




ANN ARBOR'S OFFICE OF SUSTAINABILITY AND INNOVATIONS 5-YEAR WORK PLAN

FISCAL YEAR 2020 – FISCAL YEAR 2025

APRIL 2019 | PREPARED BY THE OFFICE OF SUSTAINABILITY AND INNOVATIONS



A photograph of a woman with short brown hair, wearing a grey dress with a beaded strap, holding a red pepper. She is standing at a market stall with various vegetables like tomatoes and corn. Other people are visible in the background, and a white plastic bag is in the foreground.

“Climate change is
the greatest threat to
human rights in the
21st century.”

Mary Robinson

WELCOME LETTER

Dear Community Members:

This document presents the vision and goals of the Office of Sustainability and Innovations (the Office), along with the Office's living work plan for the time period 2020-2025. The items in this work plan are grounded in our City's 2012 Climate Action Plan, informed by the community, and guided by the professional expertise of our staff. Where appropriate, we've borrowed liberally from peers around the nation who share our aspirations of meaningfully, intentionally, and aggressively addressing climate change.

Everything within this work plan should be considered living, which means that we will continually evaluate the effectiveness of our initiatives, make real-time changes as needed, remove programs that aren't delivering, and remain open to new programs that align with our community's goals and values. We welcome feedback on this work plan, our vision, or anything else related to sustainability. Much more than that, we welcome partners.

Implementing the actions below, as well as the many others that will be necessary to meet our long-term climate goals, requires engagement, commitment, and action from all. Together, we can make a difference. Climate change is the most pressing issue of our time. The time to act is now. Ann Arbor has long been a leader in setting ambitious climate and sustainability goals – now it's time to take the actions needed to meet those goals. Join us!

Sincerely,



Howard Lazarus
City Administrator



Missy Stults, PhD
Sustainability and
Innovations, Manager

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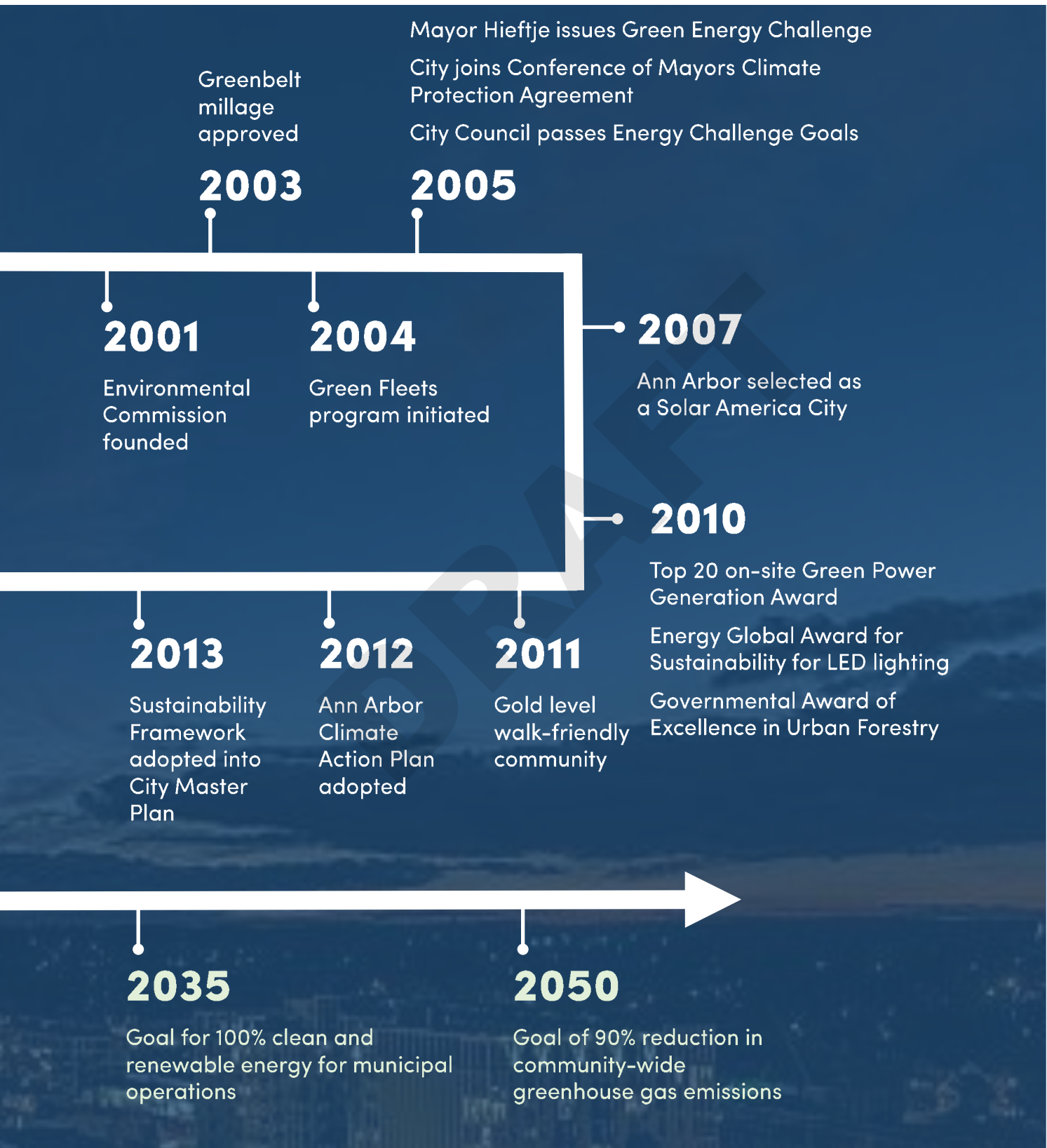
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A BRIEF HISTORY OF SUSTAINABILITY ACTIVITIES IN ANN ARBOR







INTRODUCTION

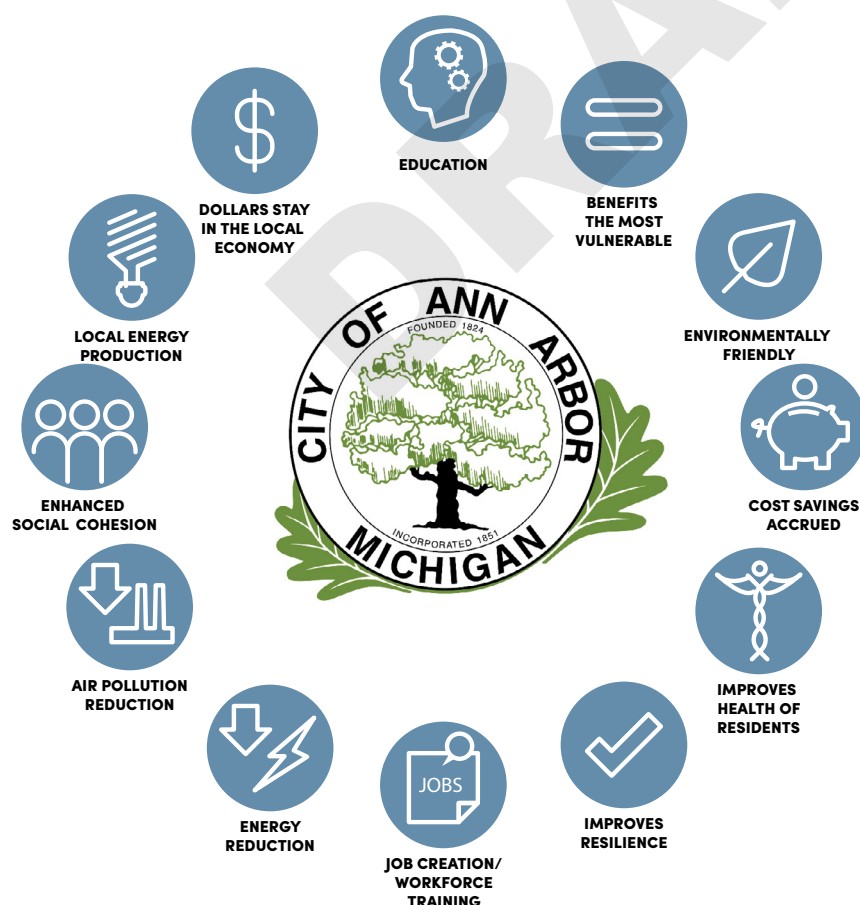
In 2012, the City of Ann Arbor created its first Climate Action Plan. This plan was heralded for its breadth and depth, as it charted a path the City and the surrounding community could follow to make progress towards 3 ambitious targets, all of which are relative to the year 2000:

- An 8% reduction in community-wide greenhouse gas emissions by 2015 (achieved).
- A 25% reduction in community-wide greenhouse gas emissions by 2025.
- A 90% reduction in community-wide greenhouse gas emissions by 2050.

Many things have changed since the City of Ann Arbor adopted this Climate Action Plan. President Obama was re-elected and committed the U.S. to the 2015 Paris Climate Agreement. Countries in the Agreement pledge to keep global temperature rise this century well below 2 degrees Celsius above

pre-industrial levels (ideally at 1.5 degrees Celsius), and to implement actions that strengthen the ability of countries to deal with the impacts of climate change. President Obama also worked to increase fuel efficiency standards for vehicles and to help communities and indigenous populations prepare for the existing and future impacts associated with a changing climate.

2016 saw the election of President Trump, who did not share the same values. The federal government started the process of withdrawing from the Paris Climate Agreement, initiated efforts to roll back vehicular fuel efficiency standards, opened public lands to oil extraction and fracking, and more, leaving a glaring void in U.S. leadership on climate action. In the face of this void, local communities, states, nonprofits, and businesses have risen up to declare, "We Are Still In!" We are still committed, perhaps more than ever, to taking action that will reduce our collective greenhouse gas emissions



CO-BENEFITS OF SUSTAINABILITY AND CLIMATE ACTION*

* These icons are used throughout this document to highlight the co-benefits associated with actions in this work plan.

INTRODUCTION

and enhance our resilience to the unavoidable impacts of a changing climate.

Meanwhile, the science of climate change has become clearer and the projected impacts have become starker. A [2018 report](#) by the Intergovernmental Panel on Climate Change found that:

- Global temperatures have already risen 1 degree Celsius above pre-industrial levels.
- There's a significant difference between climate impacts already being experienced today, those that will be experienced in a world that is 1.5 degrees Celsius warmer than pre-industrial levels, and those likely to be experienced in a world that is 2 degrees Celsius warmer.
- In order to keep global temperature increases at 1.5 degrees Celsius or less, we must lower greenhouse gas emissions by 45% from 2010 levels by no later than 2030.

This is no small task. But the City of Ann Arbor stands ready to do our part to ensure that we create a healthy, sustainable, and resilient community for all Ann Arborites – those here today and those who will be here in the future. That is why we are reaffirming our commitment to climate action.

As testament to that commitment, in 2018 the City created a new Office of Sustainability and Innovations to help advance climate and sustainability priorities throughout City operations and across the community. This new Office,

working in tandem with dozens of community groups and hundreds of community stakeholders, has created this 5-year climate and sustainability work plan. The purpose of this plan is to get the City to its interim goal of a 25% reduction in community-wide greenhouse gas emission by 2025 – and, ideally, to exceed that reduction.

The science is clear. We need to do everything in our power to reduce our greenhouse gas emissions in order to avoid the unmanageable impacts associated with a changing climate. Simultaneously, we need to do all we can to prepare for the current and impending impacts of climate change. And we need to view all of this work through the lens of social equity.

Since 2015, Ann Arbor has received more than 28 national awards or accolades. It has been named one of the best cities to live in America (Niche, 2019), one of the most innovative cities in America (24/7 Wall Street, 2018), the most educated city in America (Time, 2018), and one of the 20 happiest cities to work in right now (Forbes, 2017). We have the skills. We have the knowledge. We have the passion. It's time we all get to work to ensure that Ann Arbor is a community worthy of accolades not just from external agents, but from our children, their children, and all future generations who choose to call Ann Arbor home. As former Washington State Governor Jay Inslee said, "We're the first generation to feel the impact of climate change and the last generation that can do something about it." This 5-year work plan lays out what we, as Ann Arborites, are going to do to address the defining issue of our time.

THE GUIDING VISION

Guiding the content in this 5-year work plan is 1 overarching vision which extends far past 2025:

Thanks to the dedicated efforts of Ann Arbor residents, government officials, and community groups, Ann Arbor is a national leader in sustainability and equity.

The aforementioned guiding vision is lofty, but worth pursuing. To help gauge our progress in meeting this vision, we have created an aggressive

short-term vision that outlines what success will look like in the year 2025; the year in which our 5-year work plan sunsets.

