Fairfield Sustains sets ambitious yet sustainable, realistic, and economically viable decarbonization goals, including detailed carbon reduction projects. It emphasizes opportunity identification and prioritizes these projects based on cost, risks, and Return On Investment (ROI) metrics.

- ✔ **Building and Zoning Code Updates:** Fairfield Sustains recommends updates to building and zoning codes which can be crucial in integrating sustainability standards to promote environmentally sustainable and energy-efficient urban development.

- ✔ **Green Infrastructure Recommendations:** Fairfield Sustains recommends the development of green infrastructure, improving air quality, reducing runoff, enhancing urban green spaces, and providing complementary health and wellness co-benefits for the community.

- ✔ **Efficiency Specified to Departmental Level:** Fairfield Sustains measures are specified at the departmental level within City operations, to support accountability, appropriate resourcing, and ensure each sector contributes to the City's sustainability goals.

- ✔ **Financial Operating Structure Updates:** Fairfield Sustains includes funding mechanisms and financial operating structures to rank, prioritize and support sustainable projects and consider sustainability criteria in procurement of goods and services.

- ✔ **Macro-Level Review:** Fairfield Sustains provides a macro-level review to assess the impacts of sustainability initiatives on City-wide operational efficiencies, emissions reductions, costs, improved quality of life, smart resource utilization, and other factors.

- ✔ **Fairness in Public Policy:** Fairfield Sustains emphasizes fairness in public policy, ensuring that sustainability initiatives are locally attuned and responsive to benefit all populations within the community.

SECTION 1 **INTRODUCTION**

QUALITY OF LIFE FRAMEWORK

Sustainability serves as a powerful mechanism for enhancing quality of life, reinforcing city identity, and fostering economic vitality. With 935 acres of preserved open space and parks, the presence of natural systems, lakes and parks is one of the defining characteristics that makes Fairfield unique, attracting residents, businesses and visitors alike. By integrating sustainability into urban planning and policies, cities can distribute benefits widely, ensuring that all residents enjoy a higher standard of living while fostering a distinct city identity rooted in environmental responsibility. This approach not only improves the immediate environment but also attracts businesses and investments, catalyzing economic growth. As cities become more sustainable, they enhance their appeal as desirable places to live, work, and visit, creating a vibrant and prosperous urban ecosystem that benefits everyone. Beyond these quality of life benefits, Fairfield's focus on sustainability should result in more thoughtful and strategic resource usage in the operation of municipal affairs – improving efficiencies and impacting municipal budgets in a positive fashion.

ENGAGEMENT ACTIVITIES

The City of Fairfield values community input and public engagement, and recognizes the importance of a collaborative process to ensure Fairfield Sustains reflects the expansive perspectives and needs of the community. Engaging the community in the planning process to gather meaningful input was a crucial component of the development of Fairfield Sustains to ensure that measures are practical, fair, and can be implemented efficiently. The City engaged with stakeholders throughout the planning process, interacting with local residents, businesses, internal operations, city leadership, elected officials and other community members (collectively referred to as "stakeholders").

Fairfield's engagement activities included community survey, business leaders workshop and multiple ideation, prioritization and development workshops and focus groups with the City's Environmental Commission, department staff and leadership, and City Council representatives. Ideas, comments and suggestions are integrated into this Plan to the best of the project's team abilities and in alignment with the data analysis results and applicable policy requirements and considerations. Ongoing collaboration with community stakeholders will continue to serve as a vital element of Fairfield Sustains implementation to strengthen community ties and increase overall effectiveness of the measures and approaches contained herein. For a list of simple actions individuals can take to support a more sustainable community, see Appendix A (What The Community Can Do). The Fairfield Sustains Stakeholder Engagement Plan, including summary of primary activities, engagement channels, community survey results and feedback is presented as Appendices B and C.

APPROACH

Fairfield Sustains outlines a Strategic Roadmap to a more sustainable community by championing economic vitality, efficiency in municipal operations, and smart resource utilization, aiming to uplift the quality of life for everyone.

The Plan is built on the combined contributions gathered through extensive community engagement with the Fairfield community, stakeholders, staff, and leadership. Fairfield Sustains is a synthesis of community survey results, workshop ideation synthesis, and focus group refinement, along with key themes and policy commitments from existing planning documents and policies. The Plan is grounded in comprehensive data analysis of 2021 Municipal and Community greenhouse gas inventories, local policies, best practices in sustainability solutions, and opportunities unique to the City of Fairfield. It goes beyond emissions reduction, embracing a broad approach to sustainability with an improved quality of life as the core objective.

SECTION 1 INTRODUCTION

FAIRFIELD SUSTAINS IS ORGANIZED INTO SIX SECTIONS:

➜ **SECTION 1**

Presents an introduction to the Plan including background, engagement, policy and progress to date information;

➜ **SECTION 2**

Provides baseline data related to greenhouse gas inventory and forecasts for both municipal operations, as well as the broader Fairfield community;

➜ **SECTION 3**

Forecasts emissions reductions over time in line with mid-term 2030 and long-term 2055 targets;

➜ **SECTION 4**

Illustrates the City's Sustainability Strategic Roadmap, presented as three foundational (Mobility & Transportation, Buildings & Energy, and Resource Conservation) and two complementary (Nature & Green Community, and Business & Community Resilience) focus areas. Each focus area identifies key goals, strategies and actions to achieve results;

➜ **SECTION 5**

Outlines the Fairfield Sustains Implementation Framework, including the identification of key performance indicators (KPIs), timelines, cost estimates and funding sources to achieve selected measures; and

➜ **APPENDICES**

Provide more detailed information on Plan baseline data components including greenhouse gas inventory and analysis methodology, stakeholder engagement feedback including community survey results, summary of regional goals by jurisdiction, prioritization matrix, implementation framework detail, funding opportunities, and list of complementary studies including Miami University's *Solar Power Implementation for Fairfield's Wastewater Treatment Plant* (2024) and *Fairfield EV Fleet Feasibility* (2024), as well as University of Dayton's *Guides to Energy Productivity for Fairfield's Water and Wastewater Systems* (2023).

COLLABORATION & PARTNERSHIPS

The City of Fairfield recognizes that cultivating a sustainable community transcends individual efforts. Guided by a shared vision, Fairfield is both leading and contributing to a broader collective response across the region by embracing partnership and collaboration. In some cases this is facilitated through existing membership or participation in regional planning bodies such as Ohio-Kentucky-Indiana Regional Council of Governments (OKI) and Butler County Regional Transportation Agency (BCRTA) for transportation planning, infrastructure and transit services, Butler County Solid Waste District (BCSWD) for regional waste diversion services, and the Stormwater Collaborative and Groundwater Consortium for regional water stewardship, conservation and protection, and others.

By leveraging shared expertise, resources, responsibilities, and perspectives across the community and the broader region, Fairfield is able to achieve economies of scale and efficiencies in operational delivery to maximize benefits for its local community, while minimizing required capital outlays. This unified approach broadens the overall impact of the Plan, reduces required financial and resource investments, and fosters a sense of shared commitment and solidarity across different stakeholders in the region. This collaborative approach is further grounded in the acknowledgement that some sustainability actions are directly within the City's purview, while others may lie within the City's sphere of influence, but may not be in the City's direct regulatory authority. Additional entities, agencies or associations offer particular resources or expertise that may further complement strategies listed within this Plan, or may themselves have regulatory authority to enact such programs. For these reasons, this Plan includes actions in which the City will cultivate, continue, expand or enhance collaboration and partnership to advance the Plan's overall impact. The City is committed to cultivating partnership opportunities to enhance the effectiveness of measures outlined within the Section 4. Strategic Roadmap.

STATE AND REGIONAL PLANNING

The following outlines key state, regional or local planning policies guiding the sustainability landscape in Ohio. At present, the state of Ohio has not adopted specific climate goals or targets guiding local or regional planning similar to those adopted in other states across the nation. Such policies establish particular targets, requirements or resources at the state level to mandate, encourage or guide actions taken on the local municipal level. However, many jurisdictions across the state of Ohio are joining jurisdictions across the nation, adopting their own policies to increase sustainability and/or address environmental impacts related to a changing climate. A summary of example jurisdictional goals across the state of Ohio is presented within Appendix D. A regional planning resource example is presented below.

OHIO-KENTUCKY-INDIANA REGIONAL COUNCIL OF GOVERNMENTS (OKI) 2020 COORDINATED PLAN - OKI serves as the Metropolitan Planning Organization (MPO) for transportation in the Greater Cincinnati Region, covering Butler, Clermont, Hamilton and Warren Counties in Ohio; Boone, Campbell and Kenton Counties in Kentucky; and, Dearborn County in Indiana. The Coordinated Plan represents the latest multi-jurisdictional Coordinated Plan guiding transportation in the local region. OKI's responsibilities in southwest Ohio, northern Kentucky, and southeast Indiana consequently involve both developing a Coordinated Plan to improve mobility for these target populations and also using the Plan to guide decisions on funding for eligible transportation improvements. The City of Fairfield is a member of OKI and may benefit from various regional planning initiatives in the transportation and energy sectors.

ENERGY PROVIDER COMMITMENTS

DUKE ENERGY is the primary energy provider in Fairfield. Duke Energy has set ambitious climate goals, striving toward at least a 50% reduction in CO2 emissions from electricity generation in 2030 and net-zero CO2 by 2050. Duke Energy is also targeting net-zero methane emissions for natural gas distribution business by 2030. However, a small number of Fairfield residents are serviced by the Butler Rural Electric Cooperative, which currently does not have a climate goal set.

LOCAL PLANNING

Fairfield Connects, a connectivity master plan released in 2020, marked a significant step for the City of Fairfield in enhancing community connectivity. Spanning over two decades with a projected multi-million dollar budget, the plan is designed to develop organically alongside the city's growth, leveraging both developer contributions and grant funding to help manage costs. The plan focuses on linking neighborhoods with key city hubs such as the Town Center area, the Ohio 4 corridor, and the Mack and South Gilmore roads area, and integrates these areas with the Great Miami River Trail. It also aims to complete the unconnected sections within Fairfield, creating a more unified urban landscape. Highlighting the potential for increased property values and economic benefits, the plan draws on studies like the University of Cincinnati Economics Center's analysis of the Wasson Way Project in Cincinnati, demonstrating the environmental and household financial benefits of reduced vehicle usage. The plan's flexibility is a key feature, incorporating various pathways such as sidewalks, multi-use paths, shared road paths, and more. It also involves collaboration with developers to effectively integrate connectivity elements into new construction.

SECTION 1 INTRODUCTION

Fairfield Forward, released in 2019, is a comprehensive land use plan that articulates the City of Fairfield's vision and strategy for future growth and community resource management. As the city approached build-out capacity, with 87.3 percent of its 20-square-mile area developed, this plan provided a critical framework to sustain a high quality of life for the foreseeable future. As a comprehensive, policy-level document, it sets out a collective vision, goals, policies, and strategies focused on land use, zoning, housing, transportation, economic development, public services, and sustainability. It includes detailed future plans and policies for the entire city and specific areas like the Route 4 Corridor and the Town Center. Fairfield Forward is a key resource not just for city officials but also for private developers, real estate agents, and property owners. It emphasizes Fairfield's commitment to being a vibrant, diverse community with safe neighborhoods and a high quality of life. The plan highlights the importance of embracing diversity and adaptability, encouraging new investments and redevelopment that enhance the City's character and strengths.

The 2014 **Fairfield Parks and Recreation Department Master Plan**, a 10-year strategy, was developed to bolster the City's recreational assets and opportunities. The plan, informed by past assessments and studies, adopts a comprehensive approach to recognize parks and recreation's role in individual and community development, economic enhancement, and environmental stewardship. The plan addresses Fairfield's evolving demographics and urban landscape, emphasizing the importance of maintaining existing parks, developing trails, using technology for outreach, and enriching arts and entertainment. Strategic priorities include maintaining current facilities, expanding trail networks, enhancing arts and culture programs, and engaging youth and seniors. Implementation of the plan hinges on funding, with a basic maintenance focus under limited budgets and potential for wider improvements and services with increased funding.

COMPLEMENTARY STUDIES

Miami University Solar Power Implementation for Fairfield's Wastewater Treatment Plant (2024) - A study was conducted in partnership with Miami University's Institute for the Environment and Sustainability, on behalf of the City of Fairfield in conjunction with the completion of Fairfield Sustains. This study assessed the feasibility of a solar array at the City's Wastewater Treatment Plant considering such factors as siting locations, system size, number of panels, cost and other operational considerations. Results will be considered during the implementation phase of Fairfield Sustains.

Miami University Fairfield EV Fleet Feasibility (2024) - A study was conducted in partnership with Miami University Graduate School of Environmental Sciences, on behalf of the City of Fairfield in conjunction with the completion of Fairfield Sustains. This study assessed the feasibility of zero emission vehicle transition within the City fleet considering such factors as number of vehicles, type of vehicles, use, replacement schedule, charging infrastructure, costs, and other operational considerations. Results will be considered during the implementation phase of Fairfield Sustains.

University of Dayton (UD) Industrial Assessment Center (IAC) Guides to Energy Productivity for Fairfield's Water and Wastewater Systems (2023) - A study conducted in partnership with University of Dayton IAC, on behalf of the City of Fairfield in advance of the development of Fairfield Sustains. This study evaluated energy use at the Fairfield water and wastewater facilities and made various recommendations for efficiency improvements based on the findings. Results were summarized and presented to the Public Utilities Department in 2023. Those recommendations deemed appropriate but not yet implemented are included as actions under the Resource Conservation focus area for the implementation phase of Fairfield Sustains.

REGIONAL GREENHOUSE GAS EMISSIONS COMPARISONS

This section offers a comparative analysis of per capita greenhouse gas emissions in Fairfield, positioning it against other Ohio municipalities and the national average. Below, the table aims to contextualize Fairfield's environmental footprint within a broader regional and national framework, drawing on data from various public sources. It is important to note that this data is preliminary and subject to variation due to the differing methods used by municipalities for calculation. These discrepancies can result from diverse accounting techniques, the inclusion of different emission types classified as Scope 1, 2, and 3, and the specific emissions sources considered. Consequently, the figures should be viewed as rough estimates, not exact comparisons. Presently, Fairfield records emissions at 8.87 MT CO2e per capita, markedly below the national average of 14.4 MT CO2e per capita. However, readers should regard these numbers as provisional, considering the preliminary stage of data analysis.

Figure 1: Greenhouse Gas Emissions per capita by location

- **Huber Heights** N/A
- **Bexley** N/A
- **Miami University** 4.18 MTCO2e*
- **Ohio University** 4.35 MTCO2e
- **Oxford** 5.10 MTCO2e*
- **Fairfield** 8.79 MTCO2e
- **Dublin** 10.92 MTCO2e*
- **Columbus** 12.23 MTCO2e
- **Cleveland** 14.41 MTCO2e*
- **National Average** 14.9 MTCO2e
- **Dayton** 15 MTCO2e
- **Oberlin** 20.9 MTCO2e
- **Cincinnati** 25.36 MTCO2e*

SECTION 1 INTRODUCTION

Table 1: Overview of Community-wide Emissions

LOCATION	POPULATION[1]	TOTAL GHG INVENTORY	GHG PER CAPITA	SOURCE
Huber Heights	43,272	N/A	N/A	2023 Comprehensive Plan
Bexley	13,681	N/A	N/A	Green Bexley website and 2017 Zero Waste Plan
Miami University	19,452	80,000 MTCO2e*	4.18 MTCO2e*	Miami 2040: Climate Action Plan for Miami University Draft
Ohio University	29,217	130,009 MTCO2e*	4.35 MTCO2e	Ohio University Sustainability and Climate Action Plan 2021
Oxford	22,625	118,000 MTCO2e*	5.10 MTCO2e*	Oxford Climate Action Plan 2023
Fairfield	44,456	391,128 MTCO2e	8.79 MTCO2e	Fairfield Sustains Draft SAP 2024
Dublin	49,085	536,164 MTCO2e*	10.92 MTCO2e*	2018-2020 Sustainability Framework, in 2024 a new Sustainability Plan will be released
Columbus	906,528	11,005,874 MTCO2e	12.23 MTCO2e	2021 Columbus Climate Action Plan
Cleveland	367,991	12,500,000 MTCO2e	14.41 MTCO2e*	Cleveland Climate Action Plan 2018 and Cleveland's Clean and Equitable Energy Future
National Average	N/A	N/A	14.9 MTCO2e	Our World in Data. (2024). United States: Per capita: how much CO2 does the average person emit?.
Dayton	137,571	2,119,544 MTCO2e	15 MTCO2e	Resolution 6572-21 and 2021 Strategy for a Sustainable Dayton
Oberlin	8,249	174,391 MTCO2e	20.9 MTCO2e	Updated 2019 Climate Action Plan
Cincinnati	308,935	7,600,000 MTCO2e	25.36 MTCO2e*	Green Cincinnati Plan 2023

** Emissions figures are calculated based on the information available in the referenced documents, but may not include all emissions sources.*

[1] United States Census Bureau

SECTION 1 **INTRODUCTION**

OUR PROGRESS

Fairfield has long embraced natural spaces as a core aspect of community identity, with over 935 acres of preserved natural spaces, including City parks, lakes and other recreation areas within the City. Fairfield Forward and Fairfield Connects both emphasize the City's unique natural resources and set objectives to preserve, and expand such resources while also increasing connectivity within the City to encourage and facilitate this ease by which residents, businesses and visitors can access these natural areas that make Fairfield so unique. In 2008, Fairfield established an Environmental Commission in conjunction with its commitments and registration with Tree City USA. Since inception, the Environmental Commission has focused its efforts on such topics and initiatives as tree canopy expansion, invasive plant removal, recycling, and other sustainability objectives. The Commission was a core contributor to Fairfield Sustains.

SECTION 1 INTRODUCTION

The recent completion of Fairfield Connects serves as a core planning tool guiding the City's development over a 20-to-25-year period. Fairfield Connects aims to connect neighborhoods to the major hubs in the City, which have been identified at the Town Center area, Ohio 4 area spanning from Jungle Jim's to three Fairfield school buildings, and the Mack and Gilmore roads area. It will also connect the neighborhoods to the Great Miami River Trail, and complete the unconnected sections within the city of Fairfield. This Plan aligns with, builds on and complements strategic initiatives outlined with Fairfield Connects to broader sustainability goals.

Fairfield Forward dedicates an entire chapter to Sustainability as a core aspect of the City's most recent Comprehensive Plan.

> "Sustainability links the issues of environment, economy and social equity together. An action or decision in any one of these areas will have consequences on the others, whether anticipated or not. Sustainable actions are those that support, maintain, conserve, and enhance the environmental, economic, and social systems on which we depend."
>
> *– Fairfield Forward, Sustainability Chapter*

PROJECT HISTORY

JUNE 2022 — City Council memo seeking sustainability roadmap

SEPT 2022 — Council Manager Briefing on topic, led by City Manager Scott Timmer

OCT 2022 — Special Council work session, led by Council Member Tim Meyers

JAN 2023 — RFP for planning support issued

JUNE 2023 — Contract executed with Blue Strike

JUL-AUG 2023 — City Council 'interviews' facilitated by Blue Strike

SEPT 2023 — Kick-off meeting with Environmental Commission (EC); Community survey activated

NOV 2023 — EC meeting #2; Business stakeholder symposium

JUL-AUG 2024 — Goal ➜ Strategy ➜ Action refinement

MAR 2024 — EC meeting #3: Targeted strategy discussion with project champions and senior staff

APR 2024 — Strategy Finalization, Prioritization and Implementation Framework

MAY 2024 — Draft Fairfield Sustains Plan

JUNE 2024 — Public and Leadership Review

JUL 2024 — Plan introduction to City Council

SEPT 2024 — Anticipated Final Plan Adoption

SECTION 1 INTRODUCTION

Fairfield Forward puts Sustainability at the forefront of its community identity and calls upon the City to create a Sustainability Plan to detail and guide these efforts moving forward. In June 2022, the Fairfield City Council issued a memo calling for the creation of a Sustainability Roadmap to guide the City's efforts into the future. Two Council work sessions followed in Fall of 2022, including a Council Manager Briefing and a Special Council work session. Working swiftly to take action on this important objective, the City issued an RFP for planning services to create the development of this Plan in early 2023, sponsored by Council-members Meyers and Brill. Fairfield initiated the planning process in June 2023, forming a sustainability leadership team of representatives across all City departments to contribute to the effort. This began a 9-month engagement with community members, City staff, leadership and elected officials, business community representatives and other stakeholders to identify needs, opportunities and gaps to create a more sustainable City, with improved quality of life at the forefront. The Environmental Commission served as the advisory committee to the plan.

The result of this process is three-fold:

(1) the development of Fairfield Sustains as an actionable implementation roadmap for sustainability in the City of Fairfield;

(2) increased sustainability practice understanding, knowledge and expertise across all City Departments; and

(3) a unified vision and commitment to increased sustainability across all City Departments and throughout the City of Fairfield.

THE PLAN RESULTS ARE THREE-FOLD

An actionable implementation roadmap for sustainability

Increased sustainability knowledge and expertise

A unified vision and commitment to increased sustainability for all

SECTION 1 INTRODUCTION

The City of Fairfield has already made significant efforts toward a more sustainable community. Fairfield Sustains will further accelerate and focus previous and concurrent efforts with a particular concentration on improved quality of life for the residents of Fairfield. The following provides a sample of sustainability actions already underway by focus area within the City. For a more comprehensive list of sustainability achievements to date, please see Appendix E:

TRANSPORTATION & MOBILITY

- ✔ City adopted Fairfield Connects Plan, December 2019 identifying opportunities to improve the walkability and bikeability of Fairfield (20-to-25 plan)
- ✔ Established active transportation fund to initiate Fairfield Connects implementation, investing $3M in 2 projects to date
- ✔ Initiated municipal zero emission vehicle study in partnership with Miami University
- ✔ Received grants for three community Electric Vehicle (EV) charging station
- ✔ Completed a Feasibility Study for EV infrastructure at city buildings

BUILDINGS & ENERGY

- ✔ Launched residential and small commercial energy aggregation initiative, with 50% renewable energy
- ✔ Achieved 100% renewable energy for all municipal operations through renewable energy credits procurement since 2023
- ✔ Initiated municipal Solar Feasibility Study in partnership with Miami University
- ✔ Conducted internal comprehensive energy audit to identify opportunities for improved efficiencies through such improvements as LED lighting and smart energy management systems

RESOURCE CONSERVATION

- ✔ Established curbside recycling since the 1990s and green-waste (leaf and brush) pickup service since the 1980s
- ✔ City contracts with Rumpke as the franchised hauler for residential, multi-family and commercial recycling, and continues to expand diversion programs
- ✔ City partners with BCSWD to provide waste diversion education and outreach
- ✔ City is currently upgrading to smart water meters to provide real time water usage data and reduce water loss from damage or leaks
- ✔ Active member of regional partnerships including Stormwater Collaborative and Groundwater Consortium to protect water quality

NATURE & GREEN COMMUNITY

- ✔ 935+ acres of green space make parks and open space a core aspect of Fairfield
- ✔ Fairfield holds the designation of Tree City USA
- ✔ Partnership with MetroParks of Butler County provides free nature programs

BUSINESS & COMMUNITY RESILIENCE

- ✔ Consistent growth in key economic indicators: income tax revenues, aggregate property & building permit valuation
- ✔ Redevelopment Investment: Public American Rescue Plan Act (ARPA) and Tax Increment Financing (TIF) and private investment to redevelop older commercial corridors
- ✔ Annual capital budget investment in street maintenance, water distribution & sewer systems
- ✔ Substantial decades-long investments in flood damage mitigation projects and FEMA repetitive loss buyouts.

SECTION 2

OUR IMPACT

UNDERSTANDING FAIRFIELD'S EMISSIONS

FAIRFIELD SUSTAINS

SECTION 2

OUR IMPACT:UNDERSTANDING FAIRFIELD'S EMISSIONS

A greenhouse gas inventory is a comprehensive assessment that quantifies and categorizes the emissions of greenhouse gasses within a defined geographic area, typically a region or municipality. These inventories serve as a fundamental tool for understanding the sources and magnitudes of different greenhouse gas emissions, such as carbon dioxide, methane, and nitrous oxide. By systematically analyzing emissions from various sectors like energy, transportation, industry, and waste, a greenhouse gas inventory provides valuable insights into the carbon footprint of a community or organization. While this information represents a core aspect of this Fairfield Sustains, it is also only one component of the aspects considered in developing this Plan. Emissions are considered for some aspects of this Plan including setting emission reduction targets, and monitoring progress towards sustainable and low-carbon initiatives.

Fairfield Sustains includes the City's first greenhouse gas Emissions Inventory to assess current environmental impacts and establish a baseline for future projections. The methodology utilized the US Community Protocol from the ICLEI ClearPath tool and EPA greenhouse gas emission factors as benchmarks. ICLEI has been instrumental in advancing local environmental initiatives worldwide for over three decades. With its resources, including the ClearPath tool, ICLEI has supported over 600 municipal bodies in their efforts to scientifically assess greenhouse gas emissions, set ambitious targets, and implement effective sustainability strategies. Best practices from these resources guided the emission estimates for 2021. The full inventory details can be found in Appendix F.

SECTION 2

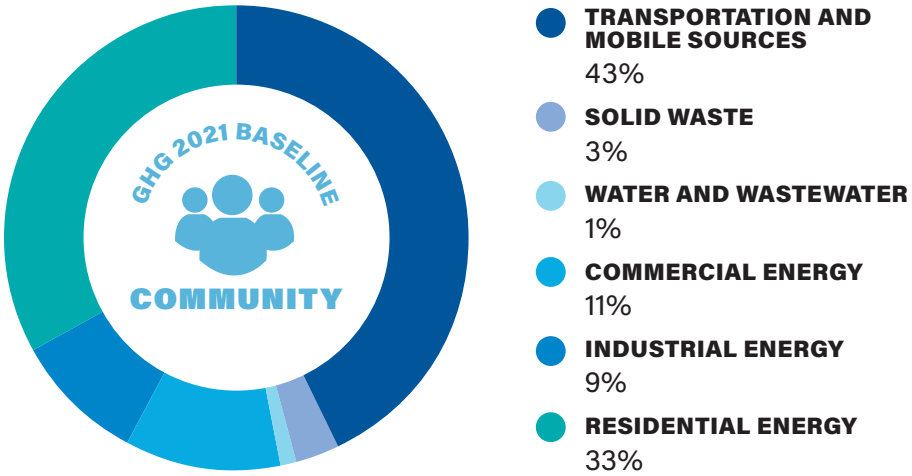
OUR IMPACT:UNDERSTANDING FAIRFIELD'S EMISSIONS

The greenhouse gas inventory examines two tracks: Community and Municipal Operations. The community track covers Fairfield's residents, including businesses, individuals, schools, and industrial sources, categorized into sectors: commercial, residential, industrial energy; transportation and mobile services; solid waste; and water and wastewater. The municipal inventory is a small component of total community emissions, (approximately 2%), detailing the City's local government-related usage from such activities as: buildings and facilities, vehicle fleet, employee commuting, streetlights and traffic signals, and waste from disposal. In the case of Fairfield, emissions related to water and wastewater utilities are attributed to municipal operations, as the City owns and operates these utilities on behalf of the community. See the following pages for additional detail on both Community and Municipal Operations emissions inventories.

COMMUNITY EMISSIONS INVENTORY

In 2021, the City of Fairfield was responsible for emitting 391,185 MT CO2e, with the largest contributor being the energy sector. These emission figures include the Community and Municipal Operations sectors. The largest source of energy emissions, 33% or 129,836 CO2e, originated from residential energy usage. Commercial energy was the second-largest source of energy emissions, accounting for 11% or 42,710 MT CO2e. Industrial energy contributed 9% or 34,454 MT CO2e to the total. These figures account for emissions from both the direct burning of natural gas and the use of electricity. The second largest contributor is the transportation sector. This sector alone was responsible for 43% of emissions, equaling 168,125 MT CO2e, encompassing emissions from vehicles and other modes of transport. Other identified sources of emissions included industrial processes, waste management operations, and the treatment processes of water and wastewater comprising approximately 4% of the total emissions or 14,285 MT CO2e. Additionally, fugitive emissions, which include leaks and unintentional releases of natural gas within the community, contributed a minor fraction of less than 1%, specifically 1,775 MT CO2e.

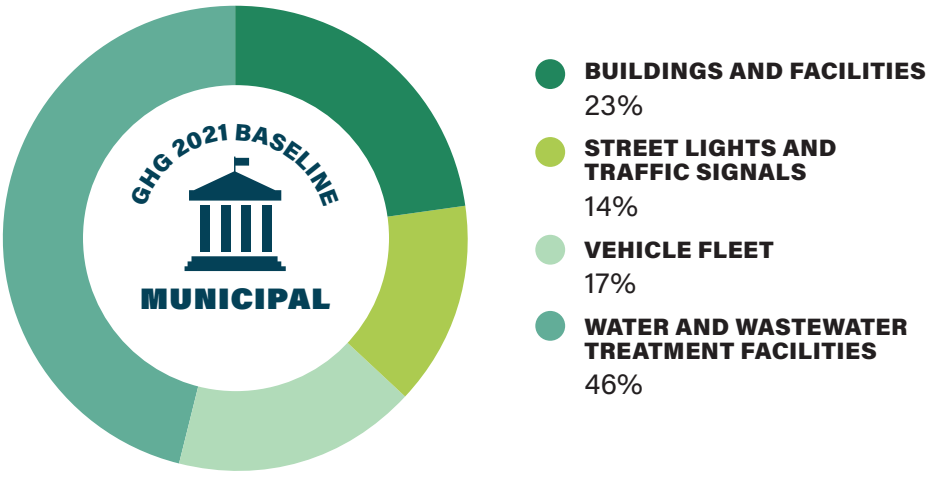
Figure 2: Community Greenhouse Gas Emissions from the 2021 Baseline



MUNICIPAL OPERATIONS EMISSIONS INVENTORY

The study also examined greenhouse gas emissions linked to municipal operations in the City of Fairfield, which amounted to 9,501 MT CO2e. These emissions are a small portion of total community emissions, representing 2% of the total community emissions. The largest source of municipal emissions, 46% or 4,377 MT CO2e, originated from the operation of water and wastewater treatment facilities. Municipal buildings and facilities were the second-largest source of emissions, accounting for 23% or 2,144 MT CO2e. The City's fleet of vehicles had a notable impact, contributing 17% or 1,604 MT CO2e to the total. Additionally, emissions from street lighting and traffic control systems constituted 14% or 1,376 MT CO2e of the municipal total.

Figure 3: Municipal Operation Greenhouse Gas Emissions from the 2021 Baseline

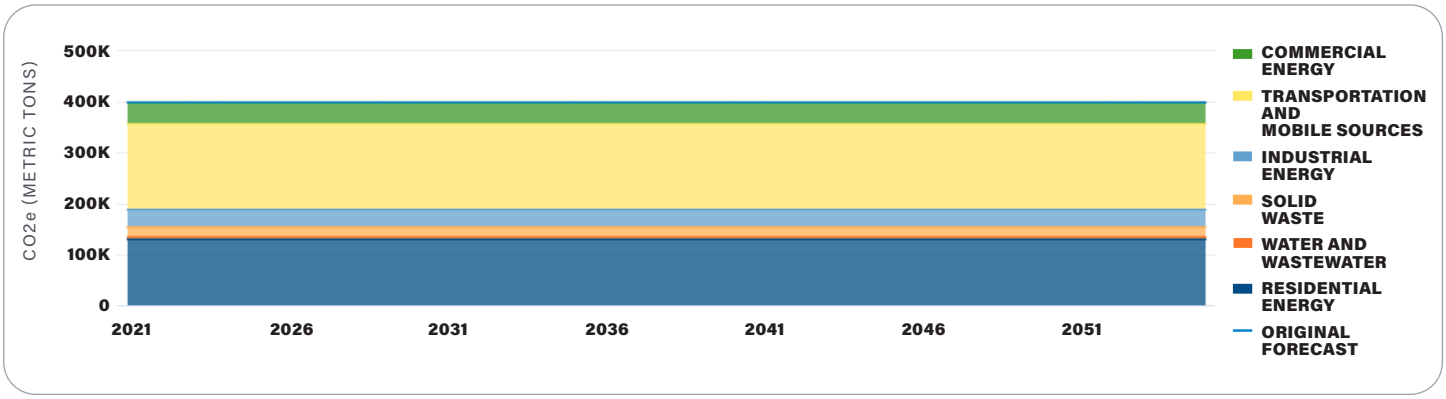


EMISSIONS PROJECTIONS

BUSINESS-AS-USUAL FORECAST

A Business-As-Usual (BAU) forecast for greenhouse gas emissions is essential for local government, offering a glimpse into the future assuming no new actions or changes are made to ongoing practices. This projection serves as a standard, helping to assess how effective different strategies and actions might be in reducing emissions over time. Understanding the BAU scenario is crucial for planning, identifying risks, and making well-informed choices. It enables the anticipation of what is ahead, spotting potential problems, and checking the long-term viability of current methods. As a comparison point, the BAU forecast aids the municipality in making sound decisions, optimizing resource use, and addressing upcoming challenges proactively. This approach bolsters the municipality's ability to adapt and grow steadily in an ever-changing setting, establishing a robust foundation that considers outside influences. In line with the anticipated stable population of Fairfield under current projections, the BAU forecast for Fairfield shows future emissions as relatively flat over time.

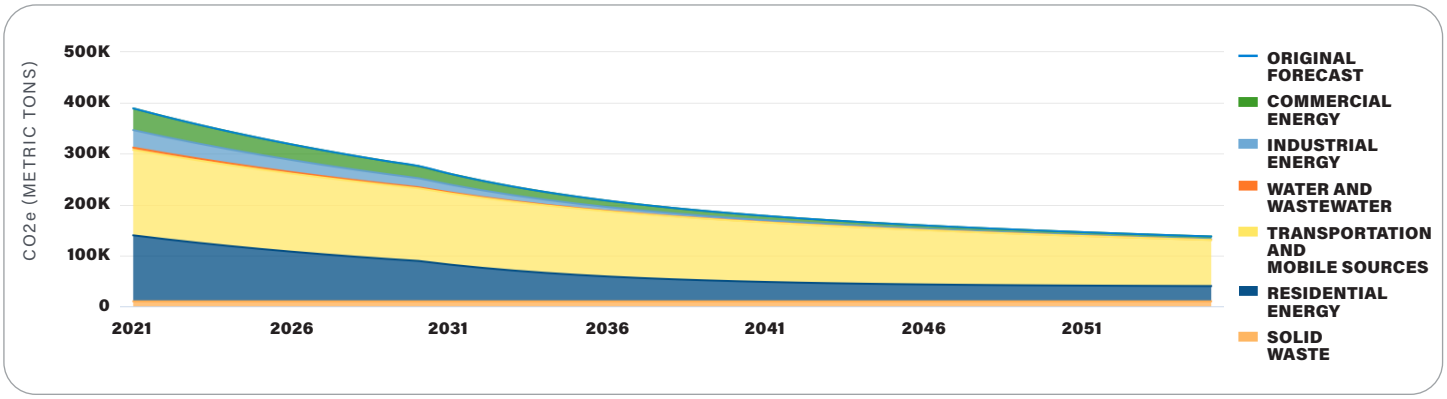
Figure 4: Projected Business-As-Usual Emissions for the City of Fairfield



ADJUSTED BUSINESS-AS-USUAL FORECAST

The Adjusted Business-As-Usual (ABAU) forecast represents an evolved approach to conventional forecasting for GHG emissions, incorporating necessary adjustments to reflect new developments, trends, or strategic interventions. In this framework, factors such as the Corporate Average Fuel Economy (CAFE) standards and Duke Energy's pledge towards carbon neutrality are factored in. Contrasting with the traditional BAU forecast that projects the uninterrupted continuation of existing practices, the ABAU forecast adjusts for changing elements like technological progress, market evolution, or legislative adjustments. It offers stakeholders a refined and flexible outlook, empowering them to proactively tackle obstacles and harness potential in a shifting landscape. The ABAU forecast stands as a crucial resource for leaders, aiding in the formulation of decisions that resonate with the present circumstances and fostering greater adaptability and resilience amidst unpredictability. While the ABAU projections indicate that emissions will decrease over time, additional actions are needed to further reduce emissions toward carbon neutrality and line with sustainability goals outlined within this Plan.

Figure 5: Projected Adjusted-Business-As-Usual Emissions for the City of Fairfield



SECTION 3 OUR SUSTAINABILITY TARGETS

FAIRFIELD SUSTAINS

SECTION 3

OUR SUSTAINABILITY TARGETS

Fairfield Sustains places sustainability at the forefront, emphasizing enhanced quality of life, cost-effective government operations, and intelligent resource management. The Plan sets forth a range of goals, strategies, and actions expected to increase sustainability, many of which will also lead to a significant reduction in emissions. The Plan further aims to address a wider spectrum of sustainability objectives as delineated in the Framework, positing that while emissions reduction is crucial, it alone is not adequate to fulfill Fairfield's sustainability ambitions. Accordingly, specific emissions reduction targets have been established, with intermediate and long-term benchmarks aligned with the city's 75th (2030) and 100th (2055) anniversaries, respectively. Additional high-impact actions and key resources for success are also outlined below. These elements serve as central themes which inform precise goals, strategies and actions highlighted throughout this Plan. Additional detail is provided within the Strategic Roadmap.

SECTION 3

OUR SUSTAINABILITY TARGETS

FAIRFIELD SUSTAINS

TARGETS

- **Improve quality of life for Fairfield residents, businesses and visitors through the adoption of effective sustainability measures**
- **Demonstrate leadership in sustainability throughout City Operations**
- **Enact programs to reduce barriers to adoption for Fairfield residents and businesses**
- **Achieve 60% total community emissions reductions from the 2021 baseline, with 40% resulting from strategies actively implemented by the city by 2030.**
- **Achieve 74% total community emissions reductions from the 2021 baseline, with 27% resulting from strategies actively implemented by the city by 2055.**

HIGH IMPACT ACTIONS

- Leverage Energy Aggregation for Renewable Energy
- Continue Municipal Renewable Energy Credit (REC) Procurement (providing 100% renewable electric to all municipal operations)
- Onsite Municipal Solar; Community solar
- Proactive Energy Efficiency Implementation
- Lead by Example - City Demonstration Projects
- Robust Implementation of Fairfield Connects
- Electrify Fleet, Off-road Vehicles, Equipment, and Tools
- Waste Diversion Plan (Waste Characterization Study, set goal, expand programs)
- Pilot Food Scrap Organics Collection
- Launch Green Business Recognition Program
- Launch Green Business Recognition Program, and Offer Incentives and Technical Assistance to Local Companies to Support Sustainability Efforts
- Education, Outreach, and Technical Assistance to Drive Adoption

RESOURCES FOR SUCCESS

- Establish a Sustainability Manager
- Proactively Secure Grant Funding
- Fund Dedicated Active Transportation Fund
- Establish Dedicated Sustainability Fund
- Strategic Use of Economic Development Funds
- Lead by Example - Demonstration, Policy
- Prioritize Sustainability in SOPs, Policies, Purchasing (Environmentally Preferable Purchasing Policy)
- Education, Outreach, and Technical Assistance

SECTION 3
OUR SUSTAINABILITY TARGETS

LOOKING OUT TO 2030

The City of Fairfield is committed to increasing sustainability in municipal operations and community-wide, setting a mid-term milestone horizon of 2030 to align with the City's 75th anniversary. In line with this target, many goals within this Plan are set against a mid-term date of 2030, including many measures anticipated to contribute to quantifiable greenhouse gas emissions reductions by 2030. The City has selected this aggressive milestone to align with the City's anniversary and underscore its demonstrated leadership in sustainability. Municipal strategies that guide Fairfield in accomplishing this goal are outlined in detail within the Strategic Roadmap. In line with the greenhouse gas inventory presented above, each strategy area corresponds with major greenhouse gas emissions generation areas related to reducing mobile source emissions, operating sustainable buildings, increasing efficiency in public street lighting, reducing solid waste generation, and developing sustainable policies and procedures to accelerate these efforts.

