



OFFICE OF
SUSTAINABILITY &
INNOVATION

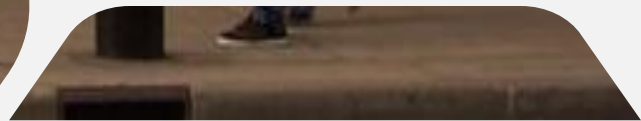


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- THE GUIDING GOALS
- THE (LIVING) PLAN
- FUNDING & NEXT STEPS



THE GUIDING GOALS

- 100% Clean and Renewable Energy Powering Municipal Operations
- 25% Reduction in Community-Wide Emissions by 2025
- 90% Reduction in Community-Wide Emissions by 2050
- One Community: Advancing Racial Equity in Washtenaw County
- **Ann Arbor Is the Most Sustainable and Equitable City in America!**



THE (LIVING) PLAN

- Energy Efficiency
- Renewables
- Education & Engagement
- EVs
- Cross-Cutting





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ENERGY EFFICIENCY



Green Rental Housing





Implement a program and associated policy for residential rental properties requiring property owners to meet a minimum efficiency standard before receiving their rental licenses.



Green Rental Housing: By the Numbers

ESTIMATED

Ann Arbor Impacts and Costs

Cost to the City to Implement Over 3 Years	Annual Energy Bill Savings	Annual Energy Savings	Annual CO2 Reductions
			
\$331,000	\$5.1 - \$15.2 million	358 – 1,075 Billion Btus	68.8 – 206.3 million lbs CO2e

Note: Range is based on 10-30% energy savings assumption over existing conditions

Aging in Place Efficiently

Work with local partners to ensure that residents can age in place in energy efficient, and healthy residences.

6 WAYS TO ACCOMMODATE AGING IN PLACE

Illustration and Consulting Team
© 2017 ICRIS by Lowes

- ### 1. THE FRONT DOOR

 - Ensure the door is well-maintained and weatherstripped.
 - Consider a door with a built-in ramp or a separate ramp.
 - Use a door pull or push bar.
- ### 2. THE KITCHEN

 - Use a range hood with a fan that vents outside.
 - Use a microwave oven with a pull-out shelf.
 - Use a sink with a pull-out faucet.
- ### 3. THE BATHROOM

 - Use a toilet with a bidet.
 - Use a toilet with a built-in ramp.
 - Use a toilet with a built-in seat.
 - Use a toilet with a built-in grab bar.
- ### 4. THE BEDROOM

 - Use a bed with a built-in ramp.
 - Use a bed with a built-in seat.
 - Use a bed with a built-in grab bar.
- ### 5. THE STAIRS

 - Use a staircase with a built-in ramp.
 - Use a staircase with a built-in seat.
 - Use a staircase with a built-in grab bar.
- ### 6. THE HOUSE

 - Use a house with a built-in ramp.
 - Use a house with a built-in seat.
 - Use a house with a built-in grab bar.

Infographic Courtesy: Lowes/Builder



ENERGY EFFICIENCY CHECKLIST

Tips to help you conserve and save

Are you getting the most out of your home automation system? Here are some simple ways to conserve more energy — and save money on your utility bills in the process.

- ### Automated Lighting

Ensure your lights turn off when you leave the room. Program your lights to turn off 15 minutes instead of full power for 30 minutes. The difference, but you'll love it on your energy bill.
- ### Thermostat

During the colder months, lower your thermostat by 1 degree when you're asleep or at work, and raise it when you get up and get home.
- ### Shades

During the day, take advantage of natural light and warmth by programming your shades to open automatically. Rooms with south and west exposures will see the greatest benefit during chilly-to-warm winter days.
- ### Water Heater

Program your water heater to lower the temperature when you're not home and turn it back up to time for showers and laundry.
- ### Appliances

According to the EPA, water heaters account for more than 10,000 gallons every year. That's enough to wash 200 loads of clothes! Wear leak detectors near your appliances and faucets to help avoid water going down the drain.
- ### Doors and Windows

Installing storm windows, caulking or weatherstripping can reduce heat loss from windows by as much as 50 percent. Use contact sensors on doors and windows to monitor temperature and find out which ones let heat escape.

Visit icrisbylowes.com for more information.