2025 VISION:

The City of Ann Arbor has successfully reduced community-wide greenhouse gas emissions by 25% (from baseline levels). Municipal operations are carbon neutral. We have laid the foundation necessary to achieve, and ideally exceed, our goal of at least a 90% reduction in community-wide greenhouse gas emissions by 2050 through a series of new initiatives, plans, and programs:

- Our comprehensive electric vehicle (EV) program, which is a small piece of the City's larger transportation strategy, includes a nationally acclaimed EV readiness zoning ordinance, nearly ubiquitous EV charging infrastructure within the City, an increase in the number of EVs in the City's fleet to 40, and assistance to local residents that has led to over 500 new EVs on the market locally (most powered by renewable energy).
- Our energy strategy and associated programs helped reduce community-wide energy consumption by 10%, led to 20MW of installed local solar and doubled the number of households participating in renewable energy purchasing programs (based on 2015 figures). Our circular economy strategy, which outlines how we will reduce consumption and effectively eliminate waste throughout the community. Through this program and our targeted outreach initiatives, we have achieved community-waste diversion rates of 60% and helped stimulate new markets for product reuse.
- Our community engagement strategy and implementation work ensure that 30% of the community is engaged in at least 1 sustainability-related event, program, outreach effort, or initiative in 2025 and every year thereafter.

- Climate change and equity considerations are fully integrated into the City's capital decision-making processes, land use decision-making, modeling, and associated planning efforts. All decisions fully consider projected changes in physical, social, and demographic shifts associated with changes in climate.

- A Sustaining Ann Arbor Together (SA2T) neighborhood grant program that supports the community in identifying and implementing sustainability solutions. This program has received national attention and is regularly touted as one of the City's most valued programs.

In addition, we have just launched the new Ann Arbor Sustainability Innovations hub, which supports, recruits, and connects for-profit and nonprofit organizations working on sustainability-related innovations. The City has reworked operations to ensure that we are receptive to these innovations, effectively serving as a real-world test site for new and promising advances in sustainability.

City-specific sustainability-related advancements continue to be driven by the City's Office of Sustainability and Innovations, but more ideas are emerging from other City Service Areas and Units. The Office of Sustainability and Innovations also works closely with community members to identify, foster, support, and champion sustainability and climate solutions emerging from our community. Collaboration is key to the Office's work – be that within the City, with the community, with surrounding universities, or with peers outside of the City.

As a team, the Office of Sustainability and Innovations continues to look for cutting-edge and tested approaches to sustainability, all while nurturing a fun, compassionate, creative, and respectful culture.

CLIMATE CHANGE IN ANN ARBOR

The City of Ann Arbor has a long track record of progressive policies and strong community engagement. However, the City has fallen behind peer communities in implementing climate and sustainability actions, including those that help the City reduce its greenhouse gas footprint and those that help the City prepare for extreme weather

and climate change. Moreover, the City faces challenges as the impacts of a changing climate become more and more pronounced. This page highlights some of the historical changes that Ann Arbor has already experienced, as well as the projected changes in climate Ann Arbor will likely see in the future.

CLIMATE CHANGE IN ANN ARBOR



Rising Temperatures:

Average air temperature in A2 has increased by nearly 1 °F since the 1900s and is expected to rise 3°F to 7°F by 2050.



Hot Days:

Ann Arbor is likely to experience 12 to 36 more days per year over 90°F by mid-century and 30 to 42 more days per year over 90°F by end of-century.



More Precipitation:

Total annual precipitation has increased by over 44% since the 1950s and will likely continue to increase in the future, though types of precipitation will vary (i.e., more winter precipitation in the form of rain or ice).



More Extreme Precipitation:

The total volume of rain falling during extreme events has increased by 37% since 1981 and the number of heavy rainfall events has increased by over 41% since the 1950s. These trends are both projected to continue increasing.



Cold Days

On average, Ann Arbor experiences 122 days per year that fall below freezing (32°F). This number is already on the decline, with projections showing 23 to 27 fewer nights below 32°F by mid-century.

GREENHOUSE GAS INVENTORY (GHG) UPDATES

[Coming soon]

DRAFT



THE GUIDING GOALS

Guiding this work plan are four Council adopted goals:

GUIDING GOALS

- 1) **2025:** Ann Arbor has achieved at least a 25% reduction in community-wide greenhouse gas emissions based on 2000 levels.
- 2) **2035:** 100% of City operations are powered by clean and renewable energy.
- 3) **2050:** Ann Arbor has achieved at least a 90% reduction in community-wide greenhouse gas emissions based on 2000 levels.
- 4) **One Community:** Advancing Racial Equity in Washtenaw County

Based on these goals, community input, and the science, the Office of Sustainability and Innovations identified 23 actions to meet, and ideally exceed, the Council established goal of a 25% reduction in community-wide greenhouse gas emissions by

2025. In addition, 2 actions were identified to help track and report on progress to meet this goal.

In total, these 25 actions are grouped into 6 action areas:

ACTION AREAS

- Residential
- Commercial
- Electric Vehicles
- Municipal Operations
- Cross-Cutting, Engagement, & Education
- Tracking Progress

EXECUTIVE SUMMARY OF ACTIONS

This 5-year Office of Sustainability and Innovations work plan contains 25 strategies: 9 residential, 3 commercial, 1 transportation, 6 focused on municipal operations, 4 cross-cutting, and 2 related to tracking our progress. Below is a

table showing the various actions, and a series of metrics related to their greenhouse gas reduction potential, cost, and co-benefits. More detail on each of these programs can be found in the following pages.

Office of Sustainability and Innovations:

MATRIX KEY

Co-Benefits

EDU - Educates the community

JOBS - Creates jobs / trains workers

NRG - Produces local energy

AIR - Reduces air pollution

\$\$ - Keeps dollars in local economy

EQU - Benefits the most vulnerable / contributes to One Community goals

COHESION - Enhances social cohesion

COST - Accrues cost savings

RES - Improves resilience and/or preparedness

HEALTH - Improves health of residents

EFF - Reduces energy use

ENV - Enhances environmental attributes

Impact Timeframe

S - short (1-3 years)

M - medium (4-8 years)







L - long (9+ years)

Priority

H - high


M - medium

L - low

Work Plan Task	GHG Reduction Potential (metric tons CO2e)	5-Year Cost Estimate (non-staffing)
<div> RESIDENTIAL</div>		
Time of Marketing	13,350	\$250,000
Net Zero Energy Affordable Housing Program	412	\$700,000
Green Rental Program	30,844	\$581,000
Aging in Place Efficiently Program	4,165	\$250,000
Efficiency and Solar in the Community	73,500	\$275,000
Weatherization Expansion	14,000	\$250,000
Resilience Hubs	500	\$300,000
Ann Arbor Storm Smart	944	\$60,000
Local Carbon Offset Program	453	\$25,000
<div> COMMERCIAL</div>		
Grand Challenge Program	73,500	\$600,000
Innovation Hub	20,000	\$250,000
Green Business Program	7,620	\$150,000
<div> EV'S</div>		
EV Readiness	18,294	\$150,000
<div> MUNICIPAL</div>		
100% Municipal Clean and Renewable Energy Strategy	26,000	\$1,500,000
Green Fleets		\$100,000
Internal Carbon Pricing		\$75,000
Climate Change Into City Decision Making		\$75,000
Volunteer Solar		\$200,000
Internalization of Sustainability into City Operations		\$25,000
<div> CROSS-CUTTING, ENGAGEMENT</div>		
Equity Programs	0	\$100,000
Commission Support (Energy, Environment)	0	\$0
Sustaining Ann Arbor Together Neighborhood Grant Program	500	\$500,000
Community Outreach (e.g., Sustainability Forums, messaging, targeted outreach, reoccurring sustainability report, coffee hours)	500	\$125,000
<div> TRACKING PROGRESS</div>		
Greenhouse Gas Emissions Inventories	0	\$100,000
Metric Tracking	0	\$50,000

5 YEAR WORK PLAN

Cost / Ton CO2e	Co-Benefits	Impact Timeframe	Priority
\$18.7	EDU; JOBS; \$\$; COST	M	M
\$1,699	EQU; JOBS; NRG; AIR; \$\$; COST; EFF	S	H
\$18.8	EDU; JOBS; AIR; \$\$; EQU; COST; EFF	M	H
\$60	EQU; JOBS; NRG; AIR; \$\$; COST; HEALTH; EFF	M	M
\$3.7	EDU; JOBS; NRG; AIR; \$\$; EQU; COST; HEALTH; EFF	L	H
\$17.9	EQU; EDU; JOBS; \$\$; HEALTH; EFF	M	M
\$600	EQU; RES; COHESION; HEALTH; EDU; NRG; AIR	M	H
\$63.6	RES; EDU; JOBS; \$\$; ENV	M	M
\$55.2	EDU; NRG; AIR; \$\$; EQU; ENV	S	L
\$8.2	EDU; JOBS; NRG; AIR; \$\$; COST; HEALTH; ENV	L	M
\$12.5	EDU; JOBS; \$\$; COHESIONS; COST; RES	L	M
\$19.7	JOBS; \$\$; EDU; COST; ENV	L	M
\$8.2	EDU; JOBS; AIR; HEALTH; ENV	L	H
\$70.6	EDU; JOBS; NRG; AIR; \$\$; COST; ENV; EEF	M	H
	EDU; AIR; ENV; HEALTH		
	EDU; NRG; RES; EFF		
	EDU; NRG; AIR; COST; ENV; RES; EFF		
	EDU; JOBS; NRG; AIR; \$\$; COST		
	EDU; JOBS; NRG; AIR; \$\$; COST; ENV		
AND EDUCATION			
Not Estimated	EQU; COHESION; EFF; HEALTH	S	H
Not Estimated	EDU; NRG; AIR; ENV; EQU; COST; EFF; RES	S	H
\$1000	EDU; COHESION; \$\$; EQU; ENV	S	H
\$250	EDU; ENV; COHESION; RES	M	H
Not Estimated	EDU	S	H
Not Estimated	EDU	S	H



“We do not face a choice between protecting our environment or protecting our economy. We face a choice between protecting our economy by protecting our environment – or allowing environmental havoc to create economic havoc.”

**Robert E. Rubin, Co-Chairman, Council on Foreign Relations and
former U.S. Secretary of the Treasury**

SECTION I

RESIDENTIAL

AGING IN PLACE EFFICIENTLY

PROGRAM DESCRIPTION

The Aging in Place Efficiently program helps low-income seniors age in their homes longer by providing physical and energy efficiency improvements to their residences. More specifically, this program aims to integrate energy efficiency improvements into a wide variety of existing services available to seniors in our community.

VISION STATEMENT

It is 2035 and all low-income seniors in our community have healthier outcomes. Thanks to physical improvements to their homes and energy efficiency upgrades that reduce their monthly expenditures, they are able to age gracefully in their homes longer.

PARTY RESPONSIBLE FOR IMPLEMENTATION

Office of Sustainability and Innovations, Washtenaw County Department of Community and Economic Development, and Ann Arbor Meals on Wheels.

COLLABORATORS / PROJECT CO-DESIGNERS

- Local aging organizations
- Energy efficiency experts
- Michigan Saves
- Dr. Tony Reames
- Ypsilanti CAPABLE team
- Detroit Edison (DTE)
- Ann Arbor Housing Commission
- Housing Bureau for Seniors
- City Transportation Team
- Ann Arbor Area Transit Authority

TARGET DEMOGRAPHIC

Low-income seniors.

TIMELINE

2 years from project inception to pilot completion.

- ✓ Year 1 focuses on learning from the Ypsilanti CAPABLE model and creating a comprehensive work plan with an accompanying strategy for the Ann Arbor Aging in Place Efficiently program.
- ✓ Year 2 focuses on piloting the program in 21 low-income senior homes. Years 3 and beyond focus on scaling the program to reach all low-income seniors within our community and the broader region. In later years, we will integrate access to high-quality transit and other active transportation options into the program.

GOALS

- Improve the quality of life for low-income seniors.
- Address climate change by lowering energy consumption and increasing efficiency in at least 21 low-income senior homes by 2022 (15% reduction in energy usage per home).
- Create a scalable and replicable model that can serve all low-income seniors in Ann Arbor and Washtenaw County.

Indicators of Success

- ✓ Increase energy efficiency by 15% in 21 low-income senior homes by 2022.
- ✓ Create a scalable and replicable Aging in Place Efficiently program that has sustained funding to operate for at least 5-7 years past project pilot testing.
- ✓ Improve the quality of senior lives, as determined by pre- and post-intervention surveys/interviews of program participants.

COST

\$295,873 total in grant funding to initiate the program; \$40,000 annually from the City budget, plus staff time to support program creation, operation, maintenance and tracking; and a \$10,000/year stipend to our Senior Equity Fellow.

Greenhouse reduction
Potential:

4,165

metric tons CO₂e

CO-BENEFITS



**BENEFITS
THE MOST
VULNERABLE**



**JOB CREATION/
WORKFORCE
TRAINING**



**LOCAL ENERGY
PRODUCTION**



**ENERGY
REDUCTION**



**AIR POLLUTION
REDUCTION**



**DOLLARS STAY
IN THE LOCAL
ECONOMY**



COST SAVINGS



**IMPROVES
HEALTH OF
RESIDENTS**

BENCHMARKS

Short Term

By 2022, we have created an effective, scalable, and replicable Aging in Place Efficiently program that has helped at least 21 low-income seniors achieve a minimum 15% reduction in their monthly energy usage.

