

# Roundtable: Municipal Decarbonization in the Midwest

Midwest Building Energy Codes Conference  
November 10, 2022



# Housekeeping

- Enter all questions you have for speakers in the Q&A feature
- Enter any other questions or comments in the chat
- Slides and recordings will be made available to participants after the conference
- Continuing Education Credits are available to participants – information will be shared at the end of the presentation
- Email Corie Anderson, Building Policy Associate, at [canderson@mwalliance.org](mailto:canderson@mwalliance.org) with questions

# Agenda

- Mentimeter Poll
- Introductions
- Short Presentations
- Discussion and Q&A

# Mentimeter Poll

*Open link in browser*

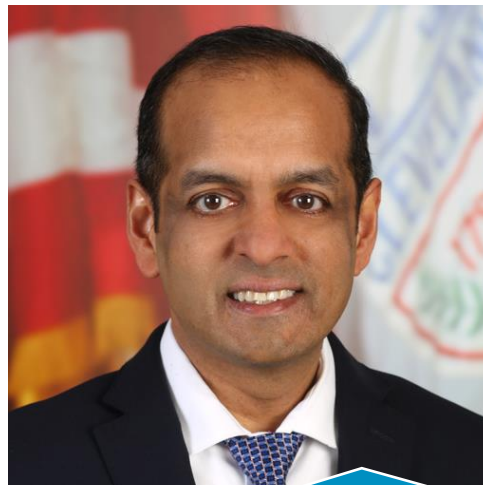


# Speakers



**Stacy Miller**

*Climate and Energy Regulatory  
Policy Specialist  
City of Minneapolis, MN*



**Anand Natarajan**

*Energy Manager  
City of Cleveland, Ohio*

# Speakers



**Pamela Ritger de la Rosa**

*Environmental Sustainability  
Program Manager*

*City of Milwaukee, WI*



**Dr. Missy Stults**

*Sustainability and Innovations  
Director*

*City of Ann Arbor, MI*



# 2022 Midwest Building Energy Codes Conference

November 10, 2022

Stacy Miller, Climate and Energy Regulatory Policy



# Three Initiatives to Advance Building Efficiency

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- Benchmarking
  - Resilience Hubs
  - Energy Code Development
- 





# Energy Benchmarking Program

CITY OF MINNEAPOLIS

50,000 + ft<sup>2</sup> commercial & multifamily buildings benchmark and report energy and water consumption to the City