The following figure illustrates the total projected community-wide greenhouse gas emissions through 2030.

The green dotted line represents the 2021 baseline, which is used to calculate the emission savings. Annual emissions at the 2021 baseline equal approximately 400,000 MT CO2e.

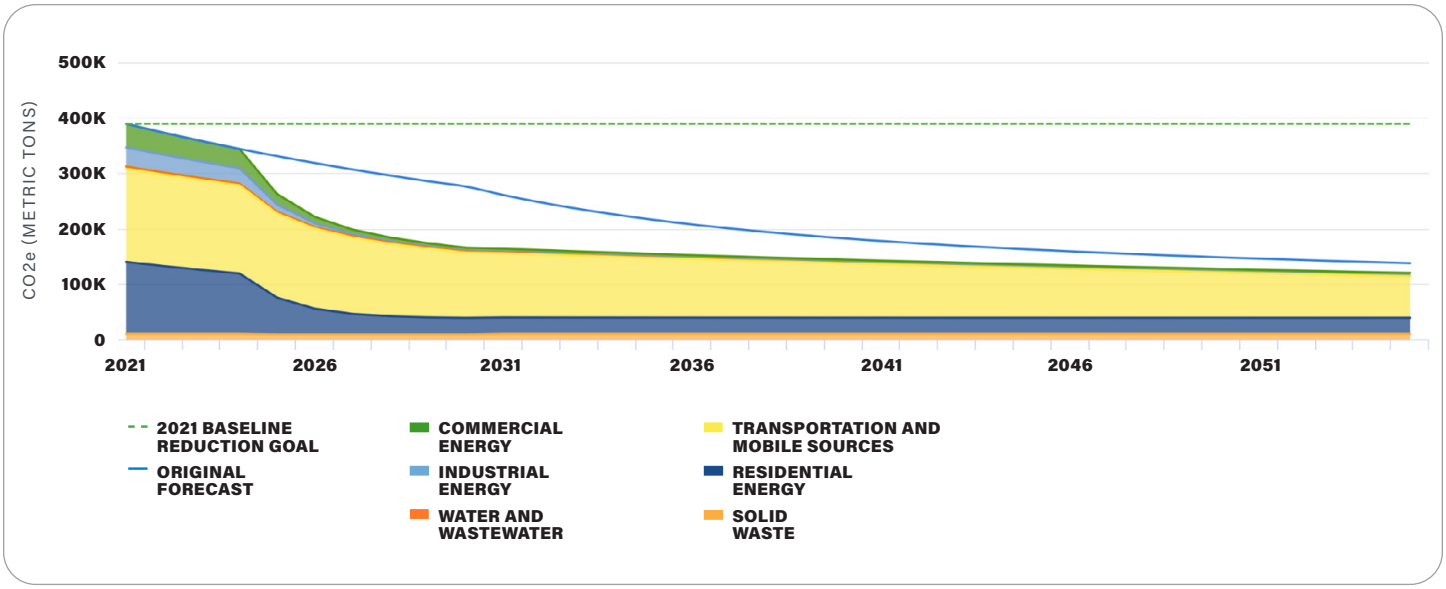
The blue line represents the Adjusted Business-As-Usual (ABAU) forecast as determined by the 2021 emissions inventory and accounting for anticipated adjustments as described in Section 2. The impact of the direct interventions, resulting in carbon achievements by Fairfield, is calculated from this benchmark.

The green, light blue, and dark blue bands represent commercial, industrial, and residential energy usage, respectively. Reductions in this sector are expected to come primarily from energy efficiency measures, procurement of renewable energy, and the development of local renewable generation, along with reductions in natural gas and stationary fuel use. Collectively, total cumulative 2021-2030 energy emissions from these sectors are projected to decrease from 3,893,570 to 1,083,328 MT CO2e, a substantial reduction of approximately 72% from the 2021 baseline.

The yellow band represents total cumulative 2021-2030 transportation emissions, which are expected to decrease by 13%, from 1,681,250 to 1,461,475 MT CO2e, in comparison with the 2021 baseline. This reduction will be driven by fewer vehicle miles traveled (VMT), increased VMT fuel efficiency, improved connectivity infrastructure, enhanced education and outreach, and increased use of multi-modal transport (biking, walking, transit) as part of the Fairfield Connects initiative. Municipal scale emissions reductions will stem from converting the municipal fleet to electric, hybrid, or clean emission vehicles.

The light orange band represents total cumulative 2021-2030 solid waste emissions, decreasing by less than 1% of the 2021 baseline, from 98,250 MT CO2e to 92,352 MT CO2e based on a 10% waste diversion rate. These reductions may increase following the completion of a Waste Characterization Study which will more accurately quantify current and projected diversion rates for Fairfield. Waste emissions reductions will mainly be driven by source reduction, procurement, recycling, composting, and other conservation measures to be outlined in municipal and community Waste Reduction and Diversion Plans.

Figure 6: Projected Greenhouse Gas Emissions for the City of Fairfield Reflecting the 2030 Goals



SECTION 3

OUR SUSTAINABILITY TARGETS

LOOKING OUT TO 2055

Looking towards 2055, the City is committed to continued and increased progress toward a sustainable community, setting long-term goals to align with the City's centennial anniversary. This goal demonstrates leadership at the City level in the absence of statewide benchmarks or targets. Emissions reductions targets are set at the focus area goal level and outlined within the Strategic Roadmap. Given the state's previous reliance on coal, the move toward increasingly carbon-free energy utilization is anticipated to result in substantial emissions reductions. Combined with additional measures outlined in this Plan to be fully implemented by 2055, Fairfield anticipates substantial progress toward carbon reductions both at the municipal level as well as community-wide. The City is dedicated to methodically reducing its community-wide emissions through strategic initiatives, demonstrating a proactive and leadership-driven approach to environmental stewardship and setting a precedent for a sustainable future by 2055.

SECTION 3

OUR SUSTAINABILITY TARGETS

The diagram below, after the 2030 goals, displays the total projected community-wide greenhouse gas emissions through 2055.

The green dotted line illustrates the baseline from 2021, which serves as the reference point for calculating emission reductions. Annual emissions at the 2021 baseline equal approximately 400,000 MT CO2e.

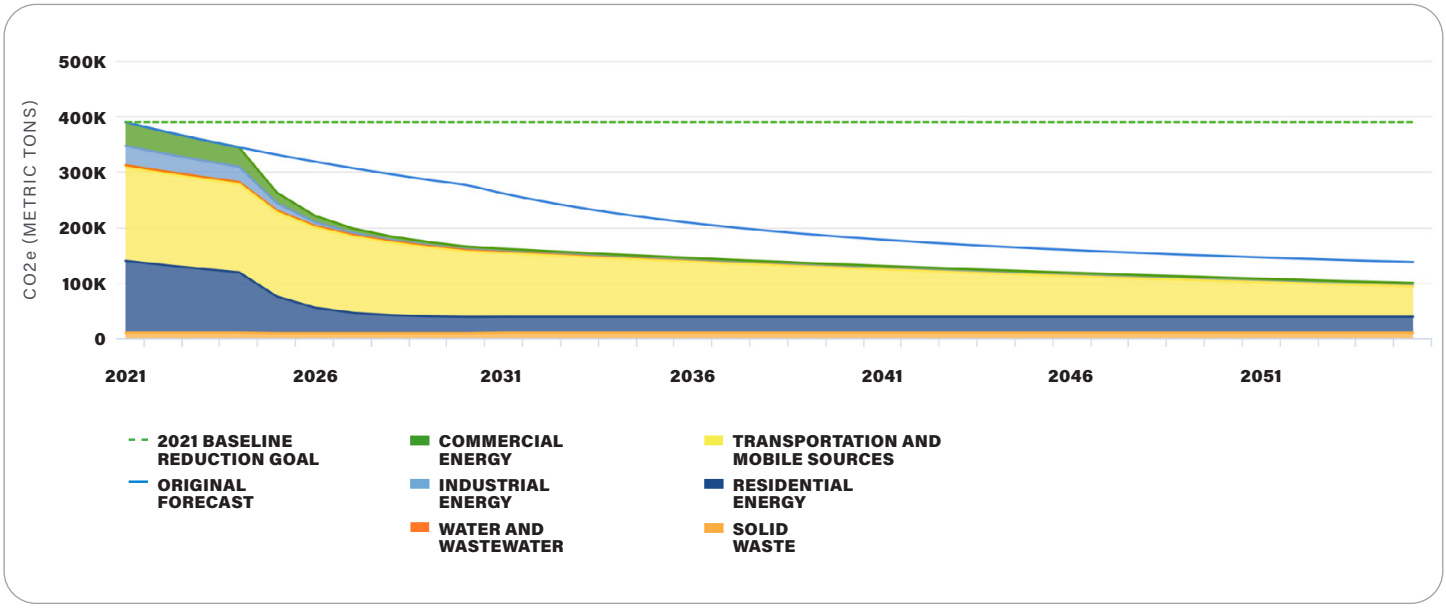
The blue line indicates the Adjusted Business-As-Usual (ABAU) projection based on the 2021 emissions inventory and includes expected modifications as outlined in Section 2. From this standard, the effects of direct interventions that lead to carbon reductions achieved by Fairfield are measured.

Following the same color scheme as the previous figure, the chart employs different colors to represent various sectors: commercial (green), industrial (light blue), and residential (dark blue) sectors are depicted as making significant strides towards zero emissions by 2055, primarily through the complete phase-out of electricity-related emissions. This will achieve a total cumulative 2021-2055 reduction of 5,283,667 MTCO2e from the 2021 baseline, corresponding to a 72% decrease in emissions.

The yellow band shows a 41% reduction in transportation emissions from the 2021 baseline, decreasing total cumulative 2021-2055 transportation emissions from 5,884,375 to 3,450,370 MT CO2e, driven by continuous efforts in reducing emissions from VMT, enhancing connectivity infrastructure, proactive education and outreach programs, and shifting towards multi-modal transportation options like biking, walking, and public transit under the Fairfield Connects initiative. Municipal emissions reduction efforts will continue to include transitioning the municipal vehicle fleet to electric, hybrid, or other low-emission vehicles.

Lastly, the thin dark orange line indicates emissions from the electricity consumed by water distribution and wastewater treatment facilities, expected to achieve neutrality by 2055 through the adoption of clean electric energy solutions.

Figure 7: Projected Greenhouse Gas Emissions for the City of Fairfield Reflecting the 2055 Goals



SECTION 3
OUR SUSTAINABILITY TARGETS

EMISSIONS PROJECTIONS REFERENCE FRAMEWORK

For greenhouse gas emissions projections, establishing a clear frame of reference is critical. While some jurisdictions measure their strategies and goals against the ABAU scenario, most opt for baseline comparisons. In the case of Fairfield, comparisons are consistently made against the 2021 baseline, which illustrates the total emissions under hypothetical conditions extended from the inventory year 2021 into the future. Notably, this scenario does not account for the emission reduction targets of other key players like Duke Energy. Between 2021 and 2055, this baseline shows the highest projected total cumulative 2021-2055 emissions at 13,627,495 MTCO2e.

Conversely, the ABAU scenario is represented by the entire dark blue area under the corresponding blue line, reflecting a total cumulative emissions of 7,663,894 MTCO2e from 2021 to 2055. Its inventory year is also 2021, with emissions of 391,850 MTCO2e. This scenario includes targets from stakeholders and incorporates standards set by the Environmental Protection Agency (EPA), such as Corporate Average Fuel Economy (CAFE) standards for transportation.

The target scenarios for 2030 and 2055 focus exclusively on emissions after the implementation of Fairfield's strategies based on the 2021 baseline. These scenarios predict total cumulative emissions of 6,085,248 MT CO2e from 2021 to 2055 for the 2030 Target Scenario, and 5,794,407 MT CO2e from 2021 to 2055 for the 2055 Target Scenario. The projected reductions in these scenarios result from Fairfield's targeted actions, alongside contributions from Duke Energy, CAFE standards, and other carbon mitigation measures.

SECTION 3

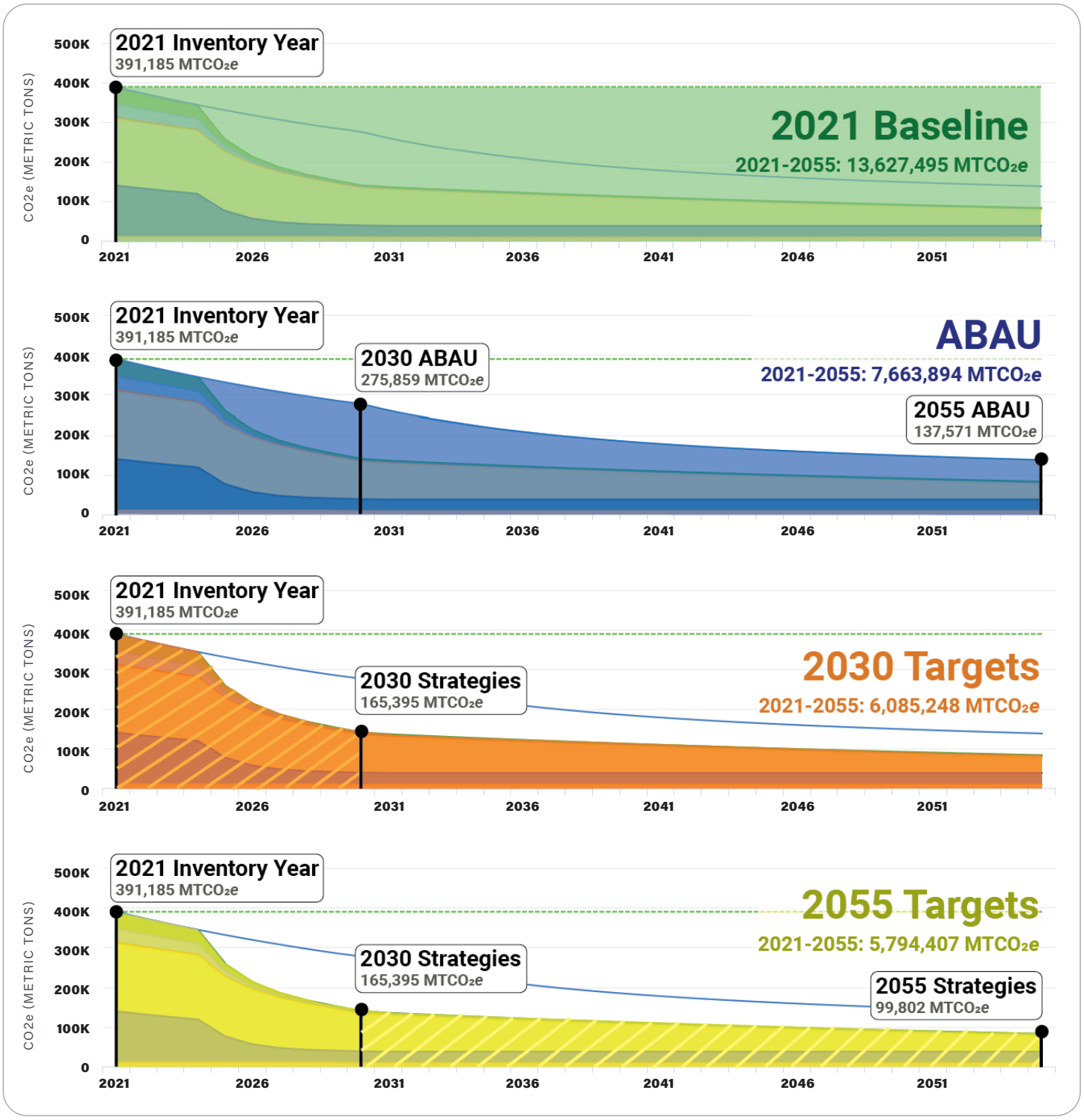
OUR SUSTAINABILITY TARGETS

All percentage reductions stated in this report are calculated by comparing the emissions of these target scenarios against the green rectangle at the top of the chart, which represents the 2021 baseline. Using this baseline for comparison not only shows a greater and more realistic percentage of reductions but also encompasses reductions from external factors like those introduced by Duke Energy. This approach effectively underscores the breadth and effectiveness of Fairfield's emissions reduction strategy.

Table 2: Breakdown of Total GHG Emissions by Sector in Fairfield (measured in MTCO2e), showing 2021 Baseline, ABAU, and Target Emissions for 2030 and 2055.

	TOTAL EMISSIONS IN MTCO2E (2021-2055)			
SECTOR	**2021 BASELINE**	**ABAU**	**2030 TARGETS**	**2055 TARGETS**
Commercial Energy	1,494,885	559,401	339,931	338,191
Industrial Energy	1,205,925	374,680	179,470	177,967
Residential Energy	4,544,260	2,037,744	1,449,967	1,445,245
Transportation & Mobile Resources	5,884,375	4,303,537	3,733,246	3,450,370
Water & Wastewater	154,175	44,657	44,657	44,657
Solid Waste	343,875	343,875	337,977	337,977
Total	**13,627,495**	**7,663,894**	**6,085,248**	**5,794,407**

Figure 8: Fairfield's 2021 Baseline, ABAU, 2030 and 2055 Targets



SECTION 4

STRATEGIC ROADMAP

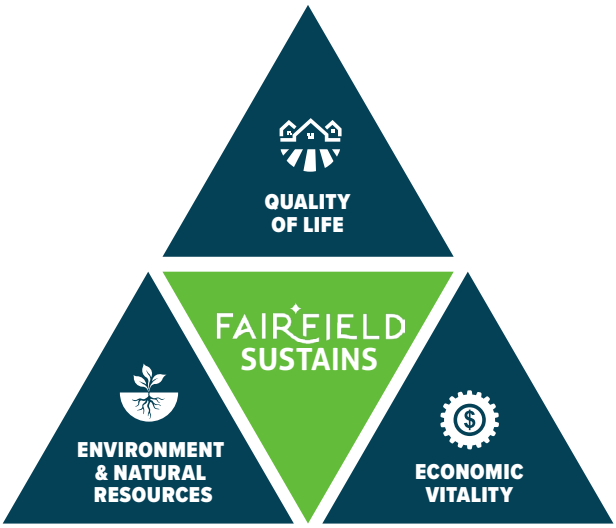
FAIRFIELD SUSTAINS

SECTION 4

STRATEGIC ROADMAP

Fairfield Sustains outlines a Strategic Roadmap to a more sustainable community by championing economic vitality, efficiency in municipal operations, and smart resource utilization, aiming to uplift the quality of life for everyone.

The Plan is built on the combined contributions gathered through extensive community engagement with the Fairfield community, stakeholders, staff, and leadership. Fairfield Sustains is a synthesis of community survey results, workshop ideation synthesis, and focus group refinement, along with key themes and policy commitments from existing planning documents and policies. The Plan is grounded in comprehensive data analysis of 2021 Municipal and Community greenhouse gas inventories, local policies, best practices in sustainability solutions, and opportunities unique to the City of Fairfield. It goes beyond emissions reduction, embracing a broad approach to sustainability with an improved quality of life as the core objective.



SECTION 4
STRATEGIC ROADMAP

This Strategic Roadmap provides an actionable Plan to guide the City toward near, mid, and long-term success, using a the following Framework:

A. **FOUNDATIONAL STRATEGIES:** Focus on three high-impact essential sectors—Mobility & Transportation, Buildings & Energy, and Resource Conservation—to drive economic vitality, improve well-being, and optimize resource use.

B. **COMPLEMENTARY STRATEGIES:** Embrace cornerstones of Fairfield's sustainability approach through two additional sectors–Nature & Green Community, plus Business & Community Resilience–strengthening the community connection to Fairfield's unique natural spaces and supporting visible sustainable solutions across all focus sectors. These strategies help reduce barriers to participation, connect residents and businesses to resources to increase cost effectiveness, and foster a more sustainable, engaged and resilient Fairfield.

STRATEGY CO-BENEFITS AND PRIORITIZATION

The Strategic Roadmap, presents foundational and complementary strategies alongside their associated co-benefits and assigned a priority score. Co-benefits are matched to the strategy with which they align. The priority score is assigned to each strategy based on a qualitative and internal analysis and is derived based on how well it aligns with the co-benefits (e.g., high/medium/low or yes/no). A score of 1 indicates high priority, while 3 signifies lower priority. The full prioritization matrix is presented for reference as Appendix G. Wherever possible, this Strategic Roadmap includes goals, actions and strategies that are Specific, Measurable, Achievable, Relevant and Timebound (SMART). In some cases, actions in one focus area complement, contribute to or enhance, an action in another strategy area.

CO-BENEFIT KEY

PRIORITY CRITERIA	DESCRIPTION
GHG REDUCTION POTENTIAL	Level of anticipated emissions reductions as quantified in MTCO2e, ranking as high, med, low. High emissions reductions are given a high emissions reduction potential.
COST EFFECTIVENESS	Upfront or ongoing cost investment needed for implementation, ranked as high, med, low. Low cost investment is given a high cost effectiveness ranking.
INCREASE OPERATIONAL EFFICIENCY	Assessed based on the degree to which this strategy is anticipated to increase operational efficiencies when implemented, in the form of cost savings, reduced resource utilization, streamlined staffing, etc. Ranked as high, med low, with most efficient given a high ranking.
REDUCES OPERATIONAL COSTS	Gives a yes/no response based on whether the strategies directly aligns with other key City Plans (e.g. Fairfield Forward, Fairfield Connects, Parks Master Plan, etc.).
FUNDING AVAILABLE	Gives a yes/no response based on whether known regular funding is available through current allocations or likely grant programs.
INTERNAL CAPACITY/SUPPORT	Assessed based on the degree to which there is current capacity and/or support to successfully implement this strategy, ranked as high, med, low, with most capacity ranked as high.
QUALITY OF LIFE	Represents various community co-benefits that may positively impact quality of life such as reduced socioeconomic or health disparities, improved health or well being, increased fairness in public policy, benefits/eases daily life, mobility, connection, economic well being for residents and businesses. Ranked as high, med, low, with those most positively correlated ranked as high.

CO-BENEFIT KEY

MOBILITY & TRANSPORTATION

FAIRFIELD SUSTAINS

CREATE A MORE BIKEABLE, WALKABLE AND CONNECTED COMMUNITY

In Fairfield, transportation contributes to 43% of community emissions and 17% of city operations emissions, underscoring the critical opportunity for increased efficiency and connectivity through multi-modal travel options. These sustainable solutions are the cornerstone of the recent Fairfield Connects Plan, and thus form a central element of Fairfield Sustains' approach to the mobility and transportation sector. Whether driving, biking, or walking, Fairfield is creating a more connected, enjoyable Fairfield, embracing innovative initiatives that make every journey better for the community and the environment.

GHG REDUCTION POTENTIAL

COST EFFECTIVENESS

INCREASE OPERATIONAL EFFICIENCY

REDUCES OPERATIONAL COSTS

FUNDING AVAILABLE

INTERNAL CAPACITY/SUPPORT

QUALITY OF LIFE

CO-BENEFITS KEY

GOAL MT.1.0 REDUCE VEHICLE MILES TRAVELED (VMT) EMISSIONS BY **20% BY 2030 AND 30% BY 2055**

STRATEGY	ACTION
MT.1.1 Create a more walkable, bikeable, transit-friendly City through robust implementation of Fairfield Connects by **2055**. **PRIORITY SCORE: 1** **CO-BENEFITS:**	**MT.1.1.1** ✔EXISTING ACTION Continue dedicated Active Transportation Fund to invest in strategic infrastructure development, smart growth, education, incentives, and connectivity enhancements in line with Plan objectives. **MT.1.1.2** ✔EXISTING ACTION Seize funding opportunities by proactively pursuing federal, state, local grant and related opportunities by monitoring and applying for relevant grants as outlined in Plan, and as new funding opportunities are available. **MT.1.1.3** ✔EXISTING ACTION Implement multi-use paths, bike lanes, shared lanes and sidewalk enhancements outlined in Fairfield Connects. Continue to integrate new paths with existing green spaces to create a more pleasant and natural walking and biking experience. **MT.1.1.4** ✔EXISTING ACTION Enhance safe bike and pedestrian infrastructure, aiming for an increase in residents within **0.2 mile** of such facilities by **2030**, adopting best practices in urban design and safety.
MT.1.2 Promote and reduce barriers to adoption of active and public transportation opportunities. **PRIORITY SCORE: 3** **CO-BENEFITS:**	**MT.1.2.1** Leverage City's membership in Butler County Regional Transportation Authority (BCRTA) to advocate for and invest in improved transit connectivity to, from and within Fairfield by **2030**, which may include but are not limited to: enhanced transit routes, schedule frequencies, micro-transit options, tools to ease use, lighting/safety features, shade, connectivity to bike routes, strategic park and ride locations, and other transit-friendly and last mile amenities. **MT.1.2.2** Launch a targeted marketing campaign to promote greenway trails and multi-modal transit lanes, leveraging local events, developing educational programs and partnering with BCRTA, OKI or other regional entities. **MT.1.2.3** ✔EXISTING ACTION Continue to improve walkability along Route 4 by replicating successful features from Pleasant Avenue, such as safe pedestrian crossings and aesthetic enhancements. **MT.1.2.4** ✔EXISTING ACTION Continue construction of multi-modal paths around Marsh Park to accommodate pedestrians, cyclists, and other non-motorized transport modes. **MT.1.2.5** Increase community bike racks and amenities along multi-modal paths. Encourage businesses to install bike racks or active commuter amenities in key commercial zones.

GOAL MT.1.0 REDUCE VEHICLE MILES TRAVELED (VMT) EMISSIONS BY **20% BY 2030 AND 30% BY 2055**

STRATEGY	ACTION
MT.1.3 Convert **20%** of non-emergency City fleet to electric vehicles (EVs), hybrid or clean fuels by **2030 and 100% by 2055**. **PRIORITY SCORE: 2** **CO-BENEFITS:**	**MT.1.3.1** ✔EXISTING ACTION Develop a Zero Emission Vehicle (ZEV) Plan for **100%** Municipal Fleet by **2055** including right sizing, replacement schedule, costs, infrastructure needs, optimal charging locations, and funding opportunities. **MT.1.3.2** Ensure all newly acquired vehicles for city use are aligned with the ZEV Plan by incorporating policy into new Environmentally Preferable Purchasing Policy (EPPP). Establish annual targets to transition fleet to achieve **100%** EVs, hybrids, or clean fuels by **2055** target.
MT.1.4 Proactively support community EV expansion and readiness. **PRIORITY SCORE: 2** **CO-BENEFITS:**	**MT.1.4.1** Update building codes and zoning requirements to encourage and facilitate EV readiness or pre-wiring in new construction. Explore waiving permit fees for EV charging infrastructure installations in existing buildings to encourage adoption. **MT.1.4.2** ✔EXISTING ACTION Coordinate installation of **10** City & Community charging stations by **2030** through federal, regional and local funding. Continuously seek grants for the expansion of EV charging infrastructure. Strategically install EV charging stations near commercial areas and amenities to support local business utilization during charging and encourage EV adoption. Combine with educational promotion and buy local campaign. **MT.1.4.3** Consider partnering with EV charging infrastructure businesses to encourage installation of Level 2/3 charging banks at strategic locations and along travel corridors. **MT.1.4.4** Create an information hub to educate residents and businesses on available EV incentives, rebates, charging information, and other resources to accelerate EV adoption.
MT.1.5 Electrify specialty vehicle, off-road tools, equipment, and machinery in municipal operations **PRIORITY SCORE: 3** **CO-BENEFITS:**	**MT.1.5.1** Conduct a study to assess and set targets including replacement schedule for specialty and off-road vehicles, tools, and machinery by **2030**. **MT.1.5.2** Eliminate off-road emissions in municipal operations by **2055** by adopting a planned replacement and purchase policy for all specialty vehicles, tools, equipment and machinery, integrated into broader municipal Environmentally Preferable Purchasing Policy (EPPP). **MT.1.5.4** Provide employee education, training and technical assistance to drive behavior change.

BUILDINGS & ENERGY

FAIRFIELD SUSTAINS

CREATE A MORE RESILIENT, SUSTAINABLE AND COST EFFECTIVE ENERGY FUTURE

Energy used to power homes, businesses and critical municipal operations is an integral focus sector of Fairfield Sustains, as it represents both major ongoing financial costs to our community, and more than half of all community emissions. Energy use and management are also critical for community resilience in the face of changing environmental conditions. This makes efforts in the buildings and energy sector a significant opportunity area for increased efficiency and improved quality of life. At the community scale, 53% of emissions are generated from residential, commercial or industrial energy use. Emissions from energy account for 83% of municipal operations emissions with the largest portion coming from water and wastewater treatment (46%), followed by buildings and facilities (23%) and streetlights and traffic signals (14%). This highlights the urgent opportunity for a shift towards energy efficiency and embracing renewable energy solutions across our community.

The recent passage of a community energy aggregation program paves the way for more sustainable energy sources along with increased rate stability for consumers. Initial efforts are already delivering a significant amount of renewable energy at a significantly lower cost for residents and small businesses. This focus area also concentrates on municipal leadership through renewable energy credit (REC) procurement, demonstration projects, improved energy efficiency, local renewable energy generation, and making it easier for businesses and residents to make sustainable energy choices.

GHG REDUCTION POTENTIAL

COST EFFECTIVENESS

INCREASE OPERATIONAL EFFICIENCY

REDUCES OPERATIONAL COSTS

FUNDING AVAILABLE

INTERNAL CAPACITY/SUPPORT

QUALITY OF LIFE

C O - B E N E F I T S K E Y

GOAL E.1.0 REDUCE ENERGY EMISSIONS BY **50% BY 2030** AND **100% BY 2055** COMMUNITY-WIDE

STRATEGY	ACTION
PROCUREMENT **E.1.1** Leverage energy aggregation procurement for residential and small commercial community energy use to achieve **50%** carbon-free energy procurement **by 2024** and **100% by 2035** **PRIORITY SCORE:** 1 **CO-BENEFITS:**	**E.1.1.1** ✔EXISTING ACTION Implement Energy Aggregation initiative for residential and small commercial customers by **2024** and achieve **50%** renewable energy power procurement by **2024**, initiating the shift towards greener, more affordable energy solutions. **E.1.1.2** Explore long-term (e.g. 10, 15, 20-year) power purchase agreements beginning in **2027** procurement cycle to secure low-cost and stable renewable and carbon-free power pricing and reduce risk against future anticipated price increases with growing demand. **E.1.1.3** Increase renewable energy procurement options by **2027** to include minimum **50%** renewable energy standard + **optional 100%** renewable, wind, or carbon-free offering for customers, which could be available at a small premium for customers interested in supporting a higher sustainability option. **E.1.1.4** Reach **100%** renewable, wind, or carbon-free power procurement by **2035**, fulfilling our promise for a fully sustainable and economically advantageous energy supply.
PROCUREMENT **E.1.2** Procure **100%** renewable energy for all municipal operations **PRIORITY SCORE:** 2 **CO-BENEFITS:**	**E.1.2.1** ✔EXISTING ACTION Continue Renewable Energy Credit (REC) purchasing to achieve **100%** renewable energy for all municipal operations through **2024**. Renew REC procurement agreement to continue **100%** renewable energy for all municipal operations by **2025**.

GOAL E.1.0 REDUCE ENERGY EMISSIONS BY **50% BY 2030** AND **100% BY 2055** COMMUNITY-WIDE

STRATEGY	ACTION
RENEWABLE ENERGY **E.2.1** Increase local on-site renewable energy in municipal operations by **2030** **PRIORITY SCORE:** 1 **CO-BENEFITS:**	**E.2.1.1** Demonstrate leadership in sustainable energy through on-site renewable energy production and potential battery storage for increased rate stability, emergency preparedness and peak shaving. **E.2.1.2** ✔EXISTING ACTION Conduct a Municipal Solar Feasibility Study by **2026** to evaluate the potential and practicality of installing solar panels on municipally owned or operated buildings, parks, facilities, and other suitable properties to include such considerations as: sizing potential, feasible rooftop, ground-mounted, parking or other installation approaches, battery integration potential, capital costs, rate per kWh, tax rebates, payback periods, self-owning pay-back periods, etc. **E.2.1.3** Install on-site solar photovoltaic systems (combined with battery storage) at municipally owned or operated buildings, facilities, parks or suitable properties as identified in Solar Feasibility Study. Set short, mid and long-term installation targets for **2055** and monitor progress. **E.2.1.4** ✔EXISTING ACTION Actively monitor grant and funding sources and seek opportunities to partner with regional agencies, non-profits or others to secure available opportunities. **E.2.1.5** Prioritize integrated systems installation with parks, parking, and facilities to support onsite energy use and charging of EV vehicles, golf carts and other building and equipment.
RENEWABLE ENERGY **E.2.2** Encourage local community solar installation among community residents and businesses **PRIORITY SCORE:** 2 **CO-BENEFITS:**	**E.2.2.1** Leverage OKI Solar Ready Program, including solar siting surveys, to guide promotion and adoption of solar for residents and businesses within Fairfield. Increase community solar capacity at strategic locations and among partners or regional agencies. **E.2.2.2** Update building codes and zoning requirements to encourage and facilitate solar installations. Implement streamlined permitting process for solar installations. Explore waiving permit fees for solar installation projects to encourage and accelerate community solar adoption. **E.2.2.3** Strategically utilize economic development funding to incentivize adoption of energy efficiency and renewable installation projects in the industrial and commercial sectors. Establish an annual fund and establish annual targets for business participation. **E.2.2.4** Educate community on state and federal tax credits, rebates, and other incentive programs to remove barriers to solar energy adoption. Create an information hub with information on programs, service providers and financing options including but not limited to PACE for commercial businesses and ESIP resources.

GOAL E.1.0 REDUCE ENERGY EMISSIONS BY **50% BY 2030** AND **100% BY 2055** COMMUNITY-WIDE

STRATEGY	ACTION
ENERGY EFFICIENCY & CONSERVATION **E.3.1** Continue and enhance existing municipal energy efficiency program **PRIORITY SCORE: 2** **CO-BENEFITS:**	**E.3.1.1** ✔EXISTING ACTION Implement results of internal comprehensive energy audit to increase efficient operations at all municipal facilities. Update energy audit every 5 years or as needed. **E.3.1.2** Prioritize window replacements in Municipal Building and Annex for energy efficiency gains in older municipal building stock. **E.3.1.3** Replace Justice Center low efficiency non-condensing boilers to high-efficiency condensing models, increasing efficiency from an estimated **70% to 95%** efficiency. **E.3.1.4** ✔EXISTING ACTION Continue and expand energy savings retrofits and installations including LED lighting, as well as light sensors, timers, and smart thermostats based on occupancy patterns in all applicable areas in municipal buildings, parks and facilities. **E.3.1.5** ✔EXISTING ACTION Continue to utilize and improve smart energy management systems for real-time and remote adjustments. Regularly review data to refine energy management. Continue to regularly upgrade energy management systems for peak performance.
ENERGY EFFICIENCY & CONSERVATION **E.3.2** Increase energy conservation initiatives in municipal operations **PRIORITY SCORE: 3** **CO-BENEFITS:**	**E.3.2.1** Prioritize energy efficiency installations across all municipal buildings, parks and facilities during upgrades, renovations, remodeling or other improvements. **E.3.2.2** Implement ongoing employee conservation policies, and promote awareness through education and training. **E.3.2.3** When preparing for replacements of major building equipment, conduct an analysis of highest energy efficiency equipment models and systems, and consider equipment electrification (HVACs, boilers, heaters) to achieve further reduced emissions, if appropriate. Consider opportunities for planned early retirement and replacement to accelerate emissions reductions through the City's Five Year Capital Improvement Plan.

GOAL E.1.0 REDUCE ENERGY EMISSIONS BY **50% BY 2030** AND **100% BY 2055** COMMUNITY-WIDE

ENERGY EFFICIENCY & CONSERVATION

STRATEGY	ACTION
E.3.3 Decrease energy usage in street lighting by **50% by 2030** **PRIORITY SCORE: 2** **CO-BENEFITS:**	**E.3.3.1** ✔EXISTING ACTION Upgrade all cobra head street lights and traffic signals to LED or other energy-efficient technologies. Accelerate end of life replacement of post head streetlights to LED or more efficient technologies. Seek partnerships and funding to accelerate adoption. **E.3.3.2** ✔EXISTING ACTION Implement smart lighting and traffic control systems in appropriate areas to shift timing or adjust brightness based on traffic and pedestrian patterns to optimize energy use.

ENERGY EFFICIENCY & CONSERVATION

E.3.4 Increase wastewater treatment efficiency through strategic installation of improved systems **PRIORITY SCORE: 3** **CO-BENEFITS:**	**E.3.4.1** ✔EXISTING ACTION Install and optimize economizers to use outdoor air cooling by **2025**. (University of Dayton (UD) Industrial Assessment Center (IAC) recommendation) **E.3.4.2** ✔EXISTING ACTION Upgrade Aeration System 1 with Fine Bubble Diffusers by **2025**. (UD IAC recommendation) **E.3.4.3** ✔EXISTING ACTION Install VFDs on all appropriate high surface pumps and optimize operation. (UD IAC recommendation) **E.3.4.4** Continue current biogas capture and reutilization efforts. Monitor systems and conduct regular upgrades to maintain peak performance. **E.3.4.5** Increase methane recapture energy program to reduce on-site flaring and improve air quality. Conduct an updated feasibility study on methane recapture to reduce seasonal summer flaring and increase heat or power utilization or energy sale to grid, including cost-benefit analysis, energy output, payback periods, tax rebates.

GOAL E.1.0 REDUCE ENERGY EMISSIONS BY **50% BY 2030** AND **100% BY 2055** COMMUNITY-WIDE

ENERGY EFFICIENCY & CONSERVATION

STRATEGY	ACTION
E.3.5 Be a conduit for resources to encourage, liaise and facilitate adoption of renewables and energy efficiency community-wide. **PRIORITY SCORE: 2** **CO-BENEFITS:**	**E.3.5.1** Offer energy audit and technical assistance services to businesses and residents in targeted community sectors. Set annual targets for participants enrolled. Launch commercial program targeting the City's largest commercial or industrial energy users beginning with the City's strong industrial base. Expand to additional sectors through **2055**. **E.3.5.2** Develop education and awareness programs to streamline and promote available energy conservation and renewable adoption programs, services, technical assistance and financial assistance programs, incentives, rebates and tax benefits. **E.3.5.3** Seek and establish partnerships with local or regional service providers offering services in the energy or sustainability sector. Establish, promote and regularly update list of service providers or other resources for businesses and residents.

RESOURCE CONSERVATION

FAIRFIELD SUSTAINS

NURTURING OUR NATURAL WEALTH THROUGH SMART RESOURCE UTILIZATION

This category encompasses the sustainable management and conservation of natural resources, including water, land, and materials. It focuses on reducing waste, recycling, and promoting the sustainable use of resources through such mechanisms as reduced consumption (source reduction, reuse), waste diversion (recycling, composting), and responsible purchasing (environmentally preferable purchasing policies). Although associated emissions reductions for resource conservation strategies may be lower than those anticipated in other foundational focus areas listed above, the Resource Conservation sector provides some of the most visible opportunities at a community level, municipal operations level and day-to-day behavioral activities that can successfully engage, activate and mobilize the community in taking daily sustainability action.