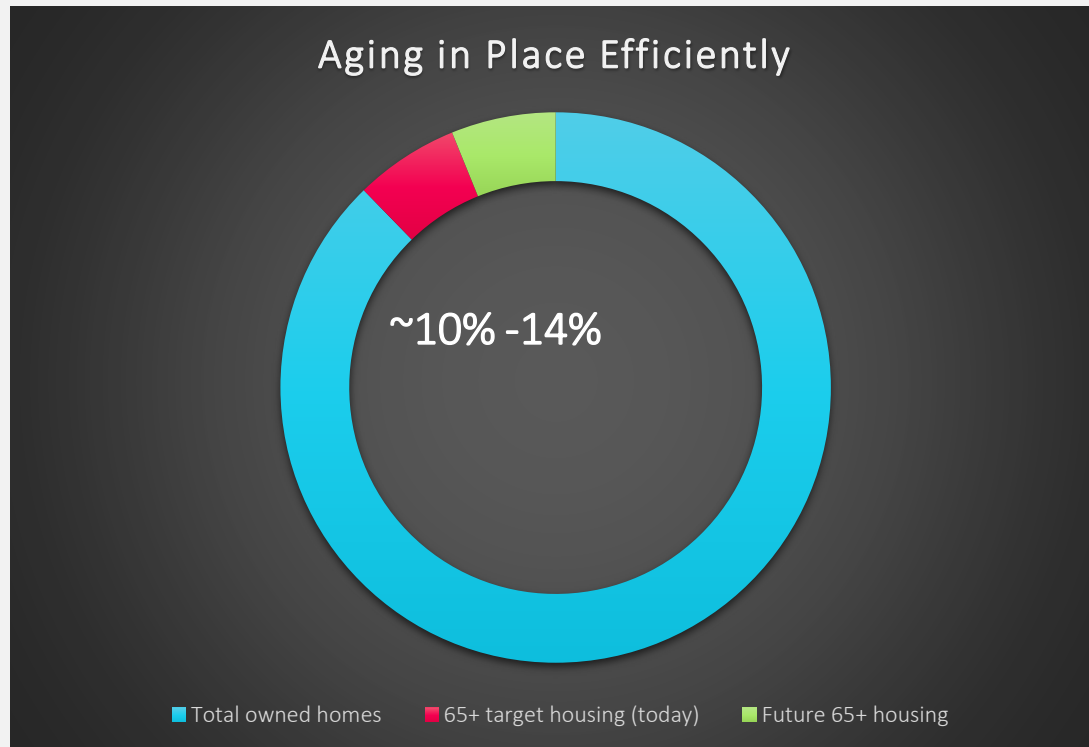
ICRIS by Lowes



Aging in Place Efficiently: By the Numbers



Vital Seniors Program – Ann Arbor Area Community Foundation



Two year pilot program:

- 15-20% increases in efficiency in senior residences
- Pursuing grants to fund $\frac{3}{4}$ of the program costs
- Partnership opportunities
- National expansion potential

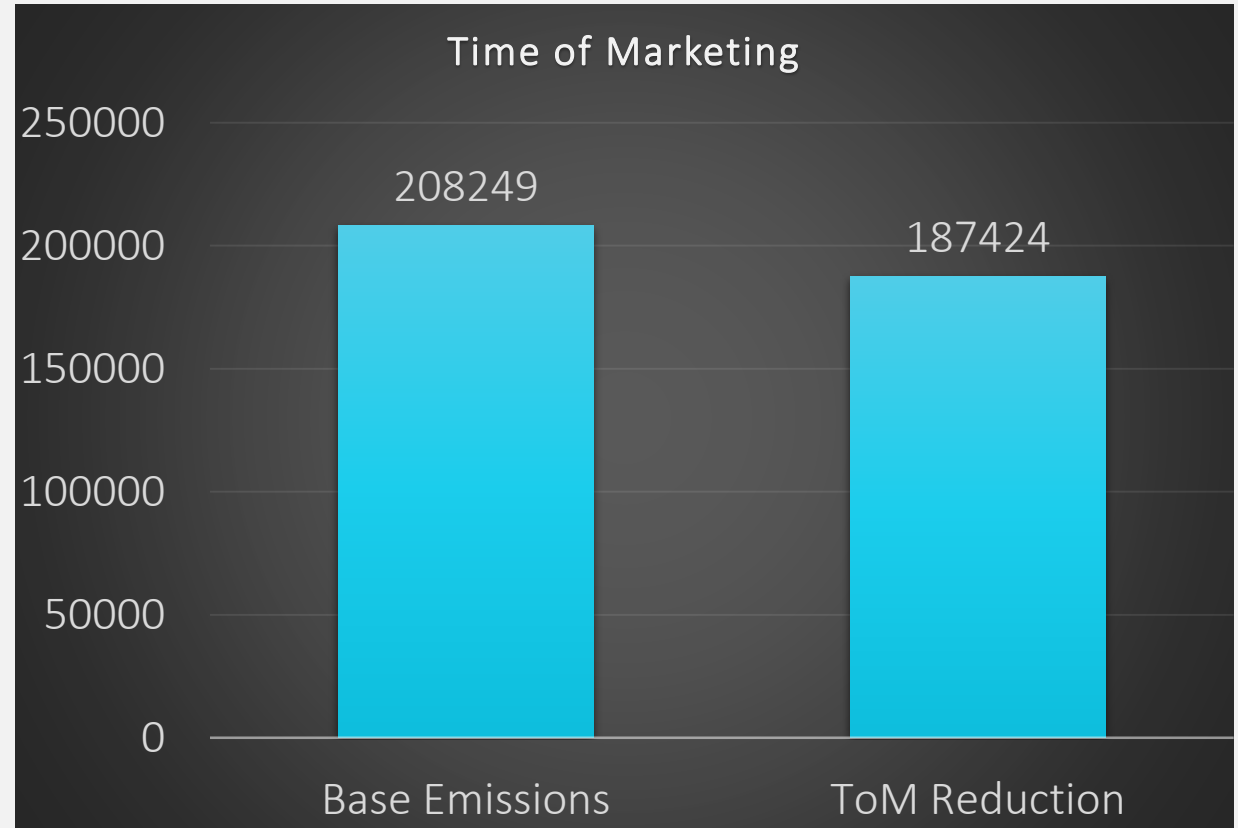
Time of Marketing

Require sellers of a single-family home to obtain and disclose the findings of a Home Energy Score