Medium Term

By 2030, the Aging in Place Efficiently program has reached 500 low- to moderate-income seniors throughout Washtenaw County, helping each reduce his or her energy consumption by a minimum of 15%. The program also offers renewable energy options so that residents have multiple paths for lowering their greenhouse gas emissions in affordable and equitable ways.

Long Term

The Aging in Place Efficiently program is one of a suite of options that every resident of Ann Arbor (and potentially Washtenaw County) has access to. Biannual notices are sent to every resident about all of the energy, resilience, and sustainability offerings available, and the City's engagement specialists conduct outreach about these offerings. According to the City's records, 90% of all homes and rentals in Ann Arbor have been impacted by 1 (and ideally many) of the City's energy, resilience, or sustainability offerings of program participants.

EFFICIENCY AND SOLAR IN THE COMMUNITY

PROGRAM DESCRIPTION

This program combines many efforts under one umbrella to stimulate energy efficiency and renewable energy installations in the Ann Arbor community. The 3 primary elements of this work are:

- 1) A centralized concierge service that provides streamlined access to energy efficiency and renewable energy programs,
- 2) Group renewable purchasing (including electric vehicle group buys), and
- 3) A constant drumbeat of community events focused on energy efficiency and renewable energy.

VISION STATEMENT

By 2025, 10% of all Ann Arbor residences have engaged in at least 1 energy efficiency or renewable energy program, and through these efforts, the community has achieved a 5% reduction in community-wide greenhouse gas emissions.

Residents regularly report that they highly value the energy efficiency and renewable energy concierge services and the other offerings of the program, so much so that the program was nominated for a national award given by the American Council for an Energy Efficient Economy.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations

COLLABORATORS\PROJECT CO-DESIGNERS

- Detroit Edison (DTE)
- Michigan Saves
- Ann Arbor Energy Commissioners
- Consumers Energy
- Internal green fleets team
- City purchasing department
- Local realtors
- Local landlords

TARGET DEMOGRAPHIC

Every Ann Arbor resident.

TIMELINE

- ✓ 3 years from program inception to full-scale pilot.

GOALS:

- Reduce energy bills for Ann Arbor residents through energy efficiency improvements and targeted behavioral changes.
- Reduce community-wide greenhouse gas emissions by 5%.
- Run group-buy programs that lead to at least 500 new efficient vehicles within the community.

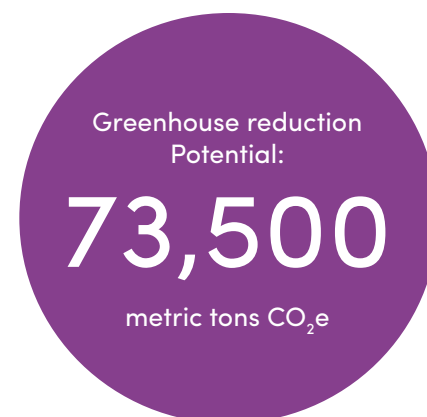
INDICATORS OF SUCCESS:

- ✓ Community-wide emissions have fallen 5% (based on 2015 figures) by 2025.
- ✓ 10% of all Ann Arbor residences have engaged in at least 1 energy efficiency or renewable energy program.

COST

- \$200,000 in start-up costs (i.e., software, messaging materials, engagement materials, trainings)
- \$15,000/year thereafter for public engagement activities, plus staff time.

This program combines many efforts under one umbrella to stimulate energy efficiency and renewable energy installations in the Ann Arbor community.



CO-BENEFITS



AIR POLLUTION
REDUCTION



BENEFITS
THE MOST
VULNERABLE



COST SAVINGS



DOLLARS STAY
IN THE LOCAL
ECONOMY



EDUCATION



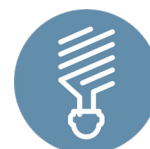
ENERGY
REDUCTION



IMPROVES
HEALTH OF
RESIDENTS



JOB CREATION/
WORKFORCE
TRAINING



LOCAL ENERGY
PRODUCTION

BENCHMARKS

Short Term

We have created the structure and programmatic offerings for a City-driven energy efficiency and renewable energy concierge service.

Medium Term

10% of all Ann Arbor residences have engaged in at least 1 energy efficiency or renewable energy program.

Long Term

Every Ann Arbor residence has been through at least 1 energy efficiency or renewable energy program.

GREEN RENTAL HOUSING PROGRAM

PROGRAM DESCRIPTION

The Green Rental Housing Program improves energy efficiency and reduces greenhouse gas emissions for renters (rental units make up 55% of Ann Arbor's housing stock). This is accomplished by adding energy efficiency requirements into the existing City rental licensing process, thereby ensuring that every rental unit in Ann Arbor meets a minimum energy efficiency performance standard. Training, rebates, and financing support are provided to landlords to support the transition to more energy efficient rentals.

VISION STATEMENT

Students and low-income renters are living in vastly more energy efficient homes and are saving on their energy bills/rents.

Property owners are investing in the value of their properties and are seeing increased tenant retention and satisfaction.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- City of Ann Arbor Office of Sustainability and Innovations
- City of Ann Arbor Rental Housing team

COLLABORATORS/PROJECT CO-DESIGNERS

- Rocky Mountain Institute
- Urban Sustainability Directors Network
- University of Michigan's Beyond the Diag student off-campus housing program
- Washtenaw Area Apartment Association
- Ann Arbor Housing Commission
- Michigan Saves
- Detroit Edison (DTE)

TARGET DEMOGRAPHIC

Renters in Ann Arbor, with a special emphasis on low-income and student renters.

TIMELINE:

- ✓ Policy development and stakeholder engagement will occur in Year 1.
- ✓ Drafting the ordinance, conducting a second round of outreach, and getting the policy through staff and legal review will follow and last for half a year to a full year.
- ✓ Workforce development for new energy raters will happen late in Year 1.
- ✓ The effective date of the policy will follow at either the end of Year 2 or the beginning of Year 3. After that, the policy will be reviewed and potentially revised approximately 5 years after adoption.

GOALS:

- Improve comfort, health, and safety and decrease energy costs for Ann Arbor renters.
- Improve the quality of the rental housing stock in Ann Arbor.

INDICATORS OF SUCCESS:

- ✓ Integration of energy efficiency measures into existing City rental licensing processes with an ordinance adoption date in mid-2021 and an effective date in mid-2022.
- ✓ 80% compliance with the policy after the policy has been in effect for 4 years.
- ✓ No net increase in average rents, outside of normal market inflation, 5 years post policy adoption.

COST

- \$331,000 for start-up, including outreach and engagement materials, developing ratings for 20 prototypical rental units, licensing an external disclosure database, training energy efficiency auditors on Home Energy Score and Portfolio Manager, and software to track efficiency performance.
- \$50,000 for annual maintenance and operations, plus staff time.

Greenhouse reduction
Potential:

30,844

metric tons CO₂e

CO-BENEFITS



AIR POLLUTION
REDUCTION



BENEFITS
THE MOST
VULNERABLE



COST SAVINGS



DOLLARS STAY
IN THE LOCAL
ECONOMY



EDUCATION



ENERGY
REDUCTION



JOB CREATION/
WORKFORCE
TRAINING

BENCHMARKS

Short Term

By mid-2021, the City has adopted the Green Rental Housing ordinance.

Medium Term

By mid-2022, the ordinance is in effect.

Long Term

By 2030, all of the City's rental units will comply with the ordinance. The City has also seen a reduction in greenhouse gas emissions because of this policy.

LOCAL CARBON OFFSET PROGRAM

PROGRAM DESCRIPTION

This program provides a means for residents and businesses to offset their greenhouse gas emissions by sustainably investing in local tree plantings, tree maintenance, and renewable energy installations.

VISION STATEMENT

All Ann Arbor residents and businesses have taken actions to reduce their energy consumption. They know that when they cannot avoid using nonrenewable sources of energy, they can offset their emissions by investing in a local offset program.

This program's high visibility and local projects simultaneously help reduce greenhouse gas emissions and meet other community values such as local economic development, greater equity, and enhanced resilience.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations
- City Forestry Group
- Collaborators/Project Co-Designers
- City's stormwater team
- NativeEnergy
- UM graduate students
- City facilities team
- City parks team
- City communications team
- Community working group (to be created)

TARGET DEMOGRAPHIC

Those who travel for work or pleasure, those who have to drive a significant distance in a gasoline-powered vehicle, those without viable solar potential on their home or office, and others interested in locally offsetting a portion of their greenhouse gas footprint.

TIMELINE

- ✓ Year 1 focuses on research and forming an exploratory offset committee.
- ✓ Year 2 focuses on program design.
- ✓ By the end of Year 3, the full program should be launched.

GOALS

Our local carbon offset program:

- Supports the planting of 1,500 new trees
- Improved maintenance for the existing urban tree canopy
- Led to 25kW of new renewable energy generation annually

INDICATORS OF SUCCESS:

- ✓ 1,500 trees planted by 2040 through resources generated by the program.
- ✓ 500 kW of new renewable energy installed by 2040 through resources generated by the program.
- ✓ 1,000 individuals participating in the program by 2025.

COST

- \$25,000 for programmatic support to design the program, plus staff time.

The cost of running the program is undetermined, as it will depend on the program's final structure.

Helping residents invest in their local community while simultaneously offsetting their greenhouse gas emissions.

Greenhouse reduction
Potential:

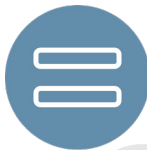
453

metric tons CO₂e

CO-BENEFITS



AIR POLLUTION
REDUCTION



BENEFITS
THE MOST
VULNERABLE



DOLLARS STAY
IN THE LOCAL
ECONOMY



EDUCATION



ENVIRONMENTALLY
FRIENDLY



LOCAL ENERGY
PRODUCTION

BENCHMARKS:

Short Term:

By 2023, a new local carbon offset program has been created and has led to the planting of 50 new trees, better maintenance of the existing tree canopy, and 10kW of new local renewable energy.

Medium Term:

By 2030, the local carbon offset program has financed the planting of 500 new trees, better maintenance of the existing tree canopy, and 100kW of new local renewable energy.

Long Term:

By 2040, the local carbon offset program has financed the planting of 1,500 new trees, better maintenance of the existing tree canopy, and 500kW of new local renewable energy.

NET ZERO ENERGY AFFORDABLE HOUSING PROGRAM

PROGRAM DESCRIPTION

Through a deep and collaborative partnership, the Office of Sustainability and Innovations and the Ann Arbor Housing Commission are leading the way regionally in creating high-quality housing for those most in need. This new housing is net zero energy, battery ready, and more resilient than previous developments.

VISION STATEMENT

Every affordable housing site in the City of Ann Arbor is net zero energy (and some are even energy positive, meaning that they produce more energy than they use).

Because the Ann Arbor Housing Commission pays the utility costs for all of its residents, energy savings are redirected to provide more affordable housing in our community and to provide more services to those in need.

This deep partnership and the achievement of our net zero energy affordable housing goals have earned Ann Arbor national acclaim, with peers from around the nation asking for assistance in replicating our work.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations
- Ann Arbor Housing Commission

COLLABORATORS/PROJECT CO-DESIGNERS

- UM Battery Lab
- Energy contractors
- Volunteer Solar team
- Detroit Edison (DTE)
- U.S. Housing and Urban Development (HUD)
- Potentially some external funders

TARGET DEMOGRAPHIC

Those currently residing in affordable housing and those in need of affordable housing.

TIMELINE

- ✓ 5 affordable housing sites are net zero energy by the end of 2025.

GOALS

- Every affordable housing site in the City is net zero energy (or energy positive) by 2035.

INDICATORS OF SUCCESS:

- ✓ Energy use at renovated sites has fallen by 15%.
- ✓ At least 50% of a building's energy use is powered by onsite (or close) renewable energy sources.
- ✓ All affordable housing sites are net zero energy sites (or positive energy producers) by 2035.
- ✓ 90% of all residents in renovated sites have improved "lived" experiences thanks to the upgrades.
- ✓ The Ann Arbor Housing Commission's net operating costs have fallen by 5%-8% by 2035.

COST

- \$200,000 per year for 2 years for the incremental energy efficiency and renewable energy elements.
- \$100,000 per year for 3 additional years for efficiency and solar improvements, plus staff time.