C O - B E N E F I T S K E Y

GHG REDUCTION POTENTIAL

COST EFFECTIVENESS

INCREASE OPERATIONAL EFFICIENCY

REDUCES OPERATIONAL COSTS

FUNDING AVAILABLE

INTERNAL CAPACITY/SUPPORT

QUALITY OF LIFE

GOAL RC.1.0 ESTABLISH BASELINE AND ACHIEVE **10% INCREASE** IN WASTE REDUCTION AND DIVERSION BY **2030** (MUNICIPAL/COMMUNITY)

STRATEGY	ACTION
RC.1.1 Advance sustainable waste management planning **PRIORITY SCORE: 3** **CO-BENEFITS:**	**RC.1.1.1** Increase the City's understanding of current waste stream by conducting an up to date City specific Waste Characterization Study (WCS), partnering with Butler County Solid Waste District (BCSWD) as appropriate. Assess current recycling (diversion) rate to inform future planning and monitoring. Obtain detailed data on various material types and generation amounts to guide programmatic development. Use WCS to inform a comprehensive Waste Diversion Plan. **RC.1.1.2** Adopt a community-wide waste reduction and diversion rate goal by **2027** to track progress and foster collective action towards waste reduction, recycling and other diversion efforts. (Use WCS data to inform goal setting) **RC.1.1.3** Use WCS data to inform and complete a comprehensive recycling & waste reduction plan (Waste Diversion Plan) to include programmatic design for all waste stream generation sectors. **RC.1.1.4** Conduct periodic audits of City and hauler green waste, recycling and other waste diversion programs to identify opportunities for increased participation, reduced contamination and/or address other barriers to current diversion programs. **RC.1.1.5** Increase recycling outreach, technical assistance and incentives efforts to educate the community about waste reduction, recycling and other diversion requirements and reduce barriers to participation.
RC.1.2 Enhance current organics collection services to increase diversion of compostable materials **PRIORITY SCORE: 3** **CO-BENEFITS:**	**RC.1.2.1** Launch pilot food-scrap composting program with residents and businesses by **2026**. **RC.1.2.2** Explore food scrap (organics) collection program expansion utilizing learning from pilot program. Combine with organics collection & composting feasibility study to consider current and needed infrastructure, separated or integrated yard waste organics systems, inclusion of biodegradable single-use materials and pilot composting collection program results. **RC.1.2.3** Consider expanding and launching a comprehensive organics collection for residents/ businesses based on pilot and study results.

RESOURCE CONSERVATION

GOAL **RC.1.0** ESTABLISH BASELINE AND ACHIEVE **10% INCREASE** IN WASTE REDUCTION AND DIVERSION BY **2030** (MUNICIPAL/COMMUNITY)

STRATEGY	ACTION
RC.1.3 Increase diversion from City's existing recycling and diversion collection programs **PRIORITY SCORE: 1** **CO-BENEFITS:**	**RC.1.3.1** ✔EXISTING ACTION Continue City's recycling collection service with franchised hauler. Expand and enhance recycling and diversion collection offerings over time in collection agreements with hauler and BCSWD. **RC.1.3.2** ✔EXISTING ACTION Continue City's greenwaste and leaf collection program for residents and businesses. **RC.1.3.3** Promote increased participation in City's recycling, greenwaste and leaf collection program for residents and businesses.
RC.1.4 Advance targeted waste management solutions **PRIORITY SCORE: 2** **CO-BENEFITS:**	**RC.1.4.1** Develop service-specific recycling education, outreach and technical assistance programs and incentives: (e.g. Business | Residential | Multi-family). **RC.1.4.2** Develop sector-specific recycling education, outreach and technical assistance programs and incentives: (e.g. schools, restaurants, hotels, groceries, industry, special events, venues, etc.). **RC.1.4.3** Develop material-specific recycling programming for hard to recycle items based on WCS (e.g. carpet, solar panels, paint, fuel canisters, etc.). Promote and expand special collection events, drop-off facilities, and/or pick-up services (including bulky item pick-up days, Household Hazardous Waste (HHW) drop-off, E-waste collection, paint, batteries, etc.).

GOAL RC.1.0 ESTABLISH BASELINE AND ACHIEVE **10% INCREASE** IN WASTE REDUCTION AND DIVERSION BY **2030** (MUNICIPAL/COMMUNITY)

STRATEGY	ACTION
RC.1.5 Utilize policy to accelerate waste reduction **PRIORITY SCORE: 3** **CO-BENEFITS:**	**RC.1.5.1** Develop and adopt an Environmentally Preferable Purchasing Policy (EPPP) for municipal operations to maximize source reduction, prioritize energy-efficient equipment and reduce mobile source emissions. Develop internal purchasing tools and educational materials including preferred product and vendor lists and staff training to support EPPP procurement of items across departments for both every day and occasional purchasing. **RC.1.5.2** Utilize waste management agreements to set diversion targets and expand education and outreach requirements. Leverage Butler County Solid Waste District to enhance education and outreach services. **RC.1.5.3** Develop special event and meeting sustainability protocols to include recycling and composting bins, source reduction, and guidance on use of disposable materials. **RC.1.5.4** Consider the adoption of a waste diversion equal space ordinance for renovations and new construction to reduce service barriers and encourage increased participation in available commercial and multi-family recycling and/or organics collection services.

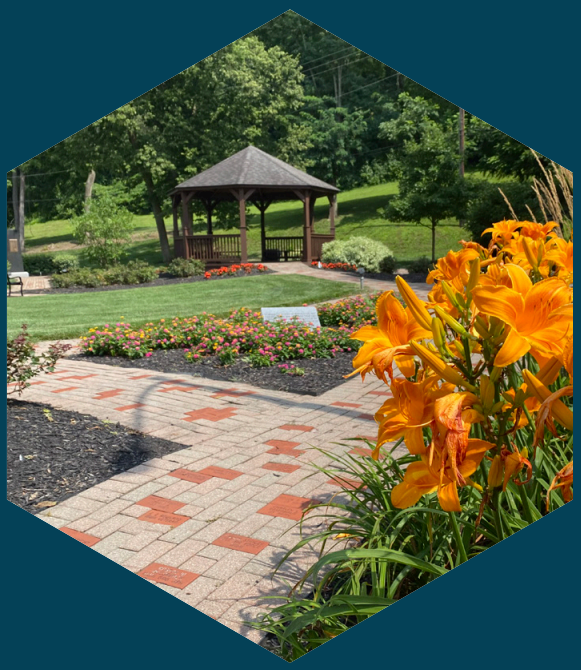
GOAL RC.2.0 ENCOURAGE WATER CONSERVATION COMMUNITY-WIDE

STRATEGY	ACTION
RC.2.1 Demonstrate and expand water efficiency community-wide and in municipal operations **PRIORITY SCORE: 2** **CO-BENEFITS:**	**RC.2.1.1** Promote water-efficient fixtures and equipment within municipal departments, commercial and residential sectors. Regularly review and upgrade to newer water-saving technologies. **RC.2.1.2** Conduct periodic audits of the City facilities to identify water-saving and energy-saving opportunities **RC.2.1.3** Install demonstration projects at City facilities and parks, combined with educational programming. **RC.2.1.4** Maintain and expand the network of water refill stations across the city to reduce reliance on single-use bottled water and provide convenient access to clean drinking water. **RC.2.1.5** ✔EXISTING ACTION Enhance smart water metering practices (e.g., installation of smart meters, sub-meters for tenant-occupied spaces) to enable monitoring and evaluation of consumption patterns. Install **80%** smart meters by **2025**.

NATURE & GREEN COMMUNITY

FAIRFIELD SUSTAINS

CULTIVATING A GREEN LEGACY IN FAIRFIELD: SUSTAINING OUR NATURAL HERITAGE



This focus sector fosters a community-wide culture of sustainability, emphasizing preservation of the environment, natural systems, greenways and ecosystem health. Efforts within this focus area preserve, enhance and protect parks, waterways, and open space as defining characteristics of the Fairfield community. The Nature & Green Community sector provides a visible community connection to nature for enjoyment, recreation, and active lifestyles. These actions also serve to further complement efforts undertaken in other focus sectors, such as the Transportation & Mobility sector's efforts to increase connectivity to parks and greenways, as well as the Resource Conservation sector's efforts to increase waste reduction and protect clean drinking water. The Nature & Green Community focus sector underscores Fairfield's commitment to sustainable forest management, preserving green space, and increasing connectivity and access to parks. For a map of Fairfield's publicly-owned open spaces and City parks see Appendix K.

GHG REDUCTION POTENTIAL

COST EFFECTIVENESS

INCREASE OPERATIONAL EFFICIENCY

REDUCES OPERATIONAL COSTS

FUNDING AVAILABLE

INTERNAL CAPACITY/SUPPORT

QUALITY OF LIFE

CO-BENEFITS KEY

GOAL NGC.1.0 PRESERVE AND STRATEGICALLY DEVELOP SUSTAINABLE LANDSCAPES AND COMMUNITY-WIDE CULTURE OF SUSTAINABILITY

STRATEGY	ACTION
NGC.1.1 Preserve, expand and enhance 935 acres of existing publicly managed parks and greenspace **PRIORITY SCORE: 1** **CO-BENEFITS:**	**NGC.1.1.1** Seek funding to conduct a Citywide Tree Inventory and develop an Urban Forestry Action Plan by **2030**. **NGC.1.1.2** Monitor and seek funding to support Urban Forestry Action Plan (UFAP), inventory and complementary initiatives. Establish clear short, mid and long-term goals for tree planting, invasive removal and low-impact design. Develop and implement Invasive Species Control Plan by **2030**. **NGC.1.1.3** Utilizing urban tree inventory, set annual targets to increase the City's urban tree canopy by **10%** over **2021** baseline by **2055**. **NGC.1.1.4** ✔EXISTING ACTION Document annual tree planting, invasive species removal and low-impact design improvements. Expand current tree planting program by **50 new trees annually**. Set annual targets to achieve urban forestry, low-impact design and other UFAP goals.

GOAL NGC.1.0 PRESERVE AND STRATEGICALLY DEVELOP SUSTAINABLE LANDSCAPES AND COMMUNITY-WIDE CULTURE OF SUSTAINABILITY

STRATEGY	ACTION
NGC.1.2 Demonstrate leadership in sustainability by modeling best practices in City operations **by 2030** **PRIORITY SCORE: 2** **CO-BENEFITS:**	**NGC.1.2.1** Lead by example by installing and maintaining City demonstration projects incorporating sustainable practices, including landscaping, water catchment, porous surfaces, stormwater protection, as the City's standard operating approach to City owned or operated parks, facilities and lands. **NGC.1.2.2** ✔EXISTING ACTION Continue City's active leadership and membership in regional Stormwater Collaborative with goal of educating residential and commercial sustainable water protection, land management and green space preservation. Utilize the Stormwater Collaborative to actively bring training and resources to residents and businesses of Fairfield to encourage sustainable practice adoption. **NGC.1.2.3** ✔ EXISTING ACTION Continue City's active leadership in urban forestry through continuing Fairfield's Tree City USA designation. **NGC.1.2.4** ✔EXISTING ACTION Continue City's active leadership and membership in Groundwater Consortium with goal of protecting drinking water sources. Actively bring training and resources to residents and businesses of Fairfield to encourage water conservation and water quality practice adoption. **NGC.1.2.5** Strategically utilize economic development resources to encourage or incentivize greenspace expansion of low-impact landscape design, tree planting, bioswales or other stormwater protection measures, especially in conjunction with revitalization, parking lot and walkway beautification, or other connectivity goals. **NGC.1.2.6** Create, maintain and promote recommended species planting list for municipal, commercial & residential landscapes. Consider such features as drought-tolerance, water management, natives, pollinator-friendly, low-impact, as well as potential species migration due to anticipated environmental changes through **2030 and 2055**. **NGC.1.2.7** Prioritize revitalization, infill and beautification of existing developed areas in new development. Connect open space landowners to incentives and resources for land conservation, with particular emphasis on riparian corridors, flood plains, sloped hillsides, and/or other areas of ecological value or special biological concern.

BUSINESS & COMMUNITY RESILIENCE

FAIRFIELD SUSTAINS

ENHANCE QUALITY OF LIFE THROUGH SUSTAINABILITY

This focus area is concentrated on elements that improve the City's ability to respond and adapt to environmental changes by embracing sustainability as a key aspect to supporting the overall quality of life for Fairfield's residents, businesses and visitors. It further includes strategies for increasing community resilience to changing environmental conditions by assessing climate risks, fortifying infrastructure, and developing response strategies to adapt to changing conditions. The Business & Community Resilience sector focuses on active city leadership to demonstrate practices across all five focus areas, while also making it easier and more cost effective for residents and businesses to adopt more sustainable practices.

GHG REDUCTION POTENTIAL

COST EFFECTIVENESS

INCREASE OPERATIONAL EFFICIENCY

REDUCES OPERATIONAL COSTS

FUNDING AVAILABLE

INTERNAL CAPACITY/SUPPORT

QUALITY OF LIFE

C O - B E N E F I T S K E Y

GOAL BCR.1.0 ENHANCE QUALITY OF LIFE THROUGH SUSTAINABILITY

STRATEGY	ACTION
BCR.1.1 Actively lead by example in City operations to demonstrate sustainable practices **PRIORITY SCORE: 2** **CO-BENEFITS:**	**BCR.1.1.1** Demonstrate City's Leadership by modeling sustainability Best Management Practices (BMPs) as standard operating procedure at City facilities, parks and community spaces through demonstration projects & complementary educational tools, promotions and case studies. **BCR.1.1.2** Adopt a policy to consider sustainability impacts along with financial considerations in City decision making. **BCR.1.1.3** Provide regular training and educational resources to City leadership, management and staff personnel on sustainability practices and protocols. Develop easily referenced resource materials to ease and remove barriers to practice adoption.
BCR.1.2 Actively encourage sustainability practice adoption among residents and businesses by removing barriers to participation **PRIORITY SCORE: 3** **CO-BENEFITS:**	**BCR.1.2.1** Establish programming to educate residents and businesses in sustainable practice adoption and easily connect to additional available resources and services (e.g. tax incentives, audit services, rebates, financing, etc.). Offer education, incentives, small grants, and technical assistance to drive sustainable practice adoption & behavior change among residents and businesses. **BCR.1.2.2** Partner with schools, non-profits, businesses and community groups to promote sustainable initiatives.

GOAL BCR.2.0 EMBRACE SUSTAINABILITY AS A CORE ASPECT OF COMMUNITY IDENTITY & VALUE

STRATEGY	ACTION
BCR.2.1 Ensure appropriate City resourcing to achieve sustainability action plan goals.	**BCR.2.1.1** Establish a City sustainability position to oversee implementation of the Sustainability Action Plan across all implementation focus areas, coordinate funding opportunities, collaborate across departments, and deliver sustainability programming.
	BCR.2.1.2 ✔EXISTING ACTION Actively monitor, pursue, and secure grant and other funding opportunities to further sustainability initiatives.
	BCR.2.1.3 Develop dedicated sustainability fund to achieve sustainability goals.
	BCR.2.1.4 Actively cultivate partnerships with sustainability service providers, technical experts, financing resources, and nonprofits. Strategically utilize economic development or other funding to remove barriers to participation through incentives, cost-sharing, fee waivers, or other means.
	BCR.2.1.5 Track and broadly promote sustainability results through multi-channel communication linked to strengthen community identity and values; highlight case studies, cost and resource savings, job creation, and co-benefits. Explore new tools including but not limited to use of online Community Dashboard to monitor and promote goals and achievements.

PRIORITY SCORE: 2

CO-BENEFITS:

GOAL BCR.3.0 ENHANCE BUSINESS & COMMUNITY RESILIENCE TO ENVIRONMENTAL CHANGES

STRATEGY	ACTION
BCR.3.1 Promote business resilience through sustainability practice adoption **PRIORITY SCORE: 3** **CO-BENEFITS:**	**BCR.3.1.1** Develop and implement a green business networking program promoting sustainable business practices by **2026**. Catalog local businesses and set annual targets for participation. Recruit 10 businesses by 2030. Utilize City sustainability resources to encourage or facilitate adoption. Recruit, award and promote green businesses. **BCR.3.1.2** Strategically recruit and incentivize business development along bike paths, parks, and connectivity areas to complement both sustainability transportation and economic development goals. **BCR.3.1.3** Utilize economic development resources to target and transform commercial areas through beautification, reduced pavement, increased porous surfaces, bike paths, and appropriate landscaping; incorporate green corridors and privately managed pocket parks. **BCR.3.1.4** ✔EXISTING ACTION Adopt updated zoning codes to incorporate reduced non-porous surfaces or pavement, appropriate landscaping, bioswail or other stormwater protections in new developments and parking zones.
BCR.3.2 Promote community resilience adaptation and preparedness **PRIORITY SCORE: 3** **CO-BENEFITS:**	**BCR.3.2.1** Partner with Butler County Emergency Management Agency to integrate resilience in community emergency response and preparedness. Reduce physical risks by maintaining and expanding active participation in Pre-Disaster Mitigation Program with particular attention on floodplain protection, stormwater management, retention basin protection and related infrastructure. Investigate regional vulnerability assessment completion to identify potential adaptation measures to increase resilience to environmental changes anticipated through **2055**. Educate and protect residents & businesses against environmental change vulnerability. **BCR.3.2.2** ✔EXISTING ACTION Continue to actively address historical flooding concerns through active stormwater and floodplain management and inspection activities. Utilize annual capital investments to monitor and improve stormwater maintenance and infrastructure. **BCR.3.2.3** ✔EXISTING ACTION Actively monitor, pursue and secure grants or other funding to support resilient natural systems through such efforts as stream protection, wetlands or riparian restoration, erosion control, low-impact design to spread, sink, and store or related efforts.

SECTION 5
IMPLEMENTATION FRAMEWORK

FAIRFIELD SUSTAINS

IMPLEMENTATION FRAMEWORK

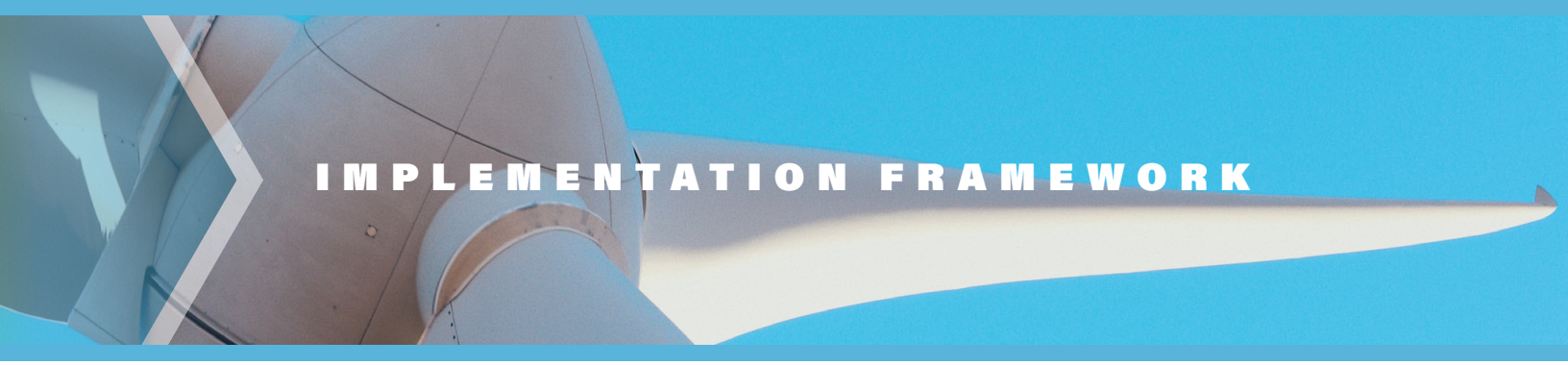
OVERVIEW

Successful Implementation of Fairfield Sustains will require an integrated multidisciplinary approach, unifying actions across City departments and the broader community, while leveraging the embedded expertise of specific departments, Staff and Community resources appropriately. The City's leadership, elected officials, and staff members will all be responsible for and contribute to the success of this effort. To support this process, City department(s) have been identified as lead implementers for each foundational strategy. The Lead Department will serve as the primary responsible party for implementation of actions and in support of higher-level goals.

Proactive efforts by the City to secure adequate near term resources will be key to long term success to: (1) establish, launch, and monitor new initiatives outlined herein; and (2) seek, secure, and manage new internal and external funding mechanisms to actualize and facilitate the adoption of these actions.

These resource allocations, along with the specific actions and initiatives presented in this Plan, demonstrate the City's dedicated approach in translating their sustainability vision into tangible results, as well as underscoring the City's overall leadership in bringing these sustainability actions to fruition.

Implementing the Fairfield Sustains strategies and actions will depend in part on the leadership of the City government and the specifics of each action. Sustainability is inherently wide ranging and not every action can be implemented at once. Actions geared toward municipal operations can be started immediately. Other actions like policies and regulations involve City staff time "up front," but in the long run rely on the activity of the private sector, residents, and businesses. Although actions may have different milestones to completion and benchmarks for success, they can all benefit from monitoring and reporting which allow implementation to be evaluated and tracked by City departments, elected officials, and the public.



IMPLEMENTATION FRAMEWORK

Appendix H summarizes the Implementation Framework for the foundational strategies outlined in this Plan. Each strategy is accompanied by a defined timeframe and priority score, key performance metric(s), lead department, and a cost estimate.

- **IMPLEMENTATION PRIORITY:** This specifies when the action is expected to begin implementation. Categories include Near term, Mid term, and Long term. The actual timing of action completion may be influenced by funding availability.
- **KEY PERFORMANCE METRIC (KPI):** This element outlines the specific criteria for measuring the success of each action. Performance metrics are tailored to the nature of each strategy, ensuring a precise and meaningful evaluation. For example, metrics may include quantitative targets such as the reduction in greenhouse gas emissions, percentage increase in renewable energy usage, or improvement in waste recycling rates. In other cases, a simple "ongoing" has been listed to signify activities that are continuous or iterative in nature, such as community engagement efforts, policy reviews, or long-term environmental monitoring.
- **LEAD DEPARTMENT(S):** This section identifies the City department(s) tasked with overseeing the implementation of the action. In certain cases, responsibilities may be shared across multiple departments.
- **COST:** The cost estimates provided (categorized as low, medium, or high) are preliminary and are derived from initial assessments, comparisons with analogous programs, and expert consultations. They offer a basic financial overview.

TRACKING, MONITORING AND REPORTING

Fairfield Sustains is designed to be an actionable guiding document to sustainability initiatives within the City of Fairfield. While the details of specific initiatives are designed to be flexible, adapting as community priorities shift, City staff and partnering organizations evolve, new laws are enacted, and environmental conditions change, careful and ongoing monitoring will be essential to achieving long-term goals. As conditions change, the City commits to engage in annual and regular tracking and monitoring. The City will also establish a schedule for reviews and updates of the Plan. This will ensure that it continues to serve as a potent and effective guide towards achieving the sustainability and quality of life goals outlined herein. Emphasis will be placed on prioritizing immediate actions that are critical for making short- and medium-term progress towards long-term goals.

This Plan provides a Strategic Roadmap for near, mid, and long-term implementation. Further, this Plan will help ensure actions and investments are deliberate, strategic, and support Specific, Measurable, Achievable, Relevant and Timebound (SMART) goals of the community. All goals, strategies and actions are built out into an expanded implementation plan to guide both implementation as well as monitoring with additional core information, including but not limited to: Key Performance Indicators (KPIs) - associated trackable metrics to indicate progress toward objectives, implementation timelines - indicating whether the implementation is likely to be concentrated near, mid, or long-term time horizons, and costs - estimated costs and assumptions related to implementation to guide financial planning.

Additional information is provided to guide internal implementation, including lead departments, priority scores, co-benefits, policy alignment, estimated emissions reductions, and progress to date. This will serve as the work plan for Fairfield Sustains implementation.

FUNDING THE PLAN

Various federal, state, and regional bodies offer grants, loans, and planning support for sustainability-focused projects. Increasingly, such funding is available to support local jurisdictions in meeting sustainability objectives, especially those related to emissions reductions. Jurisdictions, like Fairfield, with completed sustainability plans, may have an advantage in applying for grant funding, as such plans indicate an established commitment to sustainability, as well as advanced planning that can increase the City's competitiveness. **Appendix I** offers a selection of funding opportunities and programs aligned with sustainability initiatives outlined within Fairfield Sustains. While not intended to be an exhaustive list of all available sustainability funding, the table highlights potential funding avenues the City may consider to finance the implementation of the Plan. These funds can assist with initial program development, testing, and staffing, setting up a sustainable financial model for post-grant operations. Additionally, utilities and organizations provide rebates, financing options, and discounts to support energy-efficient upgrades and other projects in residential and commercial spaces.

It should be acknowledged that Fairfield already successfully established a dedicated active transportation fund, providing initial seed funding to assist the City in initiating implementation of Fairfield Connects. To continue and accelerate such progress for both Fairfield Connects and Fairfield Sustains, it is recommended that (1) the active transportation fund be continued and increased through annual allocations supporting both Fairfield Connects and Fairfield Sustains transportation focus area measures; (2) this approach be replicated to create a sustainability fund to be utilized to broadly support implementation of various Fairfield Sustains measures across all 5 focus areas; and (3) existing Economic Development funding be utilized and bolstered to support goals of this Plan especially as outlined within the Business & Community Resilience focus area of the Strategic Roadmap.

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SECTION 6

APPENDICES

APPENDIX A: WHAT THE COMMUNITY CAN DO

Individuals have the power to enhance the resilience, sustainability, and social well-being of a community through their daily choices. These small actions create a ripple effect, encouraging comparable efforts and sparking conversations that can lead to a more sustainable community and improved overall quality of life. Residents, workers, and business owners in Fairfield all have a role to play in helping the City attain its sustainability goals. Below is a list of actions that community members can take to help create a more sustainable community in their own homes, businesses, and everyday actions. Fairfield invites you to be a part of this journey, as we collectively move towards a more sustainable future.

ENERGY PLEDGE TO:

- ➜ Take advantage of our local energy aggregation program
- ➜ Upgrade appliances, HVAC, and other equipment to EnergyStar or low-energy models
- ➜ Obtain an energy audit for your home or business
- ➜ Install weatherization and insulation to reduce energy loss
- ➜ Request a solar assessment for your home or business; install renewable power
- ➜ Install occupancy sensors, auto settings, and reminders for light and temperature controls
- ➜ Turn off the lights when you leave a room, home, or office without occupancy sensors
- ➜ Take the stairs for exercise and energy savings
- ➜ Unplug or use a power strip (leaving items plugged in still uses power)

TRANSPORTATION PLEDGE TO:

- ➜ Ride your bike, walk, or carpool to destinations
- ➜ Take public transportation as often as possible
- ➜ Telecommute when possible
- ➜ Carpool, carshare or bikeshare on occasion rather than your own vehicle
- ➜ Reduce airline miles traveled, utilize trains or other public transportation where feasible
- ➜ Convert to electric vehicle, hybrid, or clean fuel vehicles when vehicle travel is necessary

WASTE PLEDGE TO:

- ➜ Reduce, Refuse, Reuse, Recycle, Rot, Repair, Rebuy
- ➜ Refuse single use plastics (bags, cutlery, straws, cups, bottles, to-go boxes, etc.)
- ➜ Bring your own reusable bags to the grocery store and reusable mugs to coffee shops
- ➜ Bring your own reusable to-go containers, cutlery, straws, napkins, mugs, and bottles to work, events, play, and for restaurant leftovers
- ➜ Reduce food waste through careful purchasing, food preservation, donation, and composting
- ➜ Start a compost or worm bin
- ➜ Purchase and donate second-hand clothing, equipment, and materials whenever possible
- ➜ Repair broken items before buying new
- ➜ Buy products with high recycled content and easily recyclable packaging

WATER PLEDGE TO:

- ➜ Bring a reusable water bottle to work each day
- ➜ Reduce meat consumption (biggest water user)
- ➜ Install rainwater catchment barrel at home or work
- ➜ Reduce water use at home and work
- ➜ Plant native plants that require less water than non-natives
- ➜ Adopt low-impact design practices to decrease irrigation water use
- ➜ Replace high volume toilet with low-flow or dual flush models
- ➜ Take advantage of your water provider's low-flow incentives and rebates

FOOD PLEDGE TO:

- ➜ Store or preserve leftover food in fridges, freezers, vacuum packaging, canning, pickling and other means
- ➜ Eat a more plant-based diet
- ➜ Donate excess unopened or unserved edible food to local food rescue organizations
- ➜ Compost food scraps in a backyard composter or worm bin
- ➜ Attend a backyard gardening, composting, canning, food preservation, or similar workshop
- ➜ Support your local farmers market or grow your own fruit and veggies
- ➜ Purchase USDA certified organic label and local food

GREEN SPACES PLEDGE TO:

- ➜ Be a good steward to the earth by planting a native tree
- ➜ Convert some or all of your lawn space to native plants
- ➜ Plant edible food, herbs, and pollinator-friendly gardens
- ➜ Use rechargeable electric garden tools including mowers, edgers, leaf blowers, etc.

PURCHASING PLEDGE TO:

- ➜ Buy local and support green businesses
- ➜ Purchase products with reduced packaging
- ➜ Buy reused materials whenever possible
- ➜ Buy products made with post consumer recycled content
- ➜ Buy locally grown, locally produced goods
- ➜ Support farmers markets, local businesses, and businesses that have sustainable operations

ENGAGE PLEDGE TO:

- ➜ Talk and share ideas with others about sustainability
- ➜ Stay informed and involved with what the Fairfield and other communities are doing
- ➜ Participate in community engagement efforts around sustainability

APPENDIX B: STAKEHOLDER ENGAGEMENT PLAN

FINAL COMMUNITY ENGAGEMENT PLAN

OVERVIEW

The City is developing a plan to ensure that Fairfield is maximizing its resources in a way that provides efficiency in City operations now and in the future. This plan, 'Fairfield Sustains', will serve as a comprehensive roadmap for addressing environmental, economic and livability considerations in the City, and will be a catalyst for quality of life improvements for all residents. Among other things, the plan will look at energy usage in the community, open space preservation, resource protection, and economic sustainability initiatives. To inform the plan, the City is deploying this stakeholder engagement plan to gather input and feedback from City operations, elected officials and the broader community, with a focus on keeping Fairfield a great place to live.

To learn more about Fairfield Sustains, please go to **www.fairfield-city.org** for an overview of the plan.

ENGAGEMENT ACTIVITIES INCLUDED BUT WERE NOT LIMITED TO:

- ➜ Biweekly Coordination with Project Team
- ➜ (8) Interviews with Council and Mayor (Intro, Goals)
- ➜ (3) Department Leadership Workshops (Kickoff, Ideation, Strategy Refinement)
- ➜ (3) Environmental Committee Workshops (Intro, Ideation, Strategy Refinement)
- ➜ (3) Special Council Work Sessions (Kickoff, Ideation, Strategy Refinement)
- ➜ Business Stakeholder Focus Group (Ideation, Strategy Refinement)
- ➜ Miami University Graduate Student Research Engagement
- ➜ Community Promotion - City Website, Facebook, Fairfield Flyer
- ➜ Community Survey - Broadly Distributed, Multiple Channels

COMMUNITY ENGAGEMENT CHANNELS INCLUDED BUT WERE NOT LIMITED TO:

- ➜ Website (City)
- ➜ Facebook (City, Resident's Page, Fairfield City Schools)
- ➜ Fairfield Flyer
- ➜ Utility Bill Inserts
- ➜ Religious & Civic Organizations
- ➜ Business Newsletter
- ➜ Chamber Newsletter
- ➜ Chamber Dinner
- ➜ Halloween on the Green
- ➜ High School Environmental Science Class
- ➜ City Employees
- ➜ Boards and Commissions
- ➜ Neighborhood Meetings
- ➜ 55 Plus Senior Group

BACKGROUND INFORMATION

The City has undertaken previous engagement efforts for other planning projects, including but not limited to **Fairfield Forward** and **Fairfield Connect**, which outline various goals and actions that are currently guiding the community. Such existing policies and best practices are informing this engagement approach, as well as specific strategies for consideration in the new Fairfield Sustains plan. The City values community input and engagement, and recognizes the importance of a collaborative process to ensure the resulting plan reflects the needs and values of the local community and supports fairness in public policy as related to sustainability initiatives, with consideration of views and needs of the entire community.

ENGAGEMENT PURPOSE AND OBJECTIVES

Engaging the community in the planning process to gather meaningful input is crucial to ensure that the Fairfield Sustains plan is practical, actionable, fair, and can be implemented efficiently. Blue Strike Environmental (Blue Strike) will lead the engagement effort in collaboration with City staff. By engaging with stakeholders throughout the planning process, the City can ensure that the final plan reflects the diverse perspectives and needs of the community it serves. The outreach strategies and tools presented in this Engagement Plan will aid the City in interacting with local residents, businesses, internal operations, and other community members (collectively referred to as "stakeholders"). The outreach program may change and evolve at the City's discretion to meet the needs of the development process, align and coordinate with other related planning efforts, and adapt to dynamic circumstances.

ENGAGEMENT OBJECTIVES:

- ➜ Increase understanding of attitudes and priorities of stakeholders and the community towards the development of the Sustainability Plan.
- ➜ Provide opportunities for stakeholders to review and provide feedback on draft strategies proposed in the Sustainability Plan.
- ➜ Ensure that the final Sustainability Plan is locally attuned and responsive to the needs and values of the community.

ENGAGEMENT PRINCIPLES:

- ➜ **Fairness:** provide a range of engagement channels to ensure all members of the community have a voice in the planning process.
- ➜ **Transparency:** provide clear and accessible information about the Sustainability Plan development process and engagement opportunities.
- ➜ **Collaboration:** work collaboratively with stakeholders to develop the Sustainability Plan.
- ➜ **Accessibility:** provide accessible engagement opportunities and materials.
- ➜ **Accountability:** report back to the community on how their input influenced the Sustainability Plan.

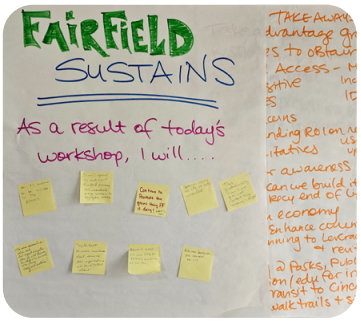
KEY MESSAGES:

- ➜ Your input is critical to developing a Sustainability Plan that reflects the needs and values of the community.
- ➜ We value your input and want to hear from you throughout the development of the Sustainability Plan.
- ➜ Your participation will help ensure that the final Sustainability Plan is locally attuned and responsive to the needs and values of the community.
- ➜ The resulting Sustainability Plan is intended to support the city mission to improve the quality of life for the residents and businesses of Fairfield.

ENGAGEMENT METHODS

Stakeholder engagement will be conducted by Blue Strike in coordination and collaboration with the City of Fairfield. Methods include multiple channels of communication throughout the development process. Our team will rely on City staff to identify and coordinate with key stakeholder groups, promote engagement activities to achieve project goals, and maximize the impact of dedicated engagement resources.

The selected community engagement will include the following stakeholder groups and activities:



CITY STAFF

☐ **Biweekly Meetings - *ongoing***

Blue Strike will meet with City staff on a biweekly basis to work through day to day tasks related to plan development.

CITY COUNCIL ENGAGEMENT

☐ **Council Introduction - *June 2023***

Blue Strike will meet with City staff and councilmembers leading the the Sustainability Plan effort at the outset of the project to understand the City's intentions and obtain guidance to inform our overall project approach

☐ **(8) Individual Councilmember & Mayor Presentations - July/Aug 2023**

These presentations will provide an overview of the intended plan development process and obtain input from each elected official on opportunities, challenges, and stakeholder groups to be considered in the plan development process.

☐ **Council Manager Briefing Content - Quarterly Updates**

Provide City staff with basic content to support quarterly updates on the planning process during regularly scheduled Council Manager Briefings.

☐ **(2) Council Manager Briefing Presentations - Winter 2023, Spring 2024**

- ☐ **Mid-term Update or Workshop**

  Blue Strike will present midterm results to date such as greenhouse gas inventory and forecasting, initial strategy concepts or other developments in order to obtain input and feedback from the City Council. If desired and time allows (see Workshop descriptions below), this presentation can be structured to align with the focus group workshop approach to review high level strategies in multiple focus areas and receive input and feedback from the full Council, or one or more representatives from the Council may be invited to participate as attendees

- ☐ **Late-term High Level Results Presentation**

  Blue Strike will present late-term high-level results and/or present the Draft Plan to the Council. This will serve as an opportunity for final feedback and refinement to guide the plan finalization process.

☐ **Council Meeting(s) - June 2023 (tentative)**

  ☐ **Final Plan for Approval**

  Blue Strike will present and/or support staff in the presentation of the Final Plan at a City Council meeting in support of final plan adoption.

ENVIRONMENTAL COMMISSION ENGAGEMENT

☐ **Plan Process Overview Presentation - 9/6/2023**

This presentation will provide an overview of the intended plan development process and obtain input from each commissioner on opportunities, challenges, and stakeholder groups to be considered in the plan development process, especially as it may relate to their mission as a City Commission.

☐ **(2) Focus Group Workshops - Fall 2023, Spring 2023**

  ☐ **Strategy Ideation/Input - 11/1/2023 (in-person) - see also workshops**

  This workshop is designed as a 90-minute focus group in which Blue Strike will facilitate an interactive discussion with the Commission in support of strategy review and ideation. The workshop will present City accomplishments to date by focus area, as well as best practices by focus area. The Commission will identify potential strategy opportunities, challenges and model practices to guide the plan moving forward. This is an opportunity for both alignment and mobilization around approaches for consideration in latter stages of the plan development.

  ☐ **Late-term High Level Results Presentation - TBD**

  Blue Strike will present late-term high-level results and/or present the Draft Plan to the Commission. This will serve as an opportunity for final feedback and refinement to guide the plan finalization process. This presentation may include an opportunity for prioritization of various strategies in the event that it occurs prior to draft plan completion, to be informed by the results of Fall engagement.

COMMUNITY ENGAGEMENT

☐ **Community Survey**

The survey is designed to assess baseline interest and familiarity with various sustainability issues and initiatives within the community and is typically launched in the early stages of the project. Surveys are designed to be broadly distributed throughout the community to include all stakeholder groups. Content will be drafted by Blue Strike with coordination and input from the City. Dissemination will be led by the City and include such channels as newsletters/ mailings, organizations, events and gatherings. A QR code will allow the City to distribute the survey broadly. The survey also serves as a communication tool to inform and align the community with the overall planning effort being conducted by the City. A link to the final survey and qr code is presented in **Appendix A**.

- ☐ **Finalize, Program & Launch Community Survey**
- ☐ **Distribute Survey via local groups, neighborhoods, associations, City communications channels**

☐ **Neighborhood Meeting Series - Fall 2023**

The City will leverage concurrent neighborhood meeting events being led by the City's neighborhood coordinator. City staff will produce and disseminate postcard flyers with a QR code link to the community survey as a tool to encourage community members to complete the survey. These forums may further serve to promote future community events such as inclusion in focus group workshops and/or community symposiums.

☐ **Community Focus Groups (Workshops) - Fall 2023, Spring 2024**

Strategy Ideation/Input - Nov 2023

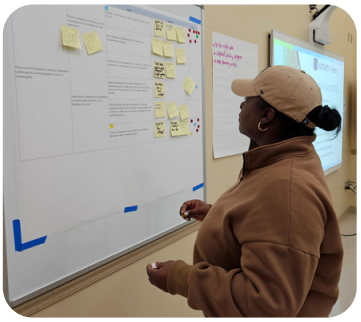
- ☐ This workshop is designed as a 90-minute focus group in which Blue Strike will facilitate an interactive discussion with the Environmental Commission in support of strategy review and ideation. The workshop will present city accomplishments to date by focus area, as well as best practices by focus area. The participating group will identify potential strategy opportunities, challenges and model practices to guide the plan moving forward. This is an opportunity for both alignment and mobilization around approaches for consideration in latter stages of the plan development. Additional detail about the general design of focus group workshops is presented as **Appendix B.1**.