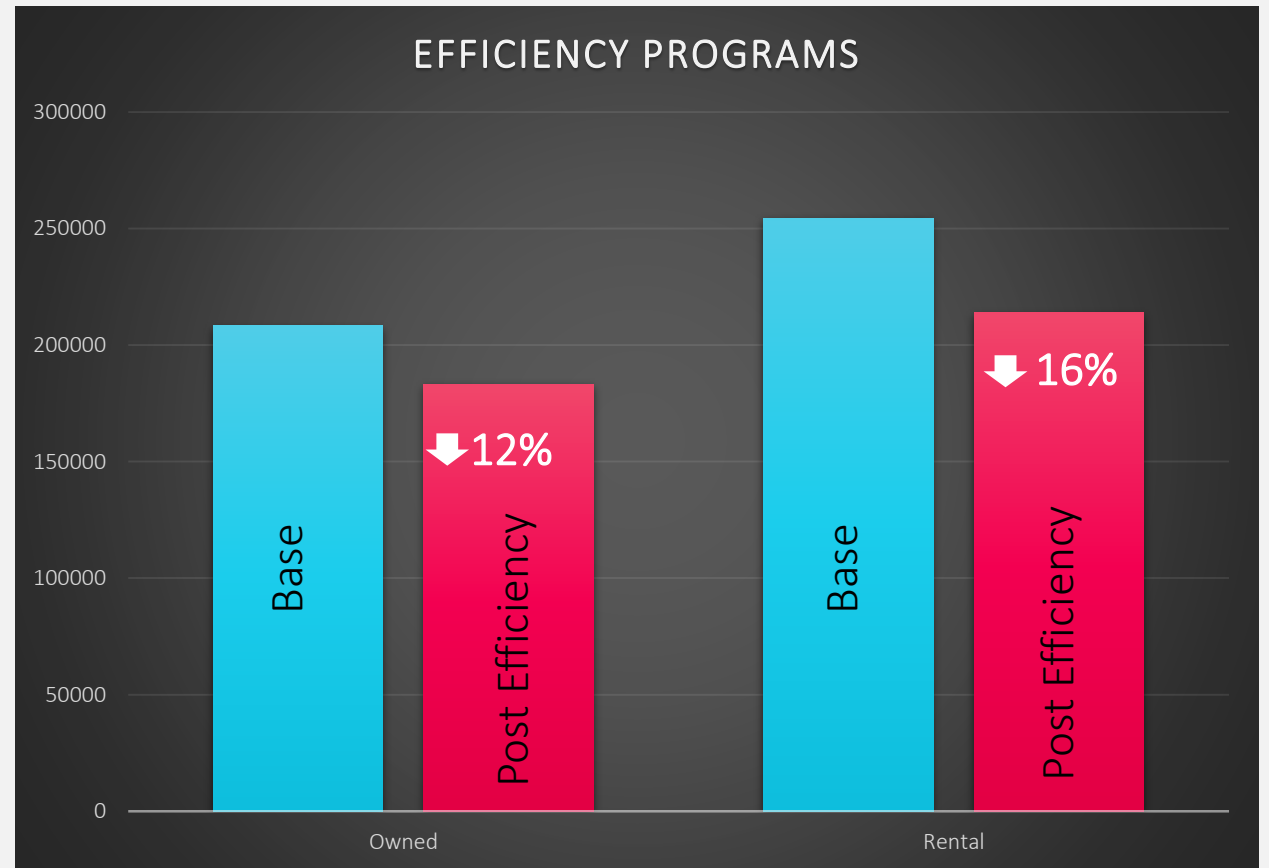
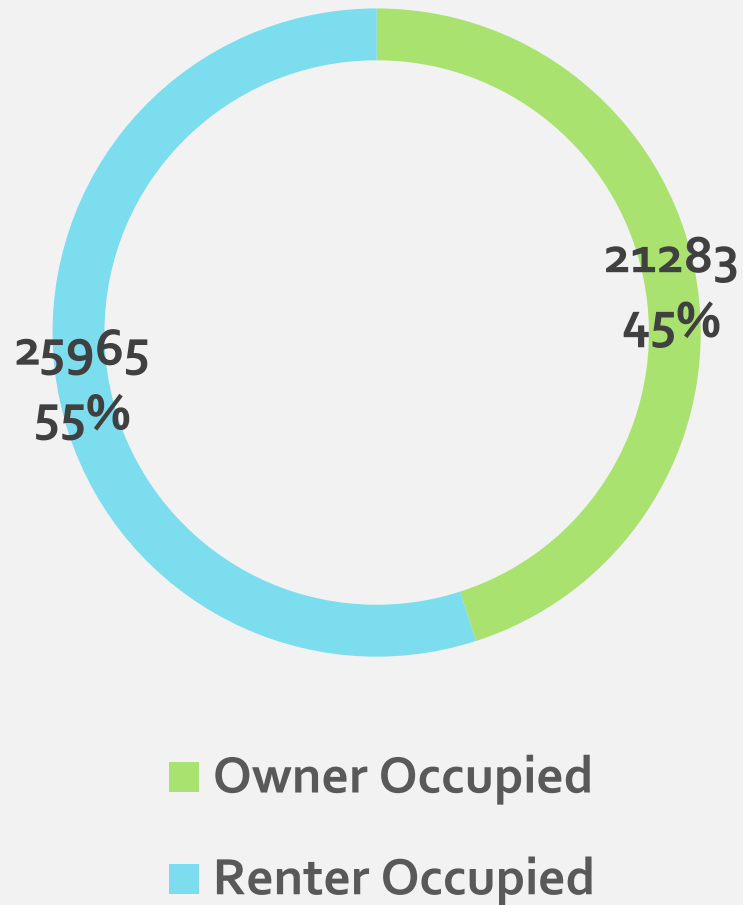
Time of Marketing: By the Numbers