Every affordable housing site in the City is net zero energy (or energy positive) by 2035

Greenhouse reduction Potential:

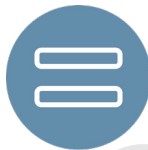
412

metric tons CO₂e

CO-BENEFITS



AIR POLLUTION
REDUCTION



BENEFITS
THE MOST
VULNERABLE



DOLLARS STAY
IN THE LOCAL
ECONOMY



EDUCATION



ENVIRONMENTALLY
FRIENDLY



LOCAL ENERGY
PRODUCTION

BENCHMARKS:

Short Term:

By 2020, 1 affordable housing site has been renovated and is near net zero energy, and another is in the design process.

Medium Term:

By 2025, 5 affordable housing sites have been renovated and are net zero energy or close to it.

Long Term:

By 2035, all affordable housing sites have been renovated and are net zero energy or close to it.

ANN ARBOR STORM SMART

PROGRAM DESCRIPTION

The Ann Arbor Storm Smart (A2StormSmart) program integrates the various elements of Ann Arbor's stormwater management into a single cohesive program, creating better coordination of both existing and new green infrastructure installations and maintenance throughout the community.

VISION STATEMENT

Through the A2StormSmart program, the City has demonstrably increased stormwater retention, improved water quality, and provided enhanced public green spaces and natural areas.

Working with residents and businesses, the City designs green infrastructure-based stormwater solutions that are able to handle current and future storms in a way that aligns with both city-wide stormwater management goals and the community's needs and place-based desires.

PARTY RESPONSIBLE FOR IMPLEMENTATION

The City's new A2StormSmart Program Coordinator (until then, the City's stormwater team in partnership with the Office of Sustainability and Innovations).

COLLABORATORS/PROJECT CO-DESIGNERS

- The city's stormwater team
- The city's floodplain manager
- The city's community engagement specialists
- Residents, businesses
- The city's communications team
- The city's facilities team
- The city's legal team
- The city's disaster preparedness team
- The Federal Emergency Management Agency

TARGET DEMOGRAPHIC

Residents or businesses that currently experience or are projected to experience flooding.

TIMELINE

- ✓ Full program design and on-boarding of new A2StormSmart coordinator in Year 1.
- ✓ Full program launch in Year 2.
- ✓ Program maintenance, recruitment, and refinement in Year 3+.

GOALS

- Localized flooding events are managed through green infrastructure projects and other flood mitigation techniques.
- The City has right-sized its stormwater infrastructure to manage current and projected future changes in precipitation.

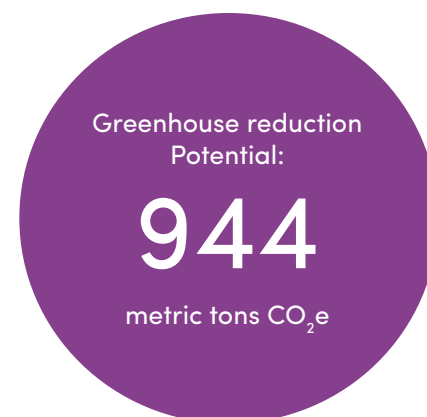
INDICATORS OF SUCCESS

- ✓ 50% of all rain falling on the City is managed onsite by 2035.
- ✓ The number of localized flooding events has dropped by 50% by 2030 (based on 2018 figures).
- ✓ By 2022, all City water-related projects are planning for climate change, ensuring that the system is being designed and renovated to manage today's weather and future changes in climate.

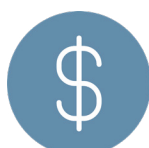
COST

- \$50,000 to initiate the program
- Funding for a new staff person (estimated at \$95,000/year – fully loaded)
- Once the program is operational, \$5,000 per year from Sustainability and Innovations to help with community outreach

Through the A2StormSmart program, the City has demonstrably increased stormwater retention, improved water quality, and provided enhanced public green spaces and natural areas.



CO-BENEFITS



**DOLLARS STAY
IN THE LOCAL
ECONOMY**



EDUCATION



**ENVIRONMENTALLY
FRIENDLY**



**IMPROVES
RESILIENCE**



**JOB CREATION/
WORKFORCE
TRAINING**

BENCHMARKS

Short Term

By 2022, a new A2StormSmart program has been launched.

Medium Term

By 2025, the City has achieved a 10% reduction in localized flooding events (based on 2018 figures).

Long Term

By 2035, 50% of all rain falling on the City is managed onsite, and localized flooding events have dropped by over 50% (based on 2018 figures).

RESILIENCE HUBS

PROGRAM DESCRIPTION

Resilience hubs are community-serving facilities augmented to support residents and coordinate resource distribution and services before, during, or after a natural hazard event.

At their core, resilience hubs are about shifting power to communities and increasing community/neighborhood capacity.

Resilience hubs operate at the nexus of climate mitigation, climate adaptation, and equity, and they strive to enhance community sustainability and resilience through a bottom-up approach centered on co-development and leadership.

VISION STATEMENT

The City's 5 resilience hubs are equitably enhancing community resilience while reducing greenhouse gas emissions and improving local quality of life for all of our residents, especially our front line communities.

Thanks in part to our robust network of resilience hubs, residents can take care of one another during a disaster for up to 5 days without any government assistance, poverty rates have declined, local economic opportunities are increasing, crime rates are reduced, and people's satisfaction with their community has significantly improved.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations
- Emergency Management

COLLABORATORS/PROJECT CO-DESIGNERS

- Residents
- Local businesses
- The city's emergency manager
- Community-based organizations
- The city's communications team
- Police department

- Fire department
- Finance and procurement
- Washtenaw County Department Of Community and Economic Development
- City planning team
- Washtenaw County Health Department
- Volunteer solar team
- The city's public works team
- The city's legal team
- The City's transportation manager
- Local community institutions
- The City's parks and recreation team
- Others as co-determined with the community in which each hub resides

TARGET DEMOGRAPHIC

The first few hubs will be placed in our underserved neighborhoods. Eventually, the goal is to have at least 1 resilience hub in each Ward and, ideally, a resilience hub in all of our front line communities/neighborhoods.

TIMELINE

- ✓ 18-24 months per resilience hub.

GOALS

- Every Ward within the City and every frontline neighborhood has a functioning, community-designed and -operated resilience hub that helps improve community sustainability, resilience, and social cohesion.

INDICATORS OF SUCCESS

- ✓ At least 1 resilience hub has been co-designed in each of the City's Wards by 2035.
- ✓ 25% of City residents have an emergency preparedness kit and plan by 2030.
- ✓ In the face of a significant, wide-ranging disaster, residents are safe and able to take care of one another for up to 5 days without City intervention.
- ✓ Community social cohesion and quality of life have improved as a result of resilience hubs implementation, as determined by participant feedback.

Greenhouse reduction
Potential:

500

metric tons CO₂e

COST

- \$150,000 estimated per hub, plus staff time (with a goal of 2 functional hubs by the end of 2025).

Funding will be secured through a combination of City resources, grant funding, crowdfunding, local matches, and volunteer labor.

CO-BENEFITS



AIR POLLUTION
REDUCTION



BENEFITS
THE MOST
VULNERABLE



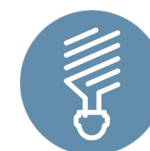
ENHANCED
SOCIAL
COHESION



IMPROVES
HEALTH OF
RESIDENTS



IMPROVES
RESILIENCE



LOCAL ENERGY
PRODUCTION

BENCHMARKS

Short Term

By the end of FY2020, we have fully designed the City's first resilience hub in partnership with community stakeholders.

Medium Term

By 2025, we have created 2 community-designed and -driven resilience hubs in the City.

Long Term

By 2035, every Ward and all frontline neighborhoods have a functioning, thriving community-designed resilience hub.

HOME ENERGY DISCLOSURE

PROGRAM DESCRIPTION

The Ann Arbor Time of Marketing – or home energy disclosure – program requires homeowners to disclose a Home Energy Score before they put their home up for sale. The energy disclosure gives potential buyers a more holistic sense of the financial costs of purchasing and living in any given home, allowing them to make a more informed decision about whether the home is right for them.

If potential buyers know the energy burden of a home up front, they can roll the costs of energy improvements into their mortgage, or the sellers can conduct energy efficiency upgrades before the sale to make their home more attractive.

The City's Time of Marketing program helps home buyers and home sellers access the information, programs, and financing needed to improve the efficiency of residences.

VISION STATEMENT

By 2021, our Time of Marketing ordinance has been in place for a year. Market forces are taking effect, and home buyers are considering energy costs when deciding which homes to purchase.

Home energy disclosures, combined with support from the Office of Sustainability and Innovations, have helped reduce greenhouse gas emissions in the residential sector by 2%.

This program has also pressured the market to implement energy efficiency measures, as homes with a higher energy score spend, on average, 2–4 days less on the market and sell for a higher price than less efficient homes.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations
- Ann Arbor Energy Commission Time of Marketing Ordinance subcommittee
- The City's legal team

COLLABORATORS/PROJECT CO-DESIGNERS

- Real estate professionals

- Energy auditors
- Earth Advantage (or similar program to help upload data to the Multiple Listing Service (MLS))
- Energy trainers
- Elevate Energy
- U.S. Department of Energy (Home Energy Score)
- Local banks
- Washtenaw County
- Other cities that have rolled out similar programs

TARGET DEMOGRAPHIC

Home buyers and home sellers in Ann Arbor.

TIMELINE

✓ 2-year roll-out with 3 different phases:

- 1) Ramp up market expertise to do Home Energy Scores, talk to banks about energy efficiency mortgages, and host trainings for realtors on energy efficiency selling points.
- 2) Roll out the ordinance.
- 3) Upload Home Energy Scores into the MLS and audit a portion of the scores and home energy inspections, as required by the U.S. Department of Energy.

GOALS

100% of homes on the market have a Home Energy Score and disclose their energy use on publicly accessible sites.

INDICATORS OF SUCCESS

- ✓ The City has adopted a holistic Time of Marketing ordinance by the end of 2020.
- ✓ 1,000 homes have publicly disclosed their Home Energy Score and energy usage by 2021.
- ✓ Residential greenhouse gas emissions have dropped 2% by 2021.

COST

- \$250,000 for training local inspectors and realtors, new software, expanded rebates for energy efficiency upgrades, marketing and messaging materials, and verification assistance, plus staff time.

Greenhouse reduction
Potential:

13,350

metric tons CO₂e

CO-BENEFITS



COST SAVINGS



**DOLLARS STAY
IN THE LOCAL
ECONOMY**



EDUCATION



**JOB CREATION/
WORKFORCE
TRAINING**

BENCHMARKS:

Short Term

The City has created a Time of Marketing ordinance by 2020.

Medium Term

1,000 homes have disclosed their energy usage by 2021.

Long Term

Every home listed for sale in Ann Arbor discloses its Home Energy Score by 2025.

WEATHERIZATION EXPANSION

PROGRAM DESCRIPTION

Washtenaw County and multiple nonprofits offer weatherization services to low-income homeowners in Ann Arbor. Weatherization is the practice of protecting a building and its interior from the elements, particularly from sunlight, precipitation, and wind, and of modifying a building to reduce energy consumption and optimize energy efficiency. Through this program, the City of Ann Arbor will expand weatherization support, especially for low-income homeowners, increasing the uptake of existing weatherization services and raising income limits to qualify more Ann Arbor homeowners for free or low-cost energy efficiency improvements.

VISION STATEMENT

By 2025, all eligible low-income Ann Arbor homeowners have been offered weatherization services.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Washtenaw County Office of Community and Economic Development
- Habitat for Humanity of Huron Valley

COLLABORATORS/PROJECT CO-DESIGNERS

- Ann Arbor Office of Sustainability and Innovations
- Michigan Saves
- Ann Arbor Meals on Wheels
- Detroit Edison (DTE)
- Consumers Energy

TARGET DEMOGRAPHIC

Low-income homeowners in Ann Arbor.

TIMELINE

- ✓ Background research into the number and needs of low-income homeowners in Ann Arbor by mid-FY20.
- ✓ Operating agreements with Washtenaw County, Habitat for Humanity of Huron Valley, and DTE by early FY21.
- ✓ The first 12 Ann Arbor homes will be weatherized through this expansion by the end of FY21.
- ✓ By 2025, all eligible low-income homeowners have learned about available weatherization services, and at least 40% have taken advantage of programmatic offerings.

GOALS

- Improve comfort, health, and safety, and decrease energy costs for low-income Ann Arbor homeowners.
- Improve the quality of the housing stock in Ann Arbor.
- Reduce greenhouse gas emissions from the housing sector.
- Improve community resilience.

INDICATORS OF SUCCESS

- ✓ By FY21, the City has expanded the weatherization initiative for Ann Arbor residents.
- ✓ By the end of FY21, the first 12 Ann Arbor homes have been weatherized through this expansion.
- ✓ By 2025, all eligible low-income Ann Arbor homeowners have been offered weatherization services, and 40% have taken advantage of the program.

Greenhouse reduction
Potential:

1,400

metric tons CO₂e

COST

- \$50,000 per year to expand weatherization services (e.g., programmatic costs, contractor fees, energy efficiency upgrades, marketing and outreach, and additional workforce training), plus staff time.

