

# A<sup>2</sup>ZERO

## Updates and Look Ahead

**ACTION SUMMARY TABLE**

|  | Total Costs            | GHG Reduction    | Total emissions | \$/ton   | Co-Benefits |
|--|------------------------|------------------|-----------------|----------|-------------|
| <b>STRATEGY 1</b>                      |                        |                  |                 |          |             |
| Community Choice Aggregation           | \$3,245,000            | 284,000          | 35.8%           | \$4      | Coming Soon |
| Bulk Purchase of Renewables            | \$605,000              | 85,000           | 3.9%            | \$7      |             |
| Community Solar Program                | \$305,000              | 11,500           | 0.5%            | \$18     |             |
| Landfill Solar Project                 | \$80,000               | 23,000           | 1.1%            | \$3.5    |             |
| <b>STRATEGY 2</b>                      |                        |                  |                 |          |             |
| Electrification                        | \$7100,000             | 362,200          | 16.0%           | \$20     | Coming Soon |
| Electrify All Buses                    | \$80,575,000           | 13,800           | 0.6%            | \$ 5,839 |             |
| Bulk Purchase EVs                      | \$700,000              | 122,900          | 5.6%            | \$6      |             |
| Private EV Fleets                      | \$123,000              | 0                | 0.0%            |          |             |
| City EV Fleet                          | \$4,000,000            | 1,100            | 0.1%            | \$3,636  |             |
| EV Infrastructure                      | \$42,000,000           | 0                | 0.0%            |          |             |
| <b>STRATEGY 3</b>                      |                        |                  |                 |          |             |
| Bulk Purchase of Energy Efficiency     | \$7100,000             | 242,500          | 16.5%           | \$ 4     | Coming Soon |
| Building Code Requirements             | \$80,575,000           | 48,300           | 0.6%            | \$ 40    |             |
| LED Lighting                           | \$700,000              | 2,600            | 5.6%            | \$1,208  |             |
| Benchmarking                           | \$123,000              | 0                | 0.0%            |          |             |
| Loan Loss Reserve                      | \$4,000,000            | 0                | 0.0%            |          |             |
| Energy Concierge & Community Education | \$42,000,000           | 0                | 0.0%            |          |             |
| Net Zero Energy Affordable Housing     | \$800,000              | 400              | 0.0%            | \$2,000  |             |
| Green Rental Housing Program           | \$530,000              | 0                | 0.0%            |          |             |
| Green Business Challenge               | \$700,000              | 0                | 0.0%            |          |             |
| Aging in Place Efficiency              | \$150,000              | 0                | 0.0%            |          |             |
| Weatherization Expansion               | \$1,550,000            | 0                | 0.0%            |          |             |
| <b>STRATEGY 4</b>                      |                        |                  |                 |          |             |
| Non-Motorized Plan                     | \$3,245,000            | 60,400           | 2.8%            | \$40     | Coming Soon |
| Expand Local and Regional Transit      | \$605,000              | 93,200           | 4.3%            | \$7047   |             |
| Park and Ride                          | \$205,000              | 28,400           | 1.3%            | \$5,986  |             |
| Duplex/Triples/ADUs                    | \$80,000               | 2,300            | 0.1%            | \$114    |             |
| Mixed-Use Zoning                       | \$365,000              | 0                | 0.0%            |          |             |
| Parking Rates                          | \$4,500,000            | 0                | 0.0%            |          |             |
| <b>STRATEGY 5</b>                      |                        |                  |                 |          |             |
| Year Round Composting                  | \$26,000,000           | 400              | 0.1%            | \$65,000 | Coming Soon |
| Expand Commercial Recycling            | \$18,400,000           | 5,600            | 0.3%            | \$3,286  |             |
| Sustainable Material Use and Reuse     | \$270,000              | 0                | 0.0%            |          |             |
| Circular Economy                       | \$270,000              | 0                | 0.0%            |          |             |
| Plant-Based Diet                       | \$208,400              | 0                | 0.0%            |          |             |
| Refrigerant Recycling                  | \$179,400              | 0                | 0.0%            |          |             |
| <b>STRATEGY 6</b>                      |                        |                  |                 |          |             |
| Resilience Hubs                        | \$5,025,000            | 2,500            | 0.1%            | \$2,010  | Coming Soon |
| Neighborhood and Youth Ambassadors     | \$350,000              | 0                | 0.0%            |          |             |
| Tree Canopy                            | \$160,000              | 450              | 0.0%            | \$2,576  |             |
| Neighborhood Asset Mapping             | \$300,000              | 0                | 0.0%            |          |             |
| Emergency Kits                         | \$350,000              | 0                | 0.0%            |          |             |
| Sensors and Data Monitoring            | \$300,000              | 0                | 0.0%            |          |             |
| <b>STRATEGY 7</b>                      |                        |                  |                 |          |             |
| Equity Programs                        | \$200,000              | 0                | 0.1%            |          | Coming Soon |
| SA2T Grant Program                     | \$1,000,000            | 0                | 0.0%            |          |             |
| Internal Carbon Tax                    | \$75,000               | 0                | 0.0%            |          |             |
| Offsets                                | \$9,440,000            | 298,500          | 13.6%           | \$32     |             |
| <b>Total</b>                           | <b>\$1,056,403,000</b> | <b>3,108,900</b> | <b>100.0%</b>   |          |             |