Through disclosure and access to efficiency upgrade opportunities, including financing options, this program could achieve a 10% energy reduction.



Efficiency Programs: By the Numbers

Owned vs Rented





RENEWABLE ENERGY

Net Zero Affordable Housing

Use a combination of solar systems and energy efficiency to reduce GHG emissions of our affordable housing units to 0

DRAFT

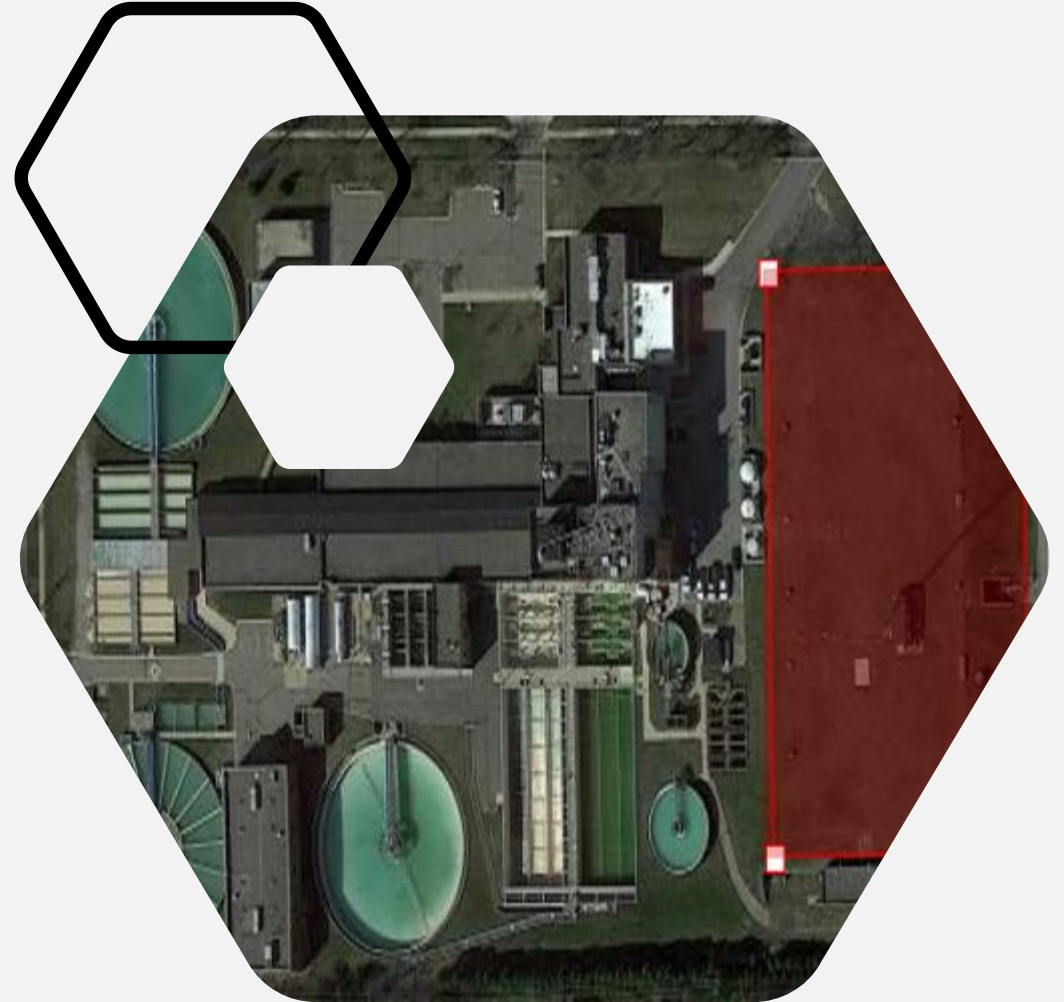
LOCATION	SOLAR CAPACITY
Broadway Terrace	45
Green Baxter Court	57
Hikone	47
Hillside Manor	17
Lower Platt	13
Maple Meadows	49
West Arbor	100
Oakwood	6
South Seventh	18
Upper Platt (Colonial Square)	20
West Washington	5
White/State/Henry	45
TOTAL	422 kW



100% Clean & Renewable Municipal Operations

Clean & Renewable Energy = Energy whose generation is associated with little to no pollution and is generated from an unlimited source

- Energy Efficiency Upgrades
- Electrifying Equipment where possible
- Use electricity generated from renewable sources onsite and offsite
- Greening the City fleets
- Changing criteria for how we invest & budget



Solar Faithful

- US Department of Energy program promotes solar on non-profits.
- The City partnered with Michigan Interfaith Power & Light for outreach
- Goal = 25 kw of solar on Houses of Worship
- Long term goal = promote adoption of solar on non-profits & schools
 - We used Power Purchase Agreement
- Grand prize of \$100,000 to continue program



Efficiency & Solar in the Community

- Work with Energy & Community Solar providers to:
 - Educate
 - Reduce regulatory challenges
 - Navigate the landscape
 - Support installation
- Refine City's role
 - Education (yes)
 - Fundraiser (sometimes)
 - Collaborate (yes)
 - Concierge (not sure)
 - Other?

