

City of Grand Rapids Climate Justice & E.H.Zero Initiatives

West Michigan Air and Waste
Management Association
Spring Conference

Annabelle Wilkinson and
Jennifer Spiller

April 28th, 2022

Community
Collaboration
on Climate
Change (C4)



EQUITABLE. HEALTHY. ZERO CARBON BUILDINGS.

Designed by: Dot Design & Providentia Imagining MKTG

The E.H.Zero initiative is a partnership of





land acknowledgment

We want to acknowledge that we are here on the beautiful ancestral lands of the Anishinaabe people, the People of the Three Fires: the Ojibwe, Odawa, and Potawatomi.

We recognize the sovereignty of Michigan's Indigenous nations and historic communities – both those who live here now and those who were forcibly removed from their Homelands.

We want to express gratitude and appreciation to the Indigenous peoples across this continent who have been living and caring for this land from time immemorial, who are still here and will always continue to be present in this place.



topics we'll cover

agenda

annabelle

why are we doing this work?

what is the C4?

jennifer

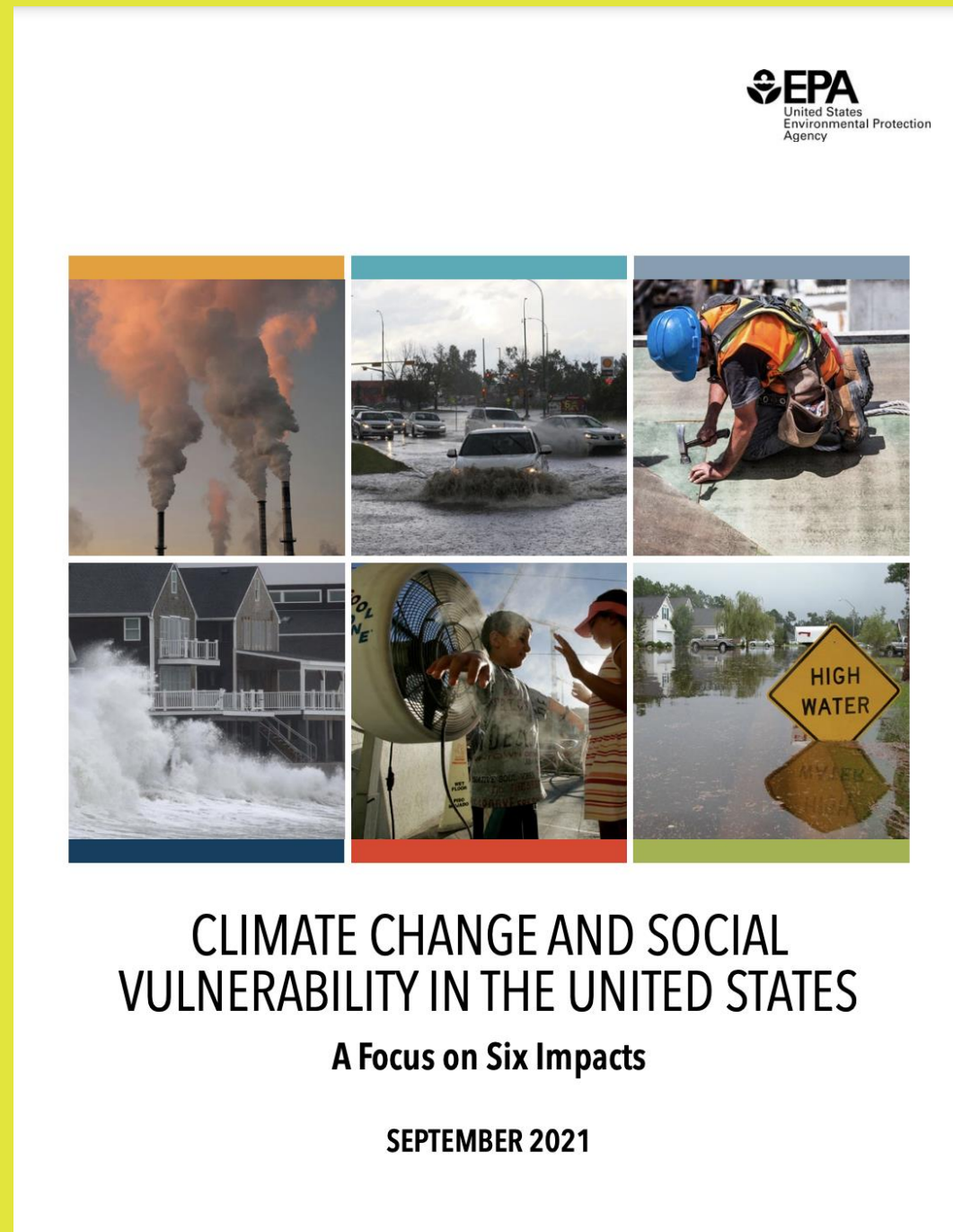
zero cities project highlights

what is E.H.Zero?

**why are
we doing
this work?**



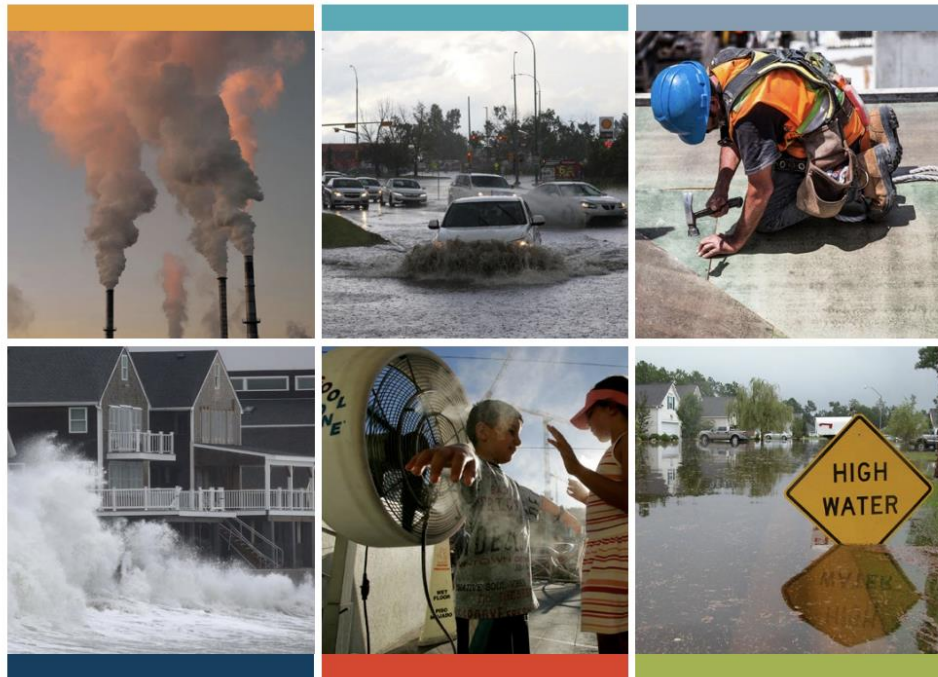
facing the facts



**Table ES.1 – Socially Vulnerable Groups
Analyzed in this Report**

CATEGORY	DEFINITION
Low Income	Individuals living in households with income that is at or below 200% of the poverty level.
Minority	Individuals identifying as Black or African American; American Indian or Alaska Native; Asian; Native Hawaiian or Other Pacific Islander; and/or Hispanic or Latino.
No High School Diploma	Individuals ages 25 and older with a maximum educational attainment of less than a high school diploma or equivalent.
65 and Older	Individuals ages 65 and older.

facing the facts

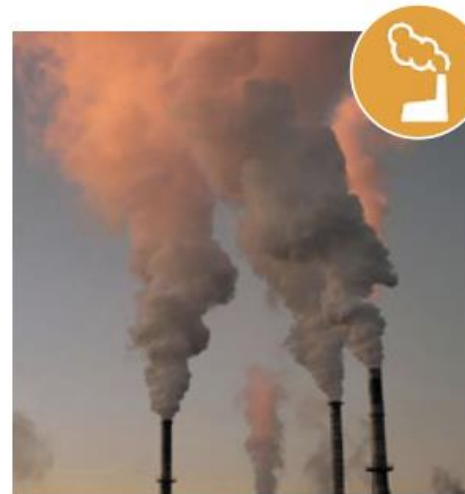


CLIMATE CHANGE AND SOCIAL VULNERABILITY IN THE UNITED STATES

A Focus on Six Impacts

SEPTEMBER 2021

Figure ES.1 – Primary Climate Change Impacts Analyzed in this Report



AIR QUALITY AND HEALTH
New asthma diagnoses in children age 0 to 17 due to particulate air pollution, and premature deaths in adults ages 65 and older due to particulate air pollution.⁴



COASTAL FLOODING AND TRAFFIC
Traffic delays due to high-tide flooding and extreme temperature and precipitation.⁵



EXTREME TEMPERATURE AND HEALTH
Deaths due to extreme temperatures.



COASTAL FLOODING AND PROPERTY
Property inundation due to sea level rise, and exclusion from protective adaptation measures.



EXTREME TEMPERATURE AND LABOR
Labor hours lost by weather-exposed workers due to high-temperature days.

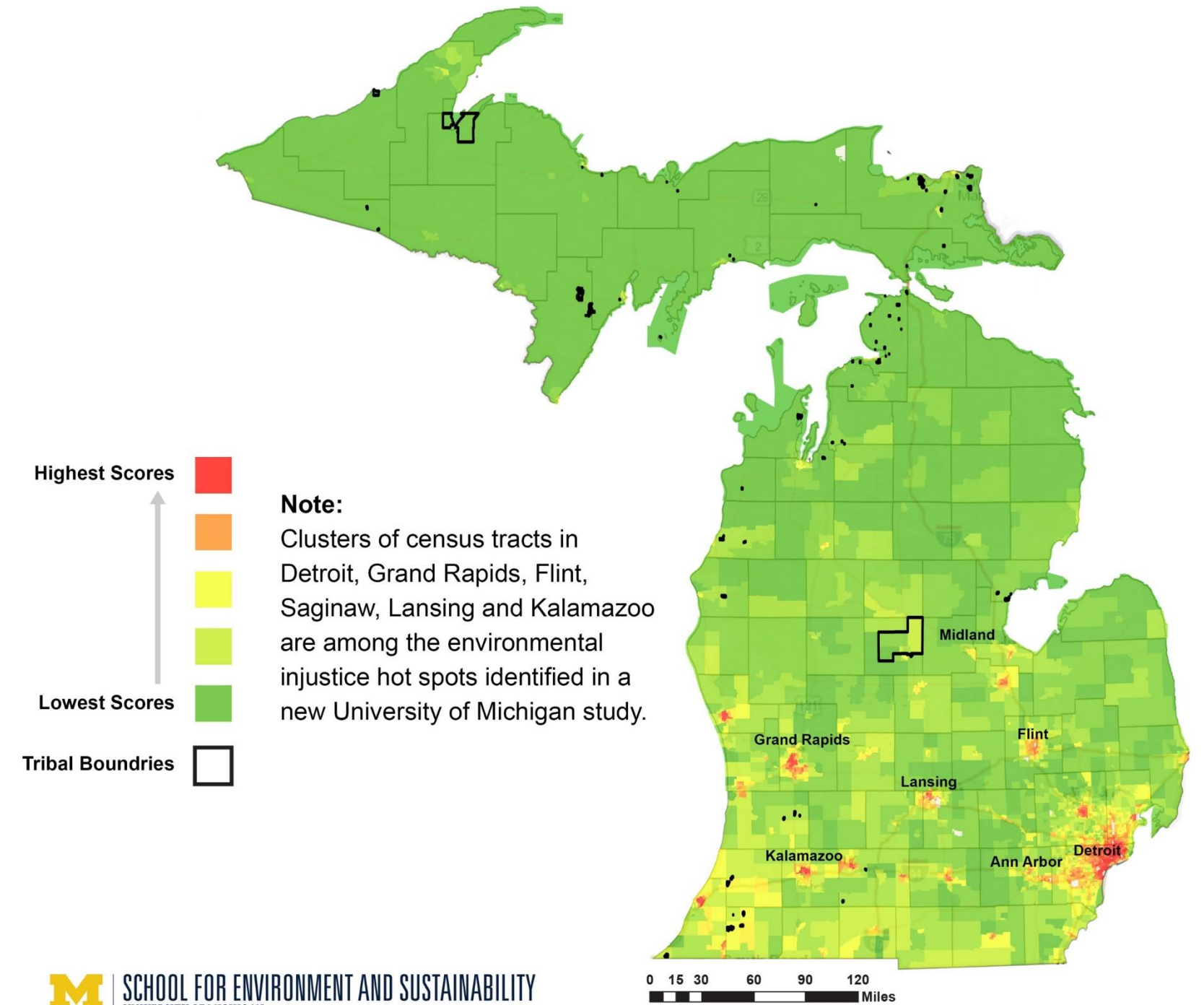


INLAND FLOODING AND PROPERTY
Property damage or loss due to inland flooding.