CO-BENEFITS



**BENEFITS
THE MOST
VULNERABLE**



**DOLLARS STAY
IN THE LOCAL
ECONOMY**



EDUCATION



**ENERGY
REDUCTION**



**IMPROVES
HEALTH OF
RESIDENTS**



**JOB CREATION/
WORKFORCE
TRAINING**

BENCHMARKS:

Short Term

By early FY21, the City has completed background research and developed operating agreements with allied organizations such as Washtenaw County and Habitat for Humanity of Huron Valley.

Medium Term

By the end of FY21, 12 low-income homes in Ann Arbor have been weatherized.

Long Term

By 2025, all eligible low-income Ann Arbor homeowners have been offered weatherization services, and at least 40% have taken advantage of some energy efficiency services.

“We know how to get all of the energy we need without using dirty or dangerous fuel sources. It is no longer a question of whether we can – but of whether we will.”

Michael Brune

“I’d put my money on the sun and solar energy, what a source of power. I hope we don’t have to wait until oil and coal run out before we tackle that.”

Thomas Edison, 1931



SECTION II

COMMERCIAL

GRAND CHALLENGE PROGRAM

PROGRAM DESCRIPTION

Every year for 5 years, our community will focus on a single sustainability topic of community importance. For that entire year, the City government, nonprofits, businesses, the University, Washtenaw County, and other partners will create messages and programs focused on advancing activities around that sustainability topic.

For example, we may decide that we need a year dedicated to energy issues. For that entire year, partners will embrace programs, messaging, incentives, or projects that help reduce community energy usage and advance the adoption of renewable energy.

As a City, we will collectively track our progress and, at the end of the year, we will celebrate our success. We will then launch the next year's topic and repeat our efforts.

VISION STATEMENT

Through the Grand Challenge Program, the City has united government, nonprofits, businesses, the University, and other community groups around 5 of the largest sustainability-related challenges facing Ann Arbor and Washtenaw County.

Together we have designed messaging, programs, projects, and incentives to advance solutions to these challenges. Each of the 5 grand challenges has received a year of dedicated attention from the partners, leading to significant progress in areas such as reducing energy usage, increasing renewable energy generation, increasing waste diversion, reducing water usage, enhancing community affordability, increasing generation and consumption of local food, and increasing local employment opportunities for frontline communities.

This program has also laid the foundation for future collaborations – particularly around sustainability.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations
- Washtenaw County Department of Community and Economic Development

COLLABORATORS / PROJECT CO-DESIGNERS

- SPARK
- Nonprofits (e.g., Huron River Watershed Council, Citizens Climate Lobby, Neutral Zone, Food Gatherers, Ecology Center)
- Local businesses
- The University of Michigan
- Washtenaw County
- Eastern Michigan University
- Washtenaw Community College
- The Downtown Development Authority
- Many others (specific partners depend on the Grand Challenges targeted in the 5-year program)

TARGET DEMOGRAPHIC

Residents and businesses in Ann Arbor and Washtenaw County and people who work in Ann Arbor or Washtenaw County but live elsewhere.

TIMELINE

- ✓ Program design occurs in Year 1
- ✓ Program implementation occurs in Years 2–6.

GOALS

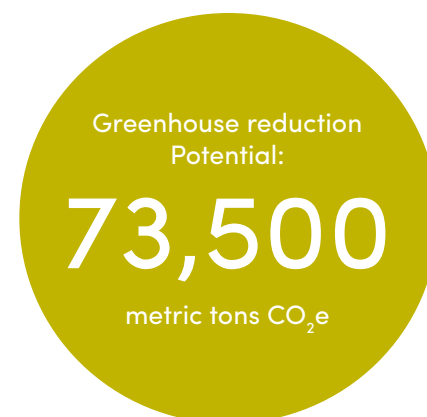
- Significantly advance sustainability solutions in 5 core areas of concern.
- Sustain those advancements in perpetuity.

INDICATORS OF SUCCESS

The indicators will be refined once the partners determine the 5 Grand Challenges to focus on. Thus, the indicators below are illustrative only.

- ✓ 10% reduction in community-wide energy usage 13 months after the Year of Energy is launched; this reduction has been sustained 5 years after the Year of Energy concludes.

- ✓ 10% reduction in local water consumption community-wide 13 months after the Year of Water is launched; this reduction has been sustained 5 years after the Year of Water concludes.
- ✓ 10% increase in diversion rate from the landfill community-wide 13 months after the Year of Waste is launched; this increase has been sustained 5 years after the Year of Waste concludes.
- ✓ 5% increase in the amount of local food consumed community-wide 13 months after the Year of Local Food is launched; this increase has been sustained 5 years after the Year of Local Food concludes.
- ✓ 10% decrease in single-occupancy vehicle usage community-wide 13 months after the Year of Transportation is launched; this reduction has been sustained 5 years after the Year of Transportation concludes.



COST

- \$600,000 over the 6 years of the program (program design, messaging, engagement, development and administration of new incentives, tracking, and program evaluation), plus staff time.

CO-BENEFITS



AIR POLLUTION
REDUCTION



COST SAVINGS



DOLLARS STAY
IN THE LOCAL
ECONOMY



EDUCATION



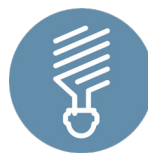
ENVIRONMENTALLY
FRIENDLY



IMPROVES
HEALTH OF
RESIDENTS



JOB CREATION/
WORKFORCE
TRAINING



LOCAL ENERGY
PRODUCTION

BENCHMARKS

Short Term

Partners have been convened, and the Grand Challenge program has been co-designed.

Medium Term

5 years after program start, we have achieved the objectives/ indicators established by the partner organizations.

Long Term

The program objectives/ indicators established by the partner organizations are still being met 10 years after the first series concludes.

GREEN BUSINESS CHALLENGE

PROGRAM DESCRIPTION

This program encourages our businesses to engage in more sustainable behaviors. Based on the national Green Business Challenge, it provides technical assistance, guidance, and recognition to Ann Arbor businesses that volunteer to become more sustainable and lower their environmental footprint.

While the program continually evolves, at its core are energy efficiency, renewable energy usage, waste reduction and material reuse, environmentally preferable purchasing (including buying local and non-toxic materials), water conservation, and alternative transportation.

VISION STATEMENT

Ann Arbor businesses are some of the most sustainable in the nation, thanks in part to the City's Green Business Challenge (GBC). By providing incentives, guidance, and recognition for local businesses, the GBC has helped them lower their operating costs and reduce their environmental footprints. It has also increased public support for the City's thriving small, medium, and large businesses.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations
- The Washtenaw County Department of Community and Economic Development

COLLABORATORS / PROJECT CO-DESIGNERS

- Ann Arbor-Ypsilanti Regional Chamber of Commerce
- Ann Arbor SPARK
- City public works team
- Detroit Edison
- Consumers Energy
- Ecology Center
- Huron River Watershed Council

- Michigan Saves
- Local banks
- The Ann Arbor Downtown Development Authority
- GetDowntown
- Ann Arbor 2030 District
- The Portfolio Manager team at the Environmental Protection Agency
- The Ann Arbor Area Transportation Authority

TARGET DEMOGRAPHIC

Local businesses – initially those in the downtown but eventually any local business in town.

TIMELINE

- ✓ Year 1: program design
- ✓ Year 2: program pilot testing
- ✓ Year 3: full-scale launch

GOALS

Every locally owned and operated business in the City of Ann Arbor voluntarily participates in the City's Green Business Challenge. Together, these businesses are helping the City make notable progress towards its aggressive climate and sustainability goals, all the while contributing to the local economy and enhancing the community's quality of life.

INDICATORS OF SUCCESS

- ✓ 50 local businesses have begun participating in the Green Business Challenge by 2025.
- ✓ Collectively, participating businesses have reduced their energy consumption by 10%, increased waste diversion by 10%, reduced water consumption by 10%, eliminated single-use plastics, and removed 50% of toxic material from their businesses.

COST

- \$150,000 for training, materials, program development, education and outreach, new incentive programs, and a recognition program, plus the cost for staff to maintain, recruit, train, track, and recognize participants.

Greenhouse reduction
Potential:

76,620

metric tons CO₂e

CO-BENEFITS



COST SAVINGS



DOLLARS STAY
IN THE LOCAL
ECONOMY



EDUCATION



ENVIRONMENTALLY
FRIENDLY



JOB CREATION/
WORKFORCE
TRAINING

BENCHMARKS:

Short Term

By FY22, a Green Business Challenge program has been designed in partnership with the community.

Medium Term

By 2025, 50 local businesses participate in the Green Business Challenge.

Long Term

By 2035, every local business participates, in some way, in the City's Green Business Challenge.

INNOVATIONS HUB

PROGRAM DESCRIPTION

The program creates a nurturing environment for sustainability-related innovations in Ann Arbor and throughout Washtenaw County. The Ann Arbor Innovations Hub is a physical space, along with key programmatic offerings, where the region and nation's sustainability vanguards come together to develop the next generation of sustainability practices, services, tools, and programs.

Core components of the Innovations Hub include individual and shared space that allows for creativity, collaboration, and deep thinking; regular design jams; direct interaction and co-design opportunities with potential end-users of emerging innovations; and access to emerging sustainability leaders and a work force ready to join the sustainability movement.

In addition, the City of Ann Arbor works with SPARK and the Washtenaw County Department of Community and Economic Development to recruit sustainability-related companies to the region, collaborate with local and regional educational institutions to ensure that students have the proper training to be sustainability innovators, and create alignment between emerging innovations and the needs on the ground.

The City and County will also work internally to create a more receptive local community to the innovations generated through the Hub.

VISION STATEMENT

Great sustainability-related ideas converge, are nurtured, and flourish at the Ann Arbor Innovations Hub.

These ideas are translated into practice, thanks to a comprehensive partnership between the Innovations Hub, the City of Ann Arbor, and Washtenaw County. And these ideas are helping the City meet its climate and sustainability goals. In fact, the City and businesses within the Hub convene annually at a Sustainability Innovation Summit to discuss the most challenging sustainability problems facing the City and region, and to explore solutions to these challenges.

Thanks in part to collaborations such as these, the Innovations Hub and its supportive ecosystem are a nationally recognized example of sustainable local economic development that demonstrably improves community members' lives.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- SPARK
- Washtenaw County Department of Community and Economic Development
- The City of Ann Arbor's Office of Sustainability and Innovation

COLLABORATORS / PROJECT CO-DESIGNERS

- University of Michigan
- Eastern Michigan University
- Washtenaw Community College
- Downtown Development Authority
- Local businesses
- Washtenaw County
- City of Ypsilanti
- Neutral Zone

TARGET DEMOGRAPHIC

Sustainability-related innovators and sustainability-related start-up companies (e.g., those focused on mobility, waste, energy, water, equity, etc.).

TIMELINE

- ✓ 5 years from project inception to launch of the Innovations Hub.

GOALS

Ann Arbor's Innovations Hub is a nationally recognized example of sustainable local economic development that demonstrably improves the lives of the community while advancing scalable and transferable sustainability solutions.

INDICATORS OF SUCCESS

- ✓ 10 sustainability-related businesses operating within the Innovations Hub by 2025.
- ✓ 500 new individuals employed in well-paying jobs at sustainability-related businesses within the City by 2028.
- ✓ Through partnership with the Innovations Hub, by 2028, the City has implemented 3 new sustainability innovations that are demonstrably helping the City to make progress towards its sustainability goals.



COST

- \$250,000, plus staff time at the City, the County, and SPARK.
- In addition, funding will be needed to establish the physical space for the Innovations Hub.

CO-BENEFITS



COST SAVINGS



EDUCATION



**ENHANCED
SOCIAL
COHESION**



**IMPROVES
RESILIENCE**



**JOB CREATION/
WORKFORCE
TRAINING**

BENCHMARKS

Short Term

Creation of the Innovations Hub and recruitment of businesses to operate in the Hub.

Medium Term

10 sustainability-related businesses operating within the Hub by 2025.

Long Term

500 new individuals employed in sustainability-related businesses within the City. The City has implemented 3 new sustainability innovations that are making substantial progress towards the City's sustainability goals by 2028.



“Climate change is real, it is happening right now. It is the most urgent threat facing our entire species, and we need to work collectively together and stop procrastinating.”

Leonardo DiCaprio

SECTION III

ELECTRIC VEHICLES

ELECTRIC VEHICLE READINESS

PROGRAM DESCRIPTION

In the next 20 to 30 years, electric vehicles (EVs) will replace internal combustion engine vehicles as the dominant type of vehicles on the market. To prepare for this transition, we have created a holistic EV readiness program.

This program includes upgrades to City ordinances to promote EV infrastructure in parking structures and at new buildings, incentives and associated programs to help retrofit existing buildings for EV readiness, and work to increase solar charging and battery storage infrastructure.