Home Energy Audit
Simple things that you can do around your home to save energy.

QUICK TIPS

- 1 Check for air leaks
- 2 Use less heated water
- 3 Use energy efficient lighting
- 4 Program your thermostats

Outlet and Switches
Air can seep from behind your outlets and light switches adding up to a 5% heat loss in your home. Add foam draft stoppers behind your outlets and switch covers to reduce heat loss through these areas.

Lighting
Replace your old incandescent bulbs with energy efficient CFL or LED bulbs.

Programmable Thermostats
You can save 2% of your energy use per degree that you drop your thermostat. Program your thermostat 10° lower when you leave the house or while you are sleeping.

Door Weatherstripping
If you see daylight coming from under your door or doors you're feeling heating and cooling, these draft stoppers or seals should be used to block the air from seeping in.

Attic Insulation
You can lose up to 40% of your heating and cooling through improper attic insulation. Insulate with special insulation with an R-19 rating. Use metal-belted tape or mastic-based duct sealant.

Windows
Insulate around your windows or install a window film that adds up to 20% heat loss.

Faucets
Washing a sink full of dishes with a standard 2.2 GPM faucet aerator can use about 20 gallons of water. By switching to a more efficient 1.0 GPM aerator you can reduce the amount of heated water used while rinsing dishes. Always use cold water whenever possible.

Showerheads
Some shower heads use up to 50 gallons of hot water per 10 minute shower. Switching to a more efficient showerhead (2.5 GPM or less) can save you almost half the amount of energy required to heat the water used for your shower.

Furnace Filter
Remember to change your furnace filter every 4-6 weeks during the colder months to keep your furnace running as clean and efficient as possible.

You can save up to 30% on your energy costs.

If you want to save more you can contact an Energy Auditor to check your home for more inefficiencies.

Click to enlarge

simply conserve. AM

Local Offset Program

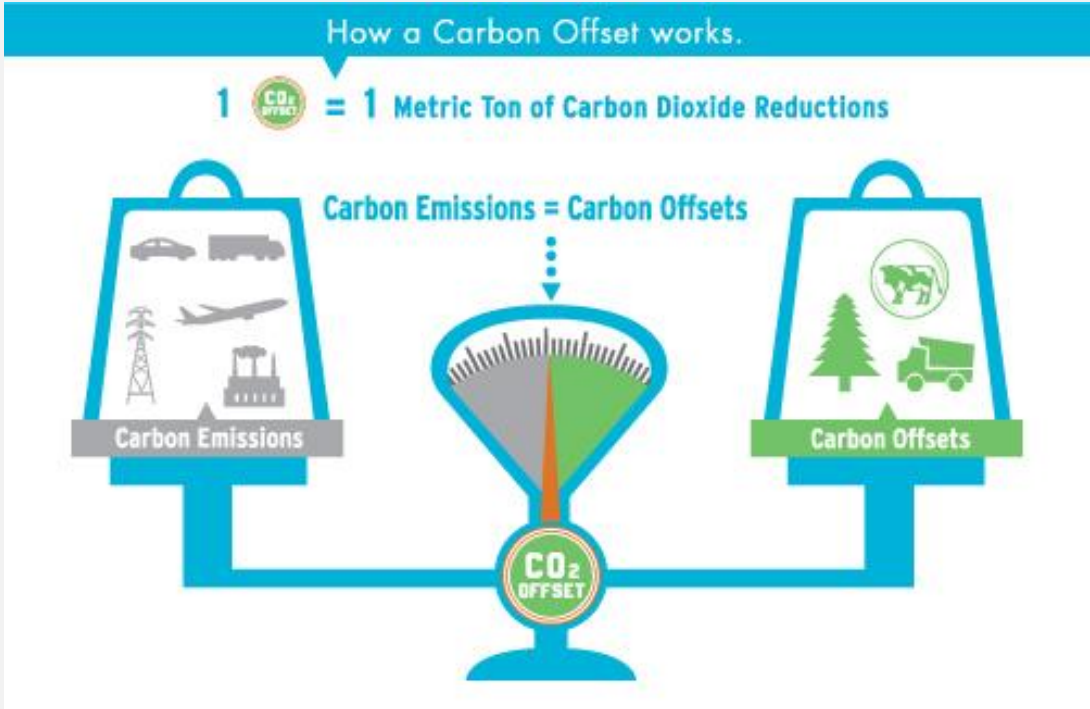
Mayor Unveils First-ever Local Carbon Offset Program

- News by Topic**
- Energy
 - Transportation
 - Zero Waste
 - Toxics & Health
 - Buildings & Environments

Mayor Unveils First-ever Local Carbon Offset Program

(December 18, 2007)

Residents will be able to buy carbon offsets that directly benefit San Francisco





EDUCATION & ENGAGEMENT



Sustaining Ann Arbor Together

SA2T neighborhood grant program promotes and supports community-based activities in support of the goals of the City's Sustainability Framework, especially equity. The City has budgeted \$100,000 annually for this program.