# A Quick Look Back

# The Actions

- 
1. Community Choice Aggregation
  2. On-Site Renewable Energy Generation with Battery Storage (Bulk Buys)
  3. Community Solar Program
  4. Landfill Solar Project
  5. Home and Business Electrification Policies and Support
  6. Electrify Buses
  7. Support Community Electric Vehicle and Solar Bulk Buys
  8. Electrify City Fleet
  9. Electrify Private Fleet
  10. Expansion of Electric Vehicle Charging Infrastructure
  11. Support Transition to More Energy Efficient Homes and Businesses
  12. Update Building Codes
  13. LED Powered Streetlights and Traffic Signals
  14. Energy Disclosure / Benchmarking
  15. Loan Loss Reserve
  16. Energy Concierge and Community Education
  17. Net Zero Energy Affordable Housing
  18. Green Business Challenge
  19. Green Rental Housing Program
  20. Aging in Place Program
  21. Expansion of Carpooling Program
  22. Transit
  23. Increase and Rides to
  24. and
  25. Tra
  26. Increasing Opp
  27. Use Neighborhoods
  28. Lowered Parking Rates
  29. Expansion of Composting Program
  30. Expansion of Commercial Recycling
  31. Require Sustainable Materials in New and Existing Developments
  32. Move Toward a Circular Economy
  33. Support a Plant Rich Diet
  34. Enhance Refrigerant Recycling and Reuse Program
  35. Invest in Resilience Hubs
  36. Foster Neighborhood and Youth Ambassadors
  37. Preserve & Enhance Local Tree Canopy
  38. Conduct Asset and Needs Mapping of Neighborhoods
  39. Assist in Assembling and Disseminating Emergency Preparedness Kits
  40. Implement Sensors to Monitor Heat, Air Quality, Waterways, and Flooding
  41. Equity Programs
  42. Sustaining Ann Arbor Together Grant Program
  43. Internal Carbon Price
  44. Greenhouse Gas Emissions Offsets