(3-4) STAKEHOLDER GROUPS ARE PROPOSED:

- ☐ **City Department Heads/Key Staff - 11/1 or 11/2**
  - ☐ List of participants to be provided by the City; timing to be aligned with Environmental Commission presentation
  - ☐ Participants may include agency representatives from surrounding communities or universities if deemed appropriate by city staff
- ☐ **Environmental Commission - 11/1 @ 6pm**
  - ☐ To be facilitated at regular Environmental Commission meeting
- ☐ **Business Community -**
  11/2 or early Nov (in-person or virtual) - City will invite:
  - ☐ Chamber of Commerce Representative
  - ☐ Key business leaders

  This workshop will be a condensed (60-min) version of those conducted with City and Business Community workshops, incorporating specific framework concepts to obtain interest levels/feedback about key strategies for the business sector, such as interest in: solar, energy efficiency, connectivity, business recognition, etc. Strategies to be informed in collaboration with the City.
- ☐ **Broader Community -**
  week of 11/6 or 11/13 (virtual) - (optional)

  City may elect to host a broader community focus group as part of this workshop series or support a community symposium/ workshop later in the ideation process. The City will invite participants and community leaders from various community organizations, nonprofits or groups, such as:
  - ☐ Schools, Scouting, Sports, Youth
  - ☐ Mayor's youth commission
  - ☐ 55+ senior group
  - ☐ Faith-based community
  - ☐ Neighborhood groups
  - ☐ Environmental organizations
  - ☐ Social services, housing, hunger alleviation services



☐ **Community Symposium - Q1/Q2 2024 (optional)**

A community workshop or symposium may be conducted in the latter stages of the planning process. This event will serve as an opportunity to present major strategies, approaches or frameworks included in the plan, gather input to further inform or refine strategy prioritization and/or obtain additional community feedback about the overall plan's development prior to finalization. The event may be hosted at the Community Arts Center or other appropriate venue at the City's direction. Displays and/or exercises to gather input may be utilized.

- ☐ Presentation of results to date - Draft Plan
- ☐ Interactive facilitation to solicit feedback from community

☐ **Business Community Outreach**

These channels will serve as primary communications tools to inform and align the business community with the City's overall planning effort.

- ☐ Chamber of Commerce & related organizations
  - ☐ https://fairfieldchamber.com/
  - ☐ https://www.fairfield-rotary.org/
  - ☐ https://www.lindenwaldkiwanis.org/
- ☐ Participation in Focus Group Workshop - see above
- ☐ Outreach to largest employers, influencers
- ☐ Business newsletter
- ☐ Basic content - overview of plan
- ☐ Graphics
  - ☐ Process timeline
  - ☐ Opportunities to participate
  - ☐ Link to survey

☐ **Newsletter/ Materials**

These materials will serve as primary communications tools to inform and align the community with the City's overall planning effort.

- ☐ Content for newsletter with overview of process, survey promotion, and identification of ways for the community to participate
- ☐ Content for other educational materials such as postcards, flyers
- ☐ Residential newsletter - September 2023 content for October 2023
- ☐ Business newsletter - September 2023 content for October 2023

☐ **Website / Social Media**

It is recommended that the City promote the Fairfield Sustains plan on appropriate locations within their website and City social media pages. This serves as a key communications tool to inform the community about the Plan and ways to engage in the process including promotion of the survey, special events and/or engagement of volunteers or supporters for canvasing or other plan related activities as deemed appropriate by the City. Blue Strike will provide basic content for the website such as graphics to design the process and link to engagement information and the survey.

- ☐ Process graphics
- ☐ Overview of process timeline and ways to engage
- ☐ Link to Community Survey
- ☐ Link/information on other events and.or milestones during the planning process

☐ **Engagement Summary**

Blue Strike will provide a summary of engagement activities performed during the development of the plan, as an appendix to the Sustainability Plan, should such a summary be desired by the City.

APPENDIX B.1: COMMUNITY-WIDE SURVEY

SURVEY TEMPLATE - CITY OF FAIRFIELD, OH

The final survey is available here:
https://qfreeaccountssjc1.az1.qualtrics.com/jfe/form/SV_88RL7UcpdOKhuZM

The QR code to link to the survey is presented below and filed within the team's file organization structure.

APPENDIX B.2: FOCUS GROUP (WORKSHOPS) DESIGN

OVERVIEW OF WORKSHOP DESIGN APPROACH - CITY OF FAIRFIELD, OH

I. FOCUS GROUPS (WORKSHOPS):

Additional detail about the general format of Focus Group Workshops is presented below.

Our approach typically includes a series of workshops to engage stakeholders at different stages during the plan development process. Workshops will aim to understand the attitudes and priorities of key stakeholders towards the development of the plan, but they will target different types of stakeholders.

- A workshop will prioritize department heads and leaders of organizations who have a broader view and relationships with diverse groups within the community. The group size for this workshop should be small to facilitate productive and engaging discussions.
- Additional workshop(s) will aim to engage a broader range of stakeholders by utilizing already existing forums. The City will assist in identifying and selecting such a forum, such as the Environmental Commission, Business Community and/or Residential or Community Leaders to tap into established networks and foster greater community ownership and support for the sustainability plan.

LENGTH - Each workshop will be 1.5-hours

REGISTRATION – Attendees should pre-register and provide contact information so we can keep them updated about new developments. The registration form should include the attendees' name, title, organization, and email address.

CONSIDERATIONS -

- Careful consideration is necessary when hosting a limited number of virtual workshops during the planning process. The selection of attendees, the stakeholder pool's breadth, and the number of participants in each session should be thoughtfully considered. The number of attendees will determine the facilitation approach.

APPENDIX B.2: FOCUS GROUP (WORKSHOPS) DESIGN

- With a small, diverse stakeholder group, we can obtain thorough feedback from participants, resulting in a smaller number of data points but more robust contributions from each participant. On the other hand, a higher number of participants in a virtual workshop forum will necessitate relying on technology survey options, where participants can choose pre-populated response options, resulting in a real-time interaction but limited opportunity for dialogue. While we are skilled in both types of facilitation, the latter becomes more of an interactive survey than a facilitated discussion.

KEY DELIVERABLES FOR EACH WORKSHOP

- Workshops agendas
- Workshops materials such as discussion guides, presentations, etc.
- Brief summaries of each workshop, with a focus on key input to the Sustainability Plan.

FORMAT -

I. Housekeeping – Introduction & Welcome Remarks - 15 min

- Overview of Workshop Agenda, Facility, Rules of Engagement
- Introduce and recognize key staff and stakeholders (organizations and types)
- High-level overview of progress to date
- Aspirational message to set stage and encourage attendee participation

II. Stakeholder Activity - 70 min

- Review of Baseline and Best Practices
- Discussion around key focus areas, such as: Natural Environment (parks, open spaces), Transportation Infrastructure & Connectivity (EV, smart growth, etc.), Built Environment & Energy (zoning regulations, etc.), Waste Management and Recycling, Water & Wastewater and Community Resilience (economic resiliency, adaptation, social factors, etc.) (10 min/topic area, 10 min closing comments)

APPENDIX B.2: FOCUS GROUP (WORKSHOPS) DESIGN

Sample questions:

- What programs/initiatives are working well in your community? What gaps or challenges do you see?
- What types of incentives (energy efficiency, EV charging, on-site renewable energy) would you like to see?
- Are there specific land-use practices the region is particularly well suited to for adoption/expansion?
- What are the broad economic and community development goals that you'd like to see the Plan support?
- What would make you more inclined to walk, bike, or take public transit?
- Are you interested in converting your fleet to electric or other alternative fuels? What obstacles exist?
- What are some challenges in reaching underserved areas of the community?
- What are some ideas to mobilize the community in terms of behavior change?

II. Closing & Next Steps - 5 min

- Summary highlights of discussion; overview of next steps/opportunities; gratitude

APPENDIX B.3: WEBSITE CONTENT

OVERVIEW OF WEBSITE PROMOTIONAL - CITY OF FAIRFIELD, OH

CONTENT INTENT

The following content is provided for the City to utilize on your website to promote the plan during the design process. For the initial phase of the project, this content intends to support the City in obtaining input and feedback from the community to inform ideation and strategy design. Additional content may be developed at latter stages of the project to support objectives, such as prior to community workshop(s), during draft sustainability plan public review, or upon final sustainability plan approval and adoption.

CONTENT PLACEMENT

Blue Strike recommended that the City create a visible link on the main landing page of the City website to promote the plan and provide residents and businesses the opportunity to participate in the plan development with the goal of building community understanding of and support for the effort. The City embedded the following graphic and link at the time of survey launch:

https://www.fairfield-city.org/

APPENDIX B.3. WEBSITE CONTENT

The City also successfully embedded an internal link, utilizing the term Fairfield Sustains to support an easily searchable web link and provide residents with further details about the effort. This internal page is found at the following:

https://www.fairfield-city.org/1097/Fairfield-Sustains

The page currently appears as the following:

Blue Strike recommends this content be updated utilizing the following content and graphics to further enhance the communications effort.

APPENDIX B.3. WEBSITE CONTENT

OVERVIEW

FAIRFIELD SUSTAINS

The City of Fairfield is developing a plan to ensure that Fairfield is maximizing its resources in a way that provides efficiency in City operations now and in the future. This plan, 'Fairfield Sustains', will serve as a comprehensive roadmap for addressing environmental, economic and livability considerations in the City, and will be a catalyst for quality of life improvements for all residents. Among other things, the plan will look at energy usage in the community, open space preservation, resource protection, and economic sustainability initiatives. To inform the plan, the City is deploying this stakeholder engagement plan to gather input and feedback from City operations, elected officials and the broader community, with a focus on keeping Fairfield a great place to live. To get involved, residents and businesses were invited to complete the community survey and follow the links below.

GRAPHICS & LINKS

The following graphics are suggested to be added to the website. Live hyperlinks should be incorporated into text and/or graphics to ease ready connection to the community survey and/or additional information as desired by the City.

APPENDIX B.3. WEBSITE CONTENT

TIMELINE

The following image provides an overview of the planning process with key milestones for development. The City is currently conducting community outreach and engagement activities to encourage local residents, community groups, businesses and City departments to provide input and feedback to inform plan goals, frameworks and strategies. The draft Fairfield Sustains plan is anticipated in Spring 2024.

APPENDIX B.3. WEBSITE CONTENT

GET INVOLVED

There are several ways to get involved in the process.

APPENDIX C: COMMUNITY SURVEY RESULTS

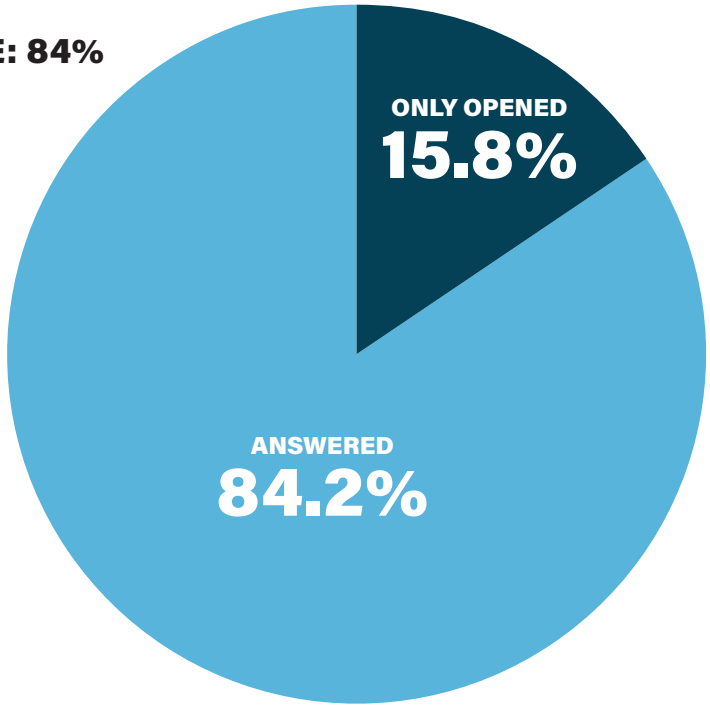
FAIRFIELD SURVEY

WHO ANSWERED THE SURVEY?

Most survey responses are from residents, making the data largely representative of the local community's views. High homeownership may indicate a stable, long-term resident population, which could influence perspectives on community development and sustainability. The presence of many long-term residents suggests a deep familiarity with the City and its evolution over time, potentially impacting their views on City initiatives. The age distribution shows a good mix, with a notable portion of younger respondents (under 18) and a significant representation of middle-aged adults. The demographic makeup is predominantly White/Caucasian, but there is some diversity within the community. More than half of the respondents have a direct work connection to Fairfield, which may influence their interest in local economic and infrastructural developments.

FIGURE B.1: THE SURVEY WAS ACCESSED BY 603 INDIVIDUALS. A TOTAL OF 508 COMPLETE RESPONSES WERE RECORDED THROUGHOUT THE SURVEY PERIOD (SEPTEMBER 15TH TO NOVEMBER 30TH, 2023).

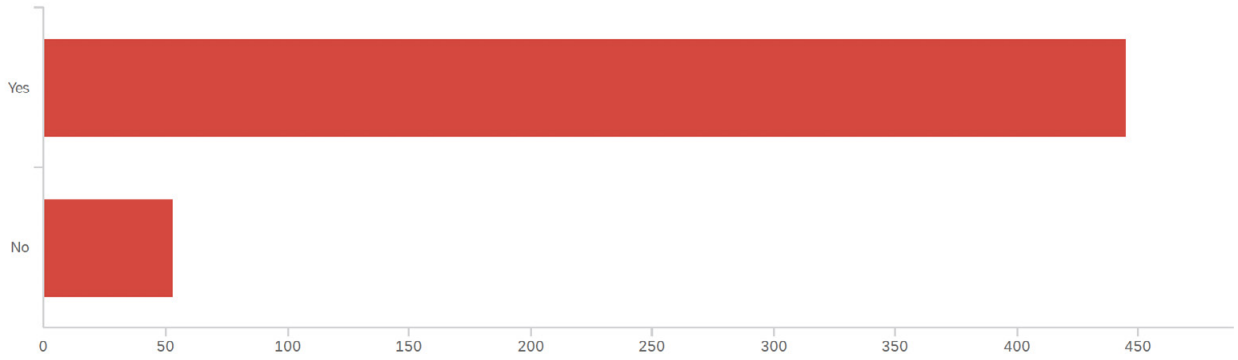
RESPONSE RATE: 84%



Q16: RESIDENCY IN FAIRFIELD

- ➜ MAJORITY RESIDENTS: 89.36% of respondents live in Fairfield.
- ➜ NON-RESIDENTS: 10.64% do not live in Fairfield.

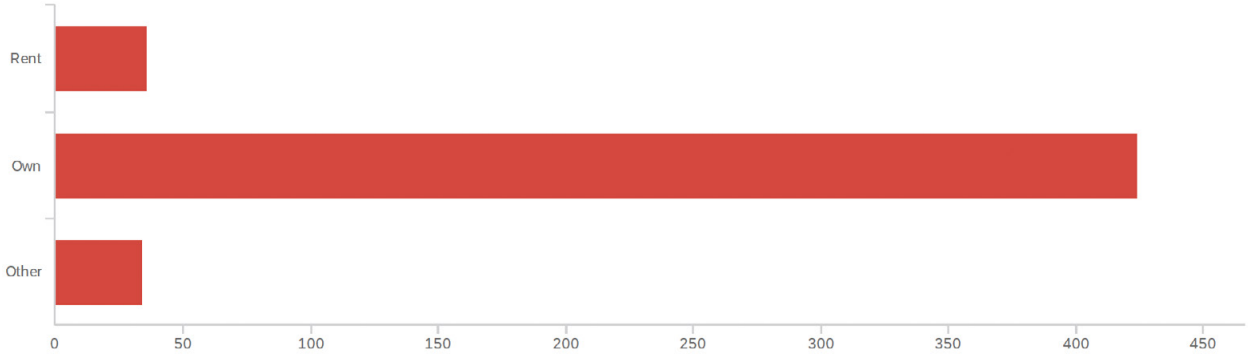
FIGURE B.2: RESPONSES TO QUESTION 16: "DO YOU LIVE IN FAIRFIELD?"



Q17: HOMEOWNERSHIP

- ➜ HOMEOWNERSHIP: A significant majority (85.83%) own their homes.
- ➜ RENTERS: Only 7.29% rent their homes.
- ➜ OTHER LIVING ARRANGEMENTS: 6.88% are in other living situations, like living with parents or other family members.

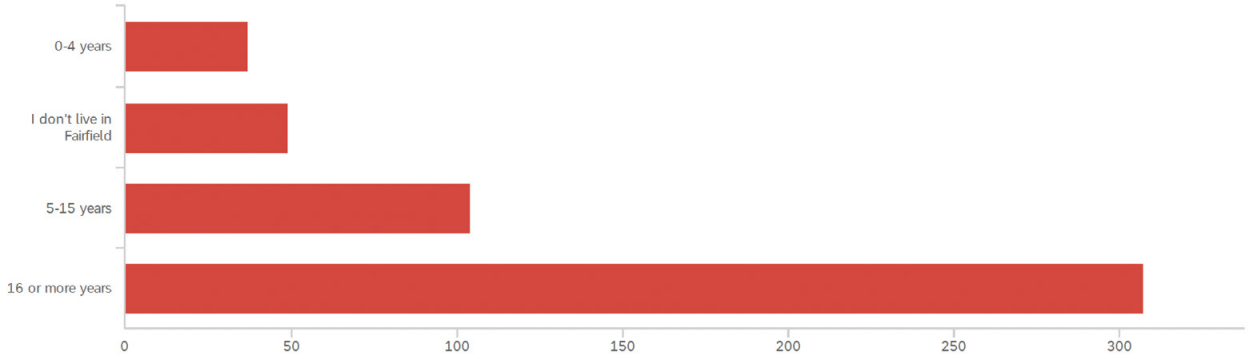
FIGURE B.3: RESPONSES TO QUESTION 16: "DO YOU RENT OR OWN YOUR HOME"



Q18: DURATION OF RESIDENCY

- ➜ LONG-TERM RESIDENTS: A majority (61.77%) have lived in Fairfield for 16 or more years.
- ➜ MEDIUM-TERM RESIDENTS: 20.93% have lived there for 5-15 years.
- ➜ NEW RESIDENTS: 7.44% have lived in Fairfield for 0-4 years.

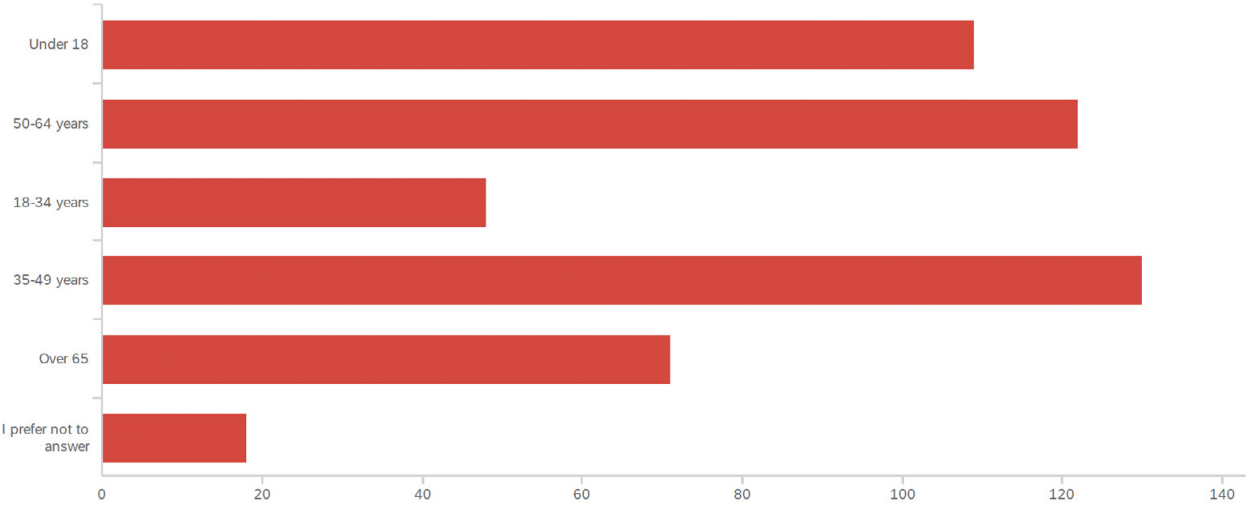
FIGURE B.4: RESPONSES TO QUESTION 18: "HOW LONG HAVE YOU LIVED IN FAIRFIELD?"



Q19: AGE DISTRIBUTION

- ➜ AGE GROUPS: The largest groups are 50-64 years (24.50%) and 35-49 years (26.10%).
- ➜ YOUNGER AND OLDER ADULTS: 18-34 years constitute 9.64%, and over 65 years make up 14.26%.
- ➜ YOUTH: Under 18 years represent 21.89%.

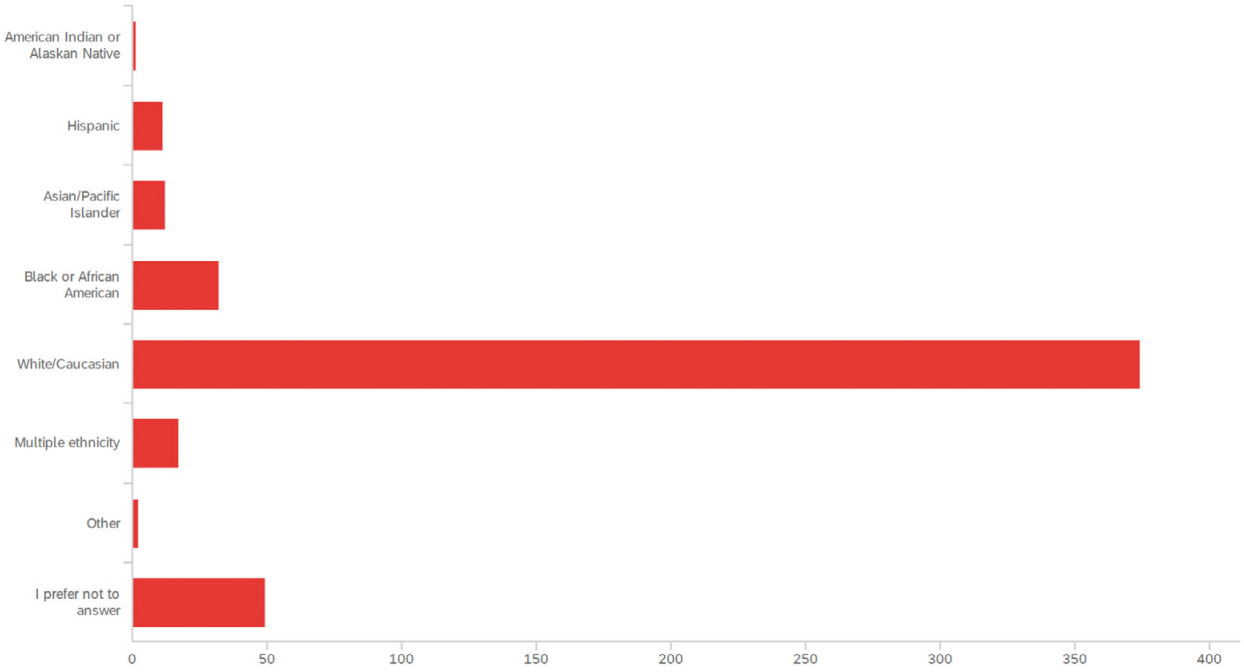
FIGURE B.5: RESPONSES TO QUESTION 19: "WHAT IS YOUR AGE?"



Q20: RACE OR ETHNICITY

- ➜ MAJORITY ETHNICITY: The majority (75.10%) identify as White/Caucasian.
- ➜ MINORITY REPRESENTATION: Black or African American (6.43%), Hispanic (2.21%), and Asian/Pacific Islander (2.41%) are the notable minority groups.

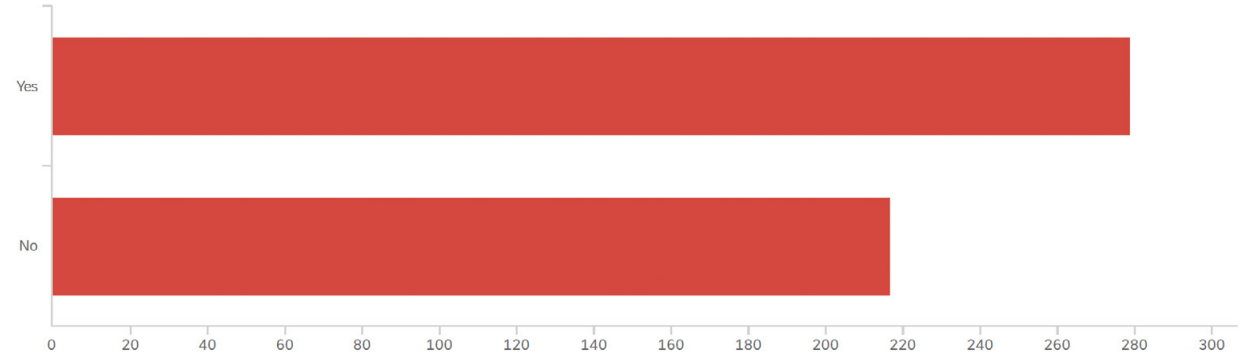
FIGURE B.6: RESPONSES TO QUESTION 20: "WHAT IS YOUR AGE?"



Q21: WORK IN FAIRFIELD

- ➜ WORKING RESIDENTS: 56.25% work in Fairfield.
- ➜ NON-WORKING RESIDENTS: 43.75% do not work in Fairfield.

FIGURE B.7: RESPONSES TO QUESTION 21: "DO YOU WORK IN FAIRFIELD?"



WHAT IS THE PERCEPTION OF ENVIRONMENT, SUSTAINABILITY & CITY?

A significant majority is concerned about future environmental challenges, indicating strong community interest in this area. Also, they value proactive environmental measures, suggesting community support for such initiatives. There's a strong belief in the effectiveness of local sustainability efforts, indicating support for continuing or expanding these initiatives.

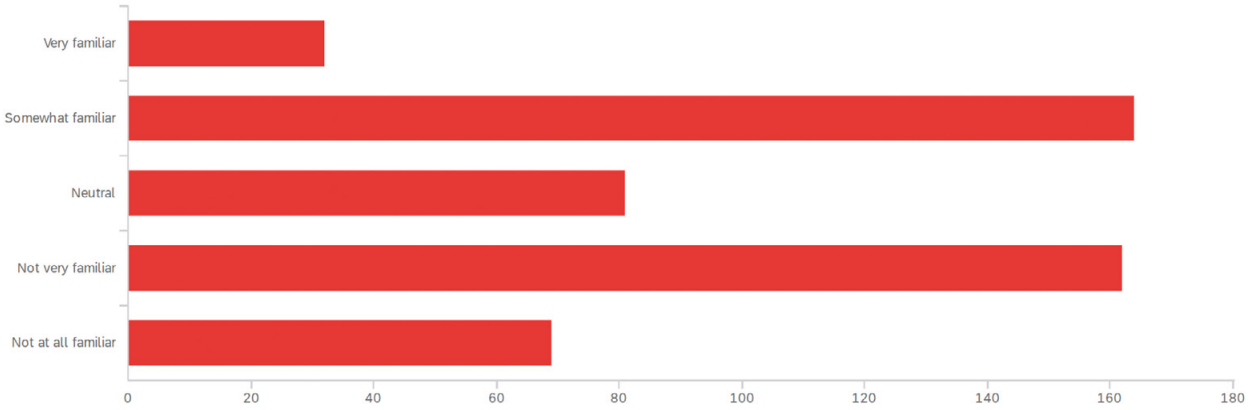
However, a significant portion is either not very familiar or not at all familiar with the City's efforts, suggesting a need for more effective communication about the City's environmental initiatives. Certain initiatives have higher public awareness, suggesting targeted communication or public engagement strategies may be more effective for lesser-known initiatives. Also, there's a strong base of support for new environmental projects, though a significant minority may require more convincing or information.

While environmental concerns are important, economic growth and resilience seem to be the top priority for the community, suggesting a need to balance environmental initiatives with economic considerations.

Q1: FAMILIARITY WITH CITY'S ENVIRONMENTAL EFFORTS

- ➜ MAJORITY VIEW: 32.28% are somewhat familiar, and 31.89% are not very familiar.
- ➜ LESS FAMILIARITY: A significant portion (45.47%) is either not very familiar or not at all familiar.

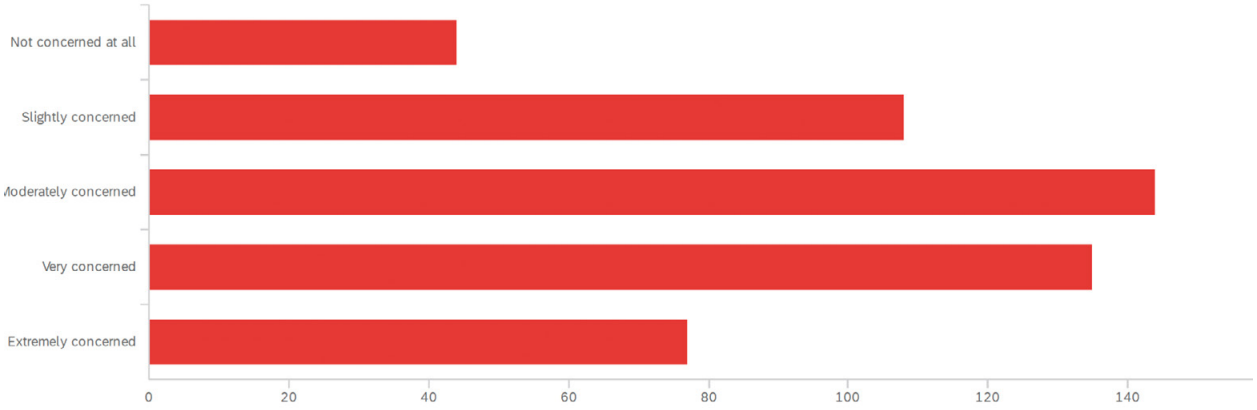
FIGURE B.8: RESPONSES TO QUESTION 1: "TO WHAT EXTENT ARE YOU FAMILIAR WITH THE CITY'S EFFORTS TO PROTECT OUR NATURAL ENVIRONMENT AND RESOURCES?"



Q2: CONCERN ABOUT FUTURE ENVIRONMENTAL CHALLENGES

- ➜ HIGH CONCERN: 54.08% are either very or extremely concerned.
- ➜ MODERATE CONCERN: 28.35% are moderately concerned.

FIGURE B.9: RESPONSES TO QUESTION 2: "HOW CONCERNED ARE YOU ABOUT FUTURE ENVIRONMENTAL CHALLENGES?"



Q3: AWARENESS OF SPECIFIC SUSTAINABILITY INITIATIVES

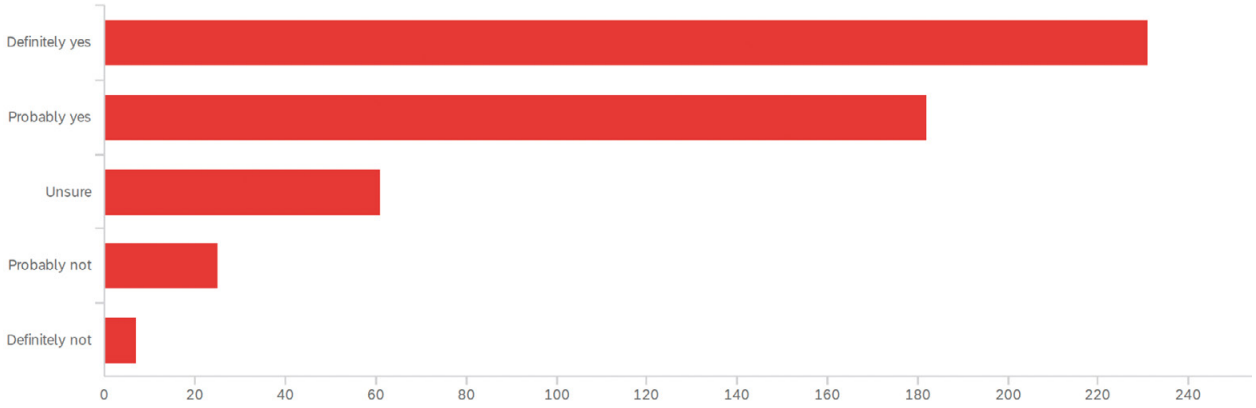
- ➜ MOST KNOWN INITIATIVES: Curbside Residential Recycling Program (19.36%) and Maintenance of parkland and open space (13.77%).
- ➜ LEAST KNOWN INITIATIVES: Lime Recycling Program (4.81%) and Environmental Commission (5.04%).

FIGURE B.10: RESPONSES TO QUESTION 3: "WHICH OF THE FOLLOWING CITY OF FAIRFIELD SUSTAINABILITY INITIATIVES ARE YOU AWARE OF?"

Q4: IMPACT OF LOCAL SUSTAINABILITY INITIATIVES

- ➜ POSITIVE PERCEPTION: 81.62% believe local sustainability initiatives can positively impact the community's quality of life.
- ➜ UNCERTAIN OR NEGATIVE PERCEPTION: 18.38% are unsure or do not believe in the positive impact.

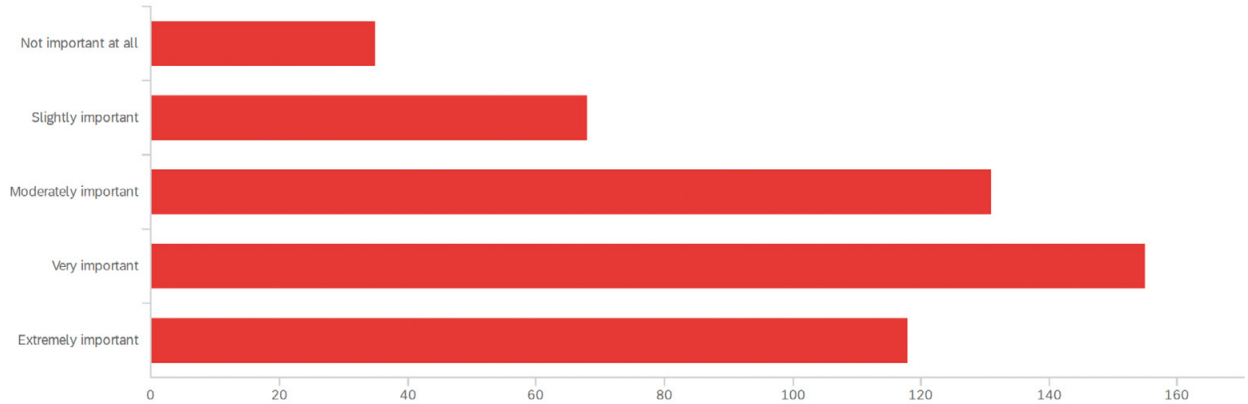
FIGURE B.11: RESPONSES TO QUESTION 4: "DO YOU BELIEVE THAT LOCAL SUSTAINABILITY INITIATIVES CAN MAKE A SIGNIFICANT POSITIVE IMPACT ON OUR COMMUNITY'S QUALITY OF LIFE?"



Q5: IMPORTANCE OF PROACTIVE MEASURES

- ➜ HIGH IMPORTANCE: 54.05% consider it very or extremely important for the City to take proactive measures.
- ➜ MODERATE IMPORTANCE: 25.84% find it moderately important.

FIGURE B.12: RESPONSES TO QUESTION 5: "HOW IMPORTANT IS IT TO YOU THAT THE CITY TAKE PROACTIVE MEASURES TO INCREASE THE COMMUNITY'S RESILIENCE AND ABILITY TO ADAPT TO ENVIRONMENTAL CHALLENGES?"

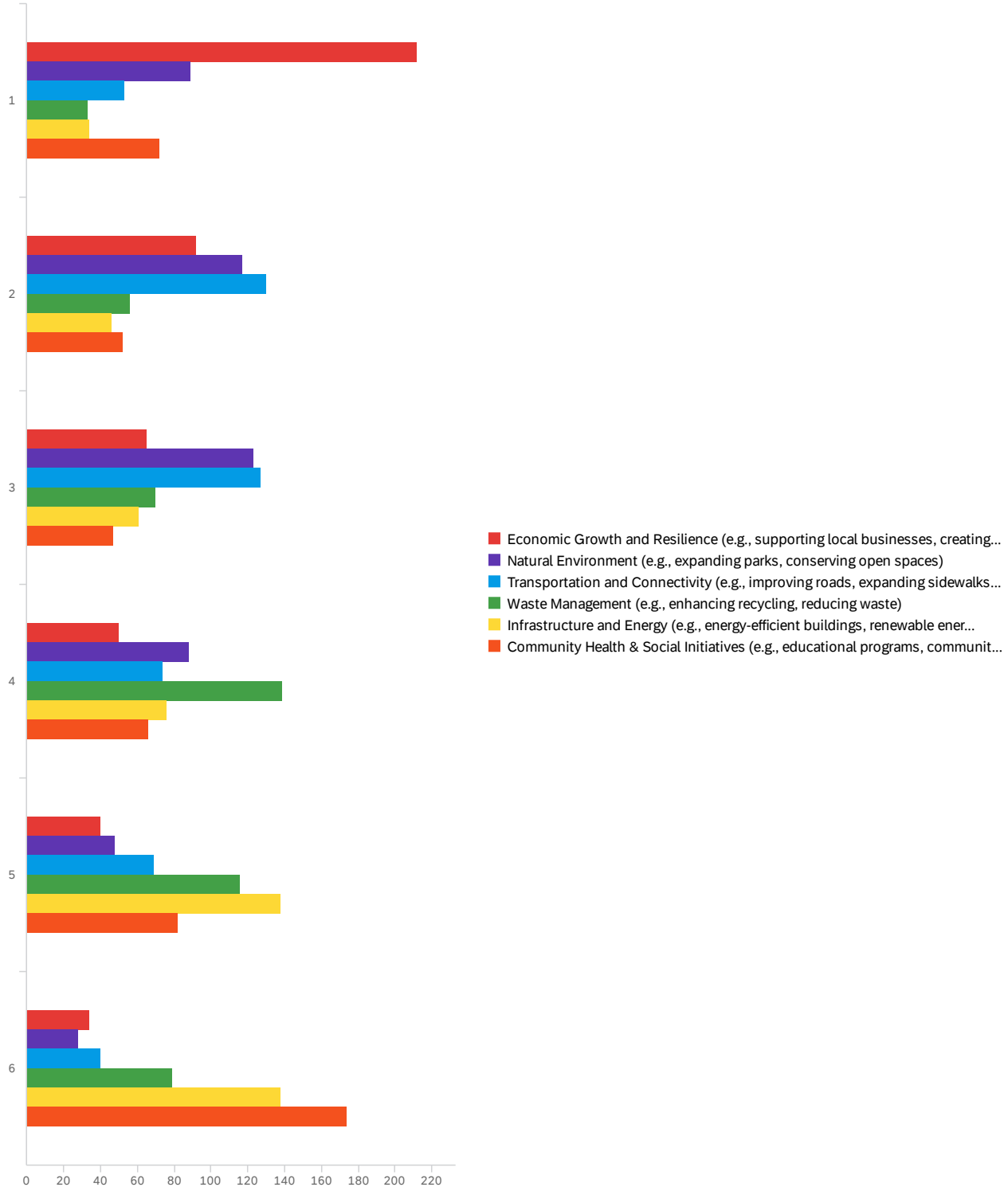


Q6: RANKING OF QUALITY-OF-LIFE AREAS

➜ TOP PRIORITY: Economic Growth and Resilience.

➜ LEAST PRIORITY: Infrastructure and Energy.

FIGURE B.13: RESPONSES TO QUESTION 6: "RANK THE IMPORTANCE OF THE FOLLOWING AREAS TO THE QUALITY OF LIFE IN FAIRFIELD."



Q7: SUPPORT FOR NEW ENVIRONMENTAL PROJECTS

➜ STRONG SUPPORT: 67.26% strongly or somewhat support new local projects.

➜ NEUTRAL OR OPPOSITION: 32.74% are neutral or oppose these projects.