Community Outreach

Conducting sustainability-related outreach and educational activities with Ann Arbor residents and businesses.

- 8th year of Sustainability Forums in partnership with AADL (4 Forums in Jan-April 2019)
- Continuing outreach at events (Green Fair, Earth Day, Scouts Badge day, etc.)
- GovDelivery email blasts (2,050 subscribers)
- Sustainability Corner in A2 Newsletter for residents
- Educating City employees (Lunch and Learns, A2 News and Notes, etc.)
- Public Coffee Hours
- Commission Support



Resilience

Fostering Resilience One Neighborhood At A Time

Resilience Hubs

- Neighborhood-based locations that support existing community needs while also fostering resilience in the face of a disaster.
- Being piloted around the nation.
- Partnership with community and community-based organizations
 - Community driven and supported
- Seeking grant funding

Rain Ready

- Help reduce local flood risk
- Done in tandem with Stormwater

Key Components



Community Desire and Support:

"A Resilience Hub can only be effective if community members actively engage in co-development..."



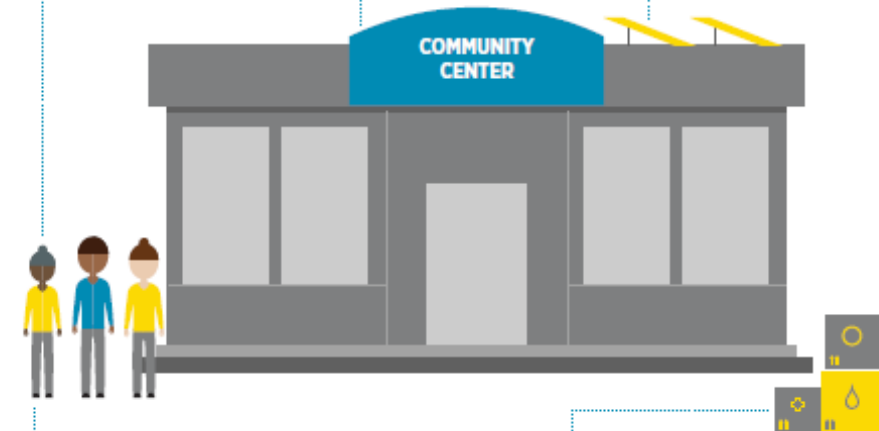
Energy Systems:

"Resilience Hubs need to host cost-effective onsite power systems capable of reliably sustaining operations during an extended power outage."



The Building(s):

"An existing well-used and well-trusted site (building) is the core of a Resilience Hub."




Community Uses:

"Resilience Hubs, defined and led in partnership with members of the community, should meet the unique needs of residents and organizations in that neighborhood."



Resources to Meet Community Needs During Extreme Events:

"In addition to providing shelter and electricity, each Resilience Hub should maintain a supply of and provide access to freshwater and resources such as food, ice, refrigeration, charging stations, basic medical supplies, and other supplies needed in the event of an emergency."