facing the facts

Heat Map of Michigan Census Tracts Ranked by Environmental Justice Scores

Rank	Tract	EJ Score	Percentile	County
1	0039	93.9945	99.9%	KENT
2	0002	91.9467	99.9%	KALAMAZOO
3	0003	90.1726	99.9%	KALAMAZOO
4	0038	89.5012	99.8%	KENT
5	0040	87.7397	99.8%	KENT
6	0036	87.6325	99.8%	KENT
7	0026	87.4281	99.7%	KENT
8	5061	87.2077	99.7%	WAYNE
9	5055	86.9241	99.7%	WAYNE
10	5162	86.6946	99.6%	WAYNE




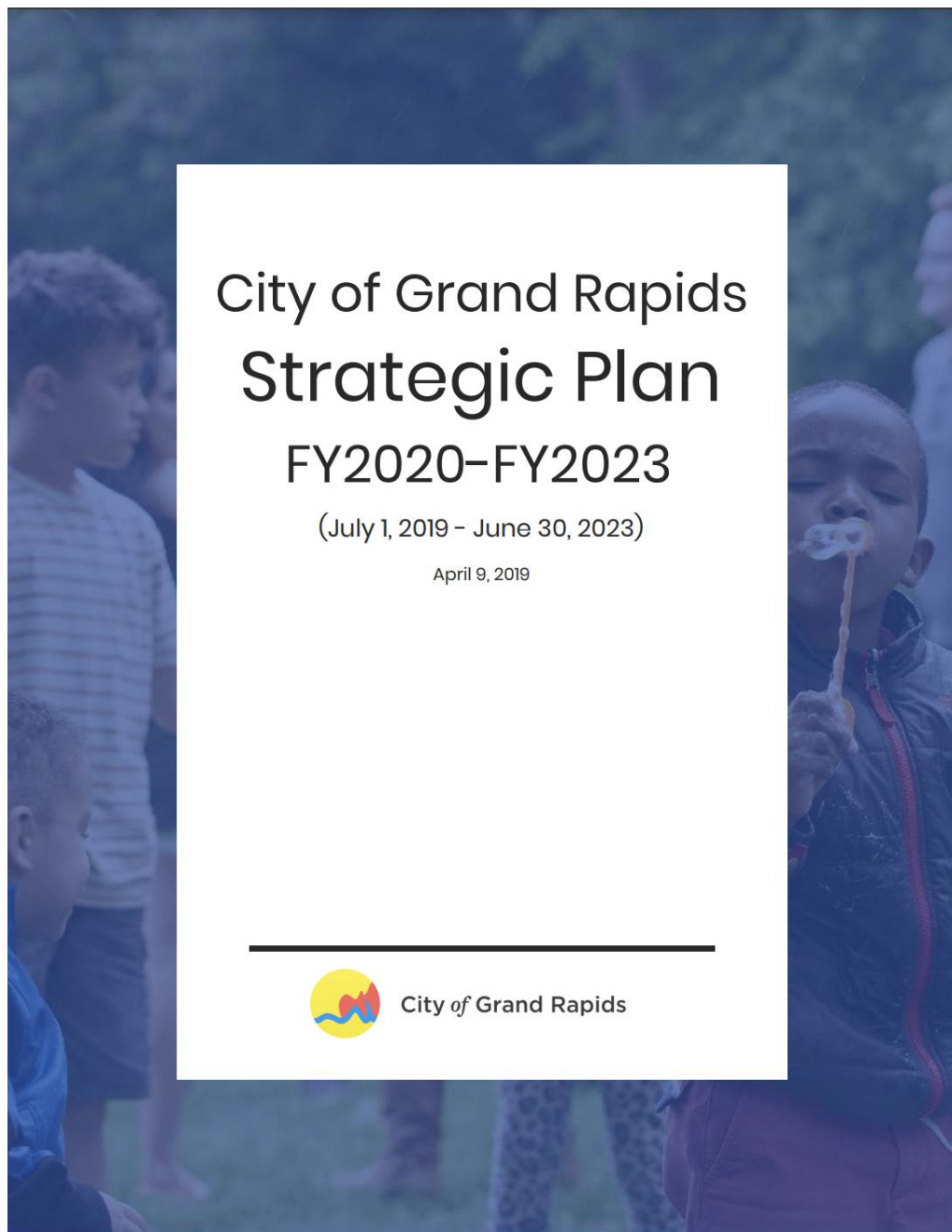


FY2020 – FY2023

city commission approved on April 9, 2019

www.grandrapidsmi.gov/strategicplan

city of
grand
rapids
strategic
plan



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city of grand rapids strategic plan

Values

Our values are what we stand for. They are embedded throughout the entire plan and guide all City work.

Accountability

Always acting with integrity and transparency and being responsible for what we do and say.

Collaboration

Working together in partnership with others; teamwork.

Customer Service

Professionally serving those who live in, work in or visit the city. Providing respectful, excellent, high quality service and assistance before, during and after the person's interactions with the City.

Equity

Leveraging City influence to intentionally remove and prevent barriers created by systemic and institutional injustice.

Innovation

Challenging how things have been done before. Fulfilling community needs by offering new ways to serve our customers and enhance operations. Being nimble, self-aware and open to feedback.

Sustainability

The ability to be maintained; making decisions with an understanding of how those decisions will impact the environment, people and communities, and finances, both today and in the future

Vision

Grand Rapids will be nationally recognized as an equitable, welcoming, innovative and collaborative city with a robust economy, safe and healthy community, and the opportunity for a high quality of life for all.

Mission

To elevate quality of life through excellent City services.

Priorities



Governmental Excellence

A fiscally resilient government powered by high performing and knowledgeable staff equipped with the appropriate tools and resources to offer excellent, equitable and innovative public service.



Economic Prosperity and Affordability

Residents, employees and businesses have pathways to financial growth and security.



Engaged and Connected Community

Residents and stakeholders have awareness of and voice in decisions that affect them, and receive culturally-responsive and proactive communication.



Health and Environment

The health of all people and the environment are advocated for, protected and enhanced.



Mobility

Innovative, efficient and equitable mobility solutions are safe, affordable and convenient to the community.



Safe Community

All people feel safe and are safe at all times throughout our community.

health and environment

Objective 1:

Reduce carbon emissions and increase climate resiliency.

Strategies

1. Create carbon reduction goals and integrate goals into appropriate City plans, including the Comprehensive Master Plan
2. Reduce the carbon footprint of City operations (buildings, utilities and fleet)
3. Assess the feasibility and cost of offsetting 100% of City electricity with renewable sources by FY2025
4. Create and support programs and policies to reduce carbon emissions from the building and transportation sectors throughout the community
5. Create a Climate Action and Adaptation Plan in partnership with the community
6. Work with community partners and businesses to achieve a 40% tree canopy

Draft Metrics

- Carbon footprint of city buildings, utilities and fleet (metric tons of carbon dioxide equivalents)
2018: 59,088* Goal: To be created
*Fleet not included
- % of City electricity supplied by renewable sources
2018: 34% Goal for June 30, 2025: 100%
- % of tree canopy
2018: 34% Goal: 40%

**city of
grand
rapids
strategic
plan**



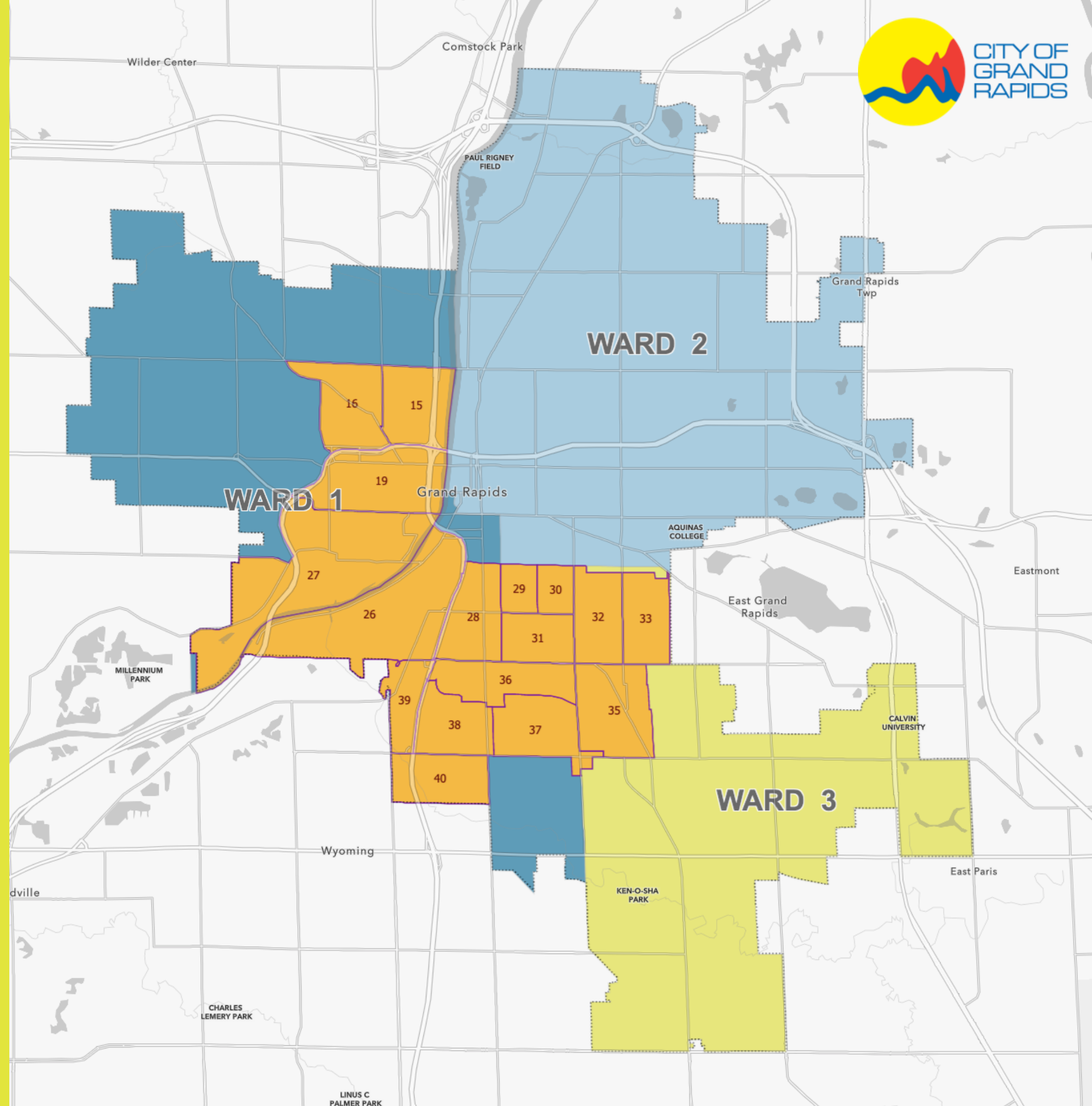
**city of
grand
rapids
strategic
plan**

health and environment

Create and support programs and policies to reduce carbon emissions from the building and transportation sectors throughout the community

grand rapids' neighborhoods of focus [NOF]

- 36% census tracts in Wards 1 and 3, in the near west and south side of Grand Rapids
- Highest % of BIPOC residents in the city
- One way the City strives to eliminate inequities is by intentionally investing in this area



**what is
the C4?**

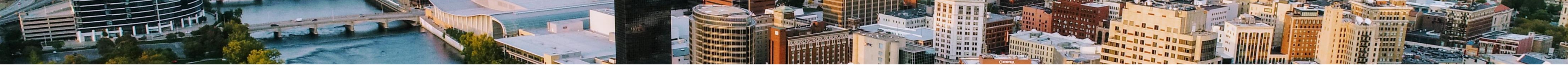


C4 vision statement

Community
Collaboration
on Climate
Change (C4)



Black, Indigenous and People of Color (BIPOC) and historically white environmental organizations will dismantle extractive systems and build new systems to address climate change - centered in human wellbeing, the interconnectedness of life, and access to shared leadership.



