Cleveland Climate Action through Building Energy Targets: Resilient and Efficient Codes Implementation (RECI) Grant

CITY OF CLEVELAND
Mayor Justin M. Bibb

University of Cincinnati – RECI Grant Awardee --- City of Cleveland – sub-award of $100,000

Amanda Webb, PhD

Department of Civil and Architectural Engineering and Construction Management

University of Cincinnati

Impacts of Building Energy Use

- Buildings use a lot of energy – large buildings that are not efficient use even more energy
- Energy Use costs money and increases climate change
- Climate change causes high heat days in cities, bigger and stronger storms that cause flooding and damage = poor environmental conditions = poor health and well-being
- Setting energy use targets for buildings that use the most energy would save both building owners and cities money, and lead to environmental improvements for community members

Building Energy Efficiency as Climate Action

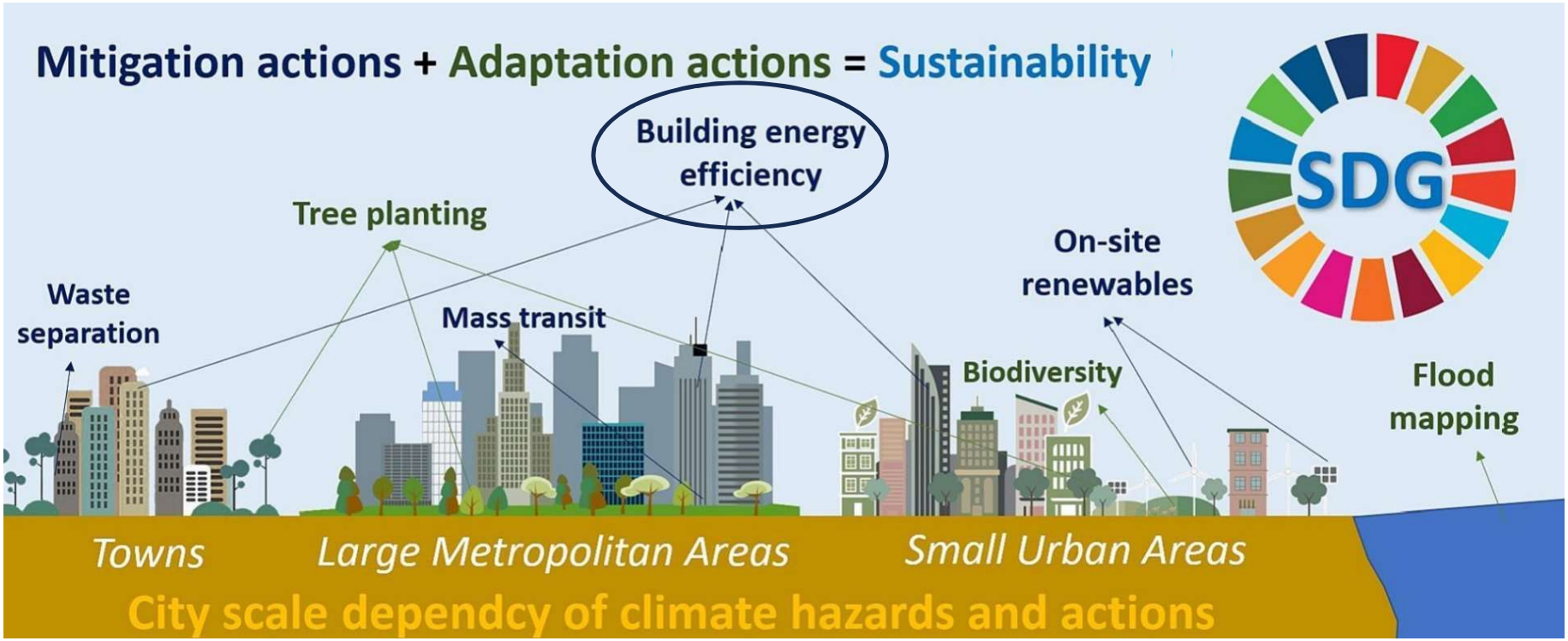
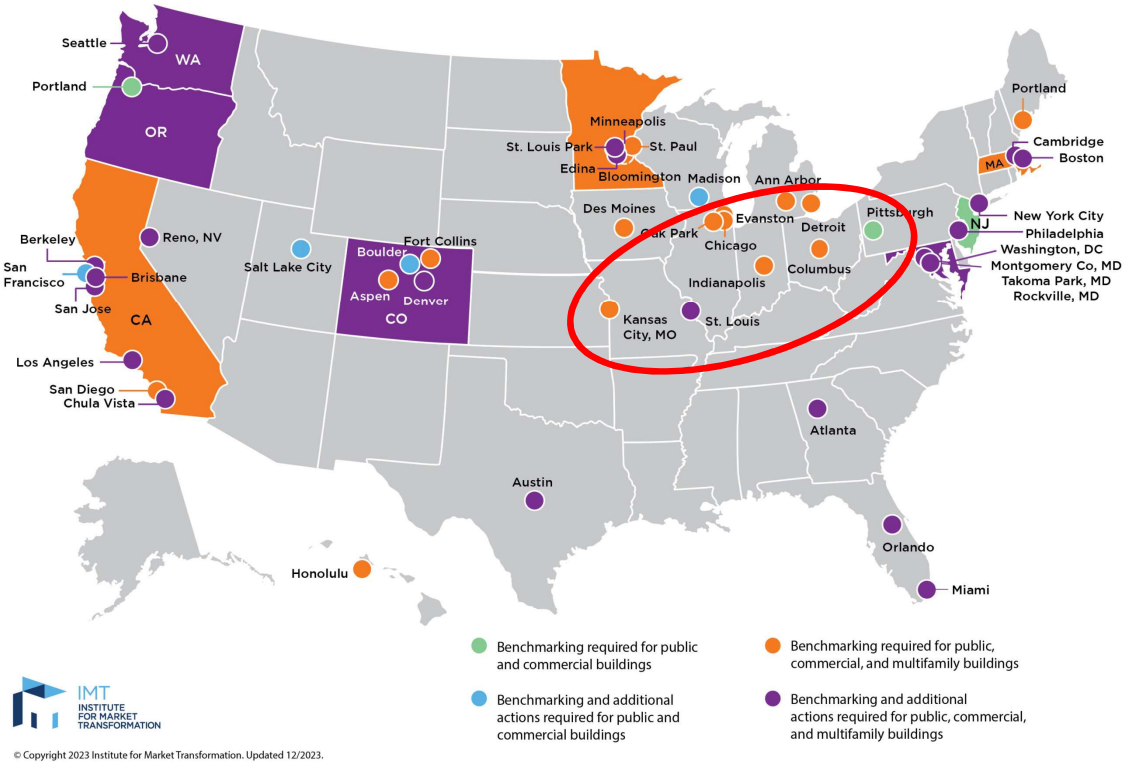