ELECTRIC VEHICLES

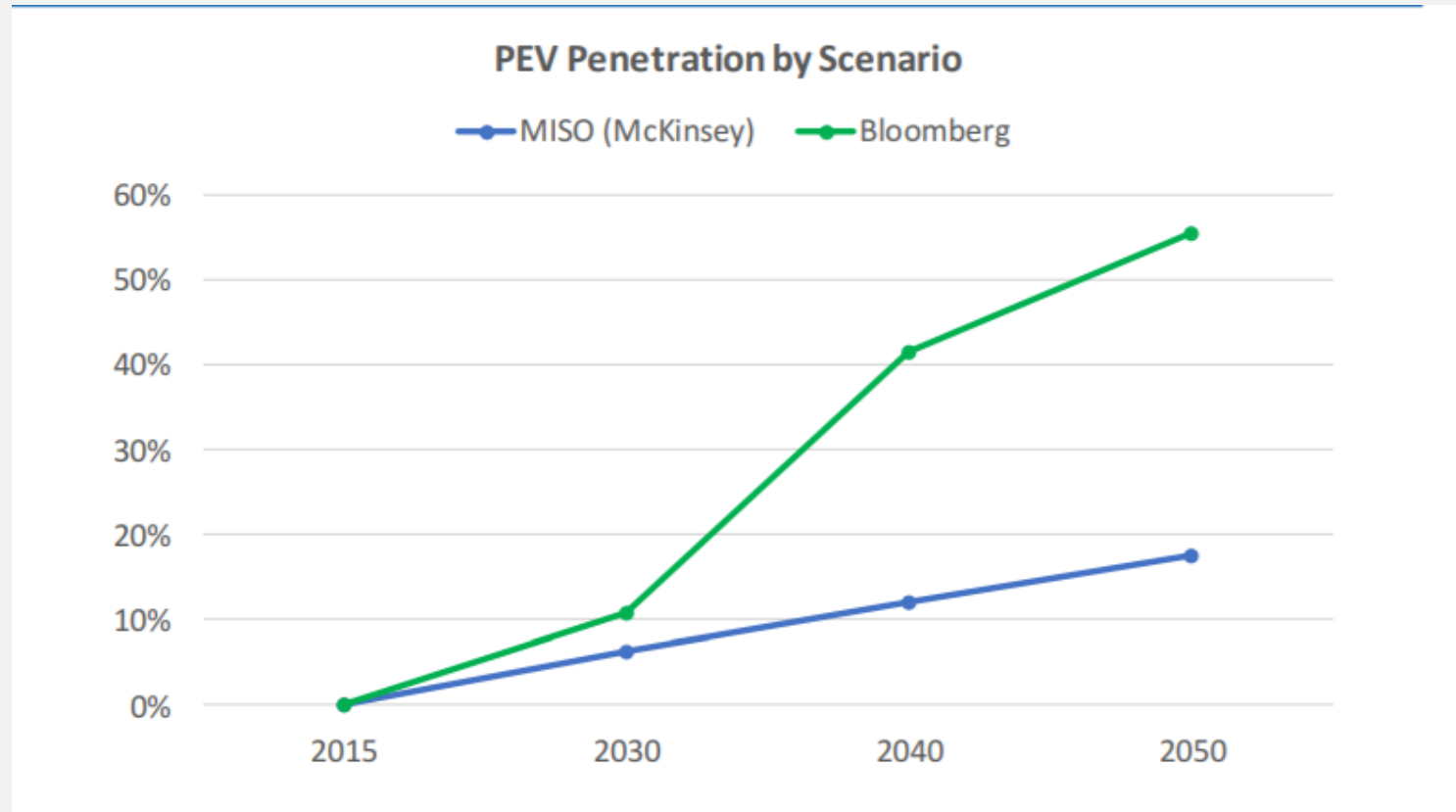
OVERVIEW

Promote the adoption of electric vehicles by residents, businesses, organizations, and the City:

- Investigate an EV car sharing program for A2 Housing Commission residents.
- Workplace Charging Challenge
- Help multifamily housing install EV charging
- Investigate new and off-lease EV group buy
- Add EVs to the City fleet through Green Fleets Policy
- Encourage new EV charging in parking garages and lots
- Outreach to the general public



Electric Vehicles: By the Numbers



CROSS-CUTTING



Internal Coordination



Strategic Engagement: Internally

Budgeting and CIP integration

Transportation

- Integrating GHG emissions and potential reductions into planning & decision making
- Idling abatement
- Electrification of systems
- Efficient lighting for pedestrian safety

Planning

- Smart land use planning and TOD
- Onsite storm water management
- Lighting Ordinance



Strategic Engagement: Community

Work with local non-profits, philanthropy, and other local governments to design sustainability programs that work for Ann Arbor and the broader region (e.g., Aging in Place Efficiently)



Leverage student and faculty expertise and interests to create practical sustainability initiatives that further city goals while supporting students and faculty development. (e.g., a City Studio)



Strategic Engagement: Utility



MI GreenPower™

- Share city data to help DTE implement core programs and new pilots (e.g., efficiency upgrades in rental units)
- Collaborate on renewable energy construction and purchasing (possible renewable installations in A2)
- Continue to put pressure on the market to move the needle on renewable installations

MI GreenPower™



Strategic Engagement: Peer Communities

- Work with peer communities to develop new urban sustainability strategies, benchmark our progress, and scale promising practices in our and other communities
- MI-MAUI – Tracking MPSC and rate case intervention opportunities



Great Lakes Network



Innovation

How do we work with private partners, the university, non-profits, and others to create a true innovation hub?

How do we make Ann Arbor a test bed for innovation?



The Sustainability Grand Challenge



5 Years; 5 Challenges Facing Southeastern Michigan



Metrics

- SMART Metrics
 - S = Specific: Who, What, When, Where, Why
 - M = Measurable
 - A = Attainable
 - R = Realistic
 - T = Time-bound
- Lagging and leading indicators
 - Progress is tracked on a regular basis with an eye towards corrective action where needed and changes to metrics where appropriate
- Metric Specific Endeavors
 - STAR, Sustainability Dashboard



FUNDING



Summary

- Energy Efficiency
- Renewables
- Education & Engagement
- EVs
- Cross-Cutting

Programs	Council Priorities			Timeframe
	100% Clean & Renewable	90% Community GHG Reduction	One Community	
Green Rental Housing		X	X	Medium
Aging in Place Efficiently		X	X	Medium
Time of Marketing		X		Medium
Net Zero Affordable Housing		X	X	Short
100% Clean and Renewable	X			Medium
Solar Faithful		X		Short
Efficiency & Solar in Community		X		Medium
Local Offset Program		X	X	Medium
Sustaining A2 Together		X	X	Short
Community Outreach		X		Ongoing
Resilience		X	X	Medium
Evs in City Fleet	X			Short
EV Readiness Ordinance	X	X	X	Medium
EV Promotional Work		X		Ongoing
Internal Coordination	X			Short
Community Engagement		X	X	Ongoing
Utility Engagement		X		Medium
Peer Community Engagement		X		Ongoing
Innovation	X	X	X	Long-Term
Sustainability Grand Challenge	X	X	X	Medium