C4 three-year pilot plan and goals

2021

- Secured Funding
- Created Leadership Team By-Laws
- Hired Project Coordinator
- Launched Leadership Team
- Started Recruiting Collaborative Partners

2022

- Identified Priorities
- Developing Website
- Hire Ambassadors
- Lead Engagement for Community-Based Climate Action and Adaptation Plan
- Support Cohort Campaigns and Mini-Grants
- Create Resource Hub
- Create Storytelling Collection

2023

- Co-Create with Community a Climate Action and Adaptation Plan
- Support Cohort Campaigns and Mini-Grants
- Create a Long-Term Sustainability Plan for the C4

Influence the Grand Rapids Master Planning process; connect individuals and organizations to available trainings to cultivate climate justice leaders in the BIPOC community; provide professional development for project coordinator, leadership team and ambassadors; foster connections to support job placement and workforce development; facilitate cross-sector networking and collaboration.



C4 leadership team

Community
Collaboration
on Climate
Change (C4)



- Alison Waske Sutter, City of Grand Rapids
- Ana Jose, Michigan Women Forward (Co-Chair)
- Annabelle Wilkinson, City of Grand Rapids (Treasurer)
- Belinda Bardwell, Grand Valley State University
- Bill Kirk, The Rapid
- Bill Wood, West Michigan Environmental Action Council (WMEAC)
- Bo Torres, Grand Rapids Climate Coalition
- Cheri Holman, U.S. Green Building Council – West Michigan (USGBC-WM) (Secretary)
- Dilli Gautam, Bethany Christian Services
- Gayle DeBruyn, Kendall College of Art and Design
- Jocelyne Romero, Hispanic Center of Western Michigan*
- Kareem Scales, NAACP Grand Rapids (Co-Chair)
- Khara DeWit, Southeast Market
- Kristen Trovillion, Consumers Energy
- Rodney Brown, Michigan Black Expo Incorporated
- Sergio Cira-Reyes, Urban Core Collective (UCC)
- Siena Ramirez, Sunrise Movement*
- Stephanie Pierce, Project GREEN GR
- Synia E. Gant-Jordan, Grand Rapids African American Task Force and Legacy & Love LLC
- Tanya Gibbs, Rosette, LLP.
- Wende Randall, Kent County Essential Needs Task Force (ENTF)
- Wesley Watson, West Michigan Sustainable Business Forum (WMSBF)
- Yumi Jakobcic, Grand Valley State University

Current Leadership Team is 65% BIPOC fulfilling C4 by-laws of at least 50%. * Indicates youth participation.

C4 2022 plans



soft launch in may 2022

Watch the C4 Facebook and Instagram for more information coming soon!

hiring C4 community ambassadors

What are C4 Community Ambassadors?

- Act as community advocates and educators on local climate justice issues by encouraging people to participate in conversations, decision making; and to get involved in already existing organizations/campaigns/events in the community focused on climate change, environmental justice
- Engage with community members to develop trusted relationships and broad C4 public support

Expected Outcomes

- Community ambassadors will increase the number of community members joining the C4 climate justice movement
- Assist community in creating climate justice mini grant campaigns

[Link to Job Posting](#)

C4 2022 plans



air quality monitoring partnership



Darren Riley, CEO of JustAir

JustAir

- Designs and deploys neighborhood-level air quality network to provide actionable insights and curate data reports to meet the community's needs

EPA Grant Partnership

- Project is focused on deploying air quality monitors throughout the Grand Rapids community to identify neighborhoods with higher levels of air pollutants.
- C4 Community Ambassadors to disseminate air quality monitoring information to the community to raise awareness and ensure that our underserved communities are engaged in the process of determining how to alleviate air quality disparities.

Additional Partners



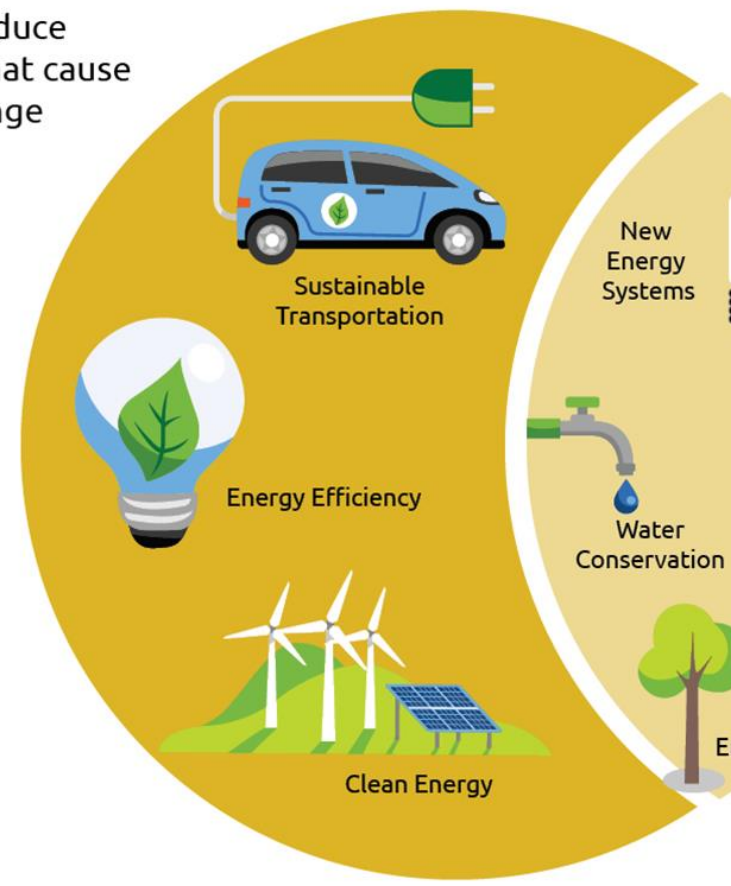
city of grand rapids climate action and adaptation plan

Summer 2022 – Summer 2023

education
engagement & drafting rounds
finalize & implement

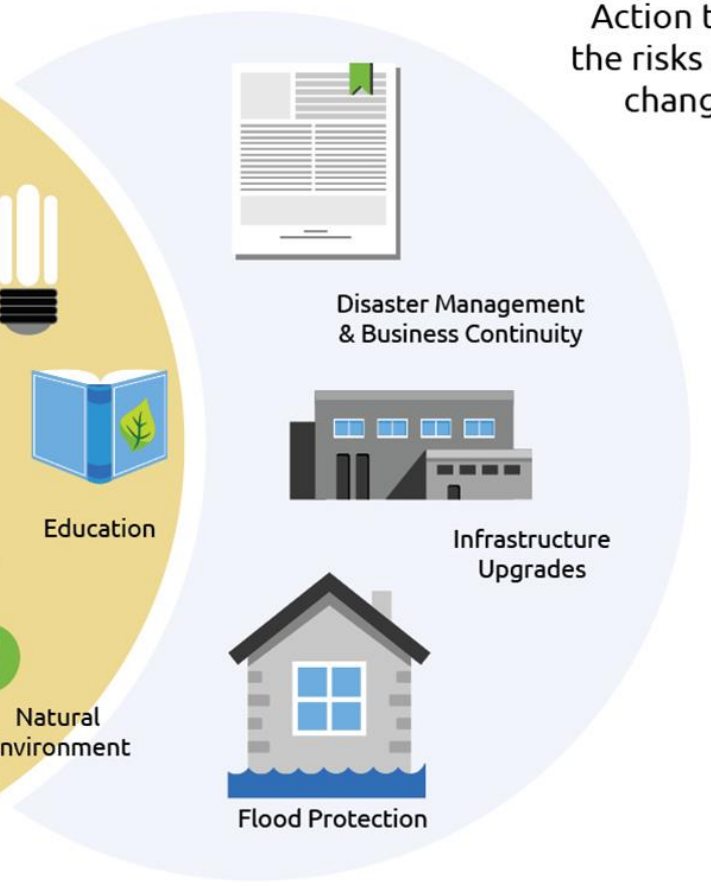
Mitigation

Action to reduce emissions that cause climate change

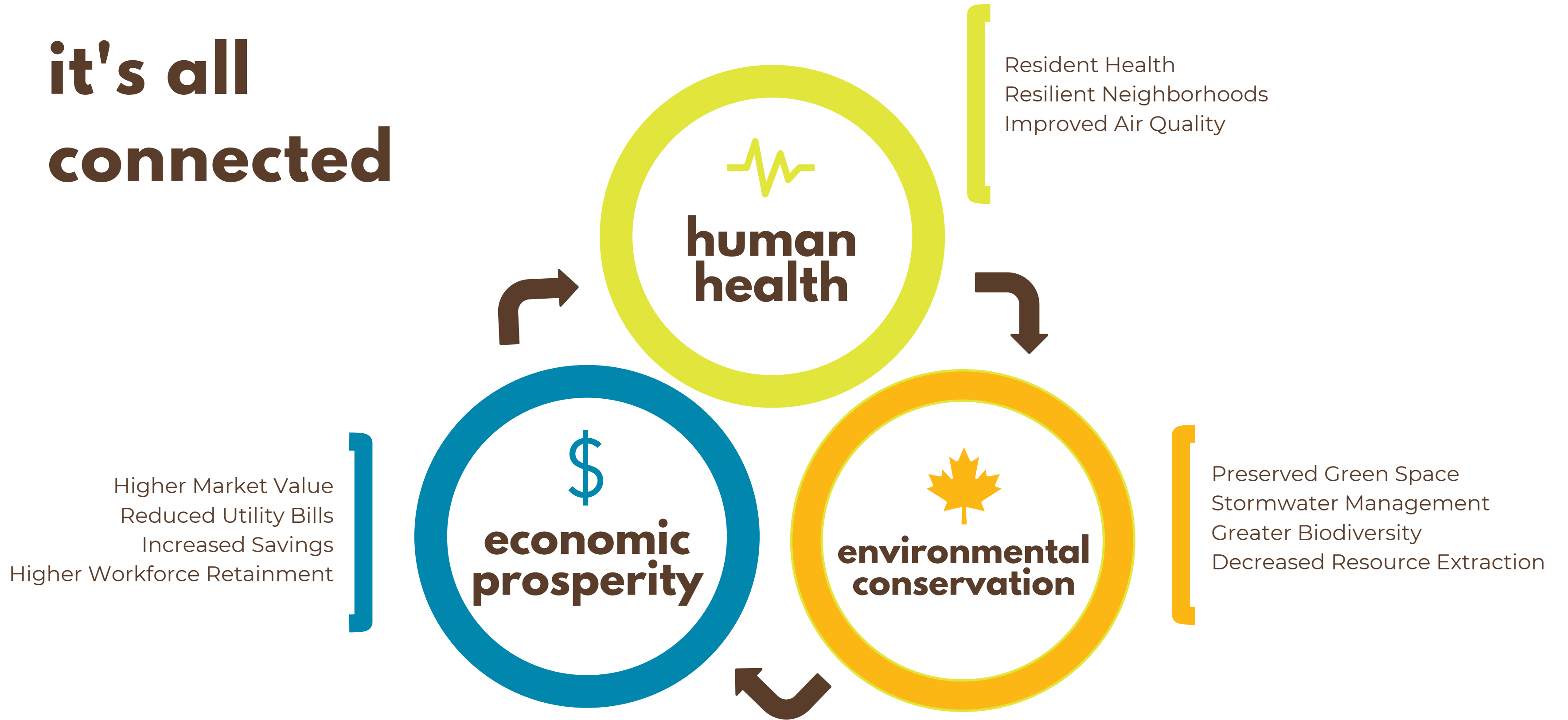


Adaptation

Action to manage the risks of climate change impacts



it's all connected





E.H.Zero

EQUITABLE. HEALTHY. ZERO CARBON BUILDINGS.