FIGURE B.14: RESPONSES TO QUESTION 7: "WOULD YOU SUPPORT NEW LOCAL PROJECTS THAT AIM TO PROTECT AND ENHANCE THE ENVIRONMENT, EVEN IF THEY REQUIRE SOME INITIAL INVESTMENT OR CHANGES?"

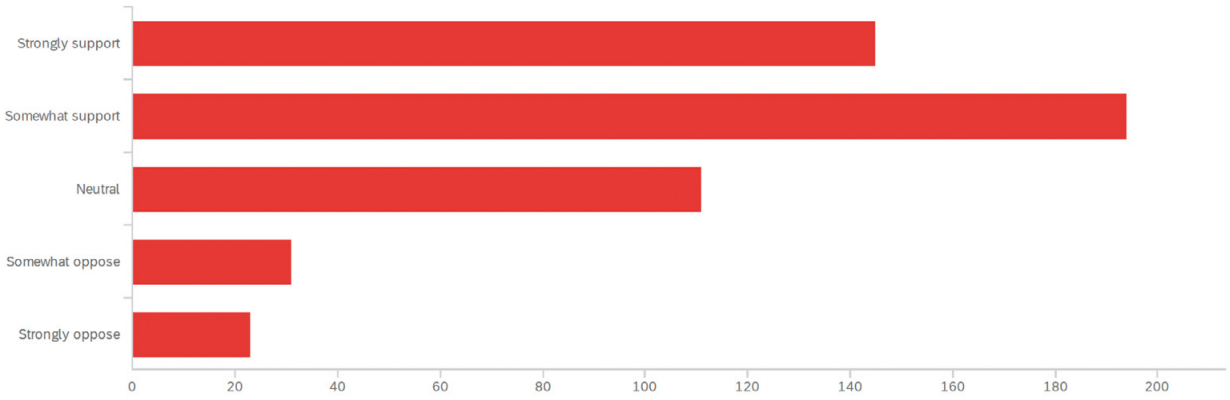
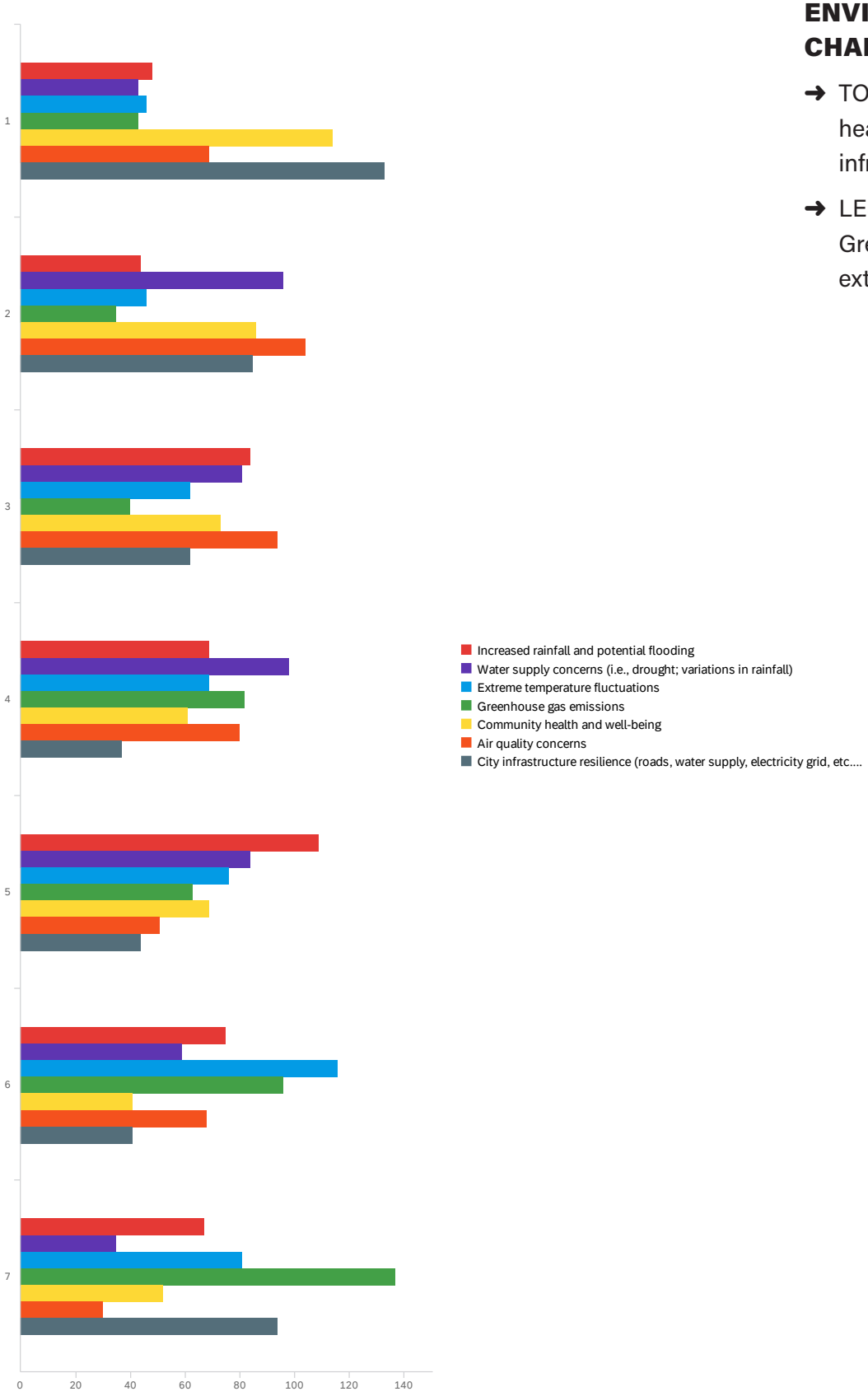


FIGURE B.15: RESPONSES TO QUESTION 8: "PLEASE RANK WHICH ENVIRONMENTAL CHALLENGES CONCERN YOU THE MOST?"



Q8: RANKING OF ENVIRONMENTAL CHALLENGES

- ➜ TOP CONCERNS: Community health and well-being, and City infrastructure resilience.
- ➜ LESSER CONCERNS: Greenhouse gas emissions and extreme temperature fluctuations.

HOW WERE STRATEGIES RANKED?

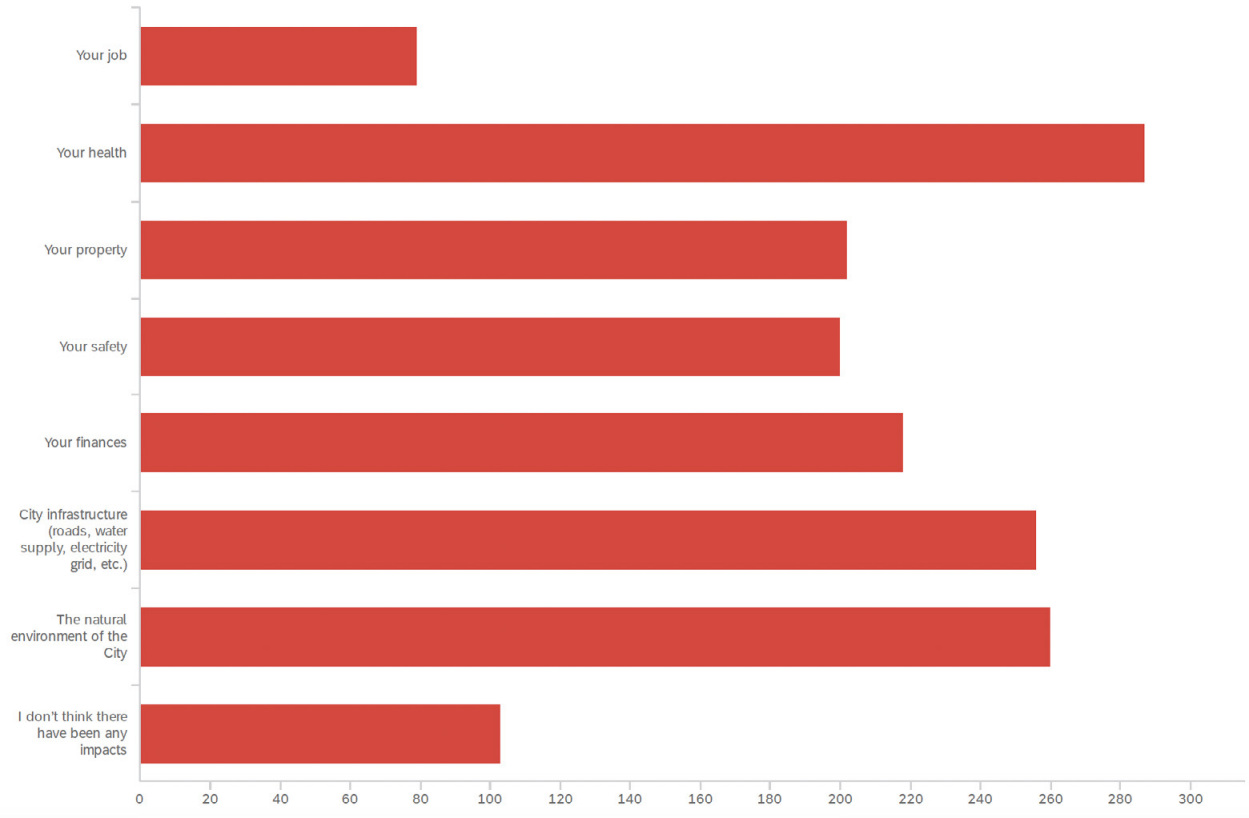
The community is most concerned about direct impacts on health and infrastructure resilience, suggesting these areas could be prioritized in city planning. There's a preference for initiatives focusing on urban redevelopment and maintenance over new developments like Marsh Lake. There is a strong inclination towards improving existing spaces and attracting vibrant businesses over financial incentives or tax strategies. Residents prefer improvements in walkability and connectivity over initiatives focused on electric vehicles or shared transportation modes. There is a preference for practical, actionable strategies over educational initiatives in sustainable energy. Tangible, direct actions like tree planting and recycling are preferred over educational or informational programs.

The community expresses a strong preference for practical, tangible actions over theoretical or educational initiatives. There's significant concern about the impact of environmental changes, particularly on health, infrastructure, and the natural environment. Urban redevelopment, beautification, and improving walkability and connectivity are key priorities. Sustainable energy and green community strategies are supported, with a focus on immediate, actionable measures.

Q10: IMPACT OF ENVIRONMENTAL CHANGES

- ➜ MOST AFFECTED AREAS: Natural environment of the city (16.20%), City infrastructure (15.95%), and individual health (17.88%) are the top three areas respondents believe are or will be negatively impacted by environmental changes.
- ➜ LESS AFFECTED AREAS: Job (4.92%) and safety (12.46%) are perceived as less impacted.

FIGURE B.16: RESPONSES TO QUESTION 10: "DO YOU THINK CHANGES IN THE ENVIRONMENT HAVE HAD OR WILL HAVE A NEGATIVE IMPACT ON:"

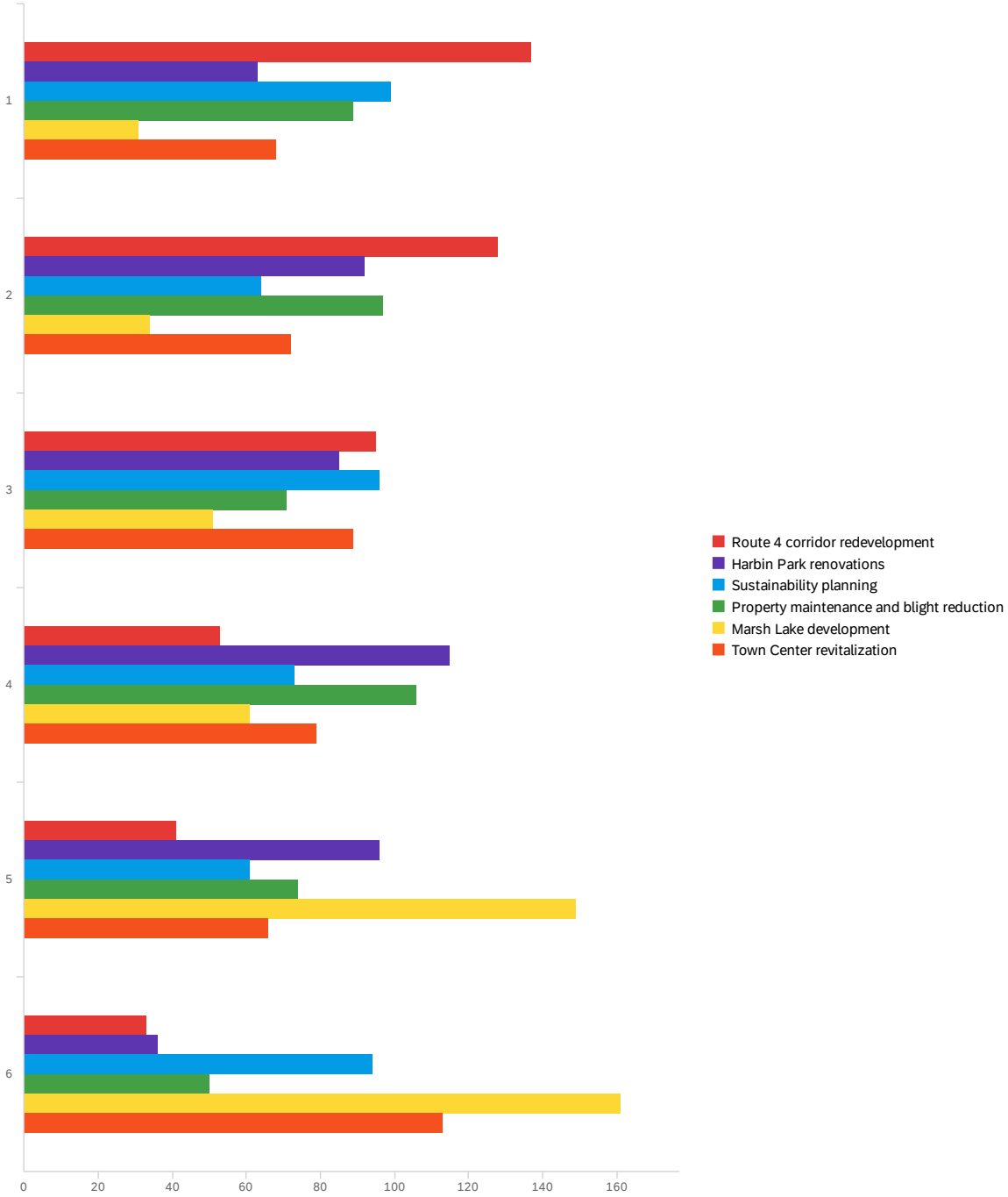


Q11: STRATEGIC INITIATIVES RANKING

TOP INITIATIVES: Route 4 corridor redevelopment and Property maintenance and blight reduction are ranked highest in importance.

LEAST IMPORTANCE: Marsh Lake development is considered least important.

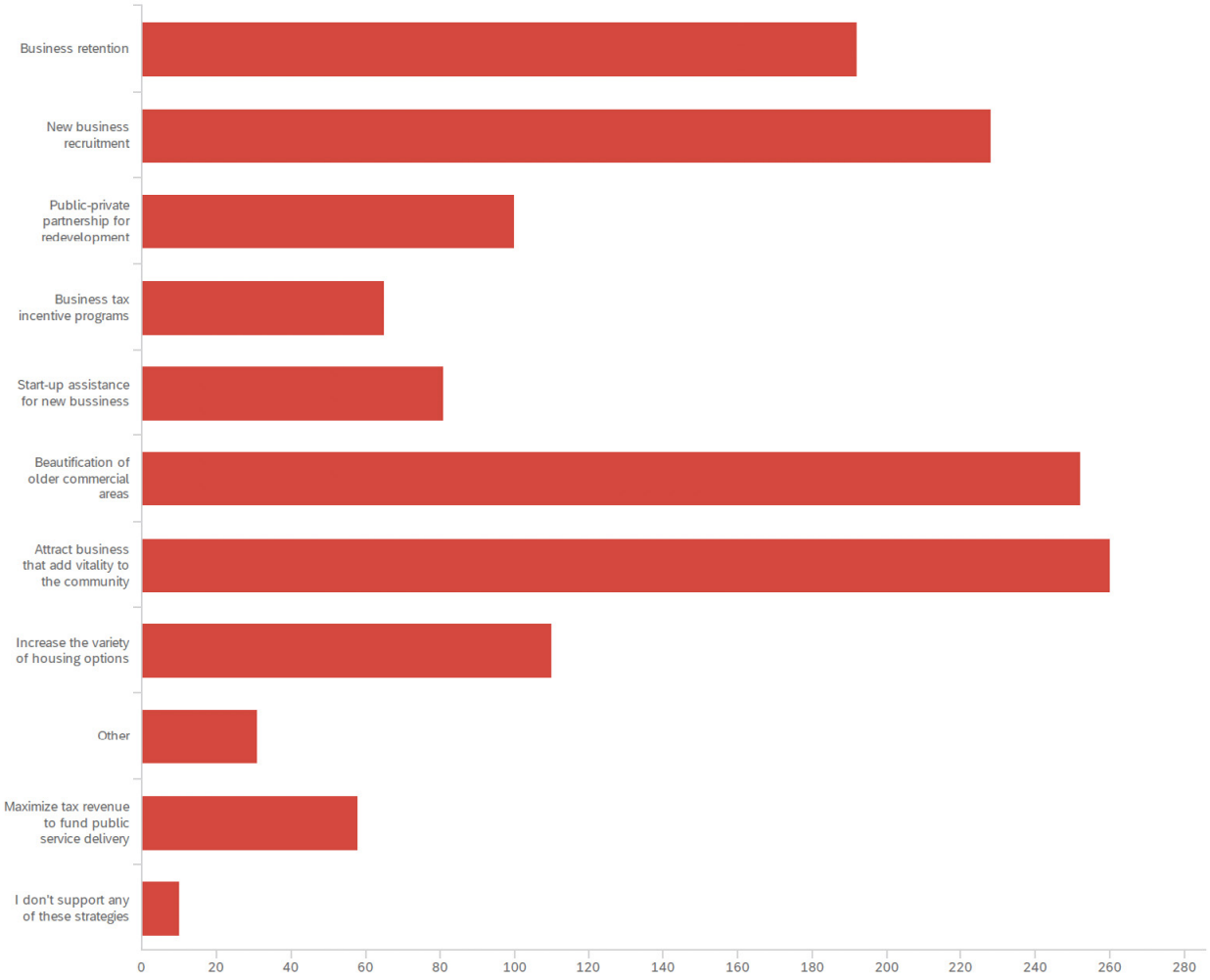
FIGURE B.17: RESPONSES TO QUESTION 11: "OF THE SIX MAJOR STRATEGIC INITIATIVES THE CITY IS CURRENTLY WORKING ON, PLEASE RANK THESE INITIATIVES IN ORDER OF IMPORTANCE (1 BEING THE MOST IMPORTANT).



Q12: SUSTAINABLE ECONOMIC DEVELOPMENT STRATEGIES

- ➜ PREFERRED STRATEGIES: Beautification of older commercial areas (18.17%) and attracting businesses that add vitality to the community (18.75%) are most favored.
- ➜ LEAST SUPPORTED: Business tax incentive programs (4.69%) and maximizing tax revenue for public service delivery (4.18%) are less supported.

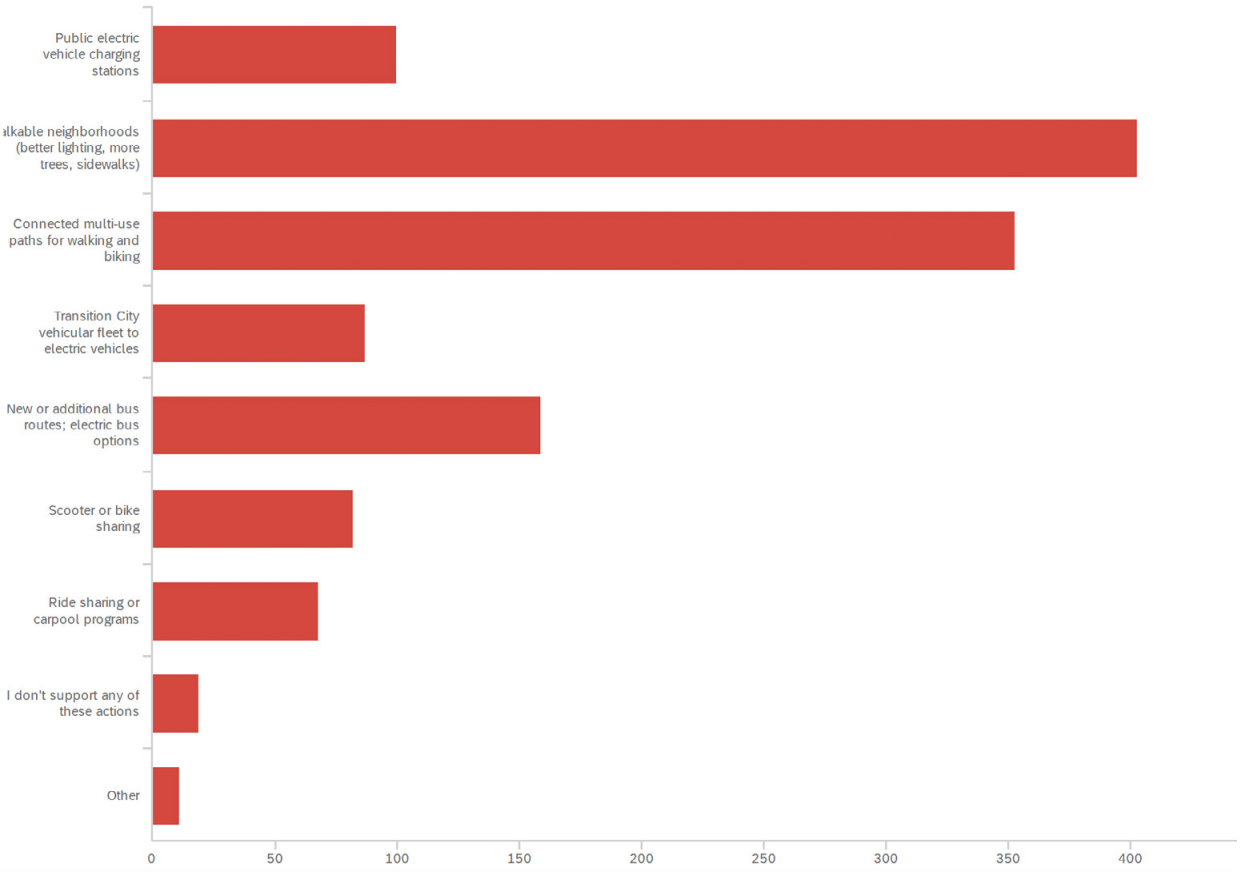
FIGURE B.18: RESPONSES TO QUESTION 12: "WHICH TYPES OF SUSTAINABLE ECONOMIC DEVELOPMENT STRATEGIES DO YOU THINK THE CITY SHOULD FOCUS ON?"



Q13: SUSTAINABLE TRANSPORTATION STRATEGIES

- ➜ TOP CHOICES: Walkable neighborhoods (31.44%) and connected multi-use paths (27.54%) are highly favored.
- ➜ LESS SUPPORT: Electric vehicle charging stations (7.80%) and scooter or bike sharing (6.40%) received less support.

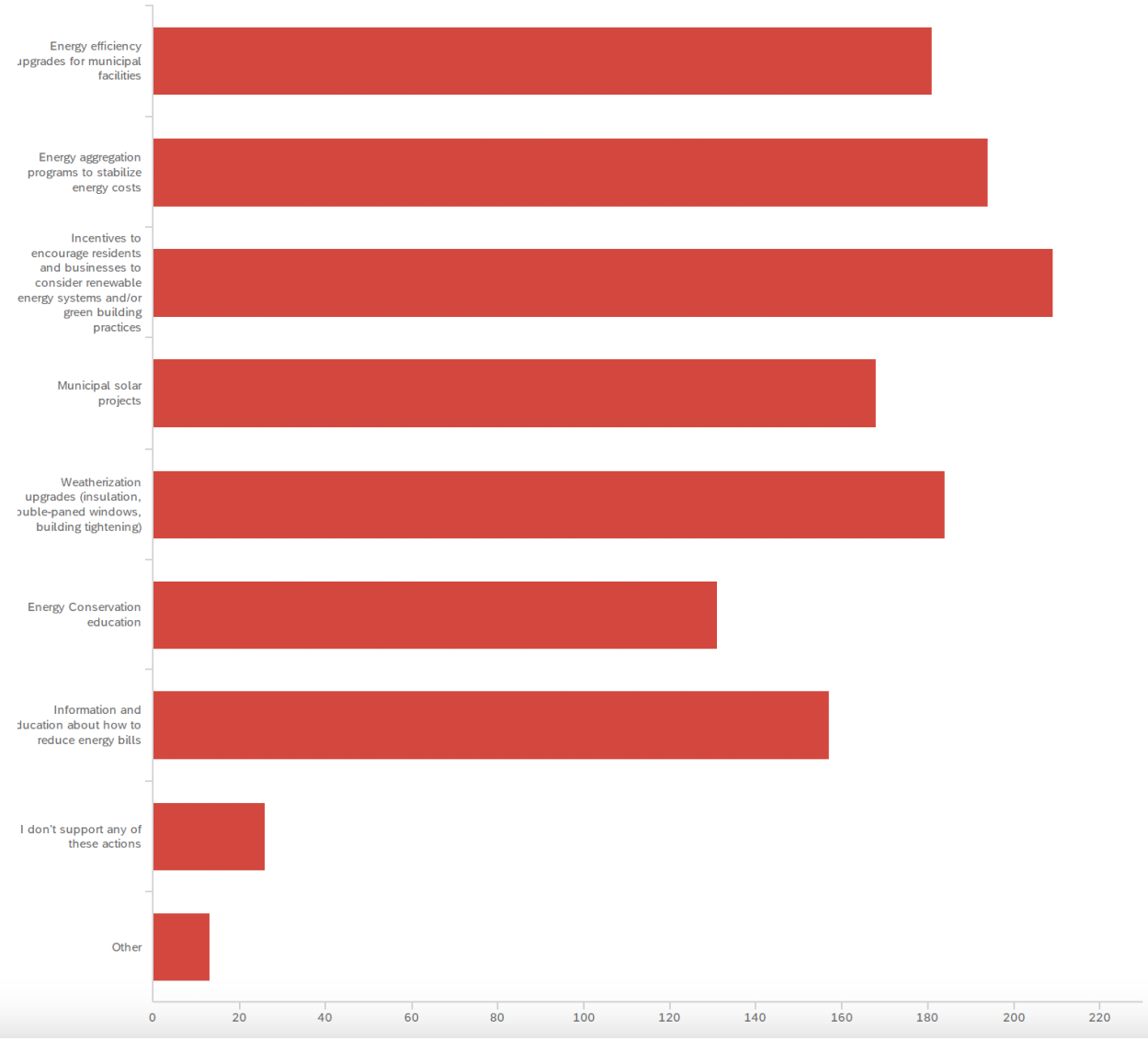
FIGURE B.19: RESPONSES TO QUESTION 13: "WHICH TYPES OF SUSTAINABLE TRANSPORTATION STRATEGIES DO YOU THINK THE CITY SHOULD FOCUS ON?"



Q14: SUSTAINABLE ENERGY STRATEGIES

- ➜ PREFERRED STRATEGIES: Incentives for renewable energy systems (16.55%) and energy aggregation programs (15.36%) are top choices.
- ➜ LESS INTEREST: Energy conservation education (10.37%) is less of a priority.

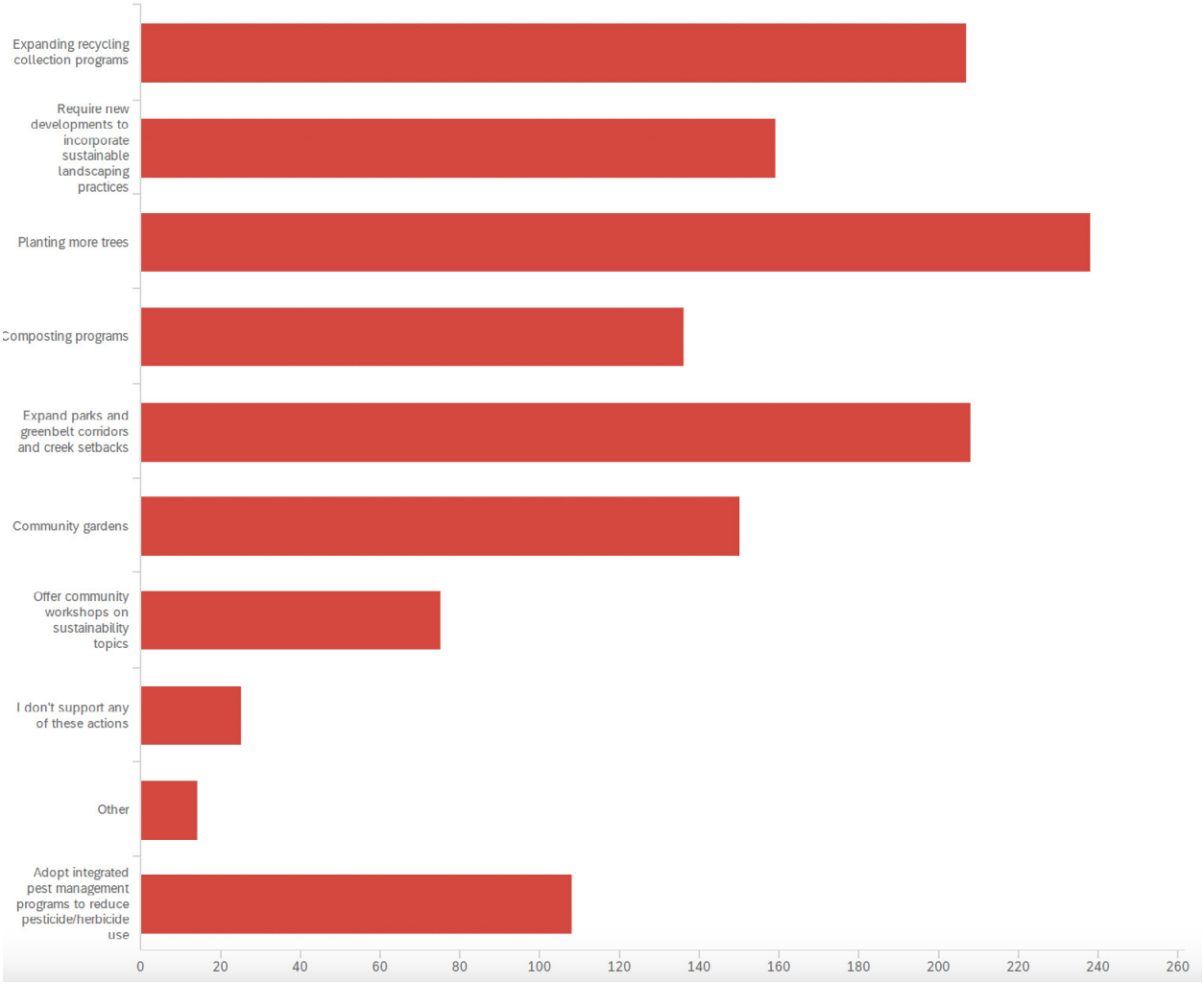
FIGURE B.20: RESPONSES TO QUESTION 14: "WHICH TYPES OF SUSTAINABLE ENERGY STRATEGIES DO YOU THINK THE CITY SHOULD FOCUS ON?"



Q15: GREEN COMMUNITY STRATEGIES

- ➜ TOP PICKS: Planting more trees (18.03%) and expanding recycling collection programs (15.68%) are most favored.
- ➜ LESS INTEREST: Community workshops on sustainability (5.68%) are least supported.

FIGURE B.21: RESPONSES TO QUESTION 15: "WHICH TYPES OF SUSTAINABLE GREEN COMMUNITY STRATEGIES DO YOU THINK THE CITY SHOULD FOCUS ON?"



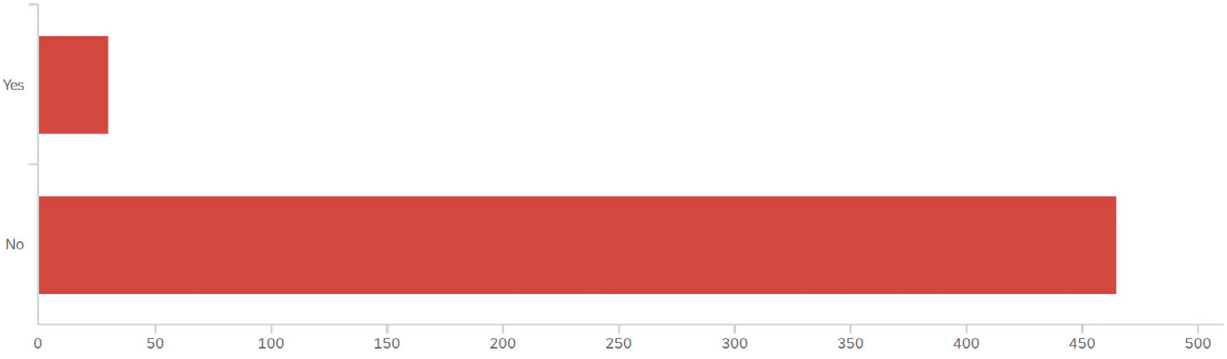
WHAT IS THE OPINION ABOUT ELECTRIC VEHICLES (EV)?

EV ownership in the community is currently low, indicating either a lack of interest, awareness, or accessibility. There's a considerable degree of uncertainty and reluctance regarding EV adoption, suggesting the need for more awareness or better incentives. The main barriers to EV adoption seem to be economic and infrastructural, along with some environmental and safety concerns. There's also a significant segment that needs more information about EVs to make an informed decision.

Q22: ELECTRIC VEHICLE OWNERSHIP

- ➜ CURRENT EV OWNERSHIP: Only 6.06% of respondents currently own an electric vehicle.
- ➜ NON-OWNERSHIP: A vast majority, 93.94%, do not own an electric vehicle.
- ➜ LESS INTEREST: Community workshops on sustainability (5.68%) are least supported.

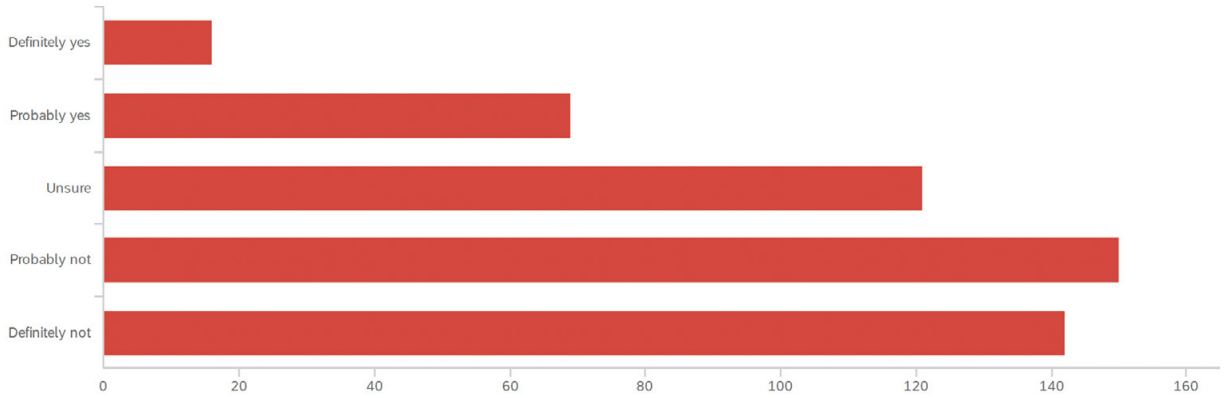
FIGURE B.22: RESPONSES TO QUESTION 22: "DO YOU OWN AN ELECTRIC VEHICLE?"



Q23: LIKELIHOOD OF PURCHASING AN EV

- ➜ DEFINITE INTEREST: 3.21% are definite about purchasing an EV next.
- ➜ PROBABLE INTEREST: 13.86% are likely to consider an EV for their next vehicle.
- ➜ UNCERTAINTY AND DISINTEREST: A significant portion is either unsure (24.30%) or inclined not to purchase an EV (58.63%).

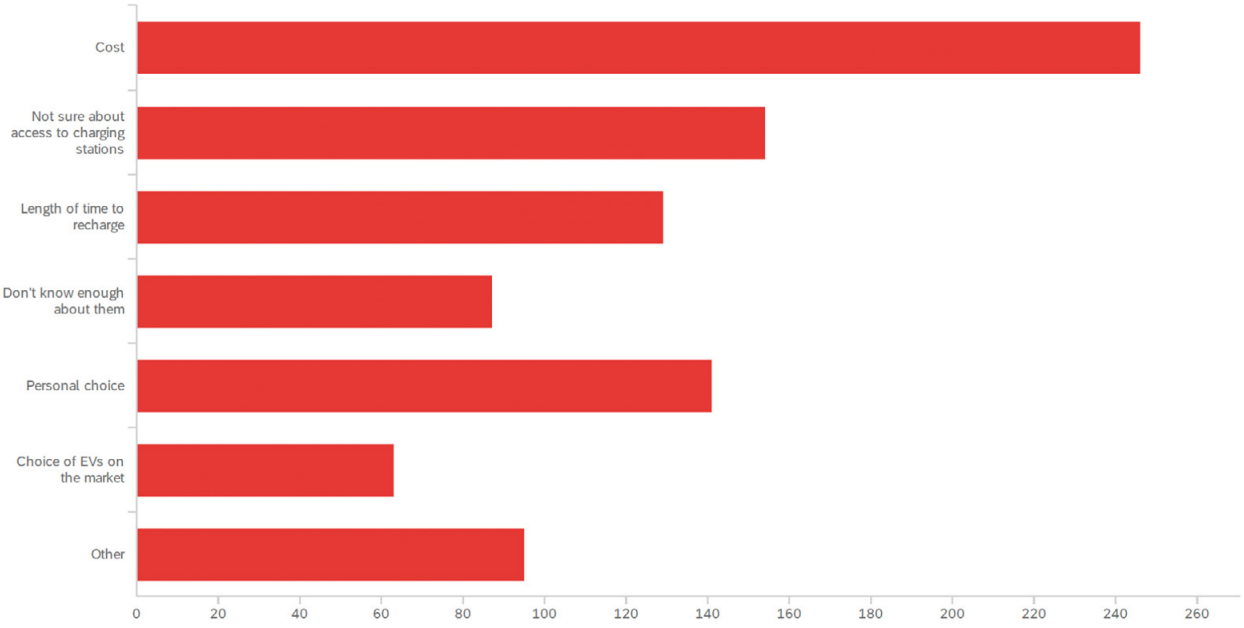
FIGURE B.23: RESPONSES TO QUESTION 23: "HOW LIKELY ARE YOU (OR YOUR HOUSEHOLD) TO PURCHASE AN ELECTRIC VEHICLE THE NEXT TIME YOU PURCHASE A VEHICLE?"



Q24: REASONS FOR NOT OWNING OR PLANNING TO PURCHASE AN EV

- ➜ PRIMARY CONCERNS: The main concerns are cost (26.89%), uncertainty about charging stations (16.83%), and the time required to recharge (14.10%).
- ➜ OTHER CONCERNS: Additional issues include lack of information about EVs, personal choice, limited choice of EVs on the market, and various environmental and practical considerations.

FIGURE B.24 RESPONSES TO QUESTION 23: IF YOU DON'T OWN OR PLAN TO PURCHASE AN ELECTRIC VEHICLE, WHY NOT?



WHAT IS QUALITY OF LIFE?