In addition, the program includes a holistic strategy to encourage greater uptake of EVs in our community and within our City's fleet. This strategy is a sub-component of our City's comprehensive transportation planning and movement towards multi-modal transit shifts.

VISION STATEMENT

The City of Ann Arbor has an ambitious, comprehensive, and living community-wide electric vehicle (EV) strategy that identifies immediate and long-term actions to facilitate EV adoption in the community.

This strategy has helped ensure that every new building within this City is designed to be EV ready and that 40% of the existing buildings within the City have been renovated and are EV ready. Importantly, 100% of the demand for new transportation-related electricity is met with renewable energy sources.

The City's work around EVs is nested in the City's broader transportation planning efforts, which are heavily focused on active transportation and fostering a transportation system that is clean and equitable.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- **For policy development:** Office of Sustainability and Innovations and the Energy Commission.
- **For policy implementation:** Building Department and Planning Services.

COLLABORATORS / PROJECT CO-DESIGNERS

- Planning Commission
- Planning staff
- Building Department
- City Council
- Ann Arbor Downtown Development Authority (DDA)
- Ann Arbor 2030 District
- University of Michigan
- Ecology Center
- Energy Commission (EV Readiness Committee)
- Car rental and vehicle-sharing programs
- Detroit Edison
- EV charger manufacturers and installers
- Affordable housing community groups and advocates
- Owners of public parking spaces
- Owners of multifamily buildings
- Home inspectors
- Private homeowners

TARGET DEMOGRAPHIC

Building developers, building owners, future EV drivers, DDA, and parking garage owners.

TIMELINE

Development, research, and adoption of strategy and policy by late 2020. Implementation and effective date of policy by mid-2021. Review and revision of ordinance within 5 years.

GOALS

- Increase the number of electric vehicle ready buildings in Ann Arbor.
- Increase the number of electric vehicle chargers in the City.
- Ensure that all who desire to drive electric vehicles can access cost-effective, and convenient EVs and EV charging equipment.
- Ensure that electric vehicles are part of the City's larger transportation planning and that this planning is grounded in equity.
- Ensure that electric vehicles are powered by renewable energy.

Greenhouse reduction
Potential:

18,294

metric tons CO₂e

- ✓ At least 500 new electric cars have been purchased through bulk purchasing and other incentives by 2025.

INDICATORS OF SUCCESS

- ✓ 100% of all new residential homes built in Ann Arbor have a 240-volt outlet in their garages by the end of FY21.
- ✓ 100% of all new and renovated commercial and multifamily parking structures meet adopted EV Readiness Ordinance policy guidelines by the end of FY21.

COST

- \$150,000, plus staff time. Additional resources will be needed if the City launches an EV car-share program.

CO-BENEFITS



AIR POLLUTION
REDUCTION



EDUCATION



ENVIRONMENTALLY
FRIENDLY



IMPROVES
HEALTH OF
RESIDENTS



JOB CREATION/
WORKFORCE
TRAINING

BENCHMARKS

Short Term


By 2021, the EV Readiness Ordinance has been approved and is being enforced through the building review permitting process. The City has also created a holistic EV strategy with widespread community support.

Medium Term

By 2025, the City has revised the ordinance to make needed edits and the City has helped run at least 2 community group EV buys totaling 500 vehicles.

Long Term

By 2050, a significant portion of the City's building stock has turned over and can support the demand for EV charging. The EV Readiness Ordinance is nationally acclaimed for encouraging and enabling high EV purchase rates among residents.



I'm often asked whether I believe in global warming. I now just reply with the question: Do you believe in gravity?"

Neil de Grasse Tyson

"Climate change is the single biggest thing that humans have ever done on this planet. The one thing that needs to be bigger is our movement to stop it."

Bill McKibben

SECTION IV

**MUNICIPAL
OPERATIONS**

100% CLEAN AND RENEWABLE ENERGY STRATEGY

PROGRAM DESCRIPTION

This program pursues City Council's goal of having all municipal operations run on clean and renewable sources of energy by no later than 2035. To do this, we will electrify natural gas-dependent infrastructure, do deep energy efficiency audits and retrofits on major City buildings, and look for large-scale on-site renewable energy potential. Where onsite renewable energy isn't an option, we will explore regional renewable energy sources. In the first few years of this strategy, we will focus on the top 5 buildings that account for about 75% of municipal energy consumption.

VISION STATEMENT

The year is 2035 and all municipal operations are more efficient and powered by renewable and clean energy. 20 MW of local renewable energy is being generated in our community, which more than covers the footprint of our municipal operations.

This renewable energy is attached to a battery to provide a 24-hour supply for our municipal operations. Steps to electrify our systems have resulted in ways to power all operations through renewable sources. Energy audits throughout municipal operations have lowered our energy burden and provided significant cost savings.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations
- City Facilities Manager

COLLABORATORS / PROJECT CO-DESIGNERS

- Energy Commission
- Water Treatment Plant
- Wastewater Treatment Plant
- City public works team
- Landfill contractors
- Parks and Recreation

TARGET DEMOGRAPHIC

City operations.

TIMELINE

The 100% Clean and Renewables plan will have 3 phases.

- ✓ In the first phase, we will perform energy efficiency audits on major buildings while looking for opportunities to electrify existing equipment.
- ✓ In the second phase, we will electrify all viable natural gas equipment.
- ✓ In the third phase, we will look at new sources of generation throughout the City, such as putting solar on the landfill and pairing the installation with battery systems.

GOALS

- Ensure that all City operations are being powered by clean and renewable generation by 2035.

INDICATORS OF SUCCESS

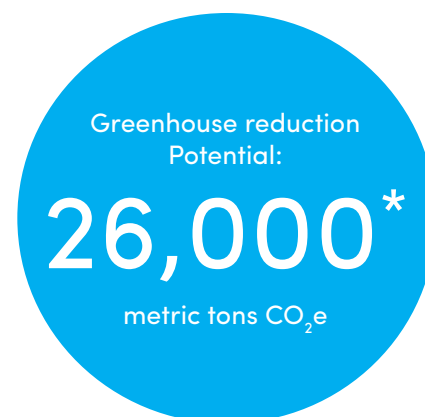
- ✓ 10% reduction in electricity demand by 2025 (this includes the increased demand from switching natural gas appliances to electric).
- ✓ 75% of all municipal operations are powered with renewable energy sources by 2030.
- ✓ 100% of all municipal operations are powered with renewable energy sources by 2035.

COST

- \$40 million for new electrical infrastructure including solar at the landfill
- \$5 million for equipment replacement, audits, and external assistance
- \$100,000 one-time infusion to the City's Revolving Energy Fund

The City will look for innovative financing mechanisms to cover a portion of these costs.

*All of the strategies in the municipal operations section combine to reach 26,000 metric tons of greenhouse gas reduction



CO-BENEFITS



AIR POLLUTION
REDUCTION



COST SAVINGS



DOLLARS STAY
IN THE LOCAL
ECONOMY



EDUCATION



ENERGY
REDUCTION



ENVIRONMENTALLY
FRIENDLY



LOCAL ENERGY
PRODUCTION

BENCHMARKS

Short-Term

By 2025, we have completed energy efficiency audits, implemented energy efficiency measures, and replaced natural gas-dependent equipment with electric equipment in the 5 buildings that are responsible for 75% of the City's electrical demand.

Medium-Term

By 2030, we have completed energy efficiency audits, implemented energy efficiency measures, and replaced natural gas-dependent equipment with electric equipment at all City buildings. Additionally, 75% of municipal operations are powered with renewable energy sources.

Long-Term

By 2035, all municipal operations are powered with clean and renewable energy.

INTEGRATING CLIMATE CHANGE INTO CAPITAL DECISION-MAKING

PROGRAM DESCRIPTION

This initiative works to ensure that every capital investment decision made in the City of Ann Arbor integrates future climate change projections at the pertinent temporal and spatial scale, so that the City's investments are climate smart. This includes ensuring that all projects are planning for projected physical changes in climate as well as projected demographic shifts associated with changing climate conditions.

VISION STATEMENT

By 2022, every capital project the City of Ann Arbor invests in has fully integrated climate change considerations, including both projections of physical changes in weather and long-term climate as well as climate-related demographic changes.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations
- Capital Improvements Plan (CIP) coordinator

COLLABORATORS / PROJECT CO-DESIGNERS

- City Administrator's Office
- The City's Information Technology Unit
- University of Michigan's Great Lakes Integrated Sciences and Assessment (GLISA)
- The City's engineering team
- Every City Service Area
- A climate demographer
- National League of Cities
- Urban Sustainability Directors Network
- The City's geographic information system specialists
- The Planning Commission

TARGET DEMOGRAPHIC

- Every City employee who plans, works on, implements, or maintains capital projects.

TIMELINE

- ✓ Full-scale project design and implementation for the for the City's next CIP planning process
- ✓ Revisions to climate information on an ongoing basis (especially as the science gets more granular)

GOALS

- Every investment the City makes considers and mitigates the impacts of climate change over the duration of the project's life.

INDICATORS OF SUCCESS

- ✓ A method to integrate future climate change projections (both physical and demographic) into capital decision-making has been designed and implemented by 2022.
- ✓ Biannually, updated climate change projections are provided by science partners and integrated into local decision-making and design.

COST

- \$75,000 for training, funding to hire climatologists to provide and continually update the climate information needed for decision-making, and potentially new software or tools that help seamlessly integrate climate change considerations into the City's CIP process, plus staff time.

The greenhouse gas reduction potential of this strategy is covered in the 100% clean and renewable calculations

CO-BENEFITS



**AIR POLLUTION
REDUCTION**



COST SAVINGS



EDUCATION



**ENERGY
REDUCTION**



**ENVIRONMENTALLY
FRIENDLY**



**IMPROVES
RESILIENCE**



**LOCAL ENERGY
PRODUCTION**

BENCHMARKS

Short-Term

All City decision-makers have a deeper understanding of the weather-related information they use, especially those who prepare capital projects.

Medium-Term

Every project funded through the City's CIP has fully integrated climate change considerations (physical and demographic).

Long-Term

Every project and decision within the City integrates climate change considerations, including mitigation and adaptation.

GREEN FLEETS

PROGRAM DESCRIPTION

In June 2017, City Council passed a revised Green Fleets policy that prioritized fleet electrification and set a 25% greenhouse gas emissions reduction goal for the entire City fleet by 2025, consistent with the Climate Action Plan.

To help meet these goals, the City formed an internal Green Fleets Team (GFT) that meets at least monthly. The GFT helps to right-size the fleet by eliminating low-use vehicles that do not have a specialized use, by assisting with the transition to more fuel efficient and fully electric vehicles, and by conducting staff-focused education.

VISION STATEMENT

The City operates a zero greenhouse gas emissions fleet, including a fully electrified light-duty vehicle fleet, and many heavy-duty electric vehicles. This was achieved by right-sizing the fleet, electrifying the fleet, using renewable energy and batteries to power the fleet, and purchasing carbon offsets for the vehicles for which electric alternatives do not exist.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations
- Fleet manager
- The rest of the Green Fleets Team

COLLABORATORS / PROJECT CO-DESIGNERS

- Transportation Manager
- City Administrator's Office
- All Service Area Administrators

TARGET DEMOGRAPHIC

City staff who purchase vehicles as well as those who drive vehicles on the job.

TIMELINE

- ✓ The GFT meets at least monthly. The team will periodically suggest revisions to the Green Fleets policy and will release an annual report.
- ✓ City Service Areas will build in the cost of future electrification into their depreciation expenses in the FY2021-22 budget.
- ✓ Vehicles coming out of service will be eliminated if they are no longer needed or switched to electric vehicles if possible.
- ✓ By 2025, an additional 40 light-duty vehicles will be transitioned to electric.
- ✓ Annually, greenhouse gas emissions offsets will be purchased to cover the emissions associated with vehicles that have not switched to electric.

GOALS

- A 25% reduction in vehicular fleet emissions by 2025 (based on 2015 levels)
- A carbon neutral fleet by 2035

INDICATORS OF SUCCESS

- ✓ 40 City fleet vehicles are electric by 2025.
- ✓ All of the City's light-duty fleet is electric by 2030.
- ✓ The City owns at least 1 electric medium- or heavy-duty vehicle by 2026.
- ✓ The City's fleet is carbon neutral by 2035.
- ✓ Systems are in place to improve data collection and analysis of greenhouse gas emissions, fuel usage, and vehicle miles traveled by the City fleet by 2022.

COST

- \$100,000 to electrify vehicles and install charging equipment, plus staff time.

These expenses will be partially offset by cost savings from the reduced operations and maintenance expenses for EVs.

The greenhouse gas reduction potential of this strategy is covered in the 100% clean and renewable calculations

CO-BENEFITS



AIR POLLUTION
REDUCTION



EDUCATION



ENVIRONMENTALLY
FRIENDLY



IMPROVES
HEALTH OF
RESIDENTS

BENCHMARKS

Short Term

By the end of its first year, the Green Fleets Team has completed the tasks set forth in the Green Fleets policy (such as releasing an annual report and identifying low-use vehicles to be removed from the fleet).