Designed by: Dot Design & Providentia Imagining MKTG

E.H.Zero

Policies and Programs for Equitable, Healthy, Zero Carbon Buildings

The E.H.Zero initiative is a partnership of





zero cities project & E.H.Zero partners



primary funder

90% of peoples' time is spent inside buildings



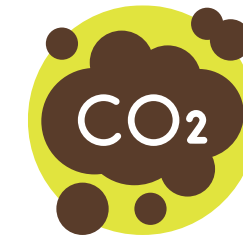
the construction and operation of buildings has a significant impact on:



affordability



community health



climate change



Black, Indigenous and People Of Color (BIPOC) are disproportionately impacted by environmental pollutants and climate change and have been under-represented in the design, regulation, and operation of buildings.

nationally, there is a shortage of more than 7 million affordable homes for our nation's 10.8 million plus extremely low-income families.

**why
focus on
buildings?**



zero cities project

Key process and outcome highlights

zero cities project

Informed policy process focusing on equity and community collaboration

desired outcome: City policies that will result in the equitable decarbonization of the building sector by 2050

The City intends to achieve this outcome by creating a plan that allows all buildings in Grand Rapids to achieve zero net carbon via economic incentives and planning programs.



funding: the Wege Foundation provided the \$75,000 match for participation and approximately \$200,000 to the USGBC West Michigan (over 3 years)



local partners



**WEST
MICHIGAN**

commercial focus



**URBAN
CORE
COLLECTIVE**

single-family residential focus

Received \$35,000 from USDN to serve as equity partner

zero cities project accomplishments

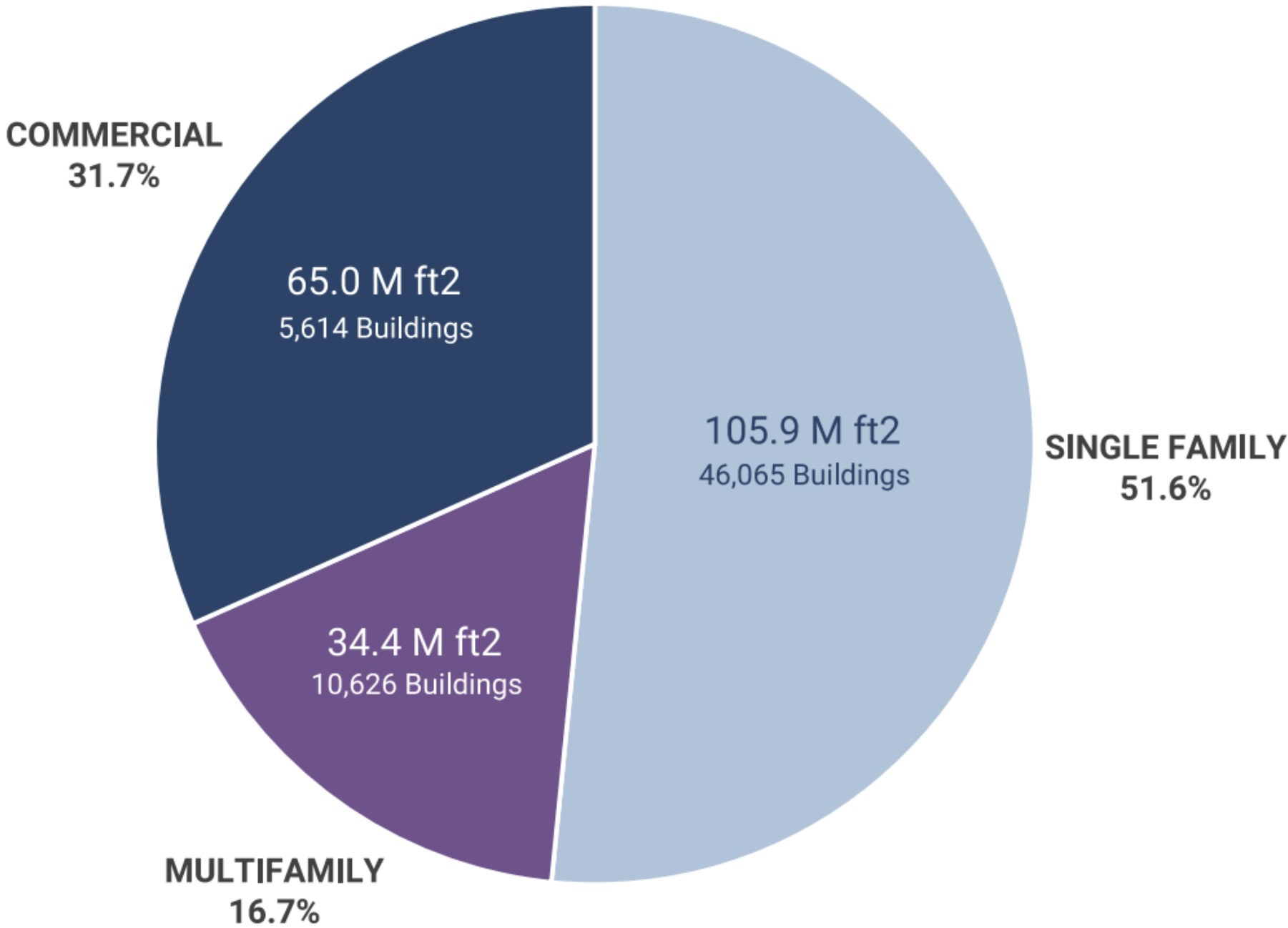


- ✓ Collaborative and innovative partnerships rooted in equity and environmental justice
- ✓ GR Equity Assessment tool
- ✓ Neighborhood of Focus (NOF) resident survey on myriad of housing obstacles
- ✓ Communitywide baseline building assessment
- ✓ Building policy modeling scenario
- ✓ Commercial building stakeholder education on zero carbon buildings
- ✓ Development and implementation of the environmental sustainability requirements of the cannabis licensing ordinance
- ✓ National recognition as a model for leading with equity in building policy development