The responses are quite varied, reflecting the diverse priorities and values of the community. This reflects a community interested in both social and sustainable development. The suggestions for improvements point towards a community aspiring for a livelier, interconnected, and environmentally conscious City. This includes a strong emphasis on better dining options, improved transportation, and increased green initiatives, indicating a community interested in sustainable living and social connectivity. The City has the opportunity to enhance its appeal and quality of life by focusing on these areas of interest, potentially leading to increased resident satisfaction and community engagement.

FIGURE B.25: WORD CLOUD SHOWCASING RESPONSES TO QUESTION 9: "IN YOUR OWN WORDS, WHAT ARE THE TOP THREE THINGS THAT ENHANCE THE QUALITY OF LIFE FOR YOU AND YOUR FAMILY IN FAIRFIELD?"

Q9: TOP THREE THINGS THAT BRING QUALITY OF LIFE TO THE FAIR FIELD RESIDENTS AND THEIR FAMILIES

- **Parks and Green Spaces:** Many responses emphasize the importance of parks, green spaces, and outdoor activities. This includes specific mentions of parks, walking paths, and recreational areas. It indicates a strong community value placed on accessible natural spaces and outdoor leisure.
- **Safety and Public Services:** Safety, including the presence of helpful police, strong law enforcement, and overall safe living environments, is frequently mentioned. Additionally, the efficiency and availability of city services like waste management, public transportation, and infrastructure maintenance are highlighted.
- **Community and Economic Aspects:** Several responses focus on the economic stability of the City, good schools, and local businesses. This includes specific mentions of shopping and dining options, community events, and local businesses. There is also an emphasis on community aspects like diversity, neighborhood quality, and community programs.
- **Environmental and Health Concerns**: Concerns about clean water, air quality, and environmental sustainability are evident. This includes the mention of initiatives like recycling programs and reduction of water runoff, indicating a community interest in environmental health.
- **Infrastructure and Accessibility:** Responses highlight the importance of good roads, sidewalks, and overall City infrastructure. This includes mentions of convenient commuting, easy access to amenities, and the maintenance of City facilities.
- **Other Specific Needs:** Some unique needs and suggestions are also mentioned, such as controlling noise pollution, addressing property maintenance, and improving local schools.

FIGURE B.26: WORD CLOUD SHOWCASING RESPONSES TO QUESTION 26: "WHAT IS MISSING from the City that, if added, would improve your Quality of Life?"

Q26: SUGGESTIONS FOR IMPROVING QUALITY OF LIFE

- **Better Dining and Nightlife:** Many responses call for more varied and quality dining options, and some nightlife.
- **Walkability and Connectivity:** Suggestions include more sidewalks, bike lanes, and connected paths.
- **Green Initiatives:** Requests for more parks, green spaces, community gardens, and environmental programs.
- **Public Transport and Infrastructure:** Desire for improved public transport and better infrastructure.
- **Community Engagement and Activities:** Requests for more events and activities, especially for younger demographics.

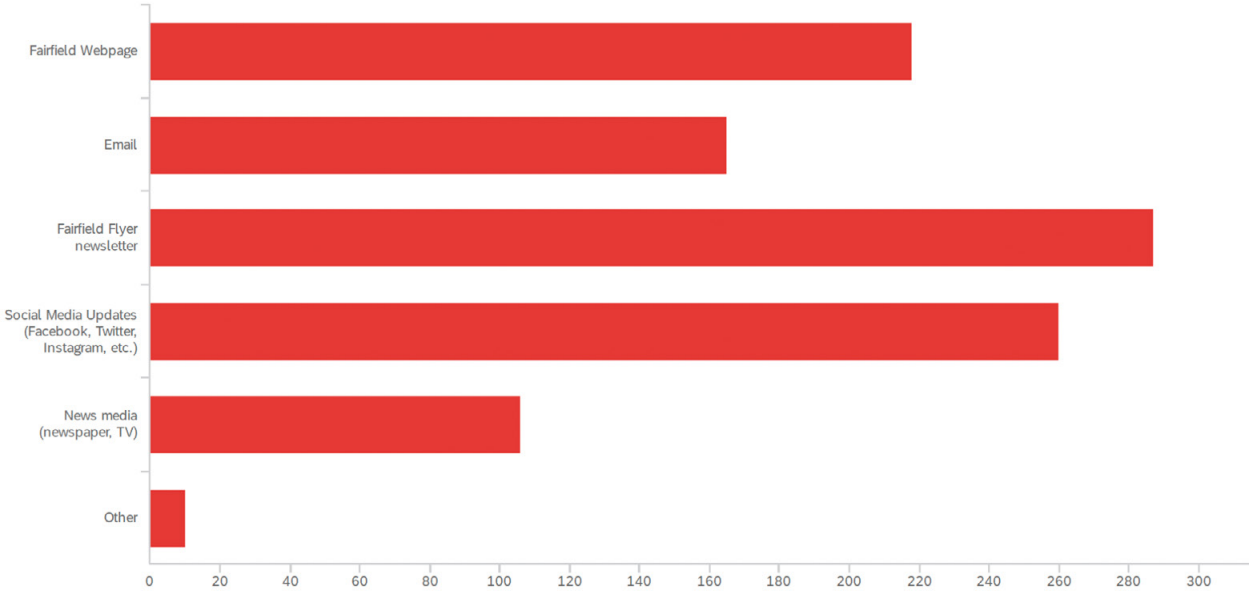
HOW TO RECEIVE UPDATES FROM THE CITY?

Traditional and digital methods are both popular. The preference for the newsletter and social media suggests a mix of detailed, official communication and quick, accessible updates.

Q25: PREFERRED CHANNELS FOR RECEIVING CITY UPDATES

- ➜ FAIRFIELD FLYER NEWSLETTER (27.44%)
- ➜ SOCIAL MEDIA UPDATES (24.86%)
- ➜ FAIRFIELD WEBPAGE (20.84%)
- ➜ OTHER METHODS: EMAIL (15.77%) AND NEWS MEDIA (10.13%)

FIGURE B.27: WORD CLOUD SHOWCASING RESPONSES TO QUESTION 25: "HOW DO YOU PREFER TO RECEIVE UPDATES AND INFORMATION ABOUT THE CITY?"



APPENDIX D: REGIONAL GOALS

A summary of sustainability goals adopted by jurisdiction and/or nearby universities within Ohio is presented below.

SECTOR	FAIRFIELD	CINCINNATI	COLUMBUS	CLEVELAND	OXFORD	OHIO UNIVERSITY	MIAMI UNIVERSITY	DUBLIN	HUBER HEIGHTS	DAYTON	OBERLIN	BEXLEY
POPULATION	44,456	308,935	906,528	367,991	22,625	29,217	19,452	49,085	43,272	137,571	8,249	13,681
EMISSION REDUCTION TARGETS	**E.1.0:** Reduce energy emissions by 50% by 2030 and 100% by 2055, community-wide.	Aim for a 50% reduction by 2030 and achieve 100% community-wide carbon neutrality by 2050 (pledge to Cities Race to Zero program)	Achieve 45% reduction by 2030 and 100% by 2050	Aim for a 40% reduction by 2030 and 80% by 2050	Target a 50% reduction by 2030 and 90% by 2040	Achieve carbon neutrality	Achieve carbon neutrality by 2040	Reduce emissions to meet federal air quality standards (Mid-Ohio Regional Planning Commission's Sustainable 2050 Goals)	Not addressed	Not addressed	Reducing 2007 GHG inventory emissions by 50% in 2015, 75% by 2030 and below 100% by 2050 (pledge to Cities Race to Zero program)	Reduce emissions 50% by 2030 and 100% by 2040 (pledge to Cities Race to Zero program)
EV ADOPTION	**MT.1.3:** Convert 20% of non-emergency City fleet to electric vehicles (EVs), hybrid or clean fuels by 2030 and 100% by 2055.	Increase zero-emission vehicle usage in the city to 25% by 2030	100% zero-emission vehicle fleets by 2050, Equitable EV charging plan developed by 2025, EV Ready Ordinance implemented by 2025, 15% registrations by 2030 and 100% by 2050	Increase the number of electric vehicle charging stations and promote alternative fuel vehicle events	Expand electric vehicle (EV) charging and infrastructure	Increase use of hybrid vehicles in the campus fleet	Not disclosed	Achieve 20% reduction in vehicle emissions by 2020, increase the number of privately owned vehicles (individual and corporate) using the City's CNG station or electric vehicle charging stations by 20%	Meet the public's electrical fleet recharging needs and have a 100% fully electric fleet of municipal vehicles by 2035	By 2035 all fleet will be converted to electric or renewable-powered vehicles, by 2050 achieve 100% renewable energy for all energy-use sectors including transportation	Adoption of policies that encourage electrified transport such as targeted rates for charging electric vehicles during off-peak hours or other mechanisms that ensure cost-effective and carbon-neutral vehicle charging	Not addressed
ENERGY	**E1.1:** Leverage energy aggregation procurement for residential and small commercial community energy use to achieve 50% carbon-free energy procurement by 2025 and 100% by 2035 **E.1.2:** Procure 100% renewable energy for all municipal operations	Transition to 100% renewable energy for city operations by 2035	Achieve 100% clean energy procurement for municipal and residential sectors by 2030, 25% for commercial sector by 2030, and 100% commercial clean energy by 2050	Achieve 25% renewable energy sources community-wide by 2030 and 100% by 2050	Achieve 100% renewable energy community-wide by 2050	Attain 36% renewable energy by Fiscal Year 2026	Implementation of a 20 million gallon Thermal Energy Storage tank to alleviate pressure on the electric grid during peak demand or brownouts.	Provide at least 15% of the facility's electricity demand from the solar installation at City facilities	Not addressed	Achieve 100% renewable energy for the municipal operations by 2035 and community-wide by 2040	Eliminate fossil fuel use for electricity generation no later than 2050	Not addressed

SECTOR	FAIRFIELD	CINCINNATI	COLUMBUS	CLEVELAND	OXFORD	OHIO UNIVERSITY	MIAMI UNIVERSITY	DUBLIN	HUBER HEIGHTS	DAYTON	OBERLIN	BEXLEY
COMPOSTING	**RC.1.2.1:** Launch pilot food-scrap composting program with residents and businesses by 2026.	Reduce food waste going to landfills by 50% by 2030	50% reduction of organic waste by 2030 and 90% by 2050	Enhance the availability of composting options for residents and businesses	Enhance community waste diversion with an emphasis on composting, food rescue, and recovery	Increase waste diversion to 75% by Fiscal Year 2026	The Armstrong Student Center is planning to introduce composting options by the fall semester of 2023, following a conducted waste audit	Explore residential and commercial composting options	Not addressed	Encourage residents to engage in backyard composting or contract with local, private composting businesses	Launch and implementation of a food waste recovery/ composting pilot, progressing to a full-scale program, integrated with an updated Zero Waste Plan	Pursue and design food waste collection pilot program. The City offers curbside composting.
RECYCLING	**RC.1.0:** Establish baseline and achieve 10% increase in waste reduction and diversion by 2030 (Municipal | Community)	Aim to increase waste diversion by 10% by 2028	40% reduction in recyclable waste landfilled by 2030 and 95% by 2050	Target a residential diversion rate of 30% by 2030	Increase waste diversion from 25% to 30% by 2030	Boost municipal waste diversion to 60% by Fiscal Year 2026	Collaboration with Rumpke for waste and recycling management, recycling bins placed alongside waste bins in most buildings, student-led initiatives and audits to encourage recycling and zero waste.	Increase the City's diversion rate from 49% to 55% by 2020	Not addressed	Increase the residential recycling baseline (8% in 2021)	Reach 90% waste reduction/ diversion by 2050	Reach 90% waste reduction/ diversion by 2040
MULTI-MODAL PATHS & TRANSPORTATION	**MT.1.0:** Reduce vehicle miles traveled (VMT) emissions by 20% by 2030 and 30% by 2055	Enhance the number of residents within 0.25 mile of safe bike and pedestrian infrastructure by 50% from 2022 levels by 2030	Implement 3 High Capacity Rapid Transit lines by 2030 and 8 by 2050, with mobility hubs accessible within 1/2 mile for all residents by 2050	Ensure 100% of residents live within a 10-minute walk of a safe and clean park	Improve safety and convenience for walking and biking across Oxford. Commit to increasing walkability and upholding Complete Streets principles and practices	Utilize the Complete Streets framework to identify additional non-motorized transportation routes	Diverse transportation options including bicycles and e-scooters, free BCRTA public transportation for campus and regional access, emphasis on a walkable, residential Oxford campus.	Build an additional 1% of shared-use paths by 2020	5% increase in transit ridership by 2035 and transformed the Old Shull Rd into a trail	Utilize the Complete Streets framework to identify additional non-motorized transportation routes	Enhance cycling and walking infrastructure, expand car-sharing and ride-sharing, improve public transport, increase public green spaces, and add new bike and pedestrian trails	Expand and improve walking, cycling and integrated transit access and identify potential areas for future zero emission zones by 2025
GREEN SPACES	**NGC.1.1:** Preserve, expand and enhance 935 acres of existing publicly managed parks and greenspace.	Maintain a 40% urban tree canopy and expand canopy coverage to 40% in residential areas, 25% in mixed-use/ industrial areas, and 10% in the Central Business District	Increase to 430 accessible green spaces by 2030, 500 by 2050, and ensure all residents have a 10-minute walk access to green spaces by 2050.	Expand the tree canopy to 30% by 2040 and plant 50,000 trees by 2020	Increase the city's urban tree canopy from 35% to 50% by 2050	Focus on maintaining and expanding natural, biodiverse spaces for learning, including gardens, green roofs, and pollinator areas	48% of Miami's campus is designated as forest, with 81% of the land within Miami's 1,000-acre Natural Areas being forest	Add a minimum of 5 native plant areas annually to open space and right-of-ways, add 30 or more certified backyard habitats to the City annually	Not addressed	Aim to increase tree canopy until a 50% goal is reached.	Maintain and preserve existing green spaces that act as carbon sinks and encourage climate-positive recreation and transportation	Not addressed

SECTOR	FAIRFIELD	CINCINNATI	COLUMBUS	CLEVELAND	OXFORD	OHIO UNIVERSITY	MIAMI UNIVERSITY	DUBLIN	HUBER HEIGHTS	DAYTON	OBERLIN	BEXLEY
REDEVELOPMENT & INFRASTRUCTURE	**BCR.3.1.3:** Utilize economic development resources to target and transform commercial areas through beautification, reduced pavement, increased porous surfaces, bike paths, and appropriate landscaping; incorporate green corridors and privately managed pocket parks.	Revitalize 25 contaminated, industrial properties in the Lower Mill Creek Valley neighborhoods by 2028	Set targets for vacant property redevelopment by 2025, ensure 40% of new housing is within 1/4 mile of employment centers by 2030, and increase this to 60% by 2050. Adopt municipal zero carbon design standards by 2025, 4 municipal zero carbon pilot buildings by 2030, adopt zero carbon design standards by 2050	Focus on stormwater control in development projects, plan for efficient vacant land reuse, and enhance retail development and food accessibility	Adopt green building standards, encourage solar-ready constructions, and promote mixed-use development with a focus on infill over expansion	Emphasize sustainable construction practices, aiming to reduce building and campus energy intensity and overall space usage per student	Commitment to LEED silver certification (minimum) for all new building constructions and renovations, transition from steam-based to geothermal or HHV (High Heat Value) systems for heating and cooling through 2026	Update the Zoning Code to encourage sustainable development practices (e.g., Provide energy audits for existing buildings)	Have developed hundreds of new housing units adjacent to transit stops and The Loop by 2035	Install green infrastructure like street rain gardens across the city, focusing on residential areas, to ensure long-term sustainability and protection of the ecological environment.	Adopt Green Building Policy, partner with POWER for energy-saving projects, sustainably develop city properties, create building performance certifications, and establish green building incentives	Develop a roadmap to achieve net zero carbon new buildings from 2030
SOURCE	Fairfield Sustains Draft SAP 2024	Green Cincinnati Plan 2023	2021 Columbus Climate Action Plan	Cleveland Climate Action Plan 2018 and Cleveland's Clean and Equitable Energy Future	Oxford Climate Action Plan 2023	Ohio University Sustainability and Climate Action Plan 2021	Miami 2040: Climate Action Plan for Miami University Draft	2018-2020 Sustainability Framework, in 2024 a new Sustainability Plan will be released	2023 Comprehensive Plan	Resolution 6572-21 and 2021 Strategy for a Sustainable Dayton	Updated 2019 Climate Action Plan	Green Bexley website and 2017 Zero Waste Plan
TOTAL GHG INVENTORY	391,185	7,600,000 MTCO2e	11,005,874 MTCO2e	12,500,000 MTCO2e	118,000 MTCO2e*	130,009 MTCO2e*	80,000 MTCO2e*	536,164 MTCO2e*	N/A	2,119,544 MTCO2e	174,391 MTCO2e	N/A
GHG PER CAPITA	8.798092496	25.36 MTCO2e*	12.23 MTCO2e	x14.41 MTCO2e*	5.10 MTCO2e*	4.35 MTCO2e	4.18 MTCO2e*	10.92 MTCO2e*	N/A	15 MTCO2e	20.9 MTCO2e	N/A

APPENDIX E: LIST OF SUSTAINABILITY ACHIEVEMENTS TO DATE

The City of Fairfield has already made significant efforts toward a more sustainable community, as referenced throughout this Plan. Fairfield Sustains will further, accelerate, and focus previous and concurrent efforts with a particular concentration on improved quality of life for the residents of Fairfield. The following provides a more complete list of sustainability actions already underway by focus area within the City:

TRANSPORTATION & MOBILITY

- ➜ City adopted Fairfield Connects Plan, December 2019 identifying opportunities to improve the walkability and bikeability of Fairfield (20-to-25 plan)
- ➜ Established active transportation fund to initiate Fairfield Connects implementation, investing $3M in 2 projects to date
- ➜ Actively increasing connectivity to bike trails, parks, multimodal paths
- ➜ Initiated municipal zero emission vehicle study in partnership with Miami University in 2023-2024
- ➜ Received grants for four community Electric Vehicle charging station
- ➜ Received 2017 Ohio Department of transportation (ODOT) Green Roads Award for 2017 based on sustainable road construction practices
- ➜ Completed a Feasibility Study for EV infrastructure at city buildings
- ➜ Conducted Pleasant Avenue Corridor Study to improve the safety, streetscape quality and function in the area
- ➜ Conducted North Route 4 Market Study: gain insights into development trends and the robustness of the local market

BUILDINGS & ENERGY

- ➜ Launched residential and small commercial energy aggregation initiative, with 50% renewable energy, in 2024
- ➜ Achieved 100% renewable energy for all municipal operations through renewable energy credits procurement since January 2021
- ➜ Initiated municipal Solar Feasibility Study in partnership with Miami University in 2023-2024
- ➜ Conducted internal comprehensive energy audit to identify opportunities for improved efficiencies through such improvements as LED lighting and smart energy management systems
- ➜ Actively retrofitting lighting with LEDs in municipal buildings and cobra head street lighting systems
- ➜ Actively installing light sensors and timers in municipal buildings
- ➜ Installed and actively monitoring smart energy management systems for real-time and remote adjustments to maximize energy efficiency throughout operations
- ➜ Worked with UD IAD to identify efficiency improvements for water treatment and wastewater treatment facilities in 2023, and begun appropriate upgrades
- ➜ Fairfield-based Cincinnati Financial Corporation received Energy Star certification for its office campus on South Gilmore Road
- ➜ Member of Energy Special Improvement District

RESOURCE CONSERVATION

- ➜ Established curbside recycling since the 1990s and green-waste (leaf and brush) pickup service since the 1980s
- ➜ City contracts with Rumpke as the franchised hauler for residential, multi-family and commercial recycling, and continues to expand diversion programs
- ➜ Fairfield partnered with Rumpke to offer a free upgrade to a 65-gallon recycling cart
- ➜ City partners with Butler County Recycling and Solid Waste District to provide waste diversion education and outreach
- ➜ City offers long-standing leaf and brush organic collection service
- ➜ City is currently upgrading to smart water meters to provide real time water usage data and reduce water loss from damage or leaks
- ➜ Active member of regional partnerships including Stormwater Collaborative and Hamilton to New Baltimore Groundwater Consortium to protect water quality, including: monitoring sourcing water, testing, protection of source water, through zone coding enforcement, and education
- ➜ Utility Billing Office offers complimentary toilet dye tablets to residents, helping them detect leaks within their households.
- ➜ Completed several recent utility system infrastructure improvement projects (e.g., Port Union water tower; John Gray Rd. water main replacement; Sewage sludge dewatering facility construction; etc.)
- ➜ The Snowbird Program allows residents to have their water service turned off and on without any associated charges
- ➜ The Summer Sewer Credit discounts sewer charges for single-family residences when water is not returned to the sewer system

NATURE & GREEN COMMUNITY

- 935+ acres of green space make parks and open space a core aspect of Fairfield
- Fairfield holds the designation of Tree City USA, it meets 4 standards set by the National Arbor Day Foundation and the National Association of State Foresters
- Village Green Park recent upgrade, including complete playground reconstruction and expansion
- 2014 Parks & Recreation Master Plan supports open space preservation throughout the development process
- Partnership with MetroParks of Butler County provides free nature programs

BUSINESS & COMMUNITY RESILIENCE

- Consistent growth in key economic indicators: income tax revenues, aggregate property & building permit valuation
- Redevelopment Investment: Public (ARPA and TIF) and private investment to redevelop older commercial corridors
- Annual capital budget investment in street maintenance, water distribution & sewer systems
- Substantial decades-long investments in flood damage mitigation projects and FEMA repetitive loss buyouts
- Fairfield Business Roundtable Series is a forum for business to discuss common issues and concerns
- The Fairfield Business Spotlight video series is aimed at engaging the public by showcasing new and expanding businesses
- Development Services Department offers support to new and established business

OTHER ACHIEVEMENTS:

- Consistent Economic Expansion: Sustained 4% annual growth in income tax revenue over a period of 20 years
- FEMA buyout grant (1990s-2000s): city demolished over 40 flood-prone homes and converted to permanent open space
- Modern, user-friendly Planning & Zoning Code

APPENDIX F: TECHNICAL ANNEX

(GHG INVENTORY & FORECAST REPORT)

EXECUTIVE SUMMARY

INTRODUCTION

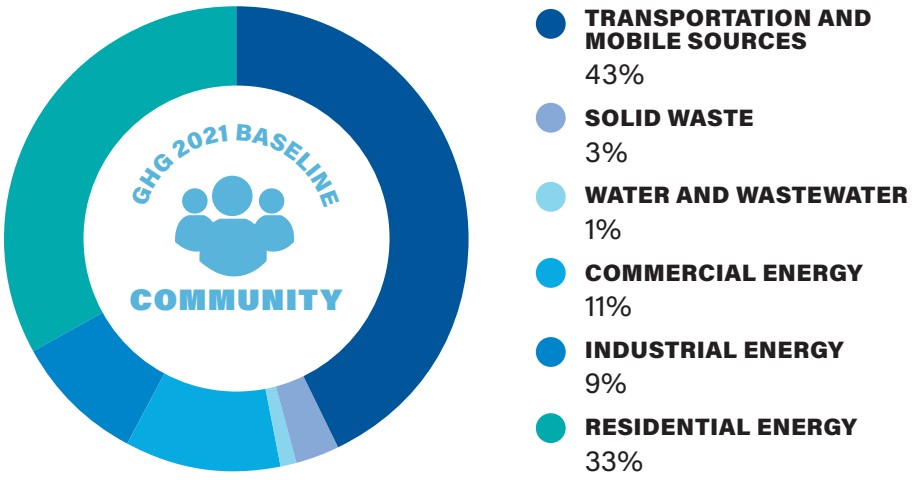
The primary objective of this document is to outline the greenhouse gas (GHG) emissions landscape within Fairfield, Ohio, serving as a cornerstone for the 2024 Sustainability Action Plan. This framework aims to chart a course towards minimizing carbon footprints while enhancing the quality of life for the City's inhabitants. It includes a comprehensive GHG inventory that identifies key emission sources across the City, encompassing residential, commercial, and governmental sectors. The inventory differentiates between direct emissions, such as those from fossil fuel use in heating, and indirect emissions, like those associated with electricity consumption from the grid. The significance of this GHG inventory lies in its role in shaping initiatives aimed at emission reduction, focusing on the environmental health of Fairfield during the reference year. The inventory's integrity and thoroughness have been validated by the International Council for Local Environmental Initiatives (ICLEI), affirming its value in guiding evidence-based policy and action.

This inventory looks at emissions through two distinct lenses. The first, the **Community Scale Track**, examines emissions attributed to Fairfield's residents, businesses, nonprofit entities, and industrial activities, excluding local government operations. It further categorizes emissions into residential and commercial energy use, transportation and mobility, waste management, and water treatment. The second perspective, the **Government Track**, examines emissions from municipal buildings, public lighting, government vehicle fleets, and staff commuting practices. This dual-track analysis is grounded in the most reliable data available, resorting to estimations only when specific data points were unattainable. Emission factors were sourced from authoritative entities like the Environmental Protection Agency (EPA) and the U.S. Community Protocol, ensuring the inventory's reflection of actual emission levels in Fairfield. All emissions calculations were conducted in accordance with the U.S. Community Protocols for Greenhouse Gas Accounting, as endorsed by ICLEI. The report includes two appendices: Appendix F.1, listing the raw data collected from various utilities and sources, and Appendix F.2, detailing the methodologies employed in calculating the emission totals.

COMMUNITY INVENTORY RESULTS

In 2021, Fairfield's community generated a total carbon footprint of 391,185 metric tons of carbon dioxide equivalent emissions (MT CO2e). The primary source of these emissions, accounting for 43% or 168,125 MT CO2e, originated from the transportation sector, including both vehicular travel and other mobile sources. To better identify opportunities for emissions reduction, energy consumption has been divided into residential, commercial and industrial categories, contributing to 33%, 11%, 9% of the emissions, with 129,836, 34,454 and 42,710 MT CO2e respectively. This includes emissions from both the direct combustion of natural gas and those associated with electricity use. Furthermore, fugitive emissions, which consist of leaks and releases of natural gas use across the community accounted for less than 1% of the total, at precisely 1,775 MT CO2e. Other sources of emissions within the community's assessment include industrial activities, waste management, and the treatment of water and wastewater.

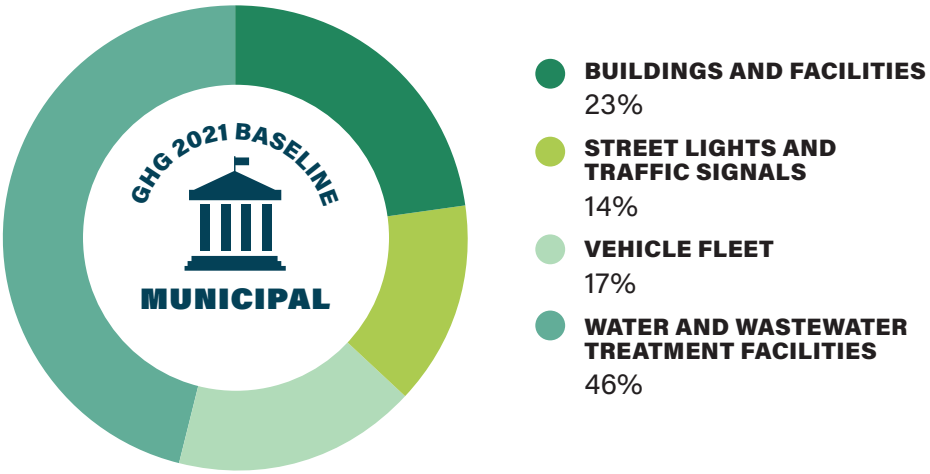
FIGURE F.1: COMMUNITY GREENHOUSE GAS EMISSION (2021)



MUNICIPAL INVENTORY RESULTS

The analysis also covered GHG emissions from municipal activities. Operations within the City of Fairfield were found to emit 9,501 MT CO2e. The bulk of these emissions came from water and wastewater processing plants, which accounted for 46% or 4,377 MT CO2e. Buildings and facilities were the next largest contributors, representing 23% or 2,144 MT CO2e. The municipal vehicle fleet also contributed significantly, making up 17% with 1,604 MT CO2e, while street lighting and traffic management systems added another 14% to the emissions, totaling 1,376 MT CO2e.

FIGURE F.2: MUNICIPAL OPERATIONS GREENHOUSE GAS EMISSIONS (2021)



INTRODUCTORY SUMMARY

This inventory followed the U.S. Community Protocol Version 1.2 guidelines developed by ICLEI in July 2019 for this specific GHG accounting exercise. The methodology for estimating emissions followed industry best practices, leveraging data from 2021 collected by the City. These "usage" figures were analyzed to select the most fitting emission factor, facilitating the determination of the total emissions volume. This process was supported by the ICLEI ClearPath tool, a resource aimed at facilitating GHG accounting and strategic management at both community and municipal levels. Emission factors were compiled from 2021 data and information from the federal Environmental Protection Agency GHG Emission Factors Hub[1] and modeled in the ICLEI ClearPath tool.

Accordingly, this report consolidates data from the City and applies GHG modeling to provide a faithful representation of the City's emissions landscape. Moreover, it identifies priority areas for strategic planning and the initiation of programs not only aimed at reducing the City's emissions but also at enhancing the quality of life for its residents and lowering operational expenses.

COMMUNITY AND MUNICIPAL OPERATIONS INVENTORIES

The inventory differentiates between two GHG accounting tracks: **Community** and **Municipal sectors**. For the community sector, the focus is on emissions from individuals and activities within the City of Fairfield's jurisdiction. Required sectors for community GHG inventories are 1) energy consumption in community buildings measured in kilowatt hours and natural gas therms, 2) vehicular emissions calculated from miles traveled within the City, 3) emissions from solid waste disposal, 4) energy usage and gallons of water consumption in water treatment and wastewater management. In contrast, the municipal inventory encompasses emissions resulting from the City of Fairfield government operations and facilities.

Despite municipal emissions forming a small segment of the overall inventory, their significance is underscored by the government's capacity to serve as a model for enhancing quality of life, reducing operational expenses, fostering fiscal efficiency, and motivating action against climate change. The municipal sector's GHG emissions come from several sources, including energy use in municipal buildings, the municipal vehicle fleet, commutes by government employees, streetlights and traffic signals, and management of solid waste.

[1] https://www.epa.gov/climateleadership/ghg-emission-factors-hub

CALCULATING EMISSIONS

GREENHOUSE GASSES

Local governments are expected to evaluate emissions of the six internationally recognized greenhouse gasses (GHG) under the Kyoto Protocol,[2] namely Carbon dioxide (CO2), Methane (CH4), Nitrous oxide (N2O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur hexafluoride (SF6). Each of these greenhouse gasses is reported and converted into metric tons (MT), differentiated by their respective Global Warming Potential (GWP). The GWP is benchmarked on Carbon dioxide's potential, which is set at 1, as it serves as the reference point for the other gasses. Methane, with a GWP of 28, is largely emitted from landfills, wastewater, and natural gas leakage. Nitrous Oxide, with a higher GWP of 265, is primarily associated with energy production and wastewater treatment. Hydrofluorocarbons, having a wide GWP range of 12-11,700, are mainly tied to refrigerant usage. Perfluorocarbons, with a GWP between 6,500-9,200, typically result from manufacturing and production processes. Sulfur Hexafluoride, possessing the highest GWP of 23,900, is principally connected with power transmission and distribution. This inventory primarily uses Carbon, Methane, and Nitrous Oxide to establish the carbon dioxide emission equivalents (CO2e) for all sectors analyzed.[3]

SECTOR ACTIVITY DATA & EMISSIONS FACTORS

The methodology for determining carbon dioxide equivalents (CO2e) involves the use of both activity data and emissions factors. Activity data, when multiplied by the appropriate emissions factors, yields the volume of CO2e emissions. This conversion of activity data into CO2e allows for the comparison between different sectors, thereby providing a basis for further analysis. It also aids in the decision-making process regarding potential strategies for emissions reduction.

[2] https://unfccc.int/resource/docs/convkp/kpeng.pdf

[3] https://icleiusa.org/ghg-protocols/

EMISSIONS REPORTING

Emissions are calculated and expressed in terms of carbon dioxide equivalent (CO2e) to facilitate comparisons across different sectors. This detailed approach allows for each sector to be individually reported and evaluated in context with others, presenting a holistic view of the City's emissions landscape. The community-level inventory includes emissions from building energy consumption, transportation, solid waste management, wastewater treatment, and water usage, with building energy further categorized into residential, commercial, and industrial sectors, including electricity, natural gas, and other fuels. Meanwhile, the municipal inventory captures emissions from energy use in buildings, commutes by employees, street lighting and traffic control systems, the municipal vehicle fleet, and solid waste management.

METHODOLOGY

The methodology adopted for this emissions inventory adheres to the best practices outlined in the US Community Protocol, as recommended by the ICLEI ClearPath tool, and is benchmarked against the United States Environmental Protection Agency's GHG Emission Factors, establishing a standard for GHG inventory analysis nationwide. This approach integrates actual usage data (detailed in Appendix F.1) and applies it through the functionalities of the ICLEI ClearPath tool to estimate emissions.[4]

INVENTORY YEAR

The choice of 2021 as the inventory year was strategic, aiming to provide a more typical baseline for greenhouse gas (GHG) emissions in the aftermath of the COVID-19 pandemic, which had profoundly affected emissions across various sectors, particularly travel. Moreover, the Science Based Targets Initiative advises selecting and reporting a base year for which emissions data can be reliably verified, further justifying the choice of 2021 for this inventory.[5]

RESULTS

The following sections detail the findings from the community and municipal operations greenhouse gas inventories, with results organized by sectors. Calculation methodologies for all results are provided in Appendix F.2.

[4] https://icleiusa.org/clearpath/

[5] https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf

COMMUNITY INVENTORY

In the City of Fairfield, total community carbon emissions were 391,185 MT CO2e. This result included emissions sources from the combustion of fuel for transportation and mobile services, onsite burning of natural gas and electricity procurement of residential, commercial, and industrial sectors. Additionally, emissions associated with the treatment of water and wastewater servicing the City, as well as emissions from solid waste generated within the City, were included in this total.

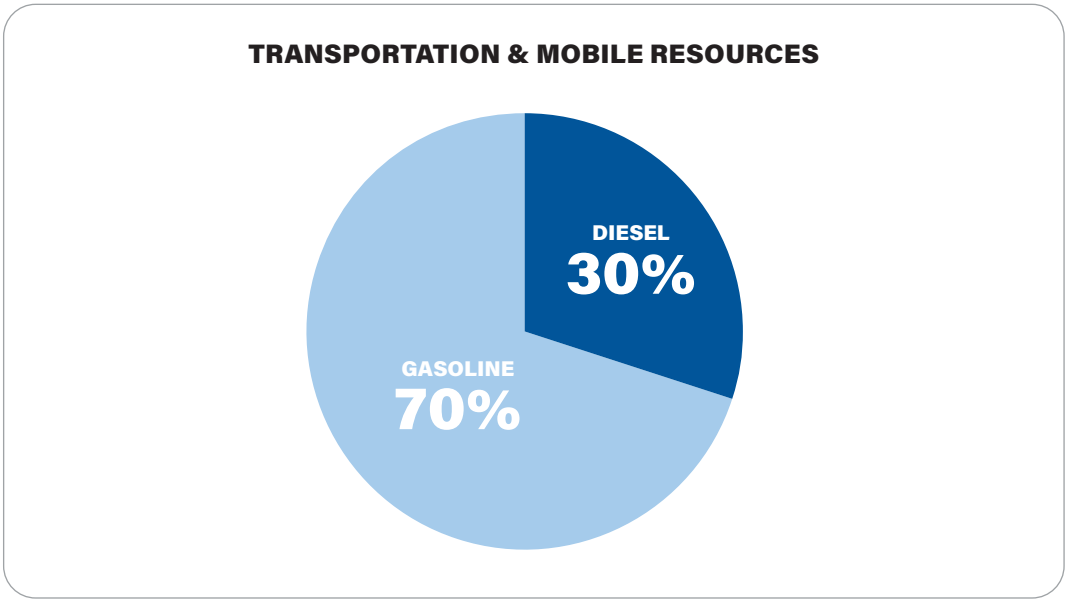
TABLE F.1: CITY OF FAIRFIELD COMMUNITY INVENTORY BY SECTOR

SECTOR	MT CO2e	PERCENTAGE (%)
Transportation & Mobile Sources	168,125	43%
Residential Energy	129,836	33%
Commercial Energy	42,710	11%
Industrial Energy	34,454	9%
Solid Waste	9,824	3%
Water & Wastewater	4,461	1%
Process and Fugitive Emissions	1,1775	<1%
Total	**391,185**	**100%**

TRANSPORTATION & MOBILE SERVICE

In the City of Fairfield, **Transport and Mobile Services** emerged as the main contributor to emissions, with a production of 168,125 MT CO2e. This figure represents 43% of Fairfield's overall emissions. The City's geographic makeup includes rural zones and significant commuter movement, which has resulted in a high reliance on automobiles. This, in turn, has led to an increased volume of Vehicle Miles Traveled (VMT) within Fairfield. The data pertaining to VMT for this analysis, focusing on diesel and gasoline-powered vehicles for the year 2021, was sourced from the Google Environmental Insights Explorer (Google EIE) website specific to Fairfield.

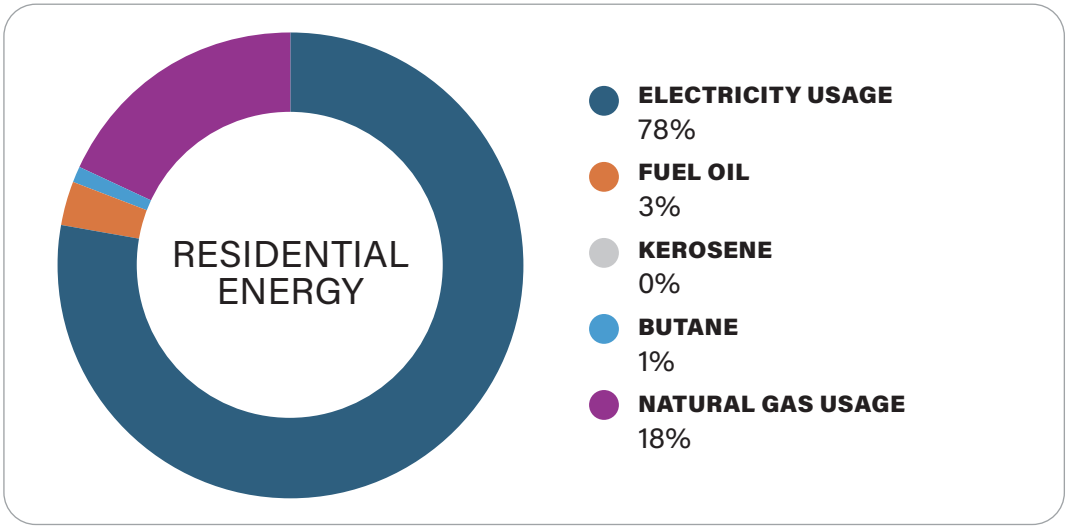
FIGURE F.4: TRANSPORTATION & MOBILE SERVICES EMISSIONS BREAKDOWN



RESIDENTIAL ENERGY

Residential Energy has been identified as the second-largest source of energy emissions in the City of Fairfield. This encompasses emissions arising from the consumption of electricity, the burning of natural gas, the use of fuel oil no. 2, as well as the utilization of kerosene and butane. Duke Energy provided the data on electricity and natural gas consumption for the residential sector in the City of Fairfield. In total, energy consumption in homes accounted for 129,836 MT CO2e emissions stemming from electricity and natural gas use, making up 33% of the City's total emissions according to the community's emissions inventory. Of that total, emissions attributed to electricity was 100,818 MT CO2e, natural gas contributed 24,159 MT CO2e, distillate fuel oil no. 2 resulted in 3,574 MT CO2e, butane generated 1,143 MT CO2 and kerosene summed 141 MT CO2e.