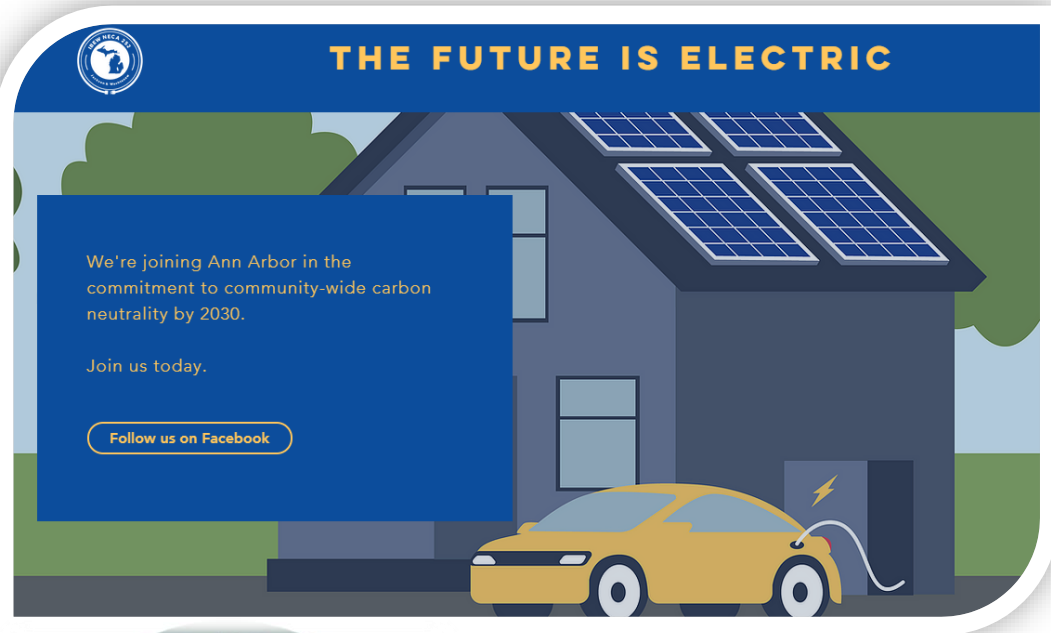
# Renewable Energy

- Designed over **4MW** of solar at City facilities
- Achieved SolSmart Silver
- Over **2.2MW** of solar installed through Solarize
- Landfill solar: RFP released; PUD amendment in progress; community solar commitment
- Began exploration of a Sustainable Energy Utility





# Beneficial Electrification



- Draft whole-home A<sup>2</sup>ZERO assessment
- Sticker replacement campaigns
- Contractor training and badging program
- EV Readiness Ordinance
- First Fast Chargers and tripling of chargers in system
- City fleet is nearing **20%** electric
- Exploring electrification collaboration with other vanguard climate communities



# Efficiency / Energy Waste Reduction



- Passed Benchmarking ordinance; city buildings reporting now
- Rental Efficiency Standard initiated\*
- Home Energy Reporting Disclosure Drafted\*
- Working with AAHC on net zero energy housing sites & collaborated on winning federal EV grant
- Completed first **15** homes for Aging in Place Efficiently; waitlist full; fundraising now
- Pushing for adoption of updated Building and Energy Codes





# Mobility

- Supported development and implementation of Vision Zero and tie to zero emissions
- Supported federal applications for transit expansion locally and regionally
- Bicycle discount programs
- Establishing telecommuting project

**ANN ARBOR**  
**MOVING**  
**TOGETHER**  
**TOWARDS VISION ZERO**



# Circular Economy

- Launched education series on plant-rich diets; exploring sustainable food options for City facilities
- Returnable container program (A<sup>2</sup>R<sup>3</sup>)
- Published a paper on circular economy in A<sup>2</sup>
- Launched zero waste challenge
- Zero Waste working group within Environmental Commission
- Exploring AI pilot in downtown to assess waste opportunities





# Natural Systems



- Launched **10,000** Trees Initiative
- **3,000** trees in the ground
- Launched community tree planting program
- Developed soil carbon tool with UM students
- Developed tree maintenance and care app
- Undergoing Master Rain Gardener training to help design rain gardens with constituents



# Resilience



- Distributed over **200** emergency kits
- Supported Emergency Shelter
- Purchased air quality monitors
- **2<sup>nd</sup>** cohort of A<sup>2</sup>ZERO Ambassadors; **3<sup>rd</sup>** launching in February



## EMERGENCY PREPAREDNESS



MAKE A PLAN



BUILD A KIT



BE INFORMED

- Holistically integrating climate change into MHMP update
- Working on second and third resilience hubs

# Community Engagement



- Equitable Engagement Steering Committee
- Climate, Coffee, Conversation
- A<sup>2</sup>ZERO Sustainability Forums
- Food and Emergency Kit Distribution
- Meals on Wheels and Energy kits
- Earth Day
- Arbor Day
- A<sup>2</sup>ZERO Week
- A<sup>2</sup>ZERO Collaborators
- Neighborhood Meetings
- Summerfest Tabling
- Scavenger Hunt
- AAPS Collaboration



# A Look into FY23

# Going Forward – Planned Activities

- **Additional intervention, as needed, in utility cases**
- Support for adoption of MI Healthy Climate Plan
- Deeper relationship with MPSC
- **Operation of landfill solar project – including community solar offering**
- **3MW more of solar through Solarize**
- **At least 4MW of solar at City properties**
- **EV trucks into City fleet**
- **100 more EV chargers – focus on multi-family installations**
- **Structure for Virtual Power Reduction offering**



# Going Forward – Planned Activities

- Adoption of updated state building and energy codes
- **Complete 4<sup>th</sup> and 5<sup>th</sup>** Ambassadors cohorts
- **3,000** more trees in the ground
- Install additional air quality monitors
- Benchmarking, green rental housing, and home energy reporting implementation
- Creation of A<sup>2</sup>ZERO Home Assessment
- Circular economy activities initiated
- Sustainable food education and partnerships
- MHMP updated – with climate and resilience
- Fundraising for equitable neighborhood efforts
- At least monthly community outreach
- Annual A<sup>2</sup>ZERO week and biannual Green Fair
- Preparing for federal and state grant opportunities