4,223
webinar views


1,981
people educated

Current Building Area by Type



Current Building Stock

205,265,759 square feet
62,305 buildings

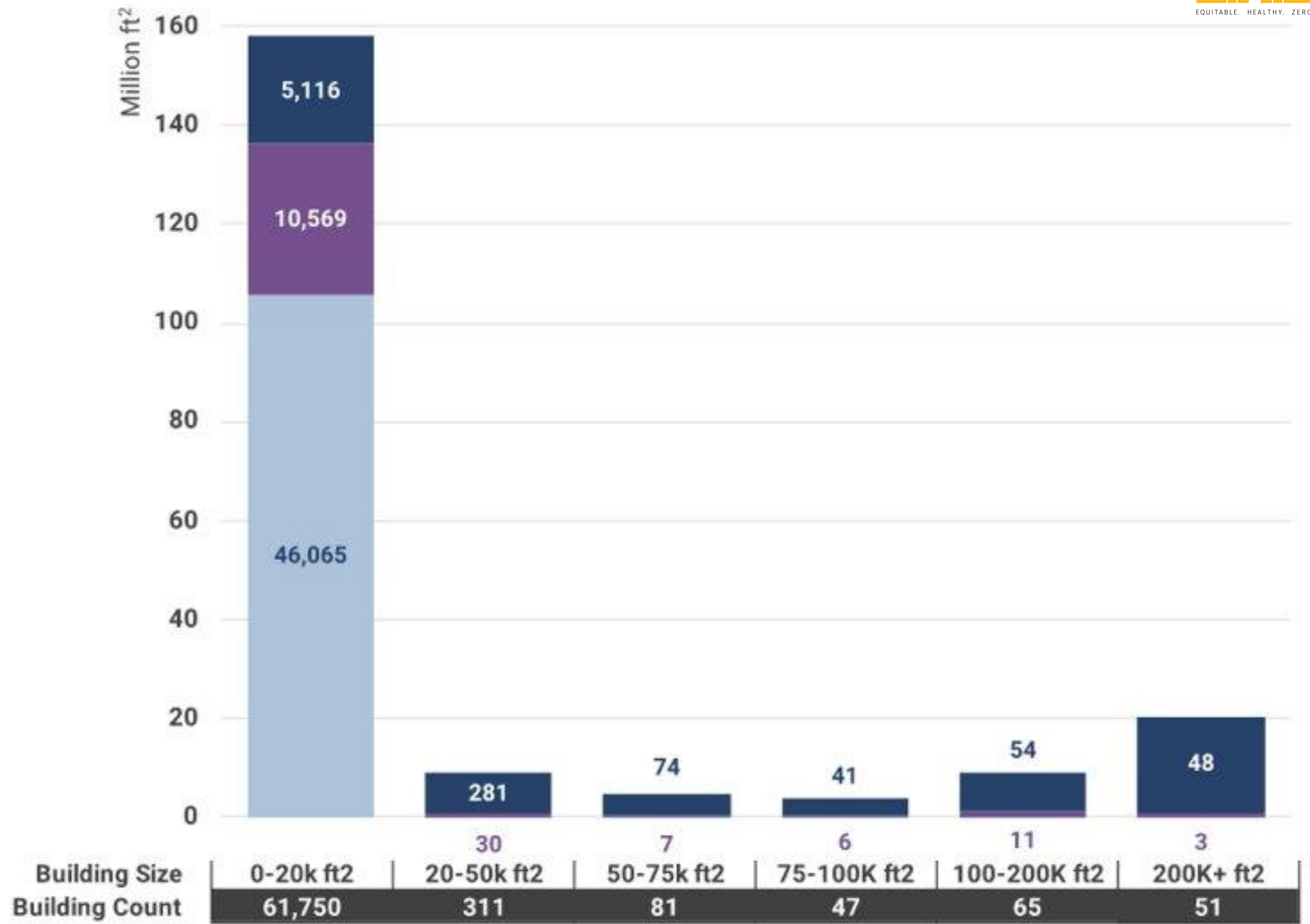
Data from Dec 2017

**baseline
building
assessment
key findings**
[building size]

**baseline
building
assessment
key findings**
[building size]



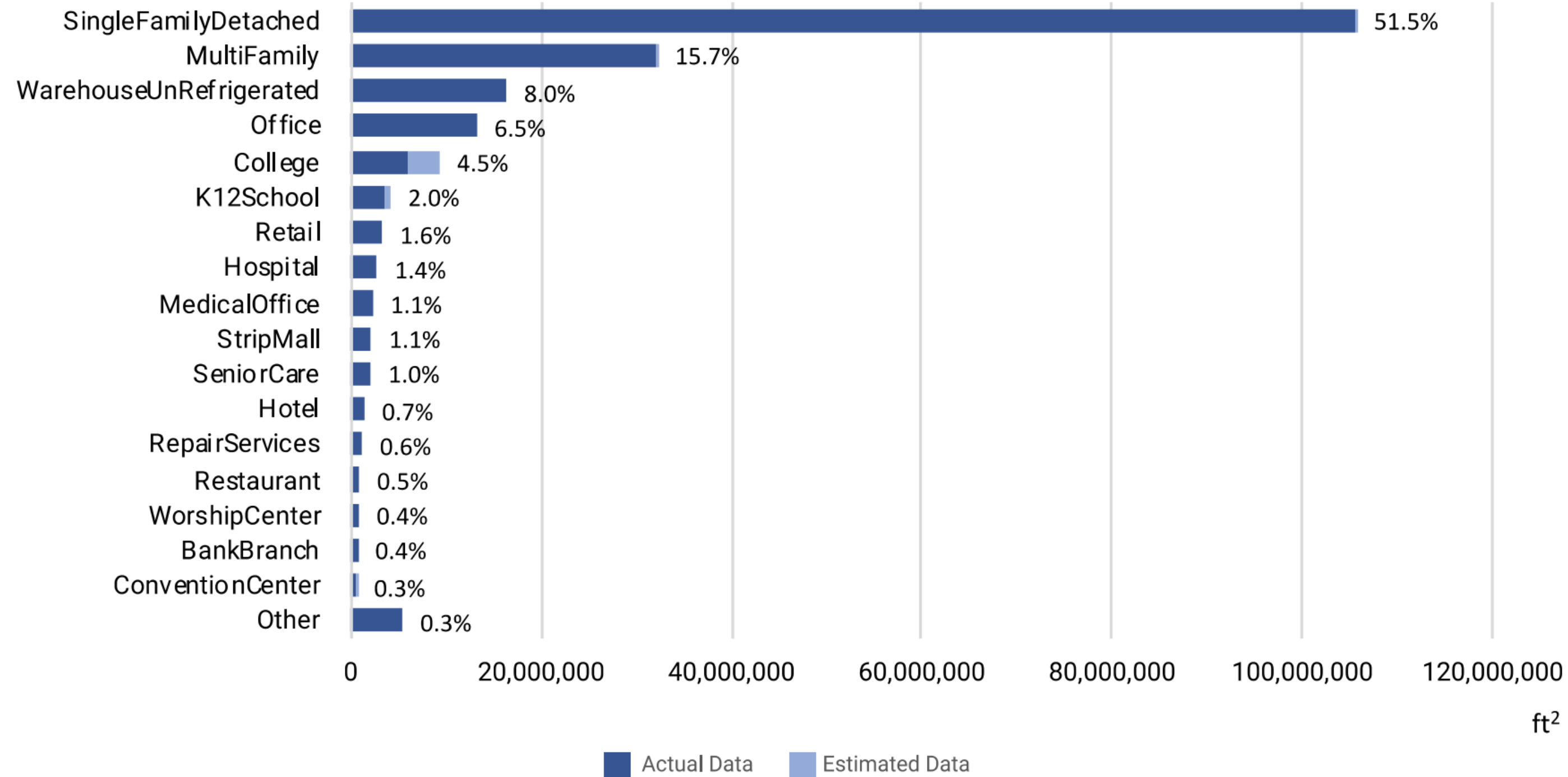
Current Building Area by Size



Data from Dec 2017



Current Building Area by Type



Data from Dec 2017

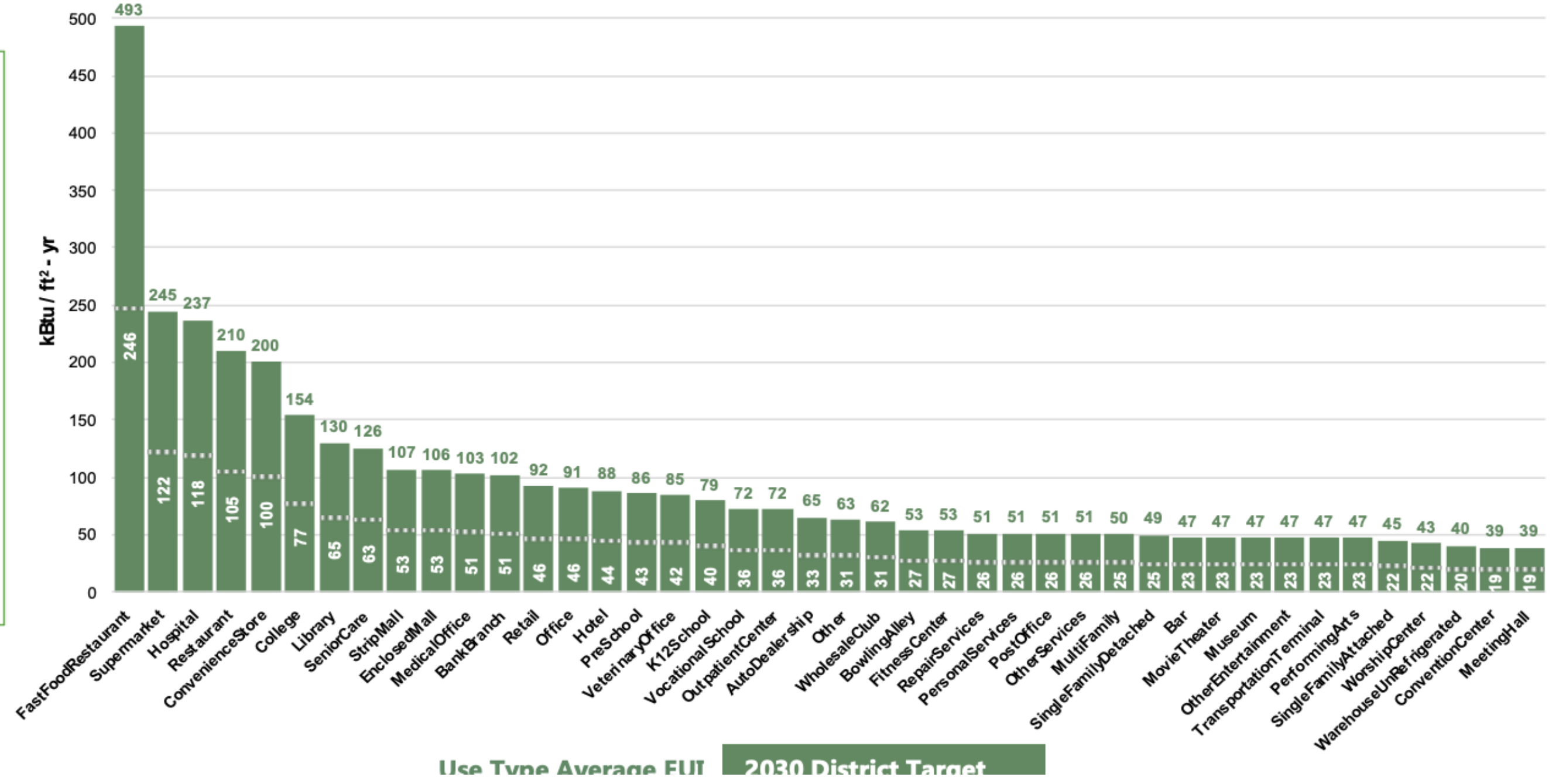
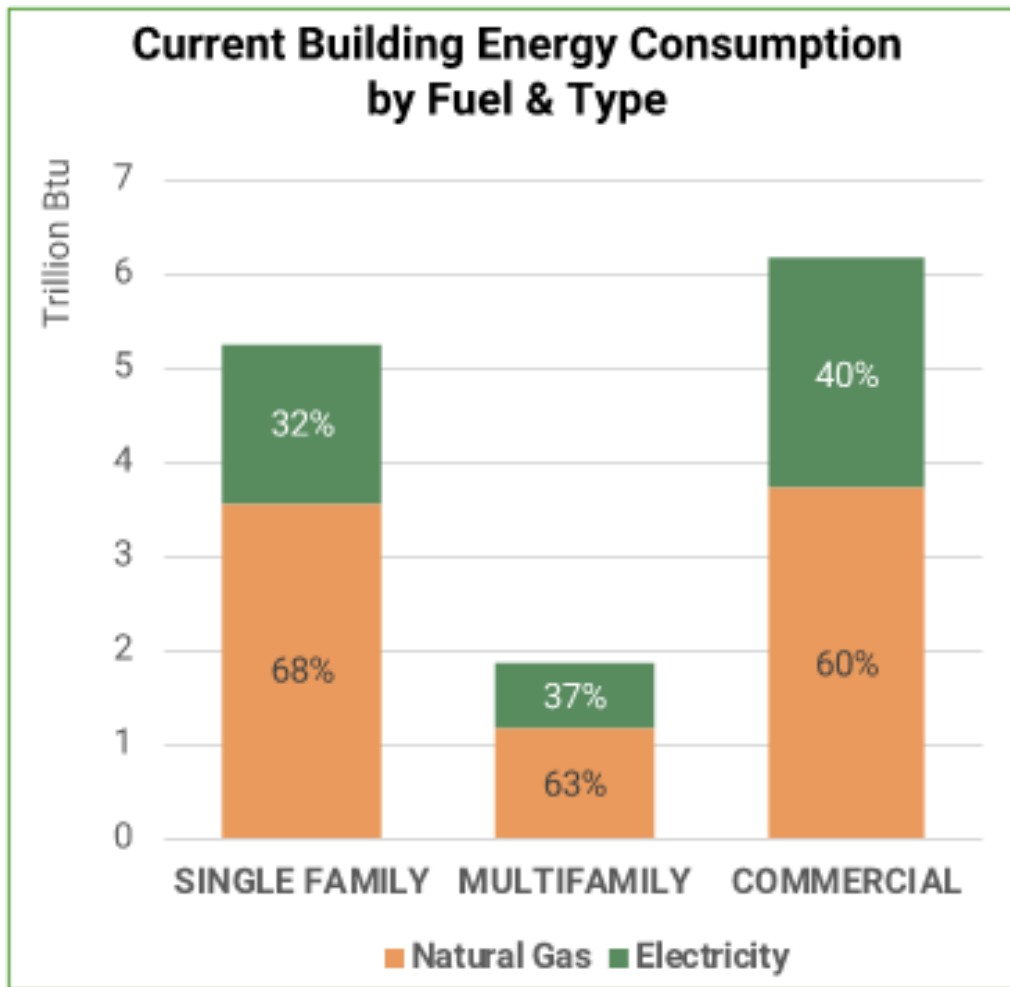
**baseline
building
assessment
key findings**
[building size]