Your Thoughts



Thank You

ANN ARBOR

by the numbers

#1

"Top 10 College Towns"
Forbes Magazine • 2010

#2

"Most E-Literate Cities in the America"
TheAtlantic.com • 2012

#2

"10 Great Cities for Raising Families"
Kiplinger • 2010

#2

"Most Educated Cities in US"
American Community Survey • 2010

#4

"Most Creative Cities"
The Daily Beast • 2012

#5

"Happiest Cities in America"
The Daily Beast • 2012

#3

"Best Places for Recent College Grads"
Forbes.com • 2010

#10

"Greatest Main Street in America"
TravelandLeisure.com • 2012

#4

"Most Well-Read Cities in America"
Amazon.com • 2011

#4

"25 Smartest College Towns in US"
Daily Beast • 2011

#6

"Top Digital Cities"
Center for Digital Government • 2010

#2

"75 Best College Towns and Cities"
American Institute for Economic Research • 2010

#7

"Best Cities in America to Find a Job"
US News • 2012

#1

"Best College Sports Town"
Forbes • 2010

#1

"Educational Attainment in Communities with 100,000+ Residents"
Business Journals "On Numbers" • 2011

#6 midsize cities

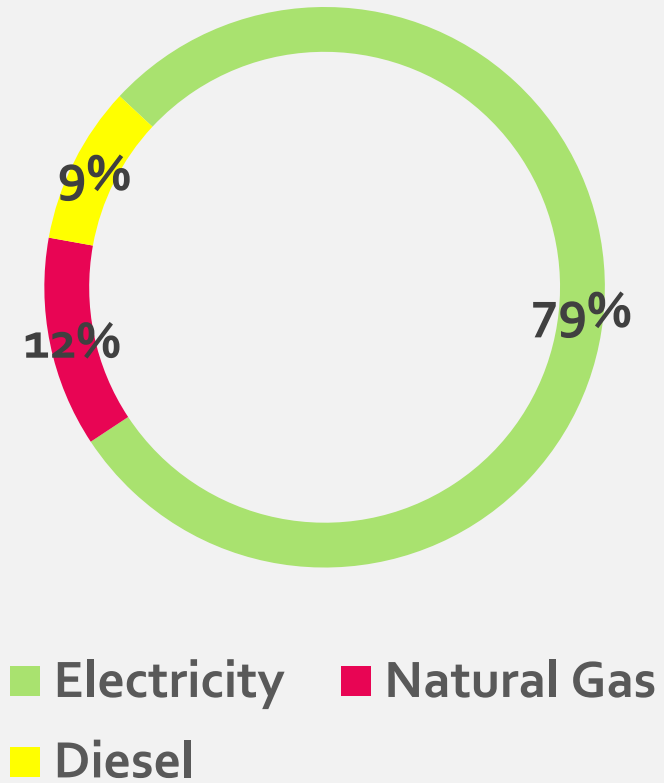
"Top Art Destinations"
American Style Magazine • 2011

M PENNY W. STAMPS SCHOOL OF ART & DESIGN

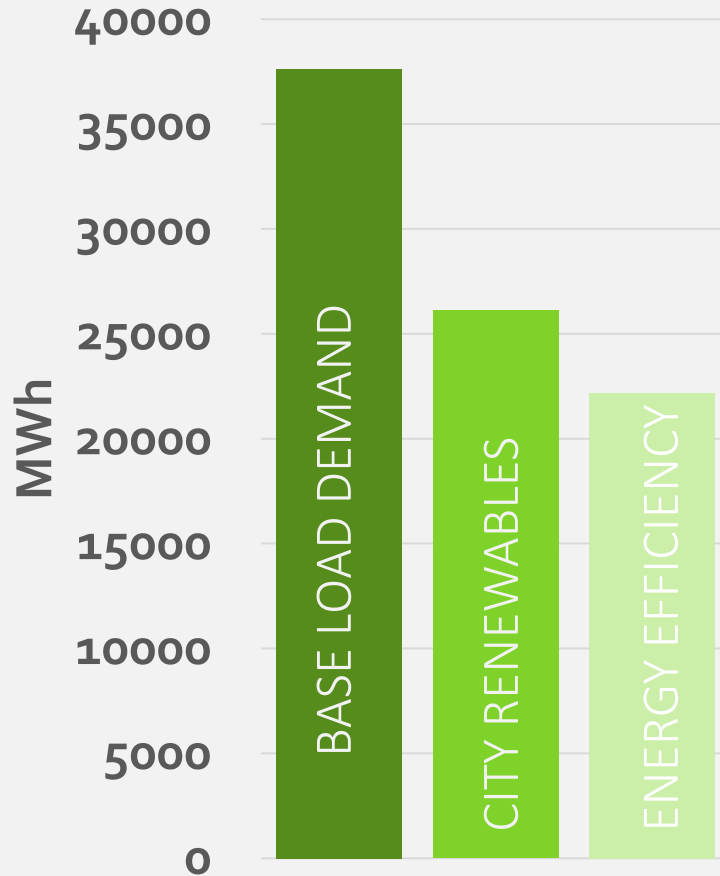
photo: James Holt design: Carl Greene
From the Summer 2012 issue of Esquire
the Journal of the U-M Morris School of Art & Design

100% Clean and Renewable: By the Numbers

Emissions By Type



City Electricity



Renewable Potential