# Potential New Initiatives

Electrification coalition with other communities to offer

- Negotiate bulk discounts
- Buy equipment in bulk
- Manufacturer discounts
- Project management coordination
- Workforce training
- Support for electrification, efficiency, energy storage, renewable energy, and equity – a bundled service

**ELECTRIFY  
EVERYTHING**



Michigan Saves™

**Electrification  
CERTIFIED**

**\*\*\*Could initiate as soon as Q1 FY23\*\*\***

# Potential New Initiatives



## Further exploration of a Sustainable Energy Utility (SEU)

- Outreach and engagement
- Waitlist creation
- Microgrid technical assessments and rate analysis
- Governance and staffing structure
- Piloting of concept

**\*\*\*Could initiate as soon as Q1 FY23\*\*\***

## Virtual Power Purchase Agreement

- Work with incumbent utility to create new solar or wind installation in Michigan to generate **100%** of Ann Arbor's electricity needs
- Explore carbon reduction element

**\*\*\*Could initiate as soon as Q2 FY23\*\*\***

# Potential New Initiatives

## A<sup>2</sup>ZERO and Carbon Neutrality Curriculum in collaboration with AAPS

- Work with AAPS to more holistically integrate carbon neutrality and climate action into curriculum
- Develop student-centered activities and engagements
- Recruit students to become more active in community initiatives – potential joint grants for student projects
- Bring student feedback into the City's sustainability efforts
- Supporting AAPS in their sustainability initiatives



\*\*\*Could initiate as soon as Q1 FY23\*\*\*



# Potential New Initiatives



## Net Zero Energy Fire Station

\*\*\*See Fire Presentation\*\*\*

## Electric Vehicle Charging Pilot at Multi-Family Housing Sites

- Potential collaboration with an OEM and property managers
- Understand barriers to installing charging at multi-family sites
- Support overcoming those challenges
- Ideally get dozens of new chargers deployed in the community

\*\*\*Could initiate as soon as Q2 FY23\*\*\*



# Potential New Initiatives

Working to turn Peace Neighborhood Center and Bryant Community Center into Resilience Hubs

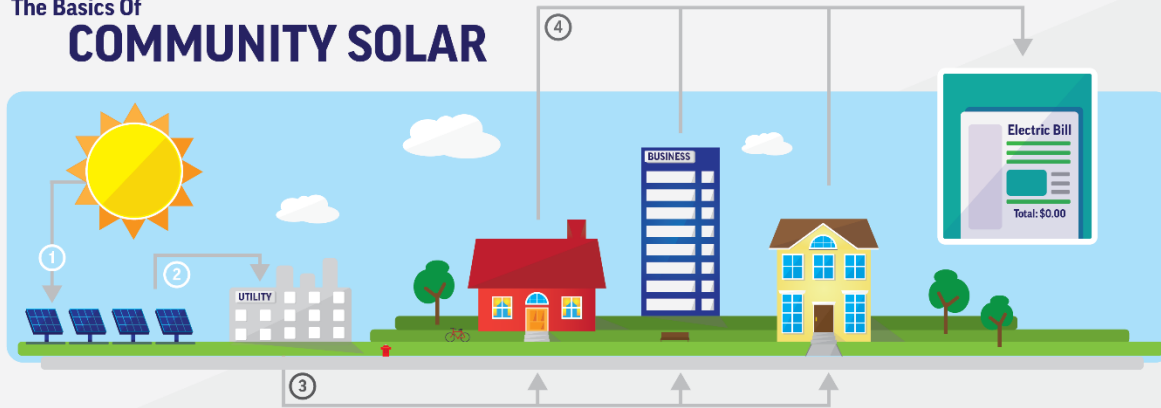
- Codesign infrastructure
- Install infrastructure and make improvements
- Determine programming and activation of resilience hub

**\*\*\*Could initiate Bryant as soon as Q1 FY23 and Peace in Q2 FY23\*\*\***



# Potential New Initiatives

## The Basics Of COMMUNITY SOLAR



## Low Income Community Solar Offering

- Buy down the cost of subscriptions through the landfill solar project
- Make those reduced cost subscriptions available to energy burdened families in Ann Arbor
  - Leads to immediate cost savings

**\*\*\*Could initiate as soon as Q1 FY23 and be in operation for savings accruing in Q4 FY23\*\*\***





**Thank You**  
**[mstults@a2gov.org](mailto:mstults@a2gov.org)**