Began in 2013, phased approach based on size

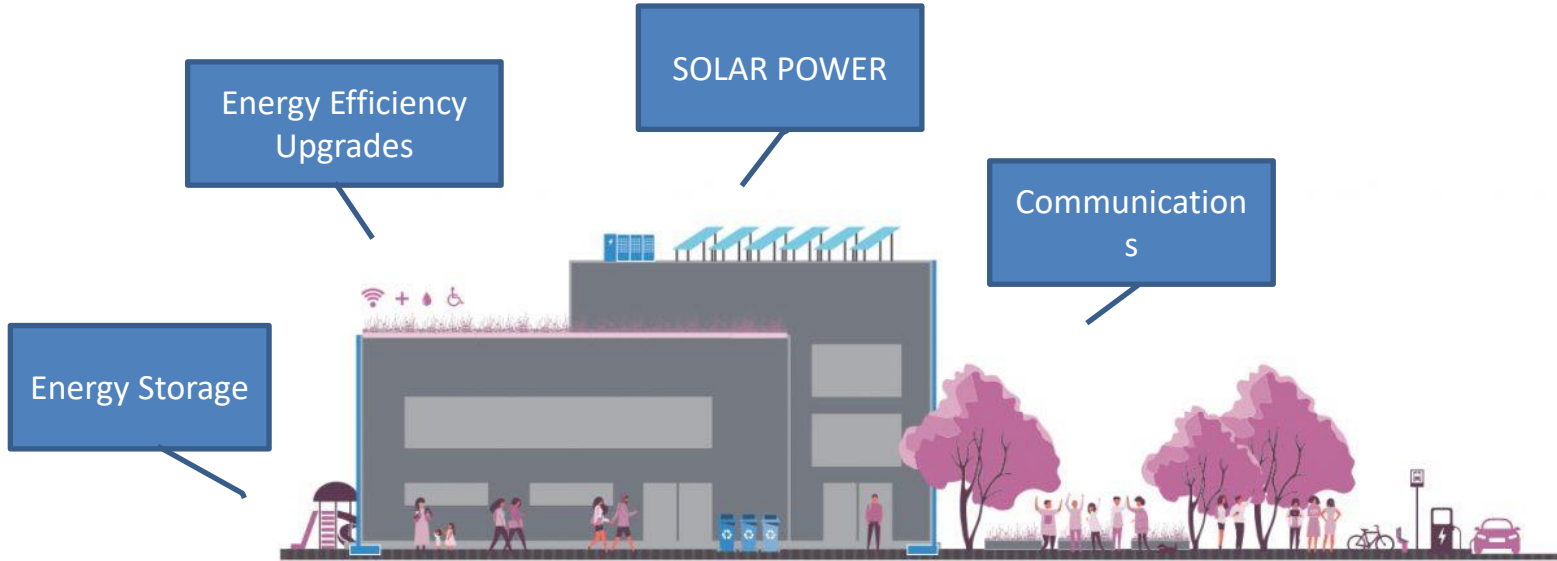
845 buildings currently in the program

Currently phasing in ASHRAE level 1 audits for lowest 25% performing buildings



# Resilience Hub Pilot

CITY OF MINNEAPOLIS



Back up power at trusted community centers

# Energy Code Development

CITY OF MINNEAPOLIS

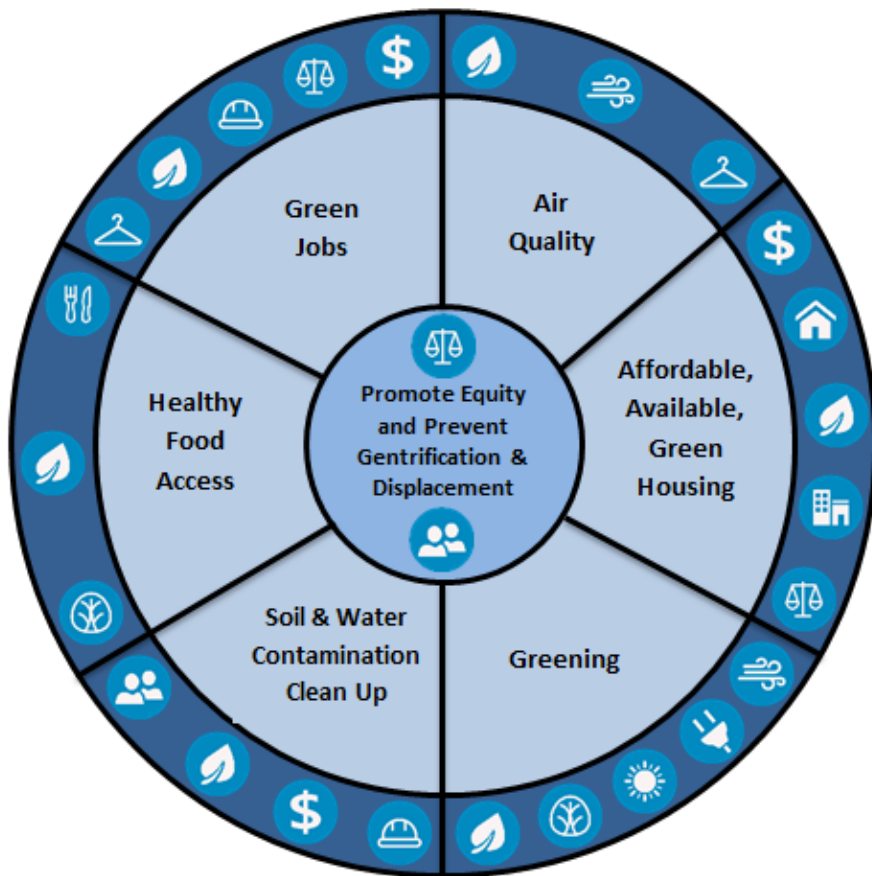
Sustainability membership in the International Code Council since 2019

- A Governmental Member ... engaged in the administration, formulation, implementation or enforcement of laws, ordinances, rules or regulations relating to