Medium Term

By mid-2025, half of the City's light-duty vehicles are electric, and the electricity to power those vehicles is coming mostly from renewable energy sources. The City has also purchased at least 1 medium- or heavy-duty electric truck.

Long Term

By 2035 (if not before), the City's fleet is carbon neutral.

INTERNAL CARBON PRICING

PROGRAM DESCRIPTION

This program creates a financial mechanism whereby all Service Areas holistically integrate greenhouse gas emissions and their impacts into decision-making. The program may take the form of an internal carbon tax (e.g., payment by department for each ton of greenhouse gases emitted) or a price on paper (e.g., a cost per ton associated with the impacts of climate change that is factored into decision-making).

Ultimately, the internal carbon pricing mechanism will help the City achieve its goal of being powered with 100% clean and renewable energy by 2035 (or before).

The carbon price will be set high enough to encourage behavior change but low enough not to disrupt each Service Area's ability to deliver world-class service.

VISION STATEMENT

Citywide greenhouse gas emissions are carbon neutral by 2035 (or before) thanks in part to an internal carbon price that encourages Service Areas to reduce emissions and provides funding for energy efficiency and renewable energy improvements.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations
- Support from Finance

COLLABORATORS / PROJECT CO-DESIGNERS

- Finance and budgeting team
- University of Michigan students
- Dr. Barry Rabe
- All City Service Areas
- The City Administrator

TARGET DEMOGRAPHIC

All City Service Areas, all City purchases, all utilities that power City operations.

TIMELINE

- 12 months of project design
- 4 months of pilot
- FY22 & FY23 budget cycle for full-scale implementation

GOALS

- City operations are carbon neutral by 2035 (or before).

INDICATOR OF SUCCESS

- ✓ All City operations are powered with 100% clean and renewable energy by 2035 (or before).

COST

\$75,000 for staff training, new greenhouse gas emissions tracking software (and potentially new tracking software for finance), and external assistance, plus staff time.

This program creates a financial mechanism whereby all Service Areas holistically integrate greenhouse gas emissions and their impacts into decision-making

The greenhouse gas reduction potential of this strategy is covered in the 100% clean and renewable calculations

CO-BENEFITS



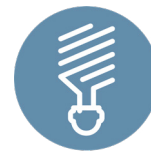
EDUCATION



ENERGY
REDUCTION



IMPROVES
RESILIENCE



LOCAL ENERGY
PRODUCTION

BENCHMARKS

Short Term

Full-scale design of the internal carbon tax pricing system by April 2020.

Medium Term

Pilot testing of the internal carbon pricing system and associated support systems by September 2020, and integration of the internal carbon pricing system into the FY22 & FY23 budget.

Long Term

All City facilities are net zero energy by 2035.

INTERNAL COORDINATION AND INSTITUTIONALIZATION OF SUSTAINABILITY PRACTICES

PROGRAM DESCRIPTION

Under this program, the Office of Sustainability and Innovations works with all City Service Areas to create an organizational culture where sustainability and climate action are intrinsic to all work the City undertakes. This includes activities such as monthly lunch-and-learns, organizing guest speakers, conducting sustainability-related staff trainings, helping to create organizational policies that advance sustainability principles, supporting implementation of sustainability policies (e.g., green fleets, environmentally preferable purchasing), and serving as the City's on-demand sustainability consultants.

VISION STATEMENT

All City Service Areas have the tools, skills, and knowledge needed to holistically integrate sustainability into the work they do.

The Office of Sustainability and Innovations acts as a vanguard, pushing new sustainability innovations across the City.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations
- City Administrator

COLLABORATORS / PROJECT CO-DESIGNERS

- All City Service Areas
- Trainers (likely from the University of Michigan)
- National partner organizations
- Peer cities

TARGET DEMOGRAPHIC

All City staff, especially the Service Area leaders.

TIMELINE

- ✓ Ongoing

GOALS

- City-specific sustainability-related advancements continue to be driven by the Office of Sustainability and Innovations, but more and more ideas and actions are being generated by other City Service Areas as well.

INDICATORS OF SUCCESS

- ✓ Every month there is a sustainability-related event or engagement activity for City staff.
- ✓ City staff regularly identify OSI's sustainability-related events as some of the most valuable trainings and support resources they are provided.
- ✓ By 2025, at least 2 new sustainability-related activities, programs, or initiatives emerge annually from non-OSI Service Areas.

COST

- \$5,000 annually, plus staff time.

Sustainability and climate action are intrinsic to all work the City undertakes.

The greenhouse gas reduction potential of this strategy is covered in the 100% clean and renewable calculations

CO-BENEFITS



EDUCATION



IMPROVES
RESILIENCE



JOB CREATION/
WORKFORCE
TRAINING

BENCHMARKS

Short Term

By the end of FY19, OSI has created a monthly engagement schedule for City staff.

Medium Term

By 2022, OSI has partnered with every Service Area in the City to implement a sustainability-related activity, program, or engagement.

Long-Term

By 2025, at least 2 new sustainability-related activities, programs, or initiatives emerge annually from non-OSI Service Areas.

VOLUNTEER SOLAR

PROGRAM DESCRIPTION

This program leverages volunteer labor to help install solar throughout our community, especially on municipal buildings. The savings accrued from using volunteer labor allows us to install solar in more places, ultimately helping us reach our 100% Clean and Renewable energy goals. The program also provides an opportunity for Ann Arborites to confront climate change in their community.

VISION STATEMENT

Starting with municipal buildings, we recruited volunteers to help us install solar on 10 City facilities. We started with fire stations and affordable housing sites and then moved to other buildings that had flat roofs. Many of the volunteers trained through the program have gone on to full-time employment in the solar field.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations

COLLABORATORS/PROJECT CO-DESIGNERS

- Community members
- City building department
- City safety unit
- Fire Department
- Ann Arbor Housing Commission
- City's legal department
- University of Michigan students
- City's Energy Commission

TARGET DEMOGRAPHIC

City facilities with roofs viable for solar.

TIMELINE

- ✓ In Year 1, the first round of installations will happen on Fire Station #6.
- ✓ In Years 2 and 3, the program expands to other City facilities that have flat roofs or can support viable ground-mounted solar systems.
- ✓ By Year 5, the City has an established Volunteer Solar program that provides assistance to all City facilities that are viable candidates for solar.

GOALS

- The City's Volunteer Solar program has engaged 50 volunteers and installed solar at 10 City facilities.

INDICATORS OF SUCCESS

- ✓ By 2025, 10 City facilities have on-site solar that meets 100% of onsite electricity demand.
- ✓ The cost to install solar on City facilities, using volunteer labor, was 15%–20% cheaper than using the traditional marketplace.
- ✓ By 2025, 50 individuals have engaged in the Volunteer Solar program.

COST

\$10,000 per installation for safety features and \$10,000 per installation for down payment on the solar panels, totaling \$200,000, plus staff time. Outside funding will be pursued to help lower these costs.

Goal: by 2025, 10 City facilities have on-site solar that meets 100% of onsite electricity demand.

The greenhouse gas reduction potential of this strategy is covered in the 100% clean and renewable calculations

CO-BENEFITS



AIR POLLUTION
REDUCTION



COST SAVINGS



DOLLARS STAY
IN THE LOCAL
ECONOMY



EDUCATION



JOB CREATION/
WORKFORCE
TRAINING



LOCAL ENERGY
PRODUCTION

BENCHMARKS

Short Term


A program has been created to help community members get involved with putting solar on municipal buildings by late FY19-20.

Medium-Term

At least 10 City facilities have on-site solar installed by 2025.

Long-Term

By 2025 the City has a Volunteer Solar program that provides assistance to all City facilities that are viable for solar.

The background image shows a protest scene with a large pink semi-transparent overlay. In the foreground, a white sign with the words "CLIMATE JUSTICE" in bold black letters is visible. The sign is held by a wooden stick. In the background, a multi-story building is visible, and a red banner with the word "TORONTO" is partially seen. The pink overlay contains a faint, repeating pattern of the words "CLIMATE JUSTICE" and a stylized leaf or flower motif.

“We’re all paying a price for climate change. Some of us, though, are bearing a greater burden. It’s a scary commentary on inequity writ large, and it points to an urgent need for all of us to work harder to advance environmental justice everywhere.”

Rhea Suh

SECTION V

**CROSS-CUTTING,
ENGAGEMENT,
& EDUCATION**

COMMUNITY OUTREACH AND ENGAGEMENT

PROGRAM DESCRIPTION

The Office of Sustainability and Innovation's Community Outreach and Engagement program provides a continual drumbeat for sustainability and climate-related topics with the community. The program includes our:

- Sustainability Forums
- PowerHours
- Climate, Coffee, and Conversation sessions
- Sustainability Listening Tour
- Mayor's Green Fair
- Tables at community events
- So much more
- Leslie Science and Nature Center
- Ecology Center
- Huron River Watershed Council
- Ann Arbor District Library
- Local coffee shops
- Detroit Edison
- Many others

A holistic community engagement strategy guides our Office's outreach efforts to ensure that we are hearing from, engaging with, and learning from Ann Arborites of all ages, ethnicities, socio-economic statuses, and backgrounds.

VISION STATEMENT

Our community engagement strategy and implementation work ensure that 30% of the community is engaged in at least 1 sustainability-related event, program, outreach effort, or initiative in 2025 and every year thereafter.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations

COLLABORATORS / PROJECT CO-DESIGNERS

- Communications
- Information Technology
- Water Treatment Plant
- Water Quality Manager
- Ann Arbor Public Schools
- Hands-On Museum

TARGET DEMOGRAPHIC

All Ann Arbor residents, businesses, and nonprofits.

TIMELINE

- ✓ Ongoing

GOALS

- 30% of the community is engaged in at least 1 sustainability-related event, program, outreach effort, or initiative by 2025 and every year thereafter.

INDICATORS OF SUCCESS

- ✓ The community engagement strategy is finalized by FY21.
- ✓ 30% of the community is engaged in at least 1 sustainability-related event, program, outreach effort, or initiative by 2025, and every year thereafter.

COST

- \$25,000/year, plus staff time.

The Office of Sustainability and Innovation's Community Outreach and Engagement program provides a continual drumbeat for sustainability and climate-related topics with the community

Greenhouse reduction
Potential:

500

metric tons CO₂e

CO-BENEFITS



EDUCATION



ENHANCED
SOCIAL
COHESION



ENVIRONMENTALLY
FRIENDLY



IMPROVES
RESILIENCE

BENCHMARKS

Short Term

The community engagement strategy has been drafted by mid-FY21.

Medium Term

The Office of Sustainability and Innovations has hosted at least 26 public engagement and outreach events a year by 2022.

Long Term

30% of the community is engaged in at least 1 sustainability-related event, program, outreach effort, or initiative by 2025, and every year thereafter.

EQUITY PROGRAMS

PROGRAM DESCRIPTION

The Office of Sustainability and Innovations (OSI) is committed to ensuring that our climate protection and mitigation work improves the lives of Ann Arbor residents who have been historically underrepresented and under-resourced. Our Equity Program thus ensures that equity is embedded in all of the work we do – from the programs we advance, to the stakeholders we engage with, to the advisors we seek.

VISION STATEMENT

By 2028, all of OSI's programs have an equity focus, OSI staff reflect the diversity of Ann Arbor and Washtenaw County, and staff have developed strong working relationships with members of local low-income communities and communities of color.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations
- OSI's Equity Fellow
- City of Ann Arbor's Diversity, Equity and Inclusion manager

COLLABORATORS/PROJECT CO-DESIGNERS

- Washtenaw County's Racial Equity Program Manager
- Dr. Tony Reames
- Urban Sustainability Directors Network
- City Administrator
- All City Service Areas

TARGET DEMOGRAPHIC

Ann Arbor City employees and staff of allied organizations, Ann Arbor residents of color, and low-income Ann Arbor residents.

TIMELINE

- ✓ Co-facilitation of second cohort for USDN Equity Foundations series will occur in year 1.
- ✓ Continuing education about equity issues for Office of Sustainability and Innovations staff will be ongoing.

GOALS

- Ensure that OSI staff time and resources are used to combat societal inequities in addition to promoting climate protection and mitigation.
- Embed equity into all decision-making in our department and city-wide.
- Authentically engage with communities of color and low-income communities in designing, developing, and implementing OSI programs.
- Hire OSI staff members who reflect the diversity of Ann Arbor and Washtenaw County.

INDICATORS OF SUCCESS

- ✓ Hire equity intern(s) for summer 2019 and potentially a senior citizen Equity Fellow for fall 2019 (to help with the Aging in Place Efficiently program).
- ✓ Engage 25 low-income Ann Arbor residents who have been behind on their Detroit Edison (DTE) bills in weatherization improvements by the end of 2019.
- ✓ Form an Equity Advisory Commission (EAC) by 2023 who will advise OSI (and perhaps other departments) on issues of equity.