baseline building assessment key findings

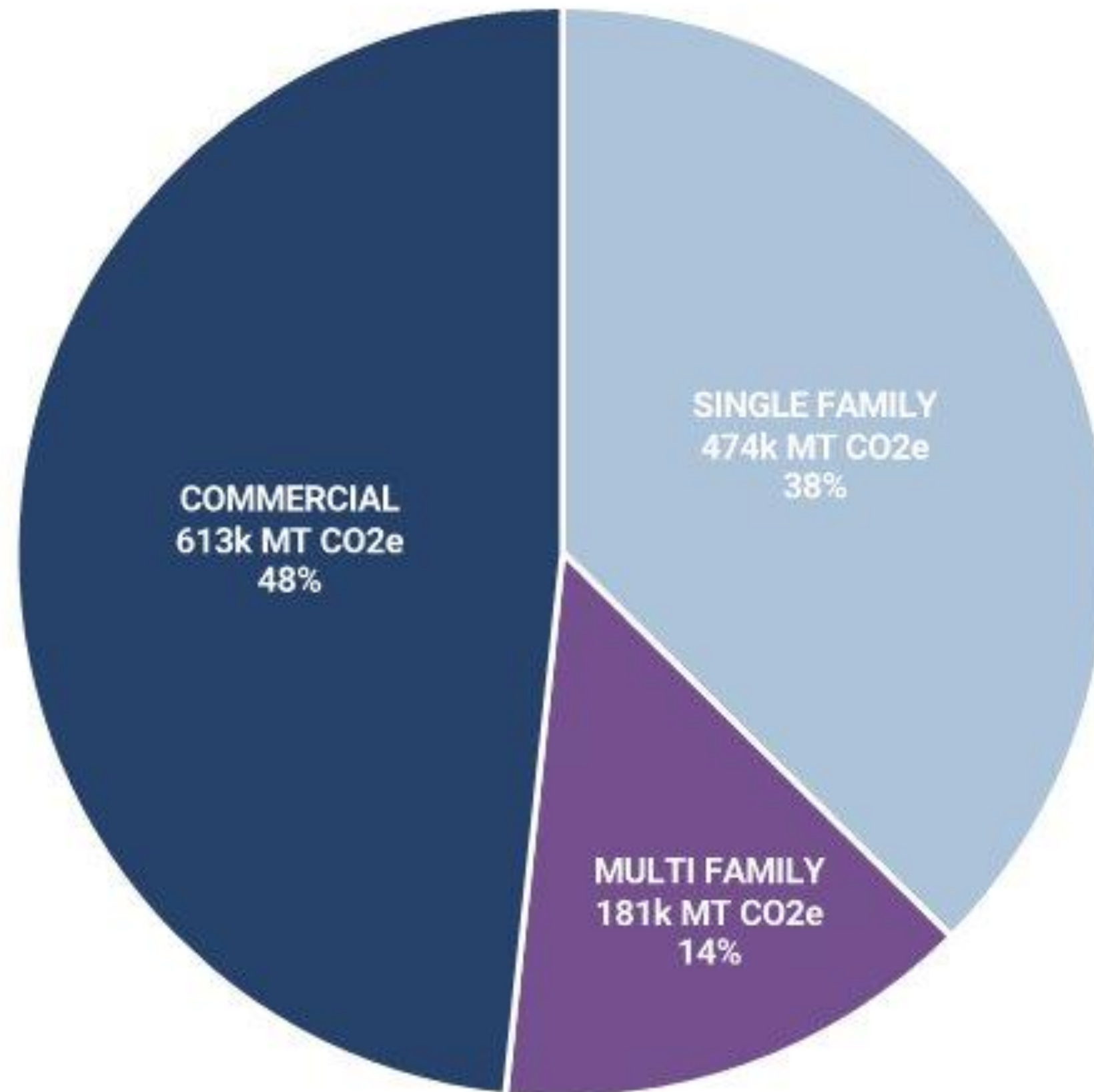
[energy consumption]



Use Type Average EUIs and 2030 District Target EUIs



Current Building GHG Emissions by Type



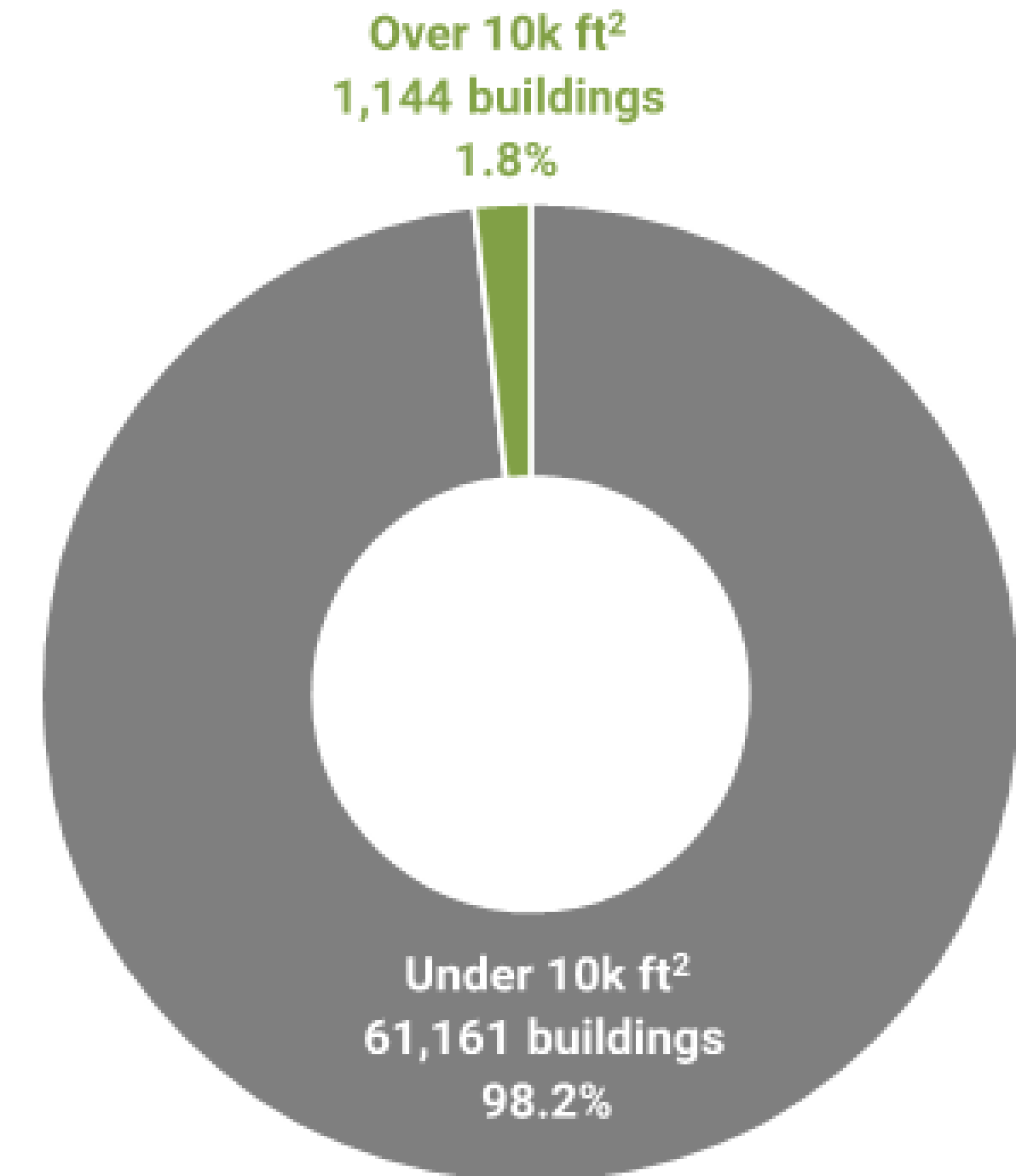
**baseline
building
assessment
key findings**

**[carbon/
ghg emissions]**

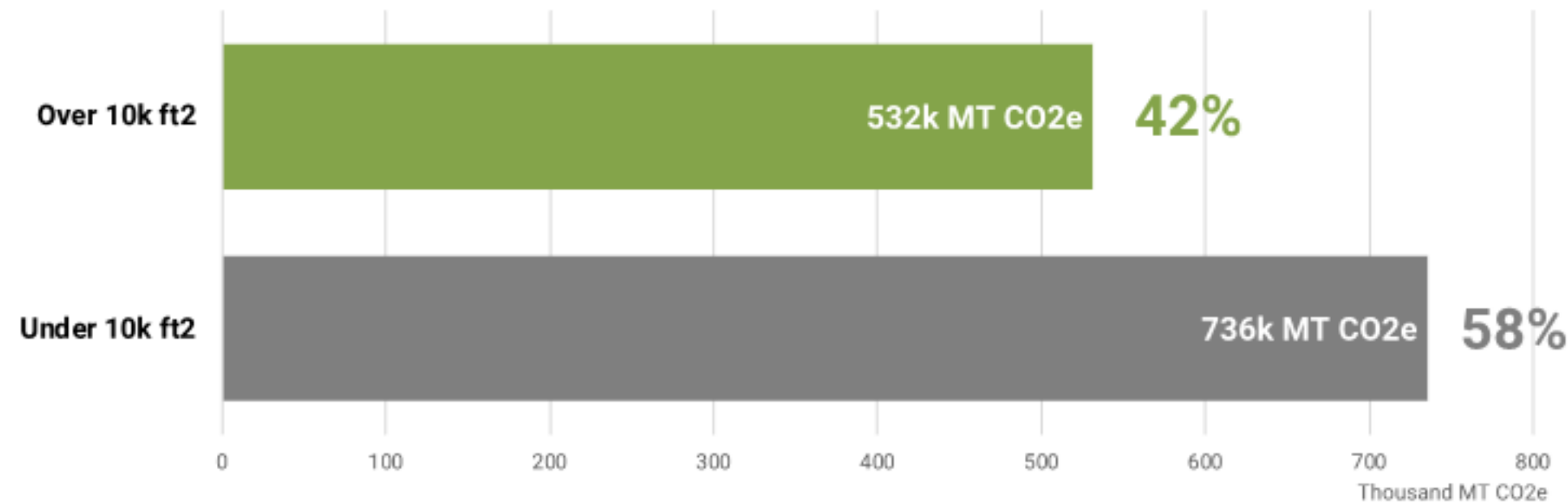
baseline building assessment key findings

[carbon/ghg emissions]

Current Number of Buildings by Size



Total Building GHG Emissions by Size



building stock insights

key takeaways



Single-family residential buildings account for 40% of total building energy use and 39% of emissions.

Electricity supplies 36% of building energy but accounts for 64% of emissions. Electrification policies lead to higher emissions due to dirtiness and volatility of the grid.

The 1,114 buildings over 10,000 ft² (1.8% of all buildings) account for 41% of current total building energy use and 42% of building sector GHG emissions.

Renovation rates are currently projected to affect approximately half of existing buildings by 2050 (and nearly all of existing commercial buildings).

Sales rates are currently projected to affect more than 100% of single family and commercial buildings by 2050.

Significant commercial building demolition as well as new multifamily growth provides an opportunity for replacement with low or zero emissions new construction.

building stock insights

policy implications



Energy efficiency upgrades for SFR buildings have potential to significantly decrease emissions.

Decarbonizing the electric grid, including renewable energy generation and procurement requirements, represents a significant opportunity to achieve emissions reductions.

Energy upgrade policies aimed at buildings > 10k ft² have the potential for significant emissions reductions in the existing building stock.