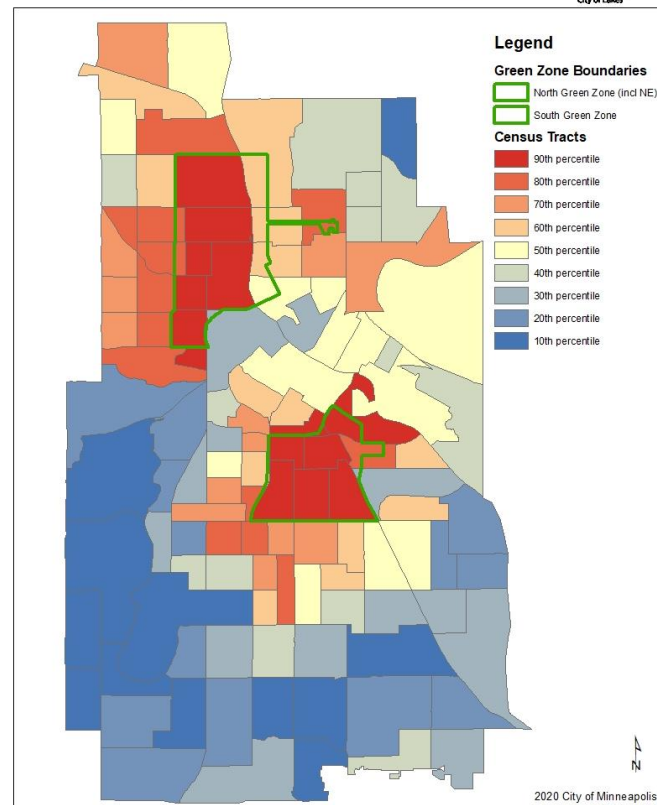
Public Health, Safety, and Welfare



# Green Zones



Minneapolis Green Zone Boundaries





**Thank you!**

**[Stacy.Miller@Minneapolismn.gov](mailto:Stacy.Miller@Minneapolismn.gov)**

**(612) 673 - 3110**

# **13<sup>th</sup> Annual Midwest Energy Codes Conference**

## **Decarbonization Panel**

**Anand Natarajan – Energy Manager**



**CITY OF CLEVELAND**

Mayor Justin M. Bibb



CLEVELAND  
CLIMATE

# What is Sustainability...for the Cleveland community?



Energy Efficiency &  
Green Building



Clean  
Energy



Sustainable  
Transportation

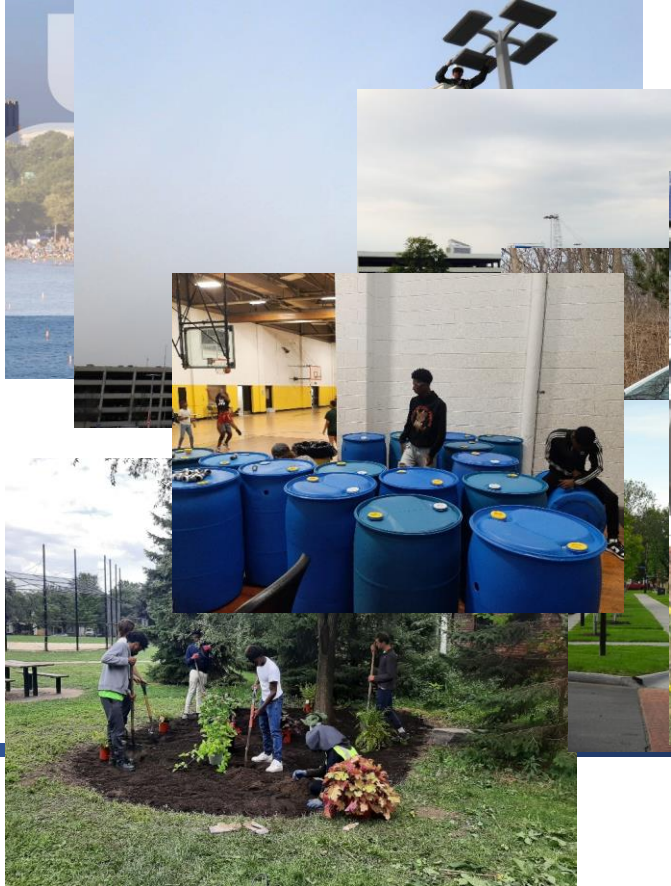
Clean Water &  
Vibrant Green Space



More Local Food,  
Less Waste

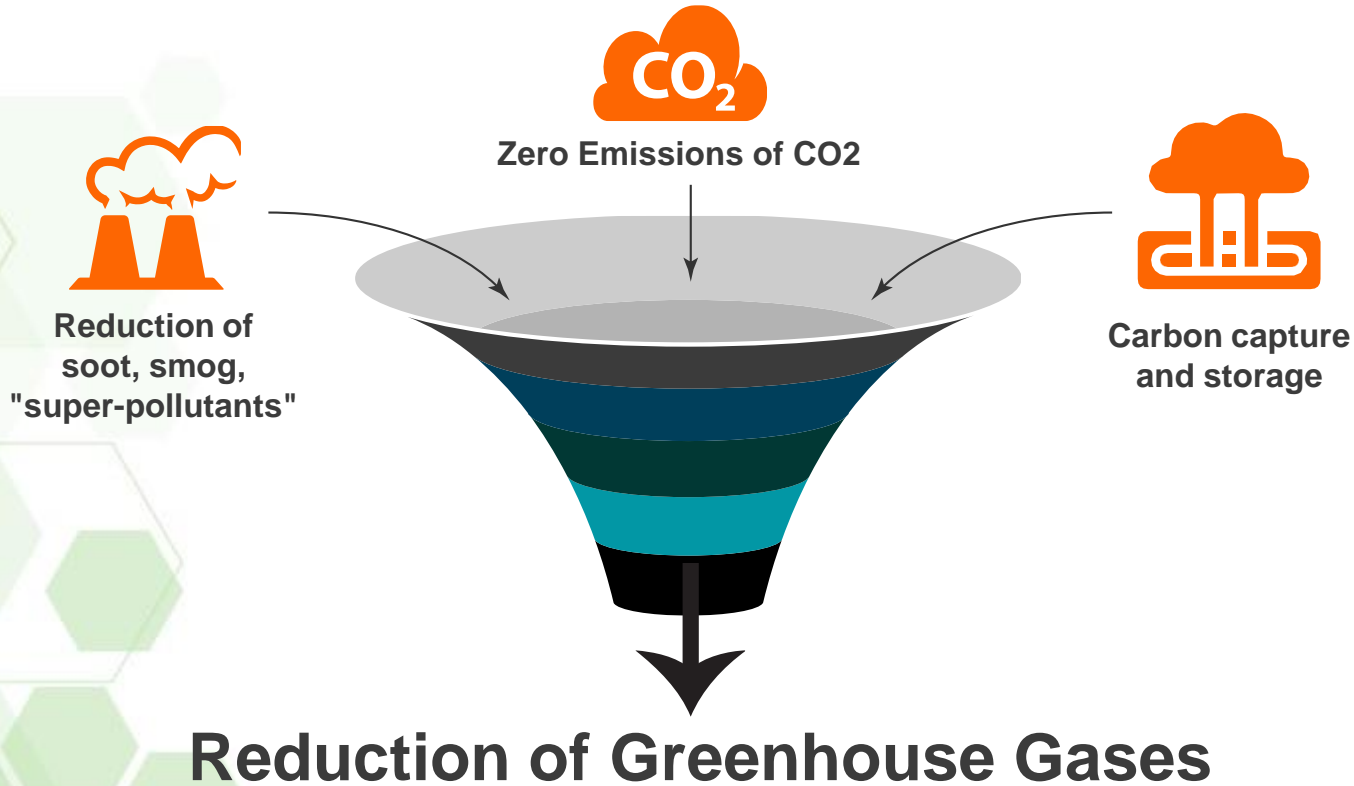


Cross-Cutting  
Priorities



# Sustainable Development Solutions Network USA: Decarbonization Framework

## Decarbonization Defined



Regional Decarbonization Framework



# FOUR PILLARS OF A NET-ZERO OR NET-NEGATIVE ENERGY SYSTEM

U.S. Benchmarks

## Electricity Decarbonization



95% reduction  
in emissions  
intensity

## Energy Efficiency (+Circular Economy)



40% reduction in  
per-capita final  
energy demand

## Electrification (Transportation, Buildings)



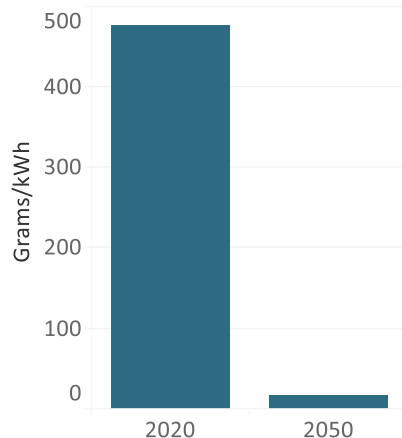
300% increase in  
share of energy  
from electricity