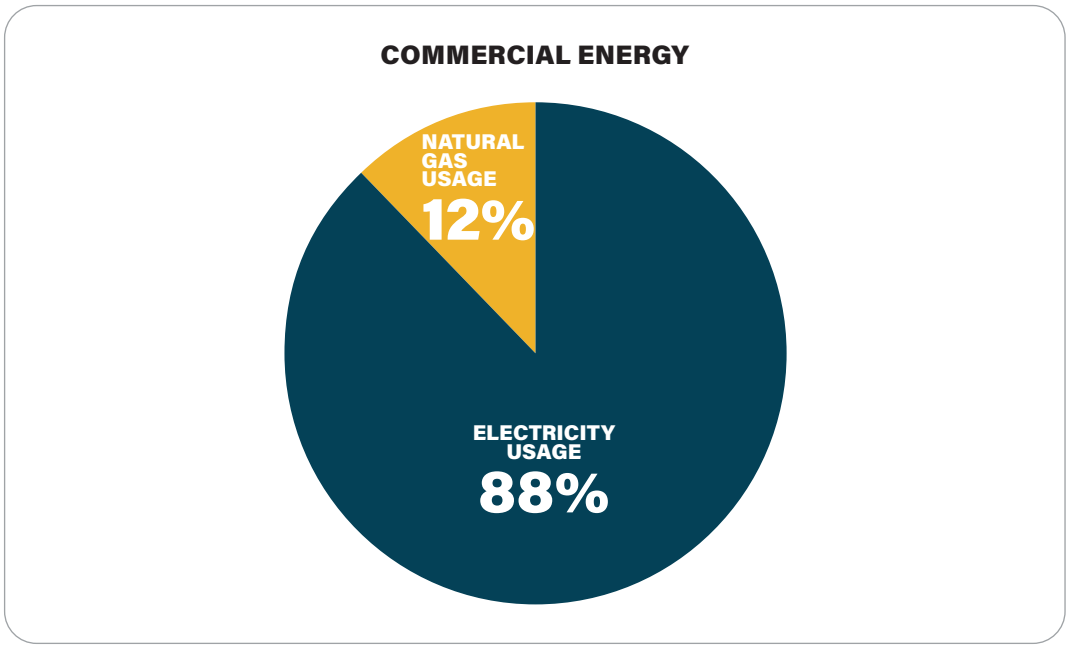
FIGURE F.5: RESIDENTIAL ENERGY EMISSIONS BREAKDOWN



COMMERCIAL ENERGY

In Fairfield, **Commercial Energy** emerged as the third largest contributor to energy-related emissions, generating 42,710 MT CO2e. Duke Energy also supplied the data regarding the consumption of commercial electricity and natural gas. Within this sector, electricity usage reached 37,626 MT CO2e and natural gas usage generated 5,083 MT CO2e. Consequently, emissions from commercial energy represented 11% of Fairfield's overall community emissions.

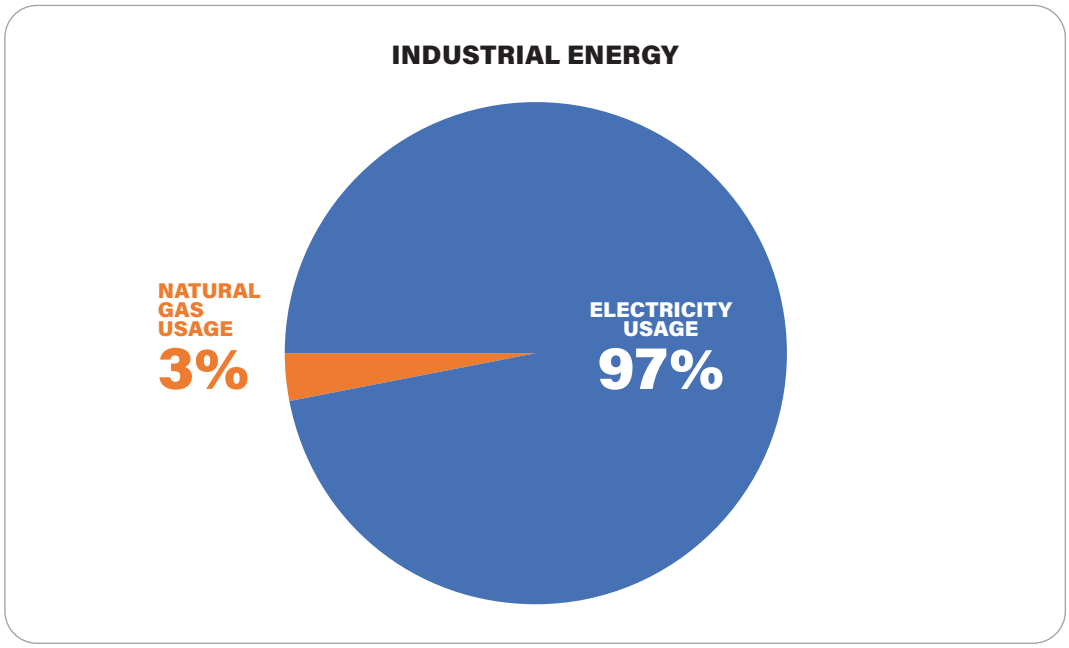
FIGURE F.6: COMMERCIAL ENERGY EMISSIONS BREAKDOWN



INDUSTRIAL ENERGY

Industrial Energy ranked as the third highest contributor to emissions within the City, emitting a total of 34,454 MT CO2e. Duke Energy supplied information on the consumption of electricity and natural gas within the industrial sector, too. According to this data, electricity usage amounted to 33,434 MT CO2e, while natural gas usage corresponded to 1,020 MT CO2e. Consequently, energy usage in the industrial sector accounted for 9% of Fairfield's overall community emissions.

FIGURE F.7: INDUSTRIAL ENERGY EMISSIONS BREAKDOWN



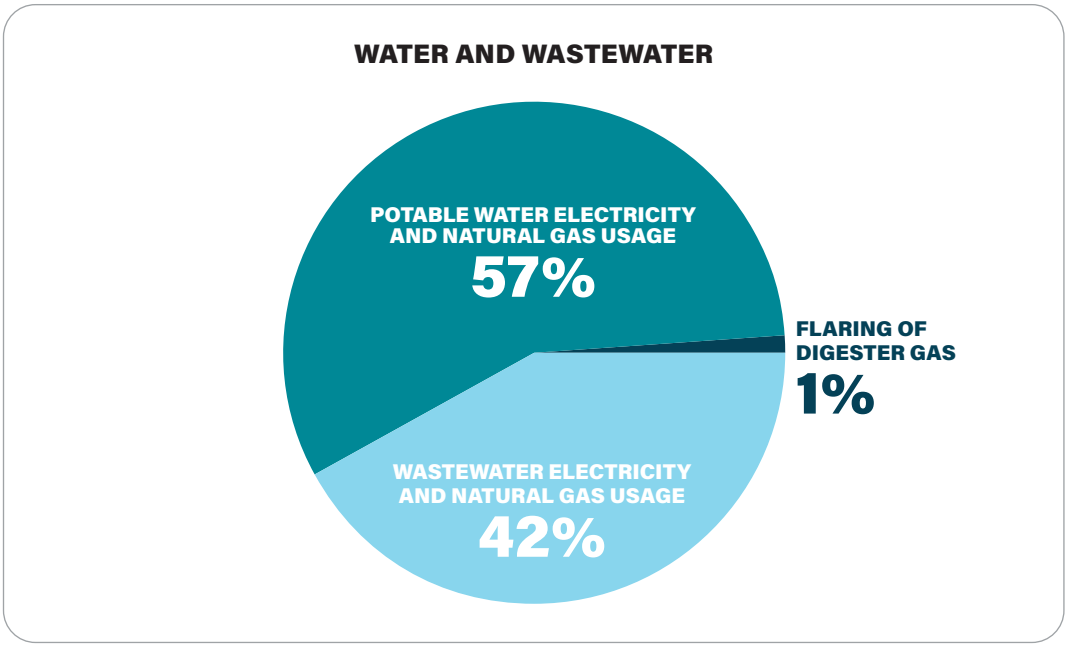
SOLID WASTE

Emissions linked to **Solid Waste** emanated from estimated methane emissions due to the decomposition of solid waste outside of the City's jurisdiction. These estimates were based on data collected from Rumpke Waste & Recycling services for residential solid waste collection. The disposal of solid waste accounted for 3% of Fairfield City's total emissions, totaling 9,824 MT CO2e.

WATER & WASTEWATER

The City of Fairfield provides **Water and Wastewater** services and it supplied all relevant data. The total emissions generated from water and sewage services reached 4,461 MT CO2e, representing 1% of the City's overall emissions. The primary source of these emissions stems from the electricity utilized in the water and sewage treatment processes, which is accounted for in the Commercial Energy sector's figures. Overall, potable water distribution corresponds to 1,868 MT CO2e, while wastewater treatment generates 2,536 MT CO2e. Digester gas produced at the wastewater treatment plant was assumed to consist of 65% methane by volume, with a flaring efficiency of 99%, resulting in a total of 56 MT CO2e.

FIGURE F.8: WATER & WASTEWATER EMISSIONS BREAKDOWN



PROCESSES & FUGITIVE EMISSIONS

Emissions categorized as fugitive - unintentional leaks or escapes of gasses during the transport or handling of materials such as natural gas - accounted for less than one percent of the City's overall emissions, totaling approximately 1,775 MT CO2e. These **Processes and Fugitive emissions** take place at different points, including production, processing, storage, transmission, and distribution phases.

MUNICIPAL INVENTORY

The next sections provide a comprehensive analysis of the municipal GHG emissions within the City of Fairfield. The emissions from local government operations encompass several sectors: the vehicle fleet, buildings and facilities, streetlights and traffic signals, employee commuting, solid waste facilities, and fugitive emissions. In 2021, activities related to the City's municipal functions resulted in a total of 9,501 MT CO2e, accounting for approximately 2% of the City's overall emissions.

TABLE F.2: CITY OF FAIRFIELD MUNICIPAL INVENTORY BY SECTOR

SECTOR	MT CO2e	PERCENTAGE (%)
Water and Wastewater	4,461	47%
Buildings and Facilities	2,144	23%
Vehicle Fleet	1,604	17%
Streetlights and Traffic Signals	1,376	14%
Total	**9,585**	**100%**

WATER & WASTEWATER

The City of Fairfield provides **Water and Wastewater** services and it supplied all relevant data. The total emissions generated from water and sewage services reached 4,461 MT CO2e, representing 47% of the total emissions from government operations. The primary source of these emissions stems from the electricity utilized in the water and sewage treatment processes, which is accounted for in the Commercial Energy sector's figures. Overall, potable water distribution corresponds to 1,868 MT CO2e, while wastewater treatment generates 2,536 MT CO2e. Digester gas produced at the wastewater treatment plant was assumed to consist of 65% methane by volume, with a flaring efficiency of 99%, resulting in a total of 56 MT CO2e.

BUILDING & FACILITIES

City of Fairfield's government-owned and operated **Buildings and Facilities** contribute 23% of the total emissions in the Municipal Inventory and a total of 2,144 MT CO2e. The main contributors to this emission total are the use of electricity, in addition to the burning of natural gas. Specifically, the electricity consumed by these governmental facilities totaled 3,034 MWh, while natural gas usage reached 13,077 MMBtu.

VEHICLE & TRANSIT FLEET

The City's Vehicle and Transit fleet account for 17% of overall emissions, resulting in the production of 1,604 MT CO2e. These emissions primarily stem from the fuel consumption of the 296 vehicles in the City's fleet. This assessment specifically focuses on on-road vehicles, hence landscape equipment has not been included in this emissions calculation.

STREET LIGHTS & TRAFFIC SIGNALS

The energy consumption of Street Lights and Traffic Signals plays a significant role in the municipality's emissions. The collected data on their energy usage represents 14% of the City's total emissions, amounting to 1,376 MT CO2e.

CONCLUSION

In 2021, the City of Fairfield, Ohio, generated a total of 391,128 MT C02e. The most significant contributors to this total were transportation sources, accounting for 43% of the total. Residential energy came in second, constituting 33% of the emissions. Commercial Energy at 11% was the next substantial contributor, followed by Industrial Energy at 9% with all other sources relatively minor in comparison.

As for the emissions attributable to City of Fairfield's Municipal Operations, four primary areas were prominent: Water & Wastewater Treatment Facilities, Buildings, Vehicle Fleet, and Street Lights, responsible for 47%, 23%, 17%, and 14% of the total emissions, respectively. Looking ahead, Fairfield is determined to lead by example in Ohio, aiming to enhance the quality of life for its citizens by actively working to reduce greenhouse gas emissions.

APPENDIX F.1: ATTACHED USE DATA

TABLE F.1.1: COMMUNITY INVENTORY DATA SOURCES

ACTIVITY	UNIT	DATA	SOURCE
Duke Residential Electricity	kWh	211,184,721	Duke Energy 2021
Duke Commercial Electricity	kWh	78,817,410	Duke Energy 2021
Duke Industrial Electricity	kWh	70,034,796	Duke Energy 2021
Residential Natural Gas	MMBtu	454,239	Duke Energy 2021
Commercial Natural Gas	MMBtu	95,586	Duke Energy 2021
Industrial Natural Gas	MMBtu	19,230	Duke Energy 2021
Residential Fuel Oil No. 2	MMBtu	48,000	
Residential Kerosene	MMBtu	1,870	
Residential Butane	MMBtu	17,400	
Process & Fugitive Emissions		3%	Calculated using ICLEI ClearPath's industry standard percentage.
Gasoline and Diesel Transportation	VMT	327,182,679	Google EIE
Solid Waste	Tons	15,041	Rumpke Estimates 2018
Water Electricity	kWh	5,132,600	Duke Energy 2021
Water Natural Gas	MMBtu	1,630	Duke Energy 2021
Wastewater Electricity	kWh	3,813,400	Duke Energy 2021
Wastewater Natural Gas	MMBtu	894	Duke Energy 2021
Volume of Water Delivered	millions gallons/year	2,072,000,000	2021 City of Fairfield
Volume of Water Treated	millions gallons/year	1,943,256,000	2021 City of Fairfield
Digester Gas Flared	scf/day	45,030	Calculated using ICLEI ClearPath's industry standard percentage.

APPENDIX F.1: ATTACHED USE DATA

TABLE F.1.2: MUNICIPAL INVENTORY DATA SOURCES

ACTIVITY	UNIT	DATA	SOURCE
Buildings and Facilities Electricity	kWh	3,034,834	Duke Energy 2021
Buildings and Facilities Natural Gas	MMBtu	13,077	Duke Energy 2021
Streetlights and Traffic Signals	kWh	2,884,152	Duke Energy 2021
Vehicle Fleet, Gasoline	Gallons	105,625	2021 City of Fairfield Usage: 3,168,750 (VMT)
Vehicle Fleet, Diesel	Gallons	66,311	2021 City of Fairfield Usage: 1,326,220 (VMT)
Water Electricity	kWh	5,132,600	Duke Energy 2021
Water Natural Gas	MMBtu	1,630	Duke Energy 2021
Wastewater Electricity	kWh	3,813,400	Duke Energy 2021
Volume of Water Delivered	millions gallons/year	2,072,000,000	2021 City of Fairfield
Volume of Water Treated	millions gallons/year	1,943,256,000	2021 City of Fairfield
Digester Gas Flared	scf/day	45,030	Calculated using ICLEI ClearPath's industry standard percentage.

APPENDIX F.2: DETAILED METHODOLOGY

COMMUNITY INVENTORY

ELECTRICITY

The electricity consumption figures for the residential, commercial, and industrial sectors for the year 2021 were provided by Duke Energy. The methodology for calculating emissions involved the multiplication of electricity consumption figures by the emissions factor applicable to the area of electricity production. The emissions factors for local jurisdictions were supplied by ICLEI: Local Governments for Sustainability, utilizing data from the EPA Emissions Hub, corresponding to the RFC West (RFCW) eGRID for the year 2021. The emission factors used were as follows: for CO2, 1,046 CO2 lbs/MWh; for CH4, 95 CH4 lbs/GWh; and for N2O, 14 N2O lbs/GWh.

NATURAL GAS

The natural gas usage for the residential, commercial, and industrial sectors for the year 2021 were provided by Duke Energy. The calculation of natural gas emissions involves multiplying the usage data by an emission factor provided by the US Community Protocol BE.1.1.[6] The respective emission factors are 53.02 kg/MMBtu for CO2, 0.005 kg/MMBtu for CH4, and 1 xE-4 for N2O.

[6] U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions Appendix C: Built Environment Emission Activities and Sources

APPENDIX F.2: DETAILED METHODOLOGY

FUEL OIL NO. 2, KEROSENE AND BUTANE

The data for these categories is derived from the United States Census Bureau's data[7] and the methodologies utilized by the US Community Protocol.[8] The Census Bureau monitors the usage of residential non-utility fuels on a statewide basis. To ascertain the fuel usage share in Fairfield, the analysis involved comparing the count of households within the City utilizing each fuel variety against the aggregate count of households across the state engaged in the use of that specific type of fuel. Statewide, 276,027 households use bottled, tank, or LP gas (assumed here as butane), and 92,792 use fuel oil, kerosene, or similar fuels (assumed here as fuel oil no. 2 and kerosene). In Fairfield, 249 households use bottled, tank, or LP gas, and 544 use fuel oil, kerosene, or similar fuels. The proportion of households in Fairfield using bottled, tank, or LP gas is 0.01354, while the proportion using fuel oil, kerosene, etc., is 0.0295. To calculate the City's share of energy consumption, we multiply these proportions by the statewide energy use. According to data from the US Energy Information Administration[9] Ohio consumes 38.6 trillion Btu of Hydrocarbon Gas Liquids (HGL, which includes LPG) and 284.6 trillion Btu of Fuel Oil No. 2. After converting these figures from trillion Btu to MMBtu and applying Fairfield's proportions, we estimate that the City's consumption of LPG is 17,400 MMBtu and its consumption of Fuel Oil No. 2 is 48,000 MMBtu. These estimates are calculated to carbon equivalencies using the US Community Protocol in ICLEI, applying emission factors of 73.96 kg/MMBtu for CO2, 0.01087 kg/MMBtu for CH4, and 0.00072464 kg/MMBtu for N2O.

[7] https://data.census.gov

[8] U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions Appendix C: Built Environment Emission Activities and Sources

[9] https://www.eia.gov/state/search/

APPENDIX F.2: DETAILED METHODOLOGY

TRANSPORTATION & MOBILE SERVICES

Transportation emissions in the City of Fairfield were calculated using the vehicle miles traveled (VMT) in 2021 available in the Google Environmental Insights Explorer. The emissions factors are sourced from the US Community Protocol[10] as follows:

TABLE F.2.1: TRANSPORTATION & MOBILE SERVICES EMISSIONS FACTORS

CO_2 Emissions Factor	0.07024
CO_2 Emissions Factor Units	MT/MMBtu
Biogenic CO_2 Emissions Factor	0.068414
Biogenic CO_2 Emissions Factor Units	MT/MMBtu
CH_4 Emissions Factor	1.9493×10^{-8}
CH_4 Emissions Factor Units	MT/mile
N_2O Emissions Factor	1.0608×10^{-8}
N_2O Emissions Factor Units	MT/mile

[10] U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions Appendix D: Transportation and Other Mobile Emission Activities and Sources

APPENDIX F.2: DETAILED METHODOLOGY

SOLID WASTE

Estimates of solid waste for Fairfield are obtained from Rumpke Waste & Recycling services, outside of Fairfield's jurisdiction, with its landfill situated in Cincinnati. Approximately 15,041 tons of residential solid trash are collected in Fairfield, and methane capture occurs at the landfill. The service does not handle the collection of separately sorted yard trimmings or compost in Fairfield; these tasks are managed by the City itself. The commercial and industrial sectors contract waste management facilities directly to meet their requirements, which complicates the City's efforts to monitor their emissions. The following are the specific emission factors: Mixed MSW Emission Factor (MT CH4/wet short ton) 0.0648, Newspaper Emission Factor (MT CH4/wet short ton) 0.042, Office Paper Emission Factor (MT CH4/wet short ton) 0.1556, Corrugated Cardboard Emission Factor (MT CH4/wet short ton) 0.1048, Magazines/Third Class Mail Emission Factor (MT CH4/wet short ton) 0.0476, Food Scraps Emission Factor (MT CH4/wet short ton) 0.0648, Grass Emission Factor (MT CH4/wet short ton) 0.0228, Leaves Emission Factor (MT CH4/wet short ton) 0.026, Branches Emission Factor (MT CH4/wet short ton) 0.058. The calculation methodology was adopted from the US Community Protocol.[11]

WATER AND WASTEWATER

Electricity is consumed by both drinking water and sewage systems, with the associated emissions determined as described earlier. Moreover, the process of treating wastewater employs natural gas, and the emissions from this usage are estimated using the methods previously mentioned. Emissions resulting from the flaring of digester gas are also considered in this inventory, factors from the US Community Protocols WW.1.A, WW2.A, and WW.3. Specifically, the CH4 Emissions Factor in this case is 1.2177 x10-7 MT CH4/scf and the annual digester gas flared is 1.6436 x10-7 scf/year.

[11] U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions Appendix E: Solid Waste Emission Activities and Sources

APPENDIX F.2: DETAILED METHODOLOGY

MUNICIPAL INVENTORY

A summary of data elements measured and collection sources by sector is presented in the following table.

TABLE F.2.2: MUNICIPAL INVENTORY DATA ELEMENT AND COLLECTION SOURCES BY SECTOR

SECTOR	WHAT IS MEASURED?	HOW DATA IS COLLECTED
Buildings and Facilities	Total amount of electricity (kWh) used for all Government Buildings	2021 Records from Duke Energy
Streetlights and Traffic Signals	Total electricity (kWh)used by all streetlights and traffic lights	2021 Records from Duke Energy
Vehicle and Transit Fleet	VMT, total gas used, or amount spent on gas	Data was provided by each department that manages a vehicle fleet, including Parks, Public Utilities, Police, Fire, and Public Work Departments
Water and Wastewater	Total amount of electricity (kWh) used in the water and wastewater facilities as well as the number of people served	2021 Records from Duke Energy

BUILDING & FACILITIES

Fairfield's buildings and facilities were calculated using usage data obtained from the government's tracking documents and utility data.

STREETLIGHTS AND TRAFFIC SIGNALS

Fairfield's streetlights and traffic signals were calculated using usage data obtained from the government's tracking documents and utility data. Utility bills from Duke Energy for 2021 were collected and analyzed specifically for streetlights and traffic signals.

APPENDIX F.2: DETAILED METHODOLOGY

VEHICLE FLEET

Fuel usage for the City of Fairfield's vehicle fleet was supplied by the City and calculated using the US Community Protocol.[12] The annual miles traveled and annual fuel usage are tracked and multiplied by emission factors from ICLEI. These include a CO2 Emissions Factor of 0.070264 MT/MMBtu, a Biogenic CO2 Emissions Factor of 0 MT/MMBtu, a CH4 Emissions Factor of 2.153 x10-8 MT/vehicle mile, a Biofuel CH4 Emissions Factor of 0 MT/vehicle mile, a N2O Emissions Factor of 1.248 x10-8 MT/vehicle mile, and a Biofuel N2O Emissions Factor of 0 MT/vehicle mile.

WATER AND WASTEWATER

Emissions from water and wastewater are determined using the methodology outlined for this sector in the Community Inventory section.

[12] U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions Appendix E: Solid Waste Emission Activities and Sources

APPENDIX G: IMPLEMENTATION FRAMEWORK

MOBILITY & TRANSPORTATION

* costs estimates encompass total anticipated implementation cost unless otherwise specified in chart
** Implementation Timeline: Short = 0-5 years; Medium = 5-15 years; Long term = 15 plus years
*** Cost: Low ≤ $50,000; Medium = $50,000-$500,000; High ≥ $500,000

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
MT.1.1: Create a more walkable, bikeable, transit-friendly City through robust implementation of Fairfield Connects by 2055.	**MT.1.1.1:** Continue dedicated Active Transportation Fund to invest in strategic infrastructure development, smart growth, education, incentives, and connectivity enhancements in line with Plan objectives.	**Number of new multi-use paths, sidewalks, shared roads and bike lanes**	**Up to 369,960 MTCO2e saved (cumulative reductions until 2030)** **Up to 1,815,740 MTCO2e saved (cumulative reductions from 2030 to 2055)**	**Long term**	**Public Works**	**High**	**In Progress**
	MT.1.1.2: Seize funding opportunities by proactively pursuing federal, state, local grant and related opportunities by monitoring and applying for relevant grants as outlined in Plan, and as new funding opportunities are available.			**Long term**		**High**	**In Progress**
	MT.1.1.3: Implement multi-use paths, bike lanes, shared lanes and sidewalk enhancements outlined in Fairfield Connects. Continue to integrate new paths with existing green spaces to create a more pleasant and natural walking and biking experience.			**Long term**		**High**	**In Progress**
	MT.1.1.4: Enhance safe bike and pedestrian infrastructure, aiming for an increase in residents within 0.2 mile of such facilities by 2030, adopting best practices in urban design and safety.			**Medium term**		**High**	**In Progress**

MOBILITY & TRANSPORTATION

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
MT.1.2: Promote and reduce barriers to adoption of active and public transportation opportunities.	**MT.1.2.1:** Leverage City's membership in Butler County Regional Transportation Authority (BCRTA) to advocate for and invest in improved transit connectivity to, from and within Fairfield by 2030, which may include but are not limited to: enhanced transit routes, schedule frequencies, micro-transit options, tools to ease use, lighting/safety features, shade, connectivity to bike routes, strategic park and ride locations, and other transit-friendly and last mile amenities.	**% of VMT reduction**	*Quantified Above*	**Medium term**	**Development Services**	**Medium**	**Not started**
	MT.1.2.2: Launch a targeted marketing campaign to promote greenway trails and multi-modal transit lanes, leveraging local events, developing educational programs and partnering with BCRTA, OKI or other regional entities.			**Short term**		**Low**	**Not started**
	MT.1.2.3: Continue to improve walkability along Route 4 by replicating successful features from Pleasant Avenue, such as safe pedestrian crossings and aesthetic enhancements.			**Long term**		**High**	**In Progress**
	MT.1.2.4: Continue construction of multimodal paths around Marsh Park to accommodate pedestrians, cyclists, and other non-motorized transport modes.			**Medium term**		**High**	**In Progress**
	MT.1.2.5: Increase community bike racks and amenities along multi-modal paths. Encourage businesses to install bike racks or active commuter amenities in key commercial zones.			**Medium term**		**Low**	**Not started**

MOBILITY & TRANSPORTATION

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
MT.1.3: Convert 20% of non-emergency City fleet to electric vehicles (EVs), hybrid or clean fuels by 2030 and 100% by 2055.	**MT.1.3.1:** Develop a Zero Emission Vehicle (ZEV) Plan for 100% Municipal Fleet by 2055 including right sizing, replacement schedule, costs, infrastructure needs, optimal charging locations, and funding opportunities.	**% of non-emergency City fleet that is EVs, hybrid, or clean fuel**	*Quantified Above*	**Long term**	**Public Works**	**Low**	**In Progress**
	MT.1.3.2: Ensure all newly acquired vehicles for city use are aligned with the ZEV Plan by incorporating policy into new Environmentally Preferable Purchasing Policy (EPPP). Establish annual targets to transition fleet to achieve 100% EVs, hybrids, or clean fuels by 2055 target.			**Long term**		**High**	**Not started**

MOBILITY & TRANSPORTATION

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
MT.1.4: Proactively support community EV expansion and readiness.	**MT.1.4.1:** Update building codes and zoning requirements to encourage and facilitate EV readiness or pre-wiring in new construction. Explore waiving permit fees for EV charging infrastructure installations in existing buildings to encourage adoption.	**Number of charging stations**	*Quantified Above*	**Short term**	**Development Services** **Public Works**	**Low**	**Not started**
	MT.1.4.2: Coordinate installation of 10 City & Community charging stations by 2030 through federal, regional and local funding. Continuously seek grants for the expansion of EV charging infrastructure. Strategically install EV charging stations near commercial areas and amenities to support local business utilization during charging and encourage EV adoption. Combine with educational promotion and buy local campaign.			**Short term**		**Medium**	**In Progress**
	MT.1.4.3: Consider partnering with EV charging infrastructure businesses to encourage installation of Level 2/3 charging banks at strategic locations and along travel corridors.			**Medium term**		**Low**	**Not started**
	MT.1.4.4: Create an information hub to educate residents and businesses on available EV incentives, rebates, charging information, and other resources to accelerate EV adoption.			**Short term**		**Low**	**Not started**

MOBILITY & TRANSPORTATION

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
MT.1.5: Electrify specialty vehicle, off-road tools, equipment, and machinery in municipal operations	**MT.1.5.1:** Conduct a study to assess and set targets including replacement schedule for specialty and off-road vehicles, tools, and machinery by 2030.	**% of electrified equipments used in municipal operations**	*Quantified Above*	**Short term**	**Public Works** **Parks** **Public Utilities**	**Low**	**Not started**
	MT.1.5.2: Eliminate off-road emissions in municipal operations by 2055 by adopting a planned replacement and purchase policy for all specialty vehicles, tools, equipment and machinery, integrated into broader municipal Environmentally Preferable Purchasing Policy (EPPP).			**Long term**		**High**	**Not started**
	MT.1.5.3: Provide employee education, training and technical assistance to drive behavior change.			**Short term**		**Low**	**Not started**

BUILDINGS & ENERGY

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
PROCUREMENT							
E1.1: Leverage energy aggregation procurement for residential and small commercial community energy use to achieve 50% carbon-free energy procurement by 2024 and 100% by 2035	**E.1.1.1:** Implement Energy Aggregation initiative for residential and small commercial customers by 2024 and achieve 50% renewable energy power procurement by 2024, initiating the shift towards greener, more affordable energy solutions.	**kWh derived from renewables**	*Quantified Above*	**Short term**	**Public Utilities** **Finance**	**Low**	**In Progress**
	E.1.1.2: Explore long-term (e.g. 10, 15, 20-year) power purchase agreements beginning in 2027 procurement cycle to secure low-cost and stable renewable and carbon-free power pricing and reduce risk against future anticipated price increases with growing demand.			**Long term**		**Low**	**Not started**
	E.1.1.3: Increase renewable energy procurement options by 2027 to include minimum 50% renewable energy standard + optional 100% renewable, wind, or carbon-free offering for customers, which could be available at a small premium for customers interested in supporting a higher sustainability option.			**Short term**		**Low**	**Not started**
	E.1.1.4: Reach 100% renewable, wind, or carbon-free power procurement by 2035, fulfilling our promise for a fully sustainable and economically advantageous energy supply.			**Medium term**		**Low**	**Not started**

BUILDINGS & ENERGY

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
PROCUREMENT							
E.1.2: Procure 100% renewable energy for all municipal operations	**E.1.2.1:** Continue Renewable Energy Credit (REC) purchasing to achieve 100% renewable energy for all municipal operations through 2024. Renew REC procurement agreement to continue 100% renewable energy for all municipal operations by 2025.	**kWh derived from renewables**	**Up to 392,019 MTCO2e saved (cumulative reductions until 2025)** **Up to 4,503,977 MTCO2e saved (cumulative reductions from 2030 to 2055)**	**Short term**	**Public Utilities**	**Low**	**In Progress**

BUILDINGS & ENERGY

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
RENEWABLE ENERGY							
E.2.1: Increase local on-site renewable energy in municipal operations by 2030	**E.2.1.1:** Demonstrate leadership in sustainable energy through on-site renewable energy production and potential battery storage for increased rate stability, emergency preparedness and peak shaving.	**Number of projects completed**	*Quantified Above*	**Medium term**	**Public Utilities** **Public Works** **Parks**	**High**	**Not started**
	E.2.1.2: Conduct a Municipal Solar Feasibility Study by 2026 to evaluate the potential and practicality of installing solar panels on municipally owned or operated buildings, parks, facilities, and other suitable properties to include such considerations as: sizing potential, feasible rooftop, ground-mounted, parking or other installation approaches, battery integration potential, capital costs, rate per kWh, tax rebates, payback periods, self-owning pay-back periods, etc.	**Study completed**		**Short term**		**Low**	**In Progress**
	E.2.1.3: Install on-site solar photovoltaic systems (combined with battery storage) at municipally owned or operated buildings, facilities, parks or suitable properties as identified in Solar Feasibility Study. Set short, mid and long-term installation targets for 2055 and monitor progress.	**Number of projects completed; kWh from solar energy**		**Long term**		**High**	**Not started**
	E.2.1.4: Actively monitor grant and funding sources and seek opportunities to partner with regional agencies, non-profits or others to respond to and secure available opportunities.	**Dollar amount secured**		**Medium term**		**Low**	**In Progress**
	E.2.1.5: Prioritize integrated systems installation with parks, parking, and facilities to support onsite energy use and charging of EV vehicles, golf carts and other building and equipment.	**Number of integrated systems installed**		**Medium term**		**Low**	**Not started**

BUILDINGS & ENERGY

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
RENEWABLE ENERGY							
E.2.2: Encourage local community solar installation among community residents and businesses	**E.2.2.1:** Leverage OKI Solar Ready Program, including solar siting surveys, to guide promotion and adoption of solar for residents and businesses within Fairfield. Increase community solar capacity at strategic locations and among partners or regional agencies.	**kWh from solar energy**	*Quantified Above*	**Short term**	**Public Utilities** **Development Services**	**Low**	**Not started**
	E.2.2.2: Update building codes and zoning requirements to encourage and facilitate solar installations. Implement streamlined permitting process for solar installations. Explore waiving permit fees for solar installation projects to encourage and accelerate community solar adoption.	**Code updated, buildings completed**		**Short term**		**Low**	**Not started**
	E.2.2.3: Strategically utilize economic development funding to incentivize adoption of energy efficiency and renewable installation projects in the industrial and commercial sectors. Establish an annual fund and establish annual targets for business participation.	**Number of energy efficiency and renewable projects completed**		**Medium term**		**Low**	**Not started**
	E.2.2.4: Educate community on state and federal tax credits, rebates, and other incentive programs to remove barriers to solar energy adoption. Create an information hub with information on programs, service providers and financing options including but not limited to PACE for commercial businesses and ESIP resources.	**Number of program participants**		**Short term**		**Low**	**Not started**

BUILDINGS & ENERGY

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
ENERGY EFFICIENCY & CONSERVATION							
E.3.1: Continue and enhance existing municipal energy efficiency program	**E.3.1.1:** Implement results of internal comprehensive energy audit to increase efficient operations at all municipal facilities. Update energy audit every 5 years or as needed.	**Number of projects completed from the energy audits**	*Quantified Above*	**Medium term**	**Public Utilities** **Public Works**	**Medium**	**In Progress**
	E.3.1.2: Prioritize window replacements in Municipal Building and Annex for energy efficiency gains in older municipal building stock.			**Medium term**		**Medium**	**Not started**
	E.3.1.3: Replace Justice Center low efficiency non-condensing boilers to high-efficiency condensing models, increasing efficiency from an estimated 70% to 95% efficiency.			**Medium term**		**Medium**	**Not started**
	E.3.1.4: Continue and expand energy savings retrofits and installations including LED lighting, as well as light sensors, timers, and smart thermostats based on occupancy patterns in all applicable areas in municipal buildings, parks and facilities.			**Medium term**		**Low**	**In Progress**
	E.3.1.5: Continue to utilize and improve smart energy management systems for real-time and remote adjustments. Regularly review data to refine energy management. Continue to regularly upgrade energy management systems for peak performance.			**Medium term**		**Low**	**In Progress**

BUILDINGS & ENERGY

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
ENERGY EFFICIENCY & CONSERVATION							
E.3.2: Increase energy conservation initiatives in municipal operations	**E.3.2.1:** Prioritize energy efficiency installations across all municipal buildings, parks and facilities during upgrades, renovations, remodeling or other improvements.	**Number of energy efficiency installations**	*Quantified Above*	**Medium term**	**Public Utilities** **Parks** **Public Works**	**Medium**	**Not started**
	E.3.2.2: Implement ongoing employee conservation policies, and promote awareness through education and training.	**# policies** **# trainings**		**Medium term**		**Medium**	**Not started**
	E.3.2.3: When preparing for replacements of major building equipment, conduct an analysis of highest energy efficiency equipment models and systems, and consider equipment electrification (HVACs, boilers, heaters) to achieve further reduced emissions, if appropriate. Consider opportunities for planned early retirement and replacement to accelerate emissions reductions through the City's Five Year Capital Improvement Plan.	**Study completed**		**Medium term**		**Medium**	**Not started**

BUILDINGS & ENERGY

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
ENERGY EFFICIENCY & CONSERVATION							
E.3.3: Decrease energy usage in street lighting by 50% by 2030	**E.3.3.1:** Upgrade all cobra head street lights and traffic signals to LED or other energy-efficient technologies. Accelerate end of life replacement of post head streetlights to LED or more efficient technologies. Seek partnerships and funding to accelerate adoption.	**Number of energy efficiency installations completed**	*Quantified Above*	**Medium term**	**Public Works**	**Medium**	**In Progress**
	E.3.3.2: Implement smart lighting and traffic control systems in appropriate areas to shift timing or adjust brightness based on traffic and pedestrian patterns to optimize energy use.			**Medium term**		**Medium**	**In Progress**

BUILDINGS & ENERGY

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
ENERGY EFFICIENCY & CONSERVATION							
E.3.4: Increase wastewater treatment efficiency through strategic installation of improved systems	**E.3.4.1:** Install and optimize economizers to use outdoor air cooling by 2025 (University of Dayton (UD) Industrial Assessment Center (IAC) recommendation)	**Number of energy efficiency installations completed**	*Quantified Above*	**Short term**	**Public Utilities**	**Low**	**In Progress**
	E.3.4.2: Upgrade Aeration System 1 with Fine Bubble Diffusers by 2025. (UD IAC recommendation)			**Short term**		**High**	**In Progress**
	E.3.4.3: Install VFDs on all appropriate high surface pumps and optimize operation (UD IAC recommendation)			**Medium term**		**Medium**	**In Progress**
	E.3.4.4: Continue current biogas capture and reutilization efforts. Monitor systems and conduct regular upgrades to maintain peak performance.	**Amount of biogas captured**		**Medium term**		**Low**	**In Progress**
	E.3.4.5: Increase methane recapture energy program to reduce on-site flaring and improve air quality. Conduct an updated feasibility study on methane recapture to reduce seasonal summer flaring and increase heat or power utilization or energy sale to grid, including cost-benefit analysis, energy output, payback periods, tax rebates.	**Amount of methane captured**		**Medium term**		**Low**	**Not started**

BUILDINGS & ENERGY

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
ENERGY EFFICIENCY & CONSERVATION							
E.3.5: Be a conduit for resources to encourage, liaise and facilitate adoption of renewables and energy efficiency community-wide.	**E.3.5.1:** Offer energy audit and technical assistance services to businesses and residents in targeted community sectors. Set annual targets for participants enrolled. Launch commercial program targeting City's largest commercial or industrial energy users beginning with the City's strong industrial base. Expand to additional sectors through 2055.	**Percentage or number of residential, commercial, or industrial users registering for and executing energy audits**	*Quantified Above*	**Long term**	**Public Utilities** **Development Services**	**Medium**	**Not started**
	E.3.5.2: Develop education and awareness programs to streamline and promote available energy conservation and renewable adoption programs, services, technical assistance and financial assistance programs, incentives, rebates and tax benefits.			**Long term**		**Low**	**Not started**
	E.3.5.3: Seek and establish partnerships with local or regional service providers offering services in the energy or sustainability sector. Establish, promote and regularly update list of service providers or other resources for businesses and residents.			**Long term**		**Low**	**Not started**