Image adapted from: https://ars.els-cdn.com/content/image/1-s2.0-S2212095523001517-ga1_lrg.jpg

Mandatory benchmarking and disclosure policies are now common across the U.S.

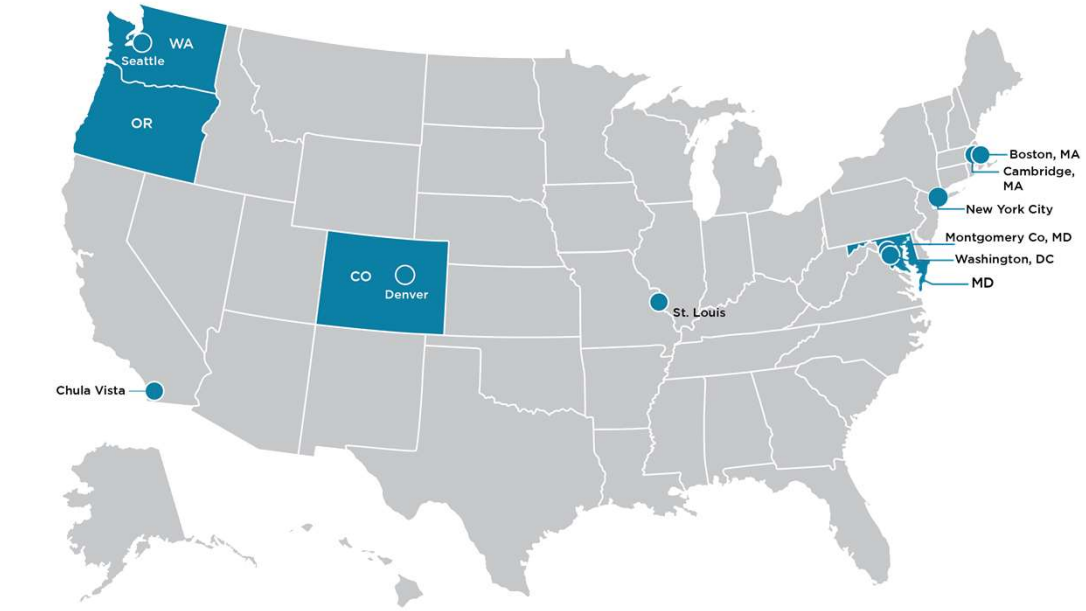


Common features:

- **Scope**: Large existing commercial and multifamily
- **Data**: Annual metered energy
- **Tools**: ENERGY STAR Portfolio Mgr.
- **Transparency**: Public disclosure to inform the market

MAP: https://www.imt.org/resources/map-u-s-building-benchmarking-policies/
COMPARISON MATRIX: https://www.imt.org/resources/comparison-of-commercial-building-benchmarking-policies/

13 jurisdictions have enacted a BPS as a key strategy to meet their climate goals



Key components:

- **Scope**: Large existing commercial and multifamily
- **Metric**: Site EUI, ENERGY STAR score, or CO2e/ft2
- **Targets**: Varies by jurisdiction
- **Timing**: 5-year cycles with stricter targets over time

MAP: https://www.imt.org/resources/map-building-performance-standards/
COMPARISON MATRIX: https://www.imt.org/resources/comparison-of-u-s-building-performance-standards/
ADDITIONAL RESOURCES: https://www.imt.org/public-policy/building-performance-standards/

A number of other cities and towns have committed to advancing Building Portfolio Standards

Key features:

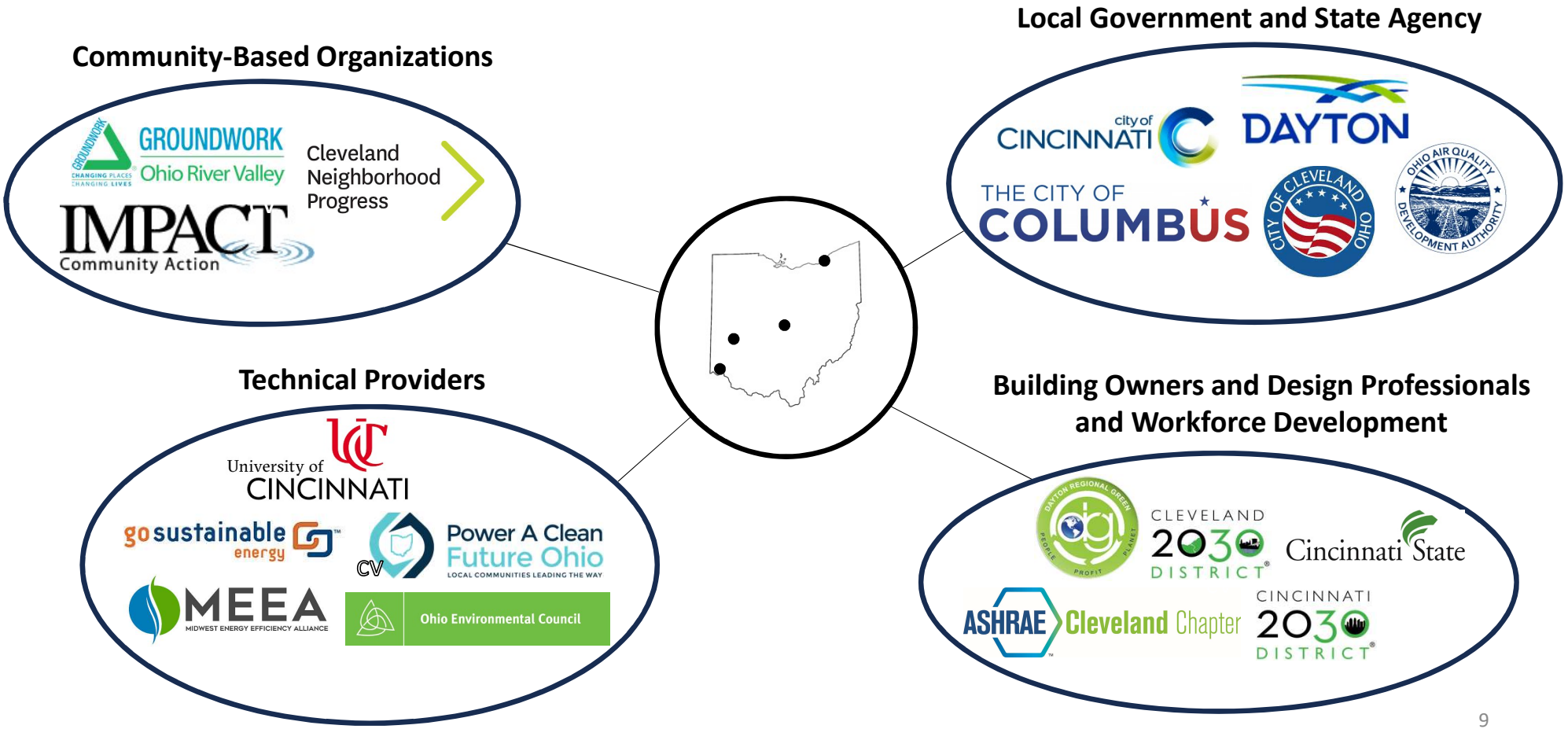
- **Goal**: Advance and adopt BPS by Earth Day 2024 (or 2026)
- **Benefits**: Technical and financial assistance from DOE
- **Scale**: Members represent ~25% of the buildings in the U.S.