## Carbon Capture (+Nature-Based Solutions)

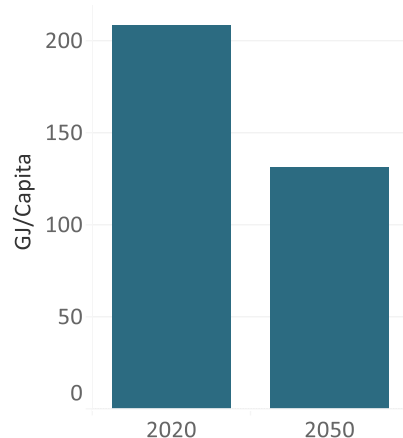


800 MMT+  
carbon capture  
and use/storage

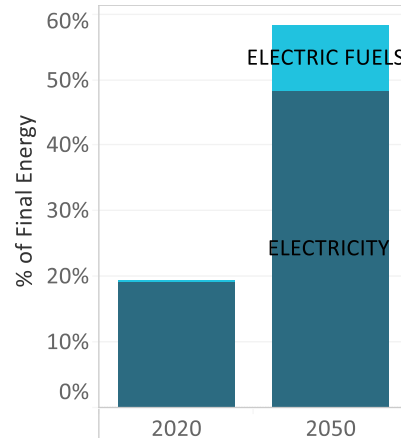
Electricity Decarbonization



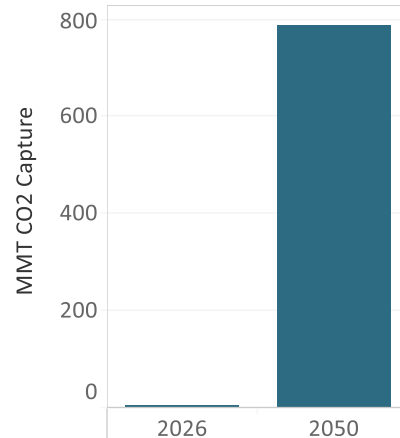
Energy Efficiency



Electrification



Carbon Capture



# Cleveland's Climate Action Plan, updating in 2023

-  Energy Efficiency & Green Building → Circular Economy & Built Environment
-  Clean Energy → Decarbonization
-  Sustainable Transportation → Built Environment
-  Clean Water & Vibrant Green Spaces → Nature-Based solutions
-  More Local Food, Less Waste → Circular Economy
-  Cross-Cutting Priorities → Equity, Health



**GOAL: Reduce GHG Emissions by 45% by 2030**

**\*\*Updating for alignment with Paris Accord**

# Decarbonization

- Built Environment
- Energy

## 30 EVs

### Electric Vehicle Fleet Conversion

- Public Utilities will:
  - Install 31 EV charging stations (build out)
  - Purchase 24 EVs for light duty fleet vehicles in 2022/2023
- 6 EVs already in use by General Funds and Airport
- Additional fleet conversion analysis in partnership with [Clean Fuels Ohio](#)
- City installing public-access charging stations

## LMI Solar

### Low-Moderate Income Solar Projects

- [Install solar panels on ~10 Cleveland homes at no cost](#)
- Reduce energy burden in Cleveland (moderate – severe)
- Identify the barriers people face when trying to go solar
- Develop solutions that address those barriers

## 21% of CPP's Energy

### Renewable Sources

- Hydropower
- Wind
- Solar
- Biogas



# Circular Economy

**\$475k**

**33,950  
tons of  
waste**

**Planning  
Grant**

## Circular Cleveland & Roadmap

November 2020, the [Robert Wood Johnson Foundation](#) awarded [Cleveland Neighborhood Progress](#) a 30-month grant for \$475,000 to launch Circular Cleveland, with City of Cleveland as a Partner

## Food Waste Reduction

Rust Belt Riders - Composting at West Side Market

Central Kitchen will help expand farm-to-school produce program – avoiding food waste in the fields – and use of juice pulp from Garden of Flavor.

## NSF Regional Innovation Engine – sustainable manufacturing “flywheel” in NE OH

CWRU led collaborative - transition manufacturing ecosystem to sustainable processes and products and become the national exemplar of a circular economy

<https://www.crainscleveland.com/government/food-waste-diversion-ripe-opportunity-new-circular-cleveland-program>

[Workbook: NSF Engines Concept Search](#)

- Search OH, Case Western Reserve Univ.
- Nick Barendt, Exec. Director, ISSACS, [nab2@case.edu](mailto:nab2@case.edu)

September 16, 2022 08:20 AM

## Food waste diversion is a 'ripe opportunity' for new program

KIM PALMER

TWEET SHARE IN SHARE EMAIL

REPRINTS



Kim Palmer/Crains Cleveland Business

Central Kitchen is a food hub located in Cleveland's Midtown neighborhood.

# Nature Based Solutions

15

## Member Urban Forestry Commission

8 Mayoral appointees  
7 Council appointees  
Planning, planting, maintaining trees

\$1.5M

## State Earmarks for Urban Forestry

Cleveland Tree Coalition – Cleveland is on Executive Board Member and will be involved in strategic planning