COST

- \$20,000 annually to hire an Equity Fellow, obtain training materials, and provide stipends to the Equity Advisory Commission, plus staff time.

The Office of Sustainability and Innovations is committed to ensuring that our climate protection and mitigation work improves the lives of Ann Arbor residents who have been historically underrepresented and under-resourced.

NOT
CALCULATED

CO-BENEFITS



**BENEFITS
THE MOST
VULNERABLE**



**ENERGY
REDUCTION**



**ENHANCED
SOCIAL
COHESION**



**IMPROVES
HEALTH OF
RESIDENTS**

BENCHMARKS

Short Term

By 2020, OSI staff have led a new cohort through the Equity Foundations training, and the OSI has employed at least 1 Equity Fellow.

Medium Term

By 2023, OSI has formed the EAC, and 75% of the OSI budget is spent on programs that have an equity focus.

Long-Term

By 2028, Ann Arbor's sustainability programs are nationally recognized because of how well OSI staff have integrated equity into all that the Office does.

SUPPORTING ENERGY AND ENVIRONMENTAL COMMISSIONS

PROGRAM DESCRIPTION

This work stream ensures that we are leveraging the vast and dynamic expertise of our Energy and Environmental Commissions and Commissioners to advance the Office of Sustainability and Innovation's goals. This is done by providing stable staff support to our Commissioners, organizing working groups to advance shared priorities, and guiding our commissions through an annual work planning process to ensure that everyone's time is used effectively.

VISION STATEMENT

The Energy and Environmental Commissions are at the cutting edge of moving sustainability and climate-related activities forward in the City of Ann Arbor.

The wait list to serve on both commissions is long – demonstrating the value these commissions provide to the City and our residents. The membership of both Commissions reflects the demographics of Ann Arbor and Washtenaw County.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations

COLLABORATORS / PROJECT CO-DESIGNERS

- Energy Commission
- Environmental Commission
- Water Treatment Plant
- Water Quality Manager
- Public Services
- Others as needed

TARGET DEMOGRAPHIC

City residents who want to be engaged in advancing sustainability and climate action in Ann Arbor.

TIMELINE

- ✓ Ongoing

GOALS

- Energy and Environmental Commissioners feel valued and know that their input is helping to advance sustainability and climate-related actions in Ann Arbor.

INDICATORS OF SUCCESS

- ✓ Annual work plans are created for the Energy and Environmental Commissions.
- ✓ For every opening on the Energy and Environmental Commission, we have at least 10 qualified applicants, and of these, at least 2 represent low-income communities or communities of color.
- ✓ Energy and Environmental Commissioners feel valued and valuable.

COST

- Staff time

NOT
CALCULATED

CO-BENEFITS



AIR POLLUTION
REDUCTION



BENEFITS
THE MOST
VULNERABLE



COST SAVINGS



EDUCATION



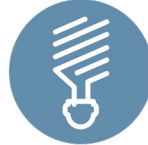
ENERGY
REDUCTION



ENVIRONMENTALLY
FRIENDLY



IMPROVES
RESILIENCE



LOCAL ENERGY
PRODUCTION

BENCHMARKS

Short Term

Annual work plans are created for the Energy and Environmental Commissions by FY20.

Medium Term

By 2021, at least 50% of Energy and Environmental Commissioners feel that their input is valued and their contributions as Commissioners are valuable.

Long-Term

The Energy and Environmental Commissions supplement the staff of the Office of Sustainability and Innovations and help to bring new sustainability and climate-related activities from idea to fruition.

SUSTAINING ANN ARBOR TOGETHER NEIGHBORHOOD GRANT PROGRAM

PROGRAM DESCRIPTION

This program provides small grants (on average \$10,000) to residents, schools, local nonprofits, and local businesses to advance sustainability-related activities in Ann Arbor's right of way (i.e., streets, sidewalks, parks, etc.).

The program has \$100,000 to award annually on a competitive basis. Grants are reviewed on a rolling basis with feedback provided to help strengthen applications.

VISION STATEMENT

Starting in FY2020, all of the funds annually budgeted to Sustaining Ann Arbor Together (SA2T) are dispersed through a simple and competitive grant process.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations
- The SA2T review team

COLLABORATORS/PROJECT CO-DESIGNERS

- Nonprofit organizations serving Ann Arbor residents
- Neighborhood associations
- University of Michigan faculty and students
- Ann Arbor Public Schools
- All City departments, especially community outreach specialists

TARGET DEMOGRAPHIC

Ann Arbor residents.

TIMELINE

- ✓ Ongoing, with the grant program running on a fiscal year calendar.

GOALS

- Increased sustainability and equity in Ann Arbor.

INDICATORS OF SUCCESS

- ✓ At least 10 grants are awarded each year, starting in FY20.
- ✓ \$100,000 is allocated per year, starting in FY20.
- ✓ At least 10 grant applications are submitted per year in FY20 and beyond.
- ✓ The grants advance local sustainability, as demonstrated by the following criteria:
 - Greenhouse gas emissions reduced
 - Number of residents engaged
 - Number of trees planted
 - Amount of increased recycling or composting
 - Vehicle miles traveled reduced
 - And more

COST

- \$100,000/annually for small grant awards, plus staff time.

This program provides small grants to residents, schools, local nonprofits, and local businesses to advance sustainability-related activities in Ann Arbor.



CO-BENEFITS



**BENEFITS
THE MOST
VULNERABLE**



**DOLLARS STAY
IN THE LOCAL
ECONOMY**



EDUCATION



**ENHANCED
SOCIAL
COHESION**



**ENVIRONMENTALLY
FRIENDLY**

BENCHMARKS

Short Term


By the end of FY19, an internal SA2T evaluation team is formed and has developed criteria by which to choose winning proposals.

Medium Term

For FY20 and FY21, more high-quality proposals are submitted than funding can support.

Long Term

More funds are allocated in FY22 and beyond to meet the growing demand for resident-led projects.



“There is no task more urgent,
more compelling or more sacred
than that of protecting the climate
of our planet for our children and
grandchildren.”

Christina Figueres

SECTION VI

TRACKING PROGRESS

GREENHOUSE GAS EMISSIONS INVENTORIES

PROGRAM DESCRIPTION

The Greenhouse Gas Emissions (GHG) Inventory tracks our community's progress in achieving our Climate Action Plan goals.

A public-facing and publicly reported GHG Inventory provides accurate data holding all community sectors accountable for their emissions, measures progress towards goals relative to established baselines, and informs policy and management decisions about how we are doing and where strategic opportunities for new emissions reductions exist.

VISION STATEMENT

In 2050, by regularly completing and evaluating a GHG Inventory, we can state affirmatively that we have achieved a 90% reduction in community-wide greenhouse gas emissions.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainable of Innovations

COLLABORATORS / PROJECT CO-DESIGNERS

- University of Michigan
- Detroit Edison (DTE)
- Interns
- All City departments
- Consumers Energy
- Southeastern Michigan Council of Governments
- Water Treatment Plant
- Wastewater Treatment Plant
- Public Services

TARGET DEMOGRAPHIC

Municipal Service Areas and all industries, businesses, and residents.

TIMELINE

- ✓ Ongoing on an annual basis.

GOALS

- Provide timely, comprehensive accounting of community-wide emissions in a way that inspires greenhouse gas reductions.

INDICATORS OF SUCCESS

- ✓ Accurate data have been compiled for electricity, natural gas, fuel emissions, solid waste, and wastewater by 2020.
- ✓ A publicly available, useful, and actionable annual report is issued starting in FY20. The report quantifies greenhouse gas emissions by sector and activity, provides key insights and takeaways, and tracks progress towards our goal of 90% reduction in community-wide greenhouse gas emissions by 2050.
- ✓ By 2020, the City reports greenhouse gas emissions to 3 third-party organizations to ensure accountability.
- ✓ The following community-wide emission reduction goals have been achieved:
 - **25% by 2025**
 - **90% by 2050**

COST

- \$20,000 per year for greenhouse gas emissions software, data scrubbing, and public outreach materials about inventory (e.g., annual report), plus staff time and intern support to produce the inventory and accompanying reports.

Goal: to provide timely, comprehensive accounting of community-wide emissions in a way that inspires greenhouse gas reduction actions

NOT
CALCULATED

CO-BENEFITS



EDUCATION

BENCHMARKS

Short Term

By 2020, we have established a reproducible method and associated tools to quantify greenhouse gas emissions, which are grounded in reliable data and verified by third-party partners. Our methodology is shared with surrounding communities to inspire region-wide greenhouse gas inventories, creating a sustainable and resilient Washtenaw County, Southeastern Michigan, and state.

Medium Term

By 2025, we have achieved our goal of reducing community-wide emissions by 25%, backed by a comprehensive and accurate greenhouse gas emissions inventory, and we continue to identify major areas of improvement to achieve our 2050 goal.

Long-Term

By 2050, we have achieved our goal of reducing community-wide emissions by 90%, backed by a comprehensive and accurate greenhouse gas emissions inventory.

METRIC TRACKING AND REPORTING

PROGRAM DESCRIPTION

The Office of Sustainability and Innovations has created and uses a highly accessible and useful sustainability dashboard to report sustainability-related progress to the public annually. The dashboard tracks community-wide greenhouse gas emissions, electric vehicle and solar adoption throughout the community, and community engagement activities, among other metrics.

While these measures reflect our sustainability goals, we are always looking for ways to improve what we track and how we track it.

VISION STATEMENT

It is 2021, a year since we implemented a new sustainability dashboard. Each City Service Area uses this dashboard to report on metrics that are relevant to the state of sustainability throughout our community.

The City's IT department helps sort pertinent data into a simple-to-use, easy-to-understand sustainability dashboard that is frequently used by the public. The dashboard reports a mixture of leading and lagging indicators that track short-term sustainability-related activity and long-term impacts.

This new focus on reporting and transparency has led to greater community engagement with ongoing sustainability efforts at the City and greater understanding among City staff about how their actions impact sustainability in the community.

PARTY RESPONSIBLE FOR IMPLEMENTATION

- Office of Sustainability and Innovations
- The City's IT office

COLLABORATORS/PROJECT CO-DESIGNERS

- City staff across different departments
- Energy Commission
- Environmental Commission
- Residents
- Local businesses

TARGET DEMOGRAPHIC

City staff and community members.

TIMELINE

- ✓ The new sustainability dashboard will take one year to implement.
- ✓ After that, an annual report on the City's sustainability progress will be produced and shared publicly.

GOALS

- Create metrics that align with our established targets, provide real-time indications to staff about the viability of given projects, and inform the public about sustainability-related progress in the City.

INDICATORS OF SUCCESS

- ✓ By FY20, have a fully functional, publicly available sustainability dashboard that reports on all aspects of the City's sustainability endeavors.
- ✓ By 2021, create an annual sustainability report that highlights sustainability progress throughout the City.

COST

- \$10,000 per year, plus staff time.

By end of FY20, have a fully functional, publicly available sustainability dashboard

NOT
CALCULATED

CO-BENEFITS



EDUCATION

BENCHMARKS

Short Term


Meet with departments to help them identify department-specific sustainability metrics for reporting. At the same time, work with IT to ensure that appropriate software (Yellowfin) is set up to use the data and report it to the public via the sustainability dashboard.

Medium Term

Departments upload data to Yellowfin, and the Office of Sustainability and Innovations uses that information to prepare an annual sustainability report.

Long Term

Through presentations to commissions and through our public engagement strategy, we elicit feedback from the community with which we continually refine the sustainability metrics we report on.



“There’s one issue that will define...
this century...And that is the
urgent and growing threat of
climate change.”

President Barack Obama

2025:

**THE JOURNEY,
THE CHALLENGES,
THE OPPORTUNITIES**

The programs laid out in this plan have been carefully selected to achieve the City's next greenhouse gas emissions target: A 25% reduction in community-wide emissions by 2025. While this target is significant, recent science tells us it is not nearly aggressive enough to avoid the most significant impacts of a changing climate. That is why staff within the Office of Sustainability and Innovations are eager to get to work laying a foundation for a carbon neutral community. Time is of the essence, and action is desperately needed. Some of the programs in this plan will be wildly successful. Others will meet with moderate success. And yet others will prove inadequate for the challenge ahead. Our job is not to be beholden to what is written in the pages of this document,

but to move intentionally, aggressively, and wholeheartedly towards a significant reduction in local greenhouse gas emissions.

Ann Arbor has the intellect, the human power, the resources, and the skills needed to move climate action and sustainability forward. What is currently missing is the will, and what is lacking is time. Join us as we combat the most significant crisis of our era. Together we can avoid the unmanageable, manage the unavoidable, and create a more equitable and just society for all.

DRAFT

OFFICE OF SUSTAINABILITY & INNOVATIONS WORK PLAN TIMELINE