RESOURCE CONSERVATION

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
SOLID WASTE STRATEGIES							
RC.1.1: Advance Sustainable Waste Management Planning	**RC.1.1.1:** Increase the City's understanding of current waste stream by conducting an up to date City specific Waste Characterization Study (WCS), partnering with Butler County Solid Waste District (BCSWD) as appropriate. Assess current recycling (diversion) rate to inform future planning and monitoring. Obtain detailed data on various material types and generation amounts to guide programmatic development. Use WCS to inform a comprehensive Waste Diversion Plan.	**Completed Waste Composition Study**	**Up to 5,898 MTCO2e saved (cumulative reductions until 2030)**	**Short term**	**Development Services** **Public Works** **Environmental Commission**	**Low**	**Not started**
	RC.1.1.2: Adopt a community-wide waste reduction and diversion rate goal by 2027 to track progress and foster collective action towards waste reduction, recycling and other diversion efforts. (Use WCS data to inform goal setting)	**% of waste reduction or diversion**		**Short term**		**Low**	**Not started**
	RC.1.1.3: Use WCS data to inform and complete a comprehensive recycling & waste reduction plan (Waste Diversion Plan) to include programmatic design for all waste stream generation sectors.	**Completed Waste Diversion Plan**		**Short term**		**Medium**	**Not started**
	RC.1.1.4: Conduct periodic audits of City and hauler green waste, recycling and other waste diversion programs to identify opportunities for increased participation, reduced contamination and/or address other barriers to current diversion programs.	**% of waste diversion**		**Medium term**		**Medium**	**Not started**
	RC.1.1.5: Increase recycling outreach, technical assistance and incentives efforts to educate the community about waste reduction, recycling and other diversion requirements and reduce barriers to participation.	**# programs** **# engagements** **# businesses** **# stakeholders**		**Medium term**		**Low**	**Not started**

RESOURCE CONSERVATION

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
SOLID WASTE STRATEGIES							
RC.1.2: Enhance current organics collection services to increase diversion of compostable materials.	**RC.1.2.1:** Launch pilot food-scrap composting program with residents and businesses by 2026.	**Program launched; # participants; # tons diverted**	*Quantified Above*	**Short term**	**Development Services** **Public Works** **Parks**	**Medium**	**Not started**
	RC.1.2.2: Explore food scrap (organics) collection program expansion utilizing learning from pilot program. Combine with organics collection & composting feasibility study to consider current and needed infrastructure, separated or integrated yard waste organics systems, inclusion of biodegradable single-use materials and pilot composting collection program results.	**Study complete**		**Medium term**	**Environmental Commission**	**Medium**	**Not started**
	RC.1.2.3: Consider expanding and launching comprehensive organics collection for residents/businesses based on pilot and study results.	**Study complete**		**Medium term**		**Medium**	**Not started**

RESOURCE CONSERVATION

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
SOLID WASTE STRATEGIES							
RC.1.3: Increase diversion from City's existing recycling and diversion collection programs.	**RC.1.3.1:** Continue City's recycling collection service with franchised hauler. Expand and enhance recycling and diversion collection offerings over time in collection agreements with hauler and BCSWD.	**% or # tons of waste diverted**	*Quantified Above*	**Medium term**	**Public Works** **Environmental Commission** **Development Services**	**Low**	**In Progress**
	RC.1.3.2: Continue City's greenwaste and leaf collection program for residents and businesses.	**% or # tons of waste diverted**		**Medium term**		**Low**	**In Progress**
	RC.1.3.3: Promote increased participation in City's recycling, greenwaste and leaf collection program for residents and businesses.	**% or # tons of waste diverted**		**Medium term**		**Low**	**Not started**

RESOURCE CONSERVATION

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
SOLID WASTE STRATEGIES							
RC1.4: Advance Targeted Waste Management Solutions	**RC.1.4.1:** Develop service-specific recycling education, outreach and technical assistance programs and incentives: (e.g. Business | Residential | Multi-family)	**Programs launched; # participants; # tons diverted**	*Quantified Above*	**Medium term**	**Development Services** **Public Works** **Parks** **Environmental Commission**	**Medium**	**Not started**
	RC.1.4.2: Develop sector-specific recycling education, outreach and technical assistance programs and incentives: (e.g. schools, restaurants, hotels, groceries, industry, special events, venues, etc.)	**Programs launched; # participants; # tons diverted**		**Short term**		**Medium**	**Not started**
	RC.1.4.3: Develop material-specific recycling programming for hard to recycle items based on WCS (e.g. carpet, solar panels, paint, fuel canisters, etc.). Promote and expand special collection events, drop-off facilities, and.or pick-up services (including bulky item pick-up days, Household Hazardous Waste (HHW) drop-off, E-waste collection, paint, batteries, etc.)	**Programs launched; # participants; # tons diverted**		**Short term**		**Medium**	**In Progress**

RESOURCE CONSERVATION

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
SOLID WASTE STRATEGIES							
RC.1.5: Utilize Policy to Accelerate Waste Reduction	**RC.1.5.1:** Develop and adopt an Environmentally Preferable Purchasing Policy (EPPP) for municipal operations to maximize source reduction, prioritize energy-efficient equipment and reduce mobile source emissions. Develop internal purchasing tools and educational materials including preferred product and vendor lists and staff training to support EPPP procurement of items across departments for both every day and occasional purchasing.	**Policy adoption; $ invested; # units purchased**	*Quantified Above*	**Medium term**	**Development Services** **Public Works** **Parks** **Finance**	**Low**	**Not started**
	RC.1.5.2: Utilize waste management agreements to set diversion targets and expand education & outreach requirements. Leverage Butler County Solid Waste District to enhance education and outreach services.	**annual diversion rate** **annual outreach summary**		**Medium term**		**Low**	**Not started**
	RC.1.5.3: Develop special event and meeting sustainability protocols to include recycling and composting bins, source reduction, and guidance on use of disposable materials.	**protocol developed** **# events implemented** **# venues implemented**		**Medium term**		**Low**	**Not started**
	RC.1.5.4: Consider the adoption of a waste diversion equal space ordinance for renovations and new construction to reduce service barriers and encourage increased participation in available commercial and multifamily recycling and/or organics collection services.	**ordinance adoption** **# facilities implemented**		**Short Term**		**Low**	**Not started**

RESOURCE CONSERVATION

STRATEGIES	ACTION STEPS	PERFORMANCE INDICATOR (KPIs)	EMISSIONS IMPACT	IMPLEMENTATION TIMELINE	LEAD DEPARTMENT	COST LO • MED • HI	PROGRESS TO DATE
WATER/WASTEWATER STRATEGIES							
RC.2.1. Demonstrate and Expand Water Efficiency Community Wide and in Municipal Operations	**RC.2.1.1:** Promote water-efficient fixtures and equipment within municipal departments, commercial and residential sectors. Regularly review and upgrade to newer water-saving technologies.	**Number of water-efficient fixtures installed**	**Up to 2,890 MTCO2e saved (cummulative reductions until 2055)**	**Medium term**	**Public Utilities** **Development Services** **Public Works** **Parks** **Environmental Commission**	**Medium**	**Not started**
	RC.2.1.2: Conduct periodic audits of the City facilities to identify water-saving and energy-saving opportunities.	**Gallons of water or energy (kWh/therms) units saved**		**Medium term**		**Low**	**Not started**
	RC.2.1.3: Install demonstration projects at City facilities and parks, combined with educational programming.	**Projects completed**		**Medium term**		**Low**	**Not started**
	RC.2.1.4: Maintain and expand the network of water refill stations across the city to reduce reliance on single-use bottled water and provide convenient access to clean drinking water.	**Number of water refill stations installed**		**Medium term**		**Medium**	**Not started**
	RC.2.1.5: Enhance smart water metering practices (e.g., installation of smart meters, sub-meters for tenant-occupied spaces) to enable monitoring and evaluation of consumption patterns. Install 80% smart meters by 2025.	**Gallons of water or energy (kWh/therms) units saved**		**Medium term**		**Low**	**In Progress**

APPENDIX H: PRIORITIZATION MATRIX

FOCUS AREA	STRATEGIES	GHG REDUCTION POTENTIAL (HIGH/ MEDIUM/ LOW)	COST (HIGH/ MEDIUM/ LOW)	INCREASE OPERATIONAL EFFICIENCY (HIGH/ MEDIUM/ LOW)	REDUCES OPERATIONAL COSTS (YES/ NO)	FUNDING AVAILABLE (YES/ NO)	INTERNAL CAPACITY/ SUPPORT (HIGH/ MEDIUM/ LOW)	QUALITY OF LIFE (HIGH/ MEDIUM/ LOW)	SCORE	PRIORITY SCORE
Mobility & Transportation	MT.1.1: Create a more walkable, bikeable, transit-friendly City through robust implementation of Fairfield Connects by 2055.	High	High	High	Yes	Yes	High	High	6.00	1
Mobility & Transportation	MT.1.2: Promote and reduce barriers to adoption of active and public transportation opportunities.	Medium	Medium	Low	No	No	Low	Medium	1.50	3
Mobility & Transportation	MT.1.3: Convert 20% of non-emergency City fleet to electric vehicles (EVs), hybrid or clean fuels by 2030 and 100% by 2055.	High	Medium	Medium	Yes	Yes	Medium	Low	4.50	2
Mobility & Transportation	MT.1.4: Proactively support community EV expansion and readiness.	High	Low	Medium	No	Yes	Low	High	4.50	2
Mobility & Transportation	MT.1.5: Electrify specialty vehicle, off-road tools, equipment, and machinery in municipal operations	Low	Low	Medium	Yes	No	Medium	Low	3.00	3

FOCUS AREA	STRATEGIES	GHG REDUCTION POTENTIAL	COST	INCREASE OPERATIONAL EFFICIENCY	REDUCES OPERATIONAL COSTS	FUNDING AVAILABLE	INTERNAL CAPACITY/ SUPPORT	QUALITY OF LIFE	SCORE	PRIORITY SCORE
		(HIGH/ MEDIUM/ LOW)			(YES/ NO)		(HIGH/ MEDIUM/ LOW)			
Buildings & Energy	E1.1: Leverage energy aggregation procurement for residential and small commercial community energy use to achieve 50% carbon-free energy procurement by 2025 and 100% by 2035	High	Low	High	Yes	No	High	High	6.00	1
Buildings & Energy	E.1.2: Procure 100% renewable energy for all municipal operations	High	Low	High	No	No	High	High	5.00	2
Buildings & Energy	E.2.1: Increase local on-site renewable energy in municipal operations by 2030	High	High	High	Yes	Yes	High	High	6.00	1
Buildings & Energy	E.2.2: Encourage local community solar installation among community residents and businesses	High	Medium	Medium	Yes	Yes	Low	High	5.00	2

FOCUS AREA	STRATEGIES	GHG REDUCTION POTENTIAL	COST	INCREASE OPERATIONAL EFFICIENCY	REDUCES OPERATIONAL COSTS	FUNDING AVAILABLE	INTERNAL CAPACITY/ SUPPORT	QUALITY OF LIFE	SCORE	PRIORITY SCORE
		(HIGH/ MEDIUM/ LOW)			(YES/ NO)		(HIGH/ MEDIUM/ LOW)			
Buildings & Energy	E.3.1: Continue and enhance existing municipal energy efficiency program	Medium	Medium	High	Yes	Yes	High	Low	5.00	2
Buildings & Energy	E.3.2: Increase energy conservation initiatives in municipal operations	Low	Low	High	Yes	No	High	Low	4.00	3
Buildings & Energy	E.3.3: Decrease energy usage in street lighting by 50% by 2030	Medium	Low	High	Yes	Yes	High	Low	5.50	2
Buildings & Energy	E.3.4: Increase wastewater treatment efficiency through strategic installation of improved systems	Low	High	High	Yes	No	High	Medium	3.50	3
Buildings & Energy	E.3.5: Be a conduit for resources to encourage, liaise and facilitate adoption of renewables and energy efficiency community-wide.	Medium	Medium	High	No	Yes	Medium	High	4.50	2

FOCUS AREA	STRATEGIES	GHG REDUCTION POTENTIAL	COST	INCREASE OPERATIONAL EFFICIENCY	REDUCES OPERATIONAL COSTS	FUNDING AVAILABLE	INTERNAL CAPACITY/ SUPPORT	QUALITY OF LIFE	SCORE	PRIORITY SCORE
		(HIGH/ MEDIUM/ LOW)			(YES/ NO)		(HIGH/ MEDIUM/ LOW)			
Resource Conservation	RC.1.1: Advance Sustainable Waste Management Planning	Medium	Medium	High	Yes	No	Low	Medium	3.50	3
Resource Conservation	RC.1.2: Enhance current organics collection services to increase diversion of compostable materials.	Medium	Medium	High	No	Yes	Low	Medium	3.50	3
Resource Conservation	RC.1.3: Increase diversion from City's existing recycling and diversion collection programs.	Medium	Low	Medium	Yes	Yes	High	High	6.00	1
Resource Conservation	RC1.4: Advance Targeted Waste Management Solutions	Medium	Low	Medium	No	Yes	High	Medium	4.50	2
Resource Conservation	RC.1.5: Utilize Policy to Accelerate Waste Reduction	Low	Low	High	No	No	High	Medium	3.50	3
Resource Conservation	RC.2.1. Demonstrate & Expand Water Efficiency Community Wide and in Municipal Operations	Low	Low	High	No	Yes	High	High	5.00	2

FOCUS AREA	STRATEGIES	GHG REDUCTION POTENTIAL	COST	INCREASE OPERATIONAL EFFICIENCY	REDUCES OPERATIONAL COSTS	FUNDING AVAILABLE	INTERNAL CAPACITY/ SUPPORT	QUALITY OF LIFE	SCORE	PRIORITY SCORE
		(HIGH/ MEDIUM/ LOW)			(YES/ NO)		(HIGH/ MEDIUM/ LOW)			
Nature & Green Community	NGC.1.1: Preserve, expand and enhance 935 acres of existing publicly managed parks and greenspace.	Low	Low	High	Yes	Yes	High	High	6.00	1
Nature & Green Community	NGC.1.2: Demonstrate Leadership in Sustainability by Modeling Best Practices in City Operations by 2030	Low	Low	High	No	Yes	Medium	High	4.50	2

FOCUS AREA	STRATEGIES	GHG REDUCTION POTENTIAL	COST	INCREASE OPERATIONAL EFFICIENCY	REDUCES OPERATIONAL COSTS	FUNDING AVAILABLE	INTERNAL CAPACITY/ SUPPORT	QUALITY OF LIFE	SCORE	PRIORITY SCORE
		(HIGH/ MEDIUM/ LOW)			(YES/ NO)		(HIGH/ MEDIUM/ LOW)			
Business & Community Resilience	BCR.1.1: Actively Lead by Example in City Operations to Demonstrate Sustainable Practices.	Low	Low	Medium	No	Yes	High	High	4.50	2
Business & Community Resilience	BCR.1.2: Actively Encourage Sustainability Practice Adoption Among Residents & Businesses By Removing Barriers to Participation.	Medium	Medium	Low	No	Yes	Low	High	3.00	3
Business & Community Resilience	BCR.2.1: Ensure appropriate City resourcing to achieve sustainability action plan goals.	High	Medium	High	No	Yes	Medium	High	5.00	2
Business & Community Resilience	BCR.3.1: Promote Business Resilience through Sustainability Practice Adoption	Medium	Low	Medium	No	No	Medium	High	3.50	3
Business & Community Resilience	BCR.3.2: Promote Community Resilience Adaptation & Preparedness	Low	Medium	Medium	No	Yes	Medium	High	3.50	3

APPENDIX I: FUNDING OPPORTUNITIES & PROGRAMS

TYPE	EXAMPLES/DESCRIPTION
GOVERNMENT PROGRAMS	
FEDERAL PROGRAMS	**Inflation Reduction Act (IRA)** provides a variety of programs including Clean Energy Tax Credits in the form of Investment Tax credits or Production Tax credits. ▪ "Investment Tax Credits—dollar-for-dollar credits to offset expenses—for investments in renewable energy projects and the build out of manufacturing facilities to produce parts and materials for clean energy projects and clean vehicles." ▪ "Production tax credits provide a rebate based on the amount of a relevant product made by an entity. One example is a rebate per kilowatt of electricity produced by a renewable source. These can also apply to manufacturing—a production tax credit would provide a certain amount for each blade or solar panel component produced." ▪ Projects that begin construction after 2021 and before 2025 can receive the full tax credit of 30%; for public institutions the credit may be available as a cash payment. IRA includes funding for over 120 new and existing programs, including but are not limited to: **Energy Investment Tax Credit (ITC) Extension (Sec 13102)** ▪ Investment tax credits for clean energy deployment, including onshore and offshore wind, solar, geothermal, battery storage, and pumped-storage hydro. - Funding level:$13.9 Billion Base Credit: 6% of Project Cost; Bonus Credit: 30% of Project Cost if prevailing wage and registered apprenticeship requirements are met - Administered by: Internal Revenue Service (IRS) - Funding Mechanism: Investment Tax Credit. Direct pay available for tax exempt entity (must meet domestic content requirements to receive direct pay, phased in 2024-2026) - Timeline: FY22 - FY25 **Clean Energy Production Tax Credit (PTC) Extension (Sec. 13101)** ▪ Production tax credits for clean energy deployment, including solar, offshore and onshore wind, and geothermal to receive a tax credit for the production of electricity based on kilowatt-hour of power produced. - Funding level: $51 Billion Base Credit: 0.05 cents per kWh, increased for inflation since 1992 Bonus Credit: .25 cents per kWh if prevailing wage and registered apprenticeship requirements are met, increased for inflation since 1992** - Administered by: IRS - Funding Mechanism: Production Tax Credit Direct pay available for tax exempt entity (must meet domestic content requirements to receive direct pay, phased in 2024-2026) - Timeline: FY22 - FY25

TYPE	EXAMPLES/DESCRIPTION
FEDERAL PROGRAMS	**Commercial Clean Vehicle Tax Credit (Sec. 13403)** ▪ Accelerates the deployment of clean vehicles for commercial and other fleets. - Funding level: $3.6 Billion Tax credit of 15% of the vehicle cost (30% for a pure EV), but not more than the incremental cost of above what a comparable powered solely by gasoline or diesel would cost - Administered by: IRS - Funding Mechanism: Consumer Tax Credit - Timeline: Jan 1, 2022-Dec 31, 2032 - Eligible entities: Commercial uses **Alternative Fueling Property Credit (Sec. 13404)** ▪ Provides a tax credit of up to $100,000 per property for the installation of EV charging or alternative fueling infrastructure for ethanol, natural gas, compressed natural gas, liquefied natural gas, liquefied petroleum gas or hydrogen. - Funding level: $1.7 Billion. The base tax credit is 6%, but it increases to 30% if the wage and apprentice requirements are satisfied - Administered by: IRS - Funding Mechanism: Consumer Tax Credit - Timeline: Jan 1, 2022-Dec 31, 2032 - Eligible entities: Commercial uses **Clean Energy Production Tax Credit (PTC) Technology Neutral (Sec. 13701)** ▪ PTC for energy projects with net zero carbon emissions. This credit will go into effect for new projects placed in service in 2025 through sometime in the 2030s. This credit is not limited to a particular clean energy technology, but rather any technology that does not contribute carbon emissions. - Funding level: $11.2 Billion Base Credit: 0.05 cents per kWh, increased for inflation since 1992 Bonus Credit: 0.25 cents per kWh if prevailing wage and registered apprenticeship requirements are met, increased for inflation since 1992** - Administered by: IRS - Funding Mechanism: Production Tax Credit Direct pay available for tax exempt entity (must meet domestic content requirements to receive direct pay, phased in 2024-2026) - Timeline: FY22 - FY35 - This credit begins to phase out in 2034, reducing 25% annually, until 2035 at which point it phases out all together. Further, the credit remains available if U.S. annual greenhouse gas emissions have reduced by 75% by the time the credit phases out.

TYPE	EXAMPLES/DESCRIPTION
FEDERAL PROGRAMS	**Clean Energy ITC Technology Neutral (Sec. 13702)** ▪ Investment tax credit for energy deployment for projects with net zero carbon emissions. This credit will go into effect for new projects placed in 2025 through sometime in the 2030s. This credit is not limited to a particular clean energy technology, but rather any technology that does not contribute carbon emissions. - Funding level: $50.8 Billion Base Credit: 6% of Project Cost; Bonus Credit: 30% of Project Cost if prevailing wage and registered apprenticeship requirements are met - Administered by: IRS - Funding Mechanism: Investment Tax Credit. Direct pay available for tax exempt entity (must meet domestic content requirements to receive direct pay, phased in 2024-2026) - Timeline: FY22 - FY35 - This credit begins to phase out in 2034, reducing 25% annually, until 2035 at which point it phases out all together. Further, the credit remains available if U.S. annual greenhouse gas emissions have reduced by 75% by the time the credit phases out. **Title 17 Innovative Clean Energy Loan Guarantee Program (Sec. 50141)** ▪ Provides an additional $40 billion of loan authority for clean energy projects eligible for loan guarantees under section 1703 of the Energy Policy Act of 2005. - Funding level: $40 Billion - Administered by: Department of Transportation (DOT) - Funding Mechanism: Loans - Timeline: FY22-FY26 - Eligible entities: Developers, utilities, nonprofits **Clean Heavy-Duty Vehicle Program (Sec. 60101)** ▪ To provide funding to offset the costs of replacing heavy-duty Class 6 and 7 commercial vehicles with zero-emission vehicles; deploying infrastructure needed to charge, fuel, or maintain these zero-emission vehicles; and developing and training the necessary workforce. - Funding Level: 1 Billion - Administered by: Environmental Protection Agency (EPA) - Funding Mechanism: Competitive grants and rebates - Timeline: To remain available until September 30, 2031 - Eligible entities: (1) a state; (2) a municipality; (3) an Indian Tribe; (4) a nonprofit school transportation association. - Program covers up to 100 percent of costs for (1) incremental cost of replacing an existing heavy-duty vehicle with a zero-emission vehicle; (2) purchasing and operating associated infrastructure; (3) workforce development and training; (4) planning and technical activities

TYPE	EXAMPLES/DESCRIPTION
FEDERAL PROGRAMS	**Greenhouse Gas Reduction Fund - Solar for All Program (Sec. 60103)** ▪ To provide up to 60 grants to States, Tribal governments, municipalities, and nonprofits to expand the number of low-income and disadvantaged communities that are primed for residential and community solar investment—enabling millions of families to access affordable, resilient, and clean solar energy. - Funding level: $7 Billion - Administered by: EPA - Funding Mechanism: Competitive grants - Timeline: To remain available until September 30, 2024. EPA will open applications for funding for this program in summer 2023. - Eligible entities: States, municipalities, Tribal governments, and "eligible recipients" are eligible for the $7 billion for low-income and disadvantaged communities. - Grantees will use grant funds to expand existing low-income solar programs or design and deploy new Solar for All programs. **Methane Emissions Reduction Program (Sec. 60113)** ▪ To provide financial and technical assistance to accelerate the reduction of methane and other greenhouse gas emissions from petroleum and natural gas systems. The statute also establishes a waste emissions charge for applicable facilities that report more than 25,000 metric tons of CO2 equivalent per year (to the petroleum and natural gas systems source category of the Greenhouse Gas Reporting Program) and that exceed statutorily specified waste emissions thresholds. - Funding level: $1.55 Billion - Administered by: DOT - Funding Mechanism: Grants, rebates, contracts, and other activities - Timeline: To remain available until September 30, 2028 - Eligible entities: States, Counties, Cities/Townships, Special Districts, Territories, Indian Tribes, Public Higher Education Institutions, Private Higher Education Institutions, Nonprofits with 501(c)(3) status, Nonprofits without 501(c)(3) status, Small Businesses, Businesses (other than small businesses), and Individuals.

TYPE	EXAMPLES/DESCRIPTION
FEDERAL PROGRAMS	**Neighborhood Access and Equity Grant Program (Sec. 60501)** ▪ Awards grants to state and local governments to improve community walkability and connectivity through the removal, retrofitting, or replacement of roads and highways. - Funding level:$1.893 Billion - Administered by: DOT - Funding Mechanism: Competitive Grants - Timeline: FY22-FY26 - Eligible entities: States and Territories, Tribes, Units of Local Government, Political Subdivisions of a State, MPOs, Special Purpose Districts and Public Authorities with a Transportation Function, Nonprofits and Higher Ed in partnership with any of the above - $1.262 Billion reserved for projects including those serving DACs, those with CBAs, and those with anti-displacement policies or community land trusts **Additional Federal Programs include but are not limited to:** ▪ DOT Surface Transportation Block Grant Program: Funding for public road, pedestrian, bicycle infrastructure, and transit capital projects. ▪ DOT Transportation Alternatives Program: Funding for pedestrian/bicycle facilities, safe routes to schools, and other related projects ▪ DOT RAISE grants: Funding available for surface transportation projects like roads, rail, transit, and ports that align with national goals. For FY24, $1.5 billion is allocated to support projects with substantial local or regional effects. ▪ Charging and Fueling Infrastructure (CFI) Grant Program: Funding for deployment of publicly accessible electric vehicle charging infrastructure and other alternative fueling infrastructure. ▪ Safe Routes to Schools: Safe Routes to Schools is an international movement focused on increasing the number of children who walk or bike to school by funding projects that remove barriers to doing so. These barriers include a lack of infrastructure and non-infrastructure projects, safety, and limited programs that promote walking and bicycling. In Ohio, $5 million is awarded annually to fund the State's implementation of this program. ▪ Federal Transit Authority (FTA) Grants for Buses and Bus Facilities Program: Capital funding to replace, rehabilitate, and purchase buses and bus-related equipment.

TYPE	EXAMPLES/DESCRIPTION
FEDERAL PROGRAMS	▪ Diesel Emissions Reduction Act (DERA) Program: Grants and rebates to reduce harmful emissions from diesel engines ($115 million for FY 22-23). ▪ U.S. Department of Energy (DOE): DOE provides grants and other financial incentives to local governments for renewable energy installations and alternative fuel vehicles and fueling infrastructure. ▪ WaterSense: Voluntary partnership program sponsored by the U.S. Environmental Protection Agency, is both a label for water-efficient products and a resource for helping residents and businesses save water. ▪ Energy Efficiency and Conservation Block Grant Program (EECBG): Funding for local governments for energy efficiency and conservation projects. ▪ Weatherization Assistance Program (WAP): Provides funding to increase the energy efficiency of homes. Typically, up to $6,500 per home. ▪ Low Income Home Energy Assistance Program (LIHEAP): Federal program administered by the U.S. Department of Health and Human Services that provides assistance to eligible low-income households to manage and meet their immediate home heating and/or cooling needs. Provides assistance to low-income households to help pay for energy bills and weatherization improvements. ▪ 179D Tax Deduction for Energy Efficiency: Section 179D of the U.S. tax code offers a deduction to owners or designers of commercial buildings for implementing energy-efficient upgrades. Eligible entities can claim up to $1.88 per square foot for improvements in lighting, HVAC systems, and building insulation, including windows. ▪ Solar Energy System Tax credits: Tax credits for solar water heaters and PV systems for residents or businesses. Receive 30% of the total solar system costs as a federal tax credit. ▪ FEMA Pre-Disaster Mitigation Program: Offers grants for long-term hazard and climate event risk reduction projects, aimed at decreasing future federal disaster recovery reliance. Eligible projects include generator installation at vital facilities and various mitigation construction efforts.

TYPE	EXAMPLES/DESCRIPTION
STATE PROGRAMS (OH)	National Electric Vehicle Infrastructure (NEVI) funding through the Bipartisan Infrastructure Law (BIL): Ohio has secured $140 million for a five-year deployment plan, with around $20.7 million earmarked for FY22 and an estimated total allocation reaching $140 million by 2026. The NEVI Plan outlines Ohio's strategy for establishing public charging infrastructure along Federal Highway Administration (FHWA) Designated EV Alternative Fuel Corridors (AFCs). Appalachian Hydrogen Hub: The Regional Clean Hydrogen Hubs initiative allocates up to $7 billion towards establishing hydrogen hubs, which is part of a broader $8 billion initiative funded through the BIL. This program is geared towards expanding hydrogen production, processing, delivery, storage, and utilization. Ohio is set to receive funding as part of the Appalachian Hydrogen Hub. VW Mitigation Grants: Ohio EPA grants for replacing or repowering eligible on- and off-road vehicles and equipment, such as Class 4-8 trucks, school buses, shuttles, public transit buses, and freight switcher locomotives. These grants are funded through Ohio's portion of an Environmental Mitigation Trust Fund, which originated from Volkswagen's settlement with the U.S. EPA due to Clean Air Act violations. Transportation Alternatives Program (TAP): Provides funding for a wide range of transportation projects. These include both on- and off-road facilities for pedestrians and cyclists, improvements to infrastructure to enhance access to public transportation for non-drivers, and initiatives aimed at promoting greater mobility. Furthermore, TAP supports community development projects, environmental mitigation efforts, the development of recreational trails, and initiatives to ensure safe routes to educational institutions. Ohio Net Metering Program: Facilitates billing arrangements enabling customers generating their own electricity to receive credits on their electric utility bills for surplus energy produced, capped at 120% of their energy generation. Under the current program, all electric utilities are mandated to provide a standard net metering tariff to customers generating electricity through renewable or alternative methods. Ohio Property Assessed Cleaning Energy (PACE) Financing Program: Connects property owners with capital providers and contractors and offers fixed-rate PACE loans. PACE financing relies on special assessments to repay and secure upfront funding for energy efficiency or creation improvements, and can result in improved financing terms (e.g., lower interest rates). Ohio Community Reinvestment Area Program: Provides property tax exemptions for property owners who renovate existing or construct new buildings.

TYPE	EXAMPLES/DESCRIPTION
STATE PROGRAMS (OH)	The Recycling and Litter Prevention Grant Program: Offers up to $200,000 for projects that initiate or expand recycling programs, encourage sustainable practices, and support litter prevention efforts. Local governments, schools, and non-profit organizations can receive funding to purchase equipment for the collection and processing of recyclables, implement litter collection events, and tire amnesty programs Clean Water Act Section 319(h) Grants: Up to $400,000 to conduct nonpoint source pollution management projects that reduce impairment of water resources or protect high-quality water resources. Proposed projects must be contained in a Nonpoint Source Implementation Strategy (9-Element Watershed plan). Clean Ohio Trail Fund (COTF): Provides funding through ODNR to improve outdoor recreational opportunities for Ohioans via land acquisition for trails, trail construction, and other related projects. Recreational Trails Program (RTP): Provides 80 percent federal funds matching (managed by ODNR) for projects related to trail maintenance, expansion, education, and restoration. Municipal Bridge Program (ODOT): Provides federal funds to municipal corporations, metroparks and Regional Transit Authorities for bridge replacement or bridge rehabilitation projects. A funding limit of $2 million per project is set. Statewide Transportation Improvement Program (STIP) / Local Transportation Improvement Program (LTIP): Provides funding for projects related to highway, public transit, rail, freight, bicycle and pedestrian transportation needs. Urban Paving Program (ODOT): Provides funds for eligible surface treatment and resurfacing projects on state and U.S. Routes within municipal corporations.

TYPE	EXAMPLES/DESCRIPTION
INTERNAL MECHANISMS	
Fund	**General Funds:** Resources allocated within the City's operating budget for various non-specific purposes, which can be directed towards environmental projects and sustainability initiatives as decided by City governance. **Capital funds:** Funds designated for the acquisition or maintenance of fixed assets such as land, buildings, and equipment, which could include investments in sustainable infrastructure and green technology. **Green Revolving Fund:** A sustainable finance mechanism that reinvests savings generated from energy efficiency projects back into more green initiatives. This fund creates a positive feedback loop, where the initial investment in sustainability leads to cost savings, which are then used to fund additional environmental projects, further enhancing the City's commitment to sustainability and carbon neutrality. **Active Transportation Fund:** Fairfield Connects called on the City to create a dedicated active transportation plan, established in 2023 in order for the city to fund the required matches for projects or the entire cost of routes that may not be eligible for outside assistance (e.g. grant funding). This fund has been seeded with an initial $3 million investment allocated from the annual operating budget so that project resources can accumulate over time. Two priority projects are identified for current investment, while additional funds are accumulating with the designed fund structure. Fairfield Connects also recommends that the city consider opportunities for allocating other revenues such as development fees and charitable contributions in order to achieve specific project goals, in addition to annual appropriations to this fund. Fairfield Sustains recommends continued annual appropriations to accelerate active transportation projects. **Sustainability Fund:** Fairfield Sustains recommends the replication of the dedicated Active Transportation Fund as a broader dedicated fund for the implementation of various strategies and actions presented throughout this Plan. Precise focus of annual fund investment may be established at the onset and/or shift year by year to address current sustainability priorities outlined within this Plan, as they evolve over time. The fund structure may be identical to that of the Active Transportation Fund as annual appropriations from the general fund, or utilize a Green Revolving Fund mechanism as outlined above.

TYPE	EXAMPLES/DESCRIPTION
THIRD PARTY MECHANISMS	
Energy Performance Contracts (EPC)	**Energy Efficiency Agreement:** Contracts for energy upgrades in exchange for cash flows from a portion of savings.
Public-Private Partnerships (PPP)	Private investors may provide funding to local governments. For example, energy service companies can finance the up-front investments in energy efficiency, reimbursed by the local government over a contract period. Private companies may finance solar power installations, and then recoup their investment by selling the resulting power to the building owner.
Infrastructure as a Service (IAAS)	**Independent Energy Purchase/Solar Services Model:** Local governments can install solar PV systems with no initial cost through a power purchase agreement with a developer, who covers the system's design, construction, and installation using third-party financing. The investor funding the project profits from fixed-price payments made by the hosting government, similar to a utility bill. This arrangement offers the local government reduced energy costs, lower greenhouse gas emissions, and fixed-income benefits without upfront expenses.

APPENDIX J: REFERENCE DOCUMENTS

COMPLEMENTARY STUDIES

- **Miami University**
  Solar Power Implementation for Fairfield's Wastewater Treatment Plant **(2024)**
- **Miami University**
  Fairfield EV Fleet Feasibility **(2024)**
- **University of Dayton (UD) Industrial Assessment Center (IAC)**
  Guides to Energy Productivity for Fairfield's Water and Wastewater Systems **(2023)**

TABLE 1 SOURCE REFERENCES

HUBER HEIGHTS
Comprehensive Plan (2023)

BEXLEY
Zero Waste Plan (2017)

MIAMI UNIVERSITY
Miami 2040: Climate Action Plan for Miami University Draft (2024)

OHIO UNIVERSITY
Sustainability and Climate Action Plan (2021)

OXFORD
Climate Action Plan (2023)

DUBLIN
Sustainability Framework (2018-2020)

COLUMBUS
Columbus Climate Action Plan (2021)

CLEVELAND
Cleveland's Clean and Equitable Energy Future (2021)

CLEVELAND
The Cleveland Climate Action Plan (2017)

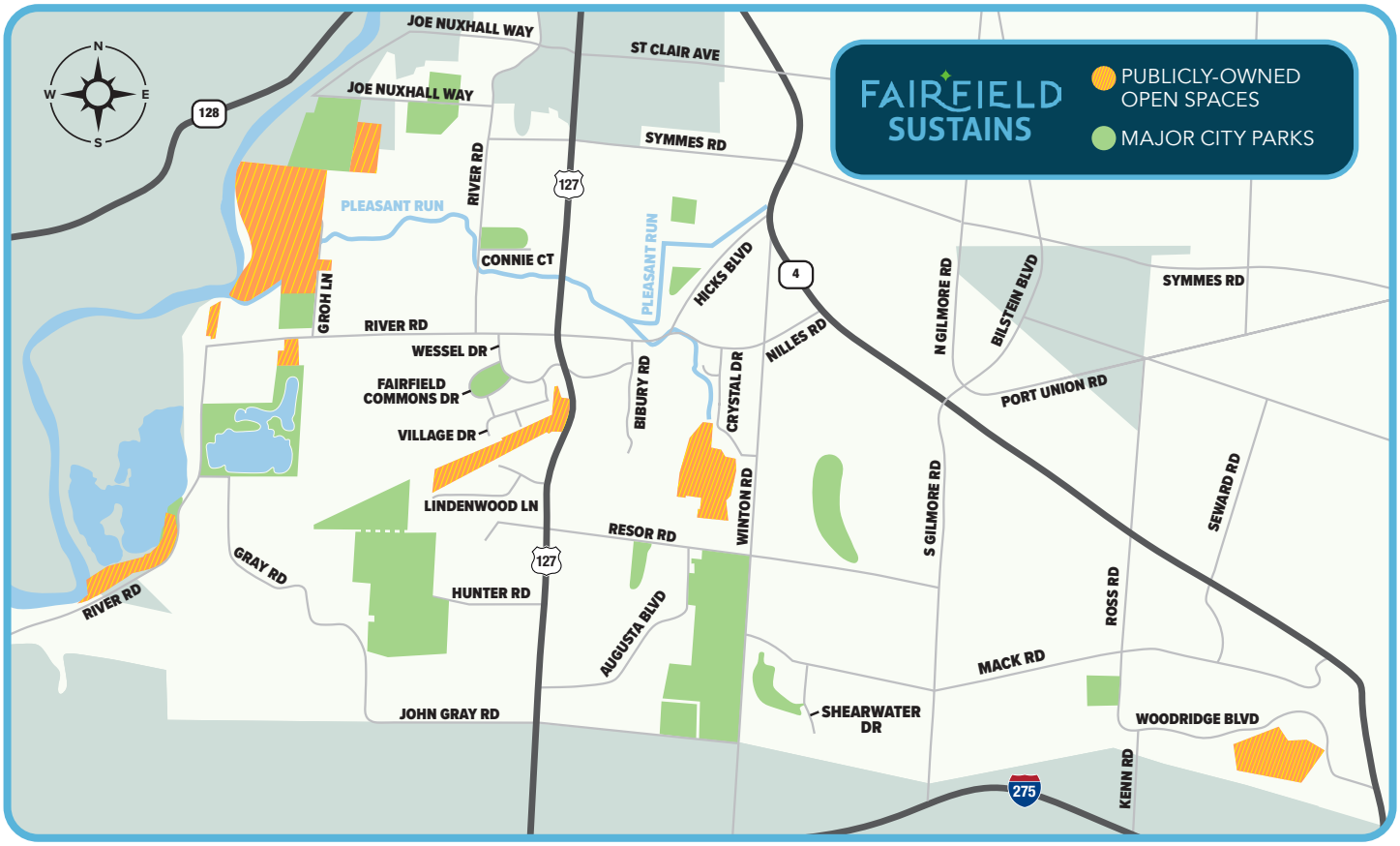
DAYTON
Strategy for a Sustainable Dayton (2021)

DAYTON
Resolution 6572-21 (2020)

OBERLIN
Climate Action Plan (2019)

CINCINNATI
Green Cincinnati Plan (2023)

APPENDIX K: MAP OF OPEN SPACES AND CITY PARKS


FAIRFIELD SUSTAINS
PUBLICLY-OWNED OPEN SPACES
MAJOR CITY PARKS
N
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128
JOE NUXHALL WAY
JOE NUXHALL WAY
ST CLAIR AVE
SYMMES RD
RIVER RD
127
PLEASANT RUN
CONNIE CT
PLEASANT RUN
HICKS BLVD
4
GROH LN
RIVER RD
WESSEL DR
FAIRFIELD COMMONS DR
VILLAGE DR
BIBURY RD
CRYSTAL DR
NILLES RD
N GILMORE RD
BILSTEIN BLVD
SYMMES RD
PORT UNION RD
LINDENWOOD LN
RESOR RD
WINTON RD
S GILMORE RD
SEWARD RD
GRAY RD
127
RIVER RD
HUNTER RD
AUGUSTA BLVD
ROSS RD
MACK RD
JOHN GRAY RD
SHEARWATER DR
WOODRIDGE BLVD
275
KENN RD

TABLES AND FIGURES

FIGURES

TABLES