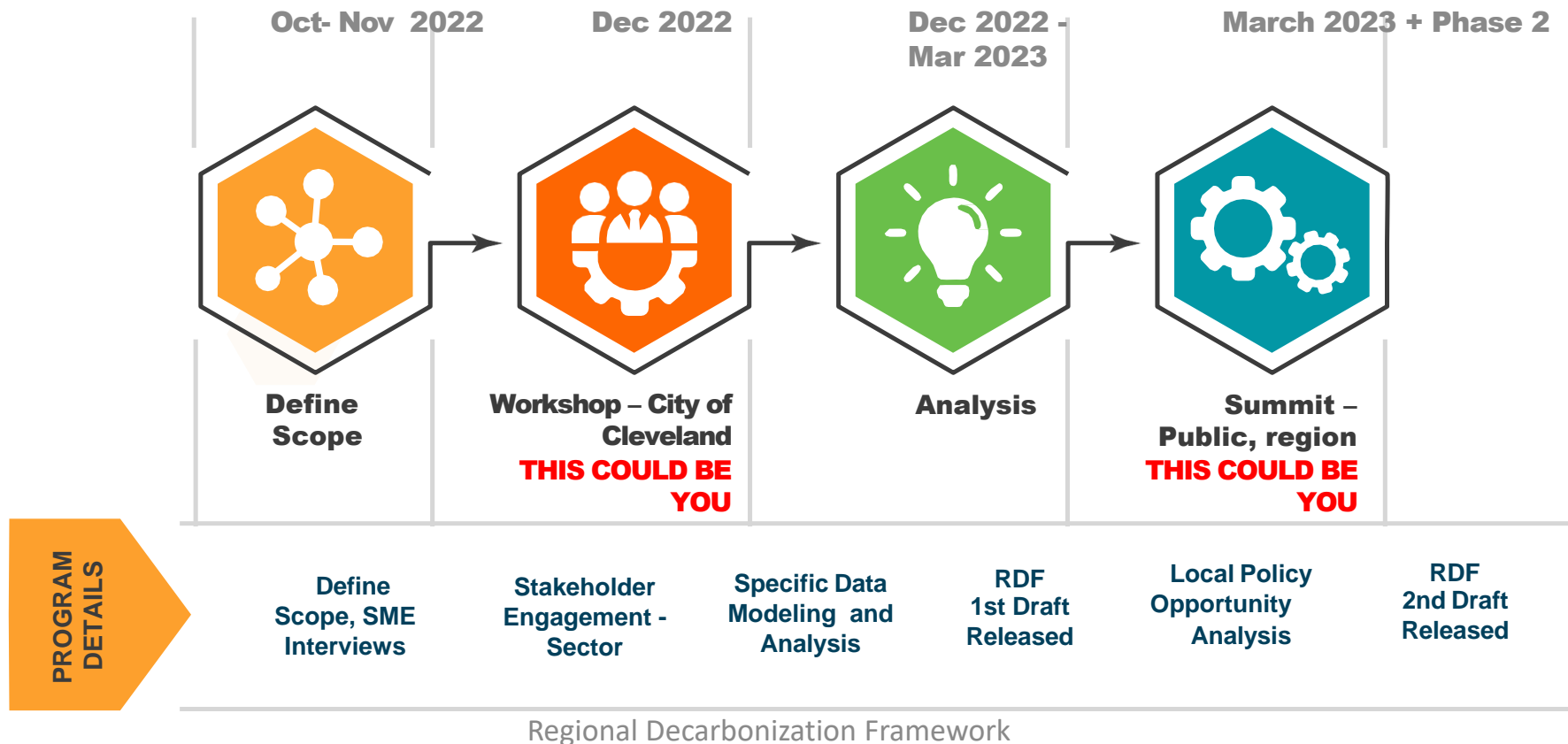
\$1.5B

## Inflation Reduction Act – Urban Forestry

Workforce development planning



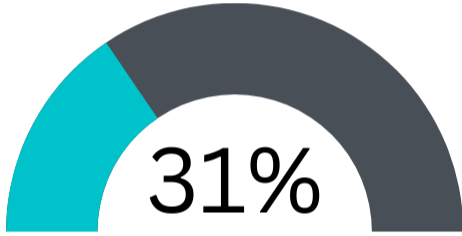
# CLEVELAND AREA DRAFT Timeline – RDF = Regional Decarbonization Framework



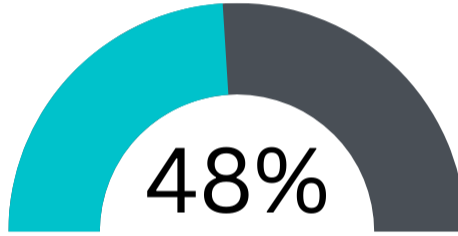
# CLEVELAND 2030 DISTRICT

Creating a high performance building district to mitigate the commercial sector's impact on the climate emergency. Building owners and managers, professional partners and community partners are working together to achieve a 50% reduction in energy use, water use, and transportation emissions by 2030.

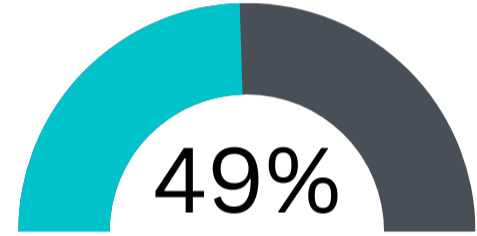
[www.2030districts.org/cleveland](http://www.2030districts.org/cleveland)



Progress toward energy goal



Progress toward water goal



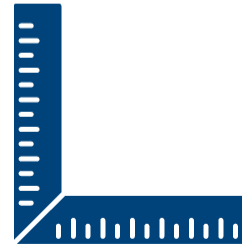
Progress toward emissions goal



413 Buildings



75 Members



73+ MSF



75 Partners

# Questions?



**CITY OF CLEVELAND**

Mayor Justin M. Bibb

**Anand Natarajan, Energy Manager, Sustainability & Climate Justice**

75 Erieview, Suite 115 • Cleveland, Ohio,

216-664-2459 | [anatarajan@clevelandohio.gov](mailto:anatarajan@clevelandohio.gov)





An aerial photograph of Milwaukee, Wisconsin, showing the city skyline across a body of water. In the foreground, there is a large green park area with a winding path and a river. The city skyline is visible in the background, featuring several tall buildings. The sky is blue with some clouds.