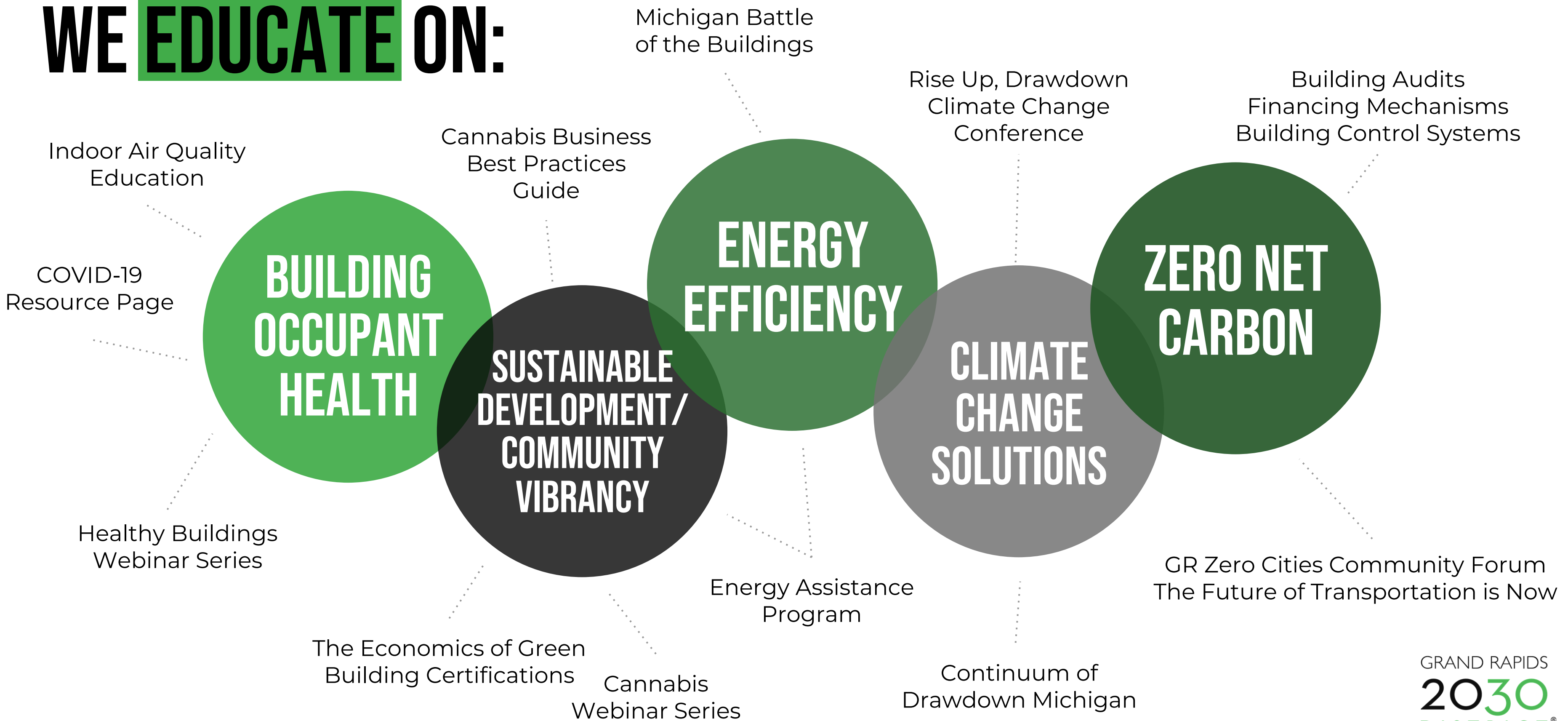
Point of renovation policies for energy upgrades have the potential to affect buildings and significantly decrease emissions.

Point of sale policies for energy upgrades have the potential to affect buildings and significantly decrease emissions.

ZERO Code provides an opportunity to avoid significant emissions in new commercial construction.

Energy upgrades and decarbonization policies include: 1) improvements to the energy efficiency of a building and its systems, including a shift to electric systems that can be powered by renewable energy sources, and/or 2) the generation or procurement of renewable energy.

WE EDUCATE ON:



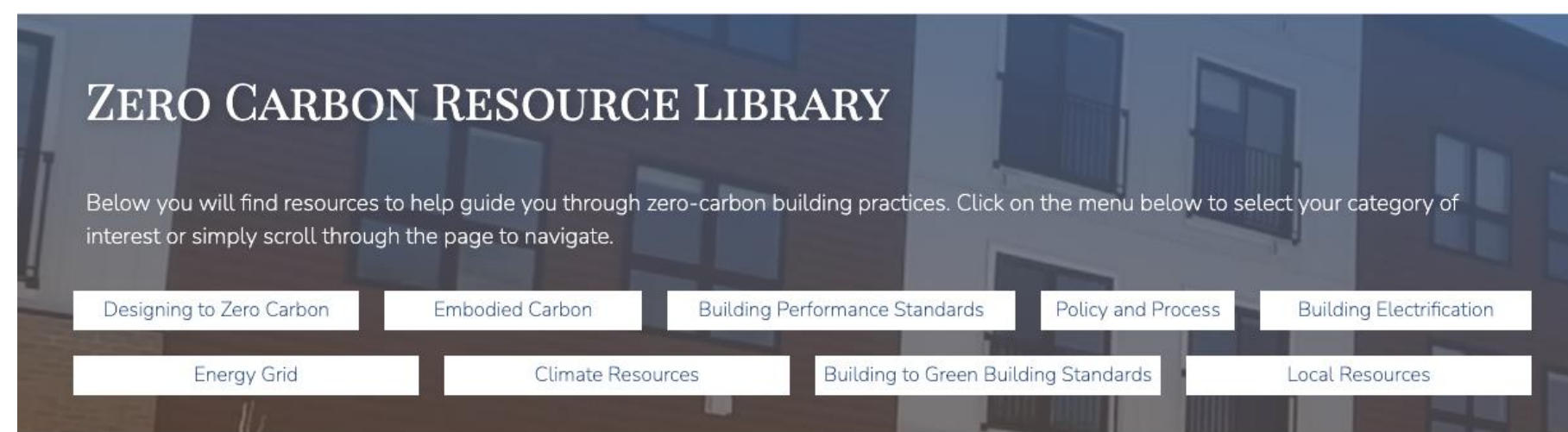
WE HAVE THE RESOURCES

The Grand Rapids 2030 District is your knowledge hub for all things zero carbon, energy efficiency, and carbon drawdown. Whether you are looking to design a zero-carbon building or simply interested in local case studies, GR2030 has a plethora of resources at your fingertips.

Visit our [YouTube channel](#) for past webinars, case studies, and other educational videos:

Check out our new [Zero Carbon Resource Library](#) for guidance on zero-carbon building practices

GR2030 will soon offer a free platform to building owner members who want to gain an understanding of the carbon footprint from their building operations in real-time. Learn more [here](#).



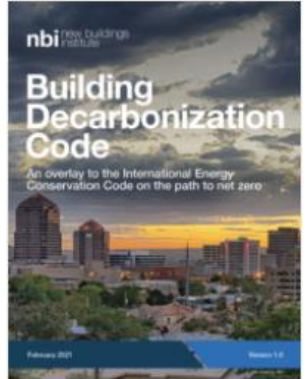

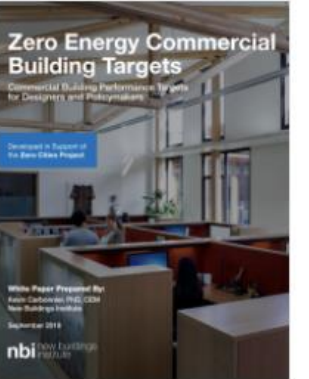
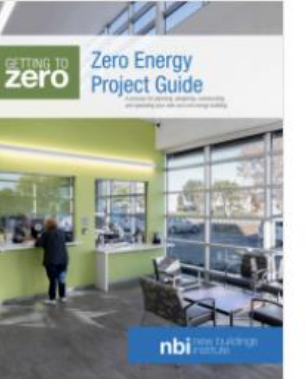
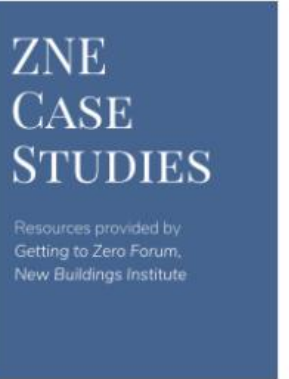
ZERO CARBON RESOURCE LIBRARY

Below you will find resources to help guide you through zero-carbon building practices. Click on the menu below to select your category of interest or simply scroll through the page to navigate.

- Designing to Zero Carbon
- Embodied Carbon
- Building Performance Standards
- Policy and Process
- Building Electrification
- Energy Grid
- Climate Resources
- Building to Green Building Standards
- Local Resources

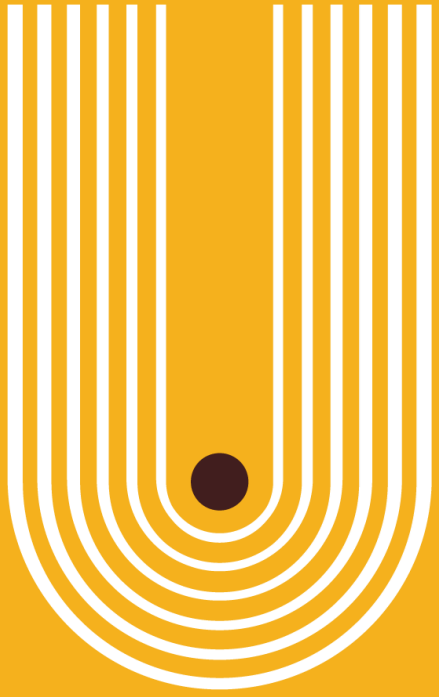
DESIGNING TO ZERO CARBON

Whether you are interested in designing a zero-carbon new construction or looking at examples of zero net energy (ZNE) buildings, the resources below will help you understand the process of ZNE design and construction.

 <p>BUILDING DECARBONIZATION CODE</p> <p>Written by New Buildings Institute Summary: BUILDING DECARBONIZATION CODE The Building Decarbonization Code is a groundbreaking tool aiming to deliver carbon-neutral performance. The Version 1.2...</p> <p>READ MORE</p>	 <p>GETTING TO ZERO BUILDINGS DATABASE</p> <p>Written by New Buildings Institute Summary: GETTING TO ZERO BUILDINGS DATABASE NBI works to identify, research, analyze, and promote commercial and multifamily buildings that are...</p> <p>READ MORE</p>	 <p>ZERO ENERGY COMMERCIAL BUILDING TARGETS</p> <p>This report is a product of the Zero Cities Project (ZCP), a three-year effort supporting both cities and their most impacted communities. The goal of...</p> <p>READ MORE</p>	 <p>ZERO ENERGY PROJECT GUIDE</p> <p>ZE is possible for many buildings and this Getting to Zero: ZE Project Guide can help you on the path to zero energy. A zero...</p> <p>READ MORE</p>	 <p>ZNE CASE STUDIES</p> <p>Resources provided by Getting to Zero Forum, New Buildings Institute</p> <p>Below please find linked resources from New Buildings Institute and Getting to Zero Forum providing case studies of Zero Net Energy commercial buildings.</p> <p>READ MORE</p>
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EMBODIED CARBON

According to Carbon Leadership Forum, embodied carbon refers to the greenhouse gas emissions arising from the manufacturing, transportation, installation, maintenance, and disposal of building materials. Embodied carbon is a significant percentage of global emissions



ZERO CITIES

Consumer Survey on
Residential Energy Services Utilization
September 2020

URBAN
CORE
COLLECTIVE

SURVEY REACH & DEMOGRAPHICS

- About 120 completed surveys 159 partial completion**
- Renters 58%, Homeowners 37%, Landlords 4.5%**
- 82% household income less than \$50,000 (GR Median income)**
- 70.13% AA, 11.04% White, 9.74% Latinx, 7.14% Multiracial, 1.9%Asian or other**
- 74% Female, 26% male**
- 59% of respondents are interested in additional conversations to help improve programs**

FINDINGS -Demand

- **Types of programs of interest (6 options)**
 - 69 Financial Assistance
 - 60 Energy Efficiency
 - 56 Home Rehabilitation
- **Most used in previous 10 yrs. (20 options)**
 - 42 DTE Energy Assistance Program
 - 20 Get the Lead Out
 - 19 Home Repair Services
- **Cost Savings - Biggest motivator to participate (Q- 12)**