MAP: https://www.imt.org/resources/map-national-bps-coalition-participating-jurisdictions/
https://nationalbpscoalition.org/

RECI Project Goal with 3 Large OH Cities

- **Develop and pilot a building performance standard (BPS)** ---- *a policy for existing buildings with energy use targets*
- **Design the BPS to improve energy equity** ---- *by applying BPS to large energy using buildings instead of all buildings*
- **Reduce implementation costs for both the city and building owners** --- *more "bang for buck" to have BPS for specific type of building instead of implementing across ALL buildings*

DOE RECI takes a collaborative approach - OH Cities, CBOs, Technical Providers



Where are we now in Cleveland and Ohio?

Benchmarking

- **Collect data**
- **Compare to peers**
- **Publicly disclose**
- ***~6-10% savings***

Building Performance Standards

- **Set performance target**
- **Action to meet target**
- **Technical and financial support for action**
- ***~25-45% aggregate savings***

Equitable Building Performance Standard - **R**esilient & **E**fficient **C**odes **I**mplementation

- Build on current Benchmarking through Cleveland 2030
- Apply to existing buildings with large energy usage
- Require existing buildings to meet energy use and performance targets
- Empower Cleveland to accomplish goals on reducing climate change and its negative impacts

CLE Climate Action Plan – currently updating

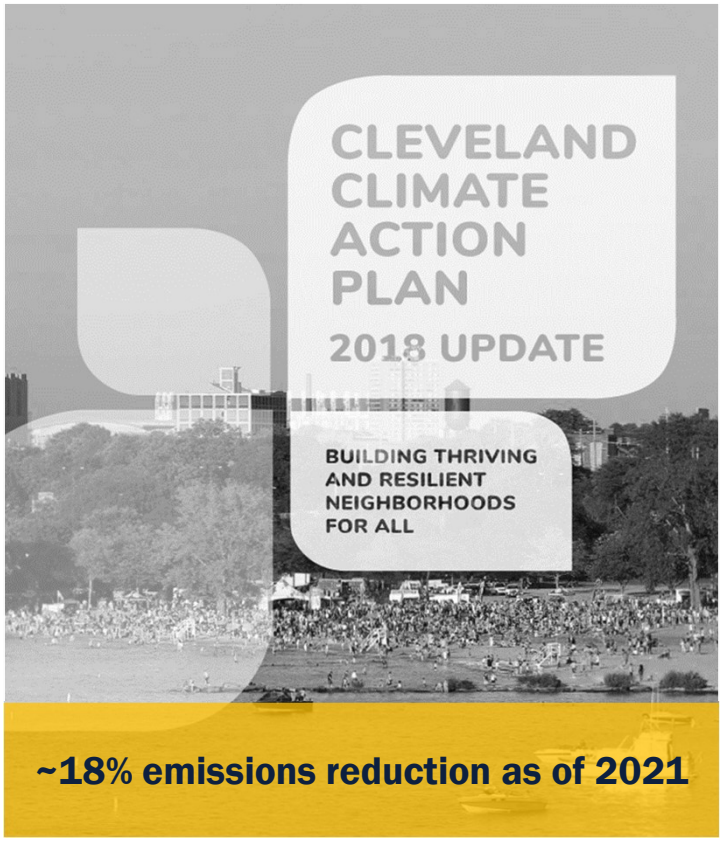
Citywide emission reduction commitments:

- 16% from 2010 to 2020
- 40% from 2010 to 2030
- 80% from 2010 to 2050

Extensive and cooperative participation in update

Science-based Target:

- Net zero emissions by 2050



Use of RECI Grant – from Plan to Action

1. $100,000 for Part-time personnel support (B/H dept)
2. Office of Sustainability support (no cost)
3. Collect, analyze, and learn about cost-optimal, equitable BPS
4. Conduct outreach and develop a plan with peer group of 3 other OH cities
5. Implement cost-optimal, equitable BPS and track compliance - provide support, education, and training for building owners in each city

- NEXT: RECI-2 - $10M announced for Implementation support

Key Points

Cleveland has the opportunity to lead by example --- build on current building benchmarking, then to pilot, adopt and implement efficient and equitable Building Performance Standards.

This Dept of Energy funding from the Resilient & Efficient Codes Implementation program will enable this for Cleveland in coordination with peer OH Cities

Sub-award for $100,000 for support in this pilot effort