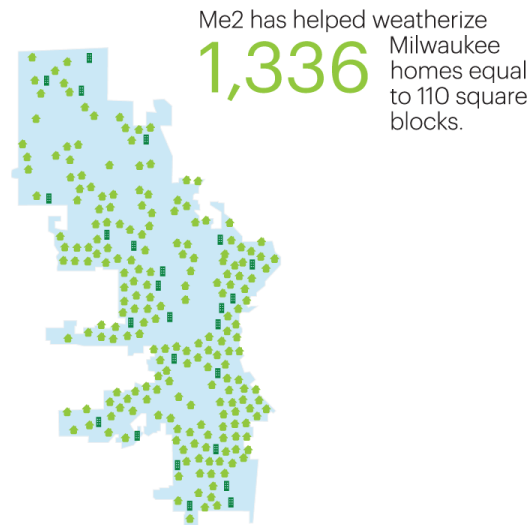
PAMELA RITGER DE LA ROSA  
ENVIRONMENTAL COLLABORATION OFFICE (ECO)  
CITY OF MILWAUKEE  
[MILWAUKEE.GOV/ECO](http://MILWAUKEE.GOV/ECO)

**TOWARDS A WORLD CLASS ECO CITY**

# Don't let your energy dollars go up in smoke!



**ACT NOW! Me2 Bonus Incentives will run out in April.**



[SmartEnergyPays.com](http://SmartEnergyPays.com)



THE CITY OF MILWAUKEE'S

# BETTER BUILDINGS CHALLENGE

## REENERGIZING MILWAUKEE

ONE BUILDING AT A TIME



BETTER  
BUILDINGS  
CHALLENGE

ecoCITY of  
MILWAUKEE



MATC

DOWN  
EARTH

T

TRANSWESTERN®

SUSTAINABILITY SERVICES

BOMA

focus on energy  
Partnership with Wisconsin utilities

Staples

greenprint

Franklin  
Energy

mWORC

INTEGRITY

SEO



BETTER  
BUILDINGS  
CHALLENGE

ecoCITY of  
MILWAUKEE

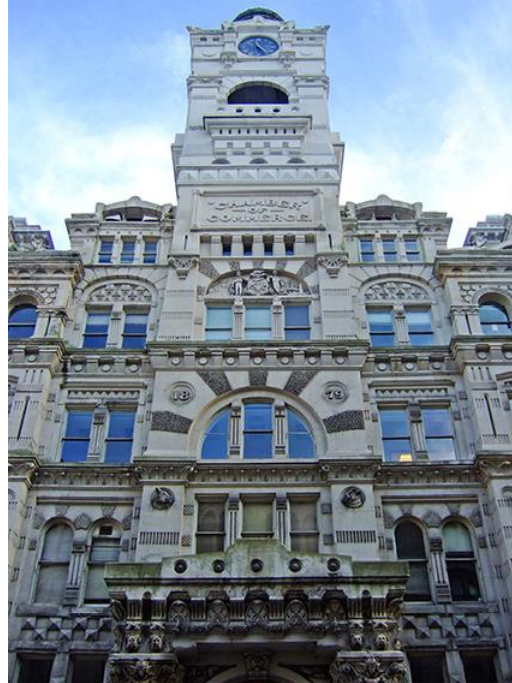
- Milwaukee's Better Buildings Challenge was modeled from US Department of Energy's national program
- Pledge for buildings to cut energy use by 20%
- City of Milwaukee municipal buildings
- 133 Commercial Buildings participated, covering over 14 million sq. ft. and \$2.4 million identified annual savings

# Voluntary Leadership



# Commercial Buildings

- PACE financing overcomes financial barriers for energy efficiency, renewable energy, and water efficiency projects
- US Department of Energy has named our PACE program a national “implementation model”
- 19 projects valued at over \$40.4 million have been approved
- [Milwaukee.gov/PACE](https://www.milwaukee.gov/PACE)



# Milwaukee's Climate and Equity Plan

[Milwaukee.gov/ClimatePlan](https://milwaukee.gov/ClimatePlan)

- Goal is to reduce community greenhouse gas emissions 45% from 2018 levels by 2030 and achieve net zero emissions by 2050
- Improve racial and economic equity by creating green jobs that pay \$40,000+ and focus recruitment on people of color





# 10 Big Ideas- Milwaukee's Climate Plan

Healthy Home Energy Upgrades

**Commercial Building Energy  
Benchmarking + BPS**

Net Zero Energy New Homes

Greening the Grid

Green Jobs Accelerator

Electrify Transportation

People-Centered Transportation

Nature in the City

Reducing Food Waste

Resilience Ambassadors





# Commercial Building Benchmarking and Building Performance Standards

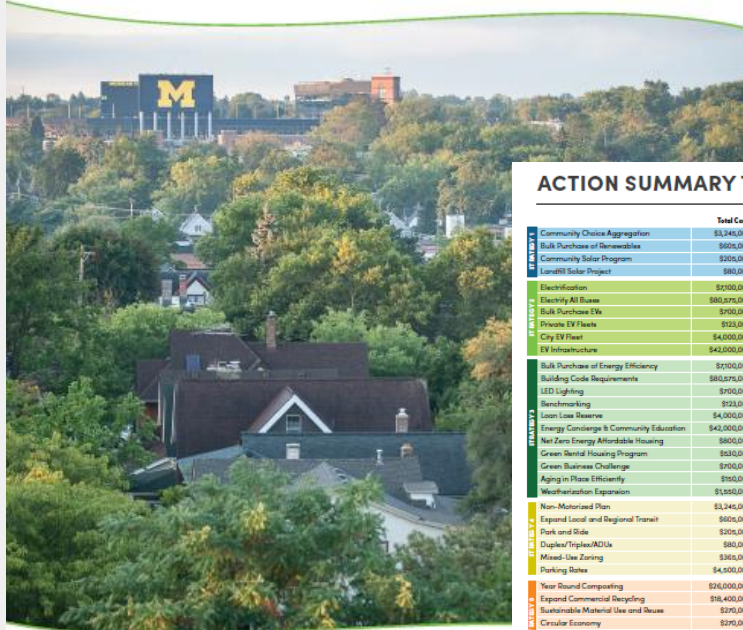
## Background

- Recommendations supported by leading national climate policy organizations including by ICLEI-USA, IMT, ACEEE, USGBC, AIA
- Mayor Johnson joined the Building Performance Standard Coalition, a White House CEQ led effort of over 30 states and local governments to implement building performance standard policies by Earth Day, 2024