FINDINGS -Barriers

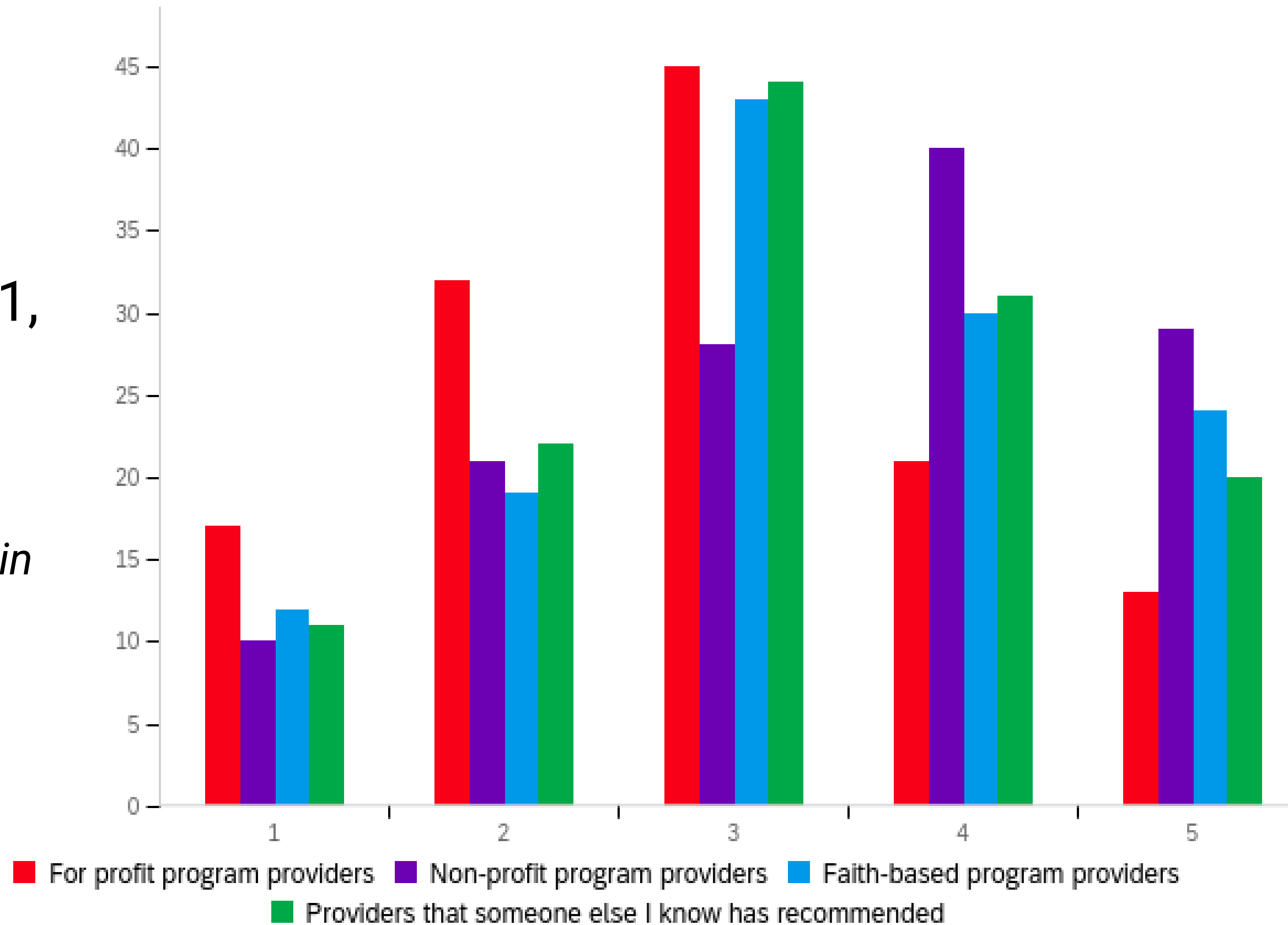
Barriers to Access Services (9 choices)

- 106 Did not know about existing programs
- 33 Did not meet eligibility requirements
 - 21 Income Requirements
 - 8 Outstanding bills or payments to providers
 - 4 Tax Requirements
- 10 Paperwork too long or difficult to complete

FINDINGS - Existing Trust

“Rate your level of trust with the following program providers from 1, the lowest and 5 the highest.”

***Notice the inverse correlation in trust between for and non profit providers.*



THANK YOU!

Collaborators

Alex Markham, Healthy Homes Coalition of West Michigan
Jennifer Spiller, Healthy Homes Coalition of West Michigan

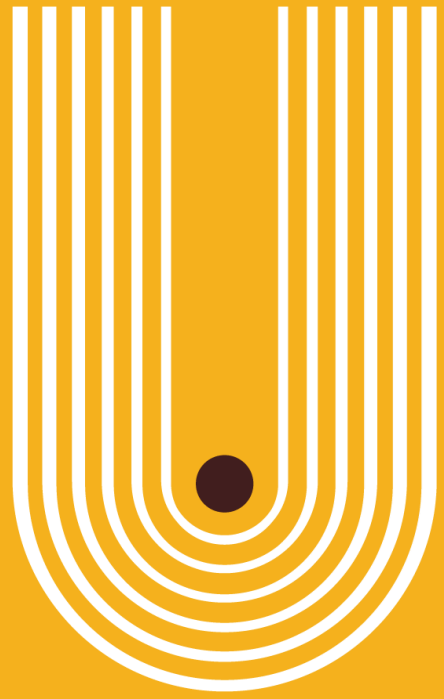
Tatiana Bustos, Independent Consultant

Annabelle Wilkinson, City of Grand Rapids

Alison Sutter, City of Grand Rapids

Sergio Cira-Reyes, Urban Core Collective





ZERO CITIES EQUITY ASSESSMENT TOOL

Grand Rapids Data
October 2020

URBAN
CORE
COLLECTIVE



Metrics in Grand Rapids

1. Energy Cost Burden
2. Economic Prosperity (Wealth, Jobs and Business Opportunities for People of Color)
3. Gentrification and Displacement
4. Substandard Housing and Exposure to Health Risks
5. Geographic Location and Exposure to Environmental Risk
6. Urban Heat Island Effects

ENERGY COST BURDEN

Zero Cities Data

1. Energy Cost Burden on People of Color

KEY TAKEAWAYS: People of Color pay a larger percentage of their income to energy bills. Zero-net carbon strategies should refrain from exacerbating this, while also taking steps to reduce this burden.

ENERGY BURDEN: A 2016 study by ACEEE (American Council for an Energy Efficient Economy) established the relationship between energy costs, income levels, and race. The following chart and the descriptions that follow are excerpts from that report - "Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low Income and Underserved Communities."

IMPACT FOR PEOPLE OF COLOR: The ACEEE analysts found "low income multifamily, African-American, Latino, and renters—devote a disproportionate share of their income to energy expenses."

The report also found, "If low-income housing stock were brought up to the efficiency level of the average US home, this would eliminate 35 percent of the average low-income energy burden of low-income households. For African-American and Latino households, 42 percent and 64 percent of the excess energy burden, respectively, would be eliminated."

WHY? The study concluded it could not make a causal argument as to why a particular city has high or low energy burden, but states, "Factors such as the efficiency of housing stock and the effectiveness and reach of energy efficiency investments, among other factors, may play a role." In general, energy cost burden on any given household is the result of some combination of higher than normal energy costs (often the result of inefficient buildings and systems) and/or lower than average household income relative to average energy bills.

As can be seen in Figure 1, in many areas across the country

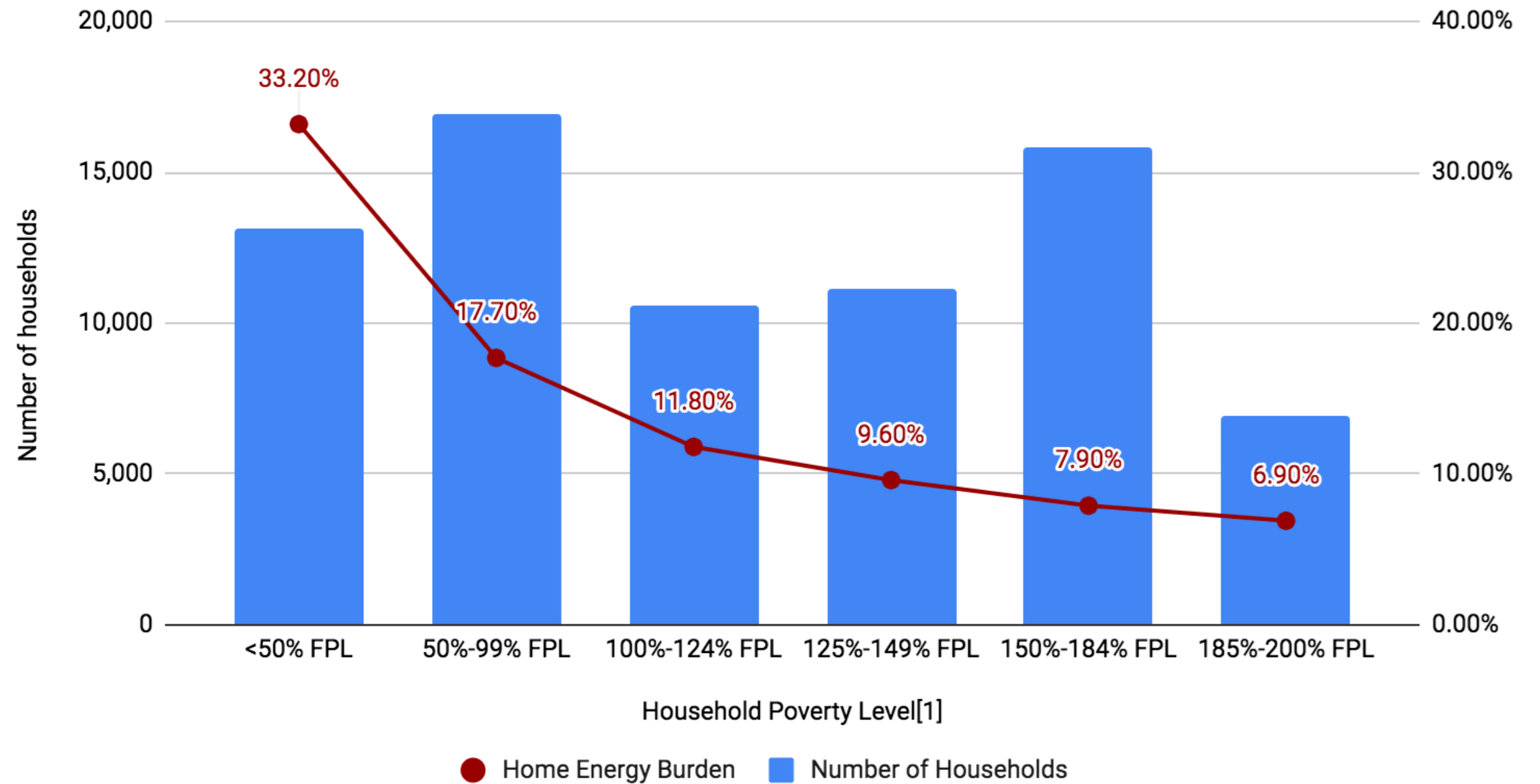
Figure 1. Energy burden of select groups by region, ordered from highest to lowest based on the average of the median burdens across all groups*

People of Color have a higher energy burden than the regional median (and often the national median as well). The data in the report shows that, on average, low-income households pay 7.2 percent of household income on utilities - more than three times the amount that higher income households pay (2.3 percent).

*Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low Income and Underserved Communities" By Andrus Dushoff and Lauren Ross, Energy Efficiency for All and ACEEE, April and August 2016 at <https://www.aceee.org/research-reports/energy>

Kent County Landscape