## Recommendations

- Establish a Commercial Building Energy **Benchmarking ordinance** (annual energy reporting)
- Phase in a **Building Performance Standard** that requires buildings to cap energy use or greenhouse gas emissions
- Stakeholder engagement process with equity lens to refine a specific policy





ANN ARBOR'S  
LIVING CARBON NEUTRALITY PLAN  
MARCH 2020

## ACTION SUMMARY TABLE

	Total Costs	GHG Reduction	Total emissions	\$/ton	Co-Benefits
<b>Community Choice Aggregation</b>	\$3,345,000	784,000	39.8%	\$4	Coming Soon
Bulk Purchase of Renewable	\$800,000	88,000	3.9%	\$9	
Community Solar Program	\$205,000	11,500	0.5%	\$18	
Landfill Solar Project	\$80,000	23,000	1.1%	\$3.5	
<b>Electrification</b>	\$710,000	362,200	16.5%	\$ 20	Coming Soon
Electricity All Buses	\$80,575,000	19,800	0.6%	\$ 5,839	
Bulk Purchase EVs	\$700,000	122,900	5.6%	\$6	
Private EV Fleets	\$22,000	0	0.0%		
City EV Fleet	\$4,000,000	1,100	0.1%	\$3,636	
EV Infrastructure	\$42,000,000	0	0.0%		
<b>Bulk Purchase of Energy Efficiency</b>	\$710,000	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	\$22,000	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	\$630,000	0	0.0%		
Green Business Challenge	\$20,000	0	0.0%		
Aging in Place Efficiency	\$160,000	0	0.0%		
Weatherization Expansion	\$155,000	0	0.0%		
<b>Non-Motorized Plan</b>	\$3,345,000	60,400	2.8%	\$40	Coming Soon
Expand Local and Regional Transit	\$600,000	93,300	4.3%	\$1047	
Trail and Bike	\$200,000	28,400	1.3%	\$6,386	
Duplicate/Triples/ADUs	\$80,000	2,200	0.1%	\$14	
Mixed-Use Zoning	\$365,000	0	0.0%		
Parking Bikes	\$4,500,000	0	0.0%		Coming Soon
Year Round Composting	\$240,000,000	400	0.1%	\$60,000	
Expand Commercial Recycling	\$18,400,000	5,600	0.3%	\$3,286	
Sustainable Material Use and Reuse	\$275,000	0	0.0%		
Circular Economy	\$275,000	0	0.0%		
Plant-Based Diet	\$208,400	0	0.0%		
Refrigerant Recycling	\$175,400	0	0.0%		Coming Soon
Reflexion Hubs	\$6,025,000	2,600	0.1%	\$2,070	
Neighborhood and Youth Ambassadors	\$350,000	0	0.0%		
Tree Canopy	\$2,560,000	400	0.0%	\$2,678	
Neighborhood Asset Mapping	\$300,000	0	0.0%		
Emergency Kit	\$350,000	0	0.0%		
Sensors and Data Monitoring	\$300,000	0	0.0%		Coming Soon
Equity Programs	\$200,000	0	0.1%		
SAIJ Grant Program	\$1,000,000	0	0.0%		
Internal Carbon Tax	\$75,000	0	0.0%		
<b>Offsets</b>	\$9,440,000	208,500	13.8%	\$32	
<b>Total</b>	<b>\$1,096,402,800</b>	<b>2,188,950</b>	<b>100.0%</b>		

# A<sup>2</sup>ZERO



# A<sup>2</sup>ZERO Vision

Together, creating and implementing a just transition to carbon neutrality by the year **2030.**



# A<sup>2</sup>ZERO Strategies



## STRATEGY 1:

Power Our Electrical Grid with 100% Renewable Energy

## STRATEGY 3:

Significantly Improve the Energy Efficiency in our Homes, Businesses, Schools, Places of Worship, Recreational Sites, and Government Facilities

## STRATEGY 5:

Change the Way We Use, Reuse, and Dispose of Materials

## STRATEGY 2:

Switch our Appliances and Vehicles from Gasoline, Diesel, Propane, Coal, and Natural Gas to Electric

## STRATEGY 4:

Reduce the Miles we Travel in our Vehicles by at least 50%

## STRATEGY 6:

Enhance the Resilience of Our People and Our Place

## OTHER STRATEGIES:

This strategy covers the remaining programs and activities that don't fit into other areas. It also includes greenhouse gas emissions offsets to close out any

# Renewable Energy

- Designed over **4MW** of solar at City facilities
- Over **3.4MW** of solar installed through Solarize\*\*\*
- Landfill solar: 20MW of solar; PUD amendment approved; community solar commitment\*\*\*
- Began exploration of a Sustainable Energy Utility\*\*\*
- Intervenor in rate cases\*\*\*
- Exploring large-scale programs





# Beneficial Electrification



- Drafted and started to implement whole-home A<sup>2</sup>ZERO assessment
- Sticker replacement campaigns\*\*\*
- Contractor training and badging program\*\*\*
- Collaborating with IBEW/NECA on a “The Future is Electric” campaign
- EV Readiness Ordinance
- First Fast Chargers; tripling of L2 chargers in system; utility pole pilot
- City fleet is nearing 20% electric; EV refuse trucks
- Exploring electrification collaboration with other vanguard climate communities



- 

# ZERO CODE

## The Paybacks of Powering Buildings with Clean Energy



Cities and states looking to decarbonize new construction in a way that pencils out for developers and spurs local jobs creation have a new tool in the toolbox.

The Zero Code Network provides a means for the jurisdictions to quantify the payback of clean energy investments. It is a tool that provides a more accurate and robust energy payback analysis than the current energy payback analysis (EPA's eTool) and can help them understand the benefits of clean energy investments. It can also help them understand the benefits of clean energy investments. It can also help them understand the benefits of clean energy investments.

For more information, visit [www.zerocode.org](http://www.zerocode.org)

# Mobility

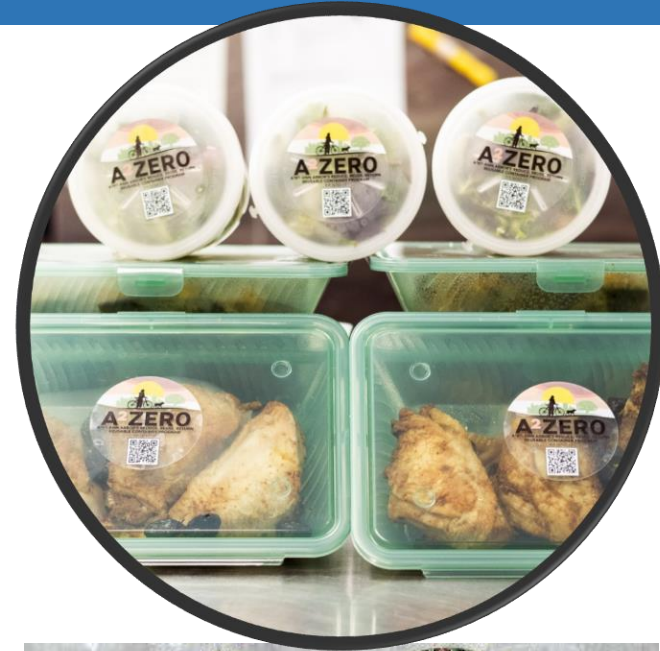
- Initiated co-development of “carbon calculator” to include transportation metrics in plan review process
- Collaborating with Planning to integrate climate change into Unified Development Code
- Supported expansion of protected bike lanes
- Bicycle discount programs
- Planning Department removed requirement for parking minimums
- Supporting federal transit funding applications

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



# Circular Economy

- Returnable container program (A<sup>2</sup>R<sup>3</sup>)
- Moved to year-round composting
- Saturday downtown commercial recycling beginning
- Sustainable Food events – Plant-Based Challenge
- Launched sustainable food working group with food systems stakeholders
- Launched Resident Race to Zero: weeklong zero waste challenge
- Launched circular economy working group – secured funding to create circular economy plan
- Joined NextCycle Intergovernmental Initiative and Public Private Partnership (I2P3)
- Began looking at tools to reduce refrigerants





# Enhance Resilience



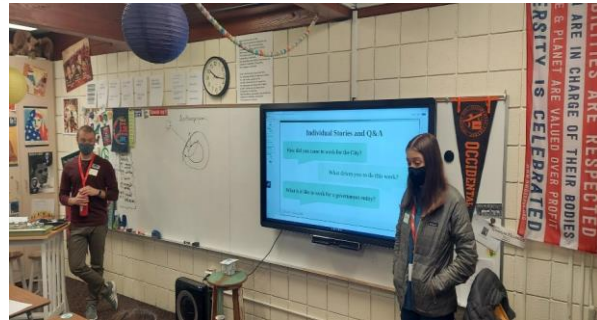
- Distributed over **2,500** trees through FreeTree Giveaways and Community Tree Plantings
- Undertook Master Rain Gardener training to support residents installing green infrastructure
- Installed AQ monitors at Kerrytown and Bryant, two more to be installed
- Integrating climate into MHMP
- Created first and granted funds to create 2<sup>nd</sup> and 3<sup>rd</sup> resilience hubs
- Initiated resilience assessment with Avalon
- Completed 2<sup>nd</sup> and 3<sup>rd</sup> cohorts of Ambassadors – over 75 people trained
- Distributed over 200 emergency preparedness kits
- Developed soil carbon calculator
- Developed tree maintenance app
- Supported No Mow May



# Cross-Cutting



- Distributed \$150,000 in grant funding to community sustainability initiatives
- Worked with peers to advance national decarbonization coalition
- Created scavenger hunt to daylight sustainability
- A<sup>2</sup>ZERO Collaborators network now over 110 organizations strong
- Continued work on Bryant project: to create the first fully decarbonized neighborhood in the US
- Hosted over 100 community events, meetings, presentations, or discussions
- Continued fundraising to support work in community



# Millage Language


## ANN ARBOR CITY CHARTER AMENDMENT TAX FOR COMMUNITY CLIMATE ACTION

Shall the Charter be amended to authorize a tax up to 1 mills to fund community climate action for 2023 through 2043, which will raise in the first year of levy the estimated revenue of \$6,800,000? In accordance with State law, a portion of the millage may be subject to capture by the Ann Arbor Downtown Development Authority and the Washtenaw County Brownfield Redevelopment Authority.

Authorized uses include: year-round composting; expanded residential/multifamily recycling; community and rooftop solar programs; rental and low-income household energy programs; bicycle, pedestrian and transit infrastructure; neighborhood resource centers; electric vehicle infrastructure; and tree plantings.

Yes

No



The Future Looks Bright!  
[www.a2gov.org/sustainability](http://www.a2gov.org/sustainability)

# Upcoming MEEA Events



**Early Bird Registration  
Now Open!**

January 31 - February 2, 2023  
Chicago, IL  
[www.meeaconference.org](http://www.meeaconference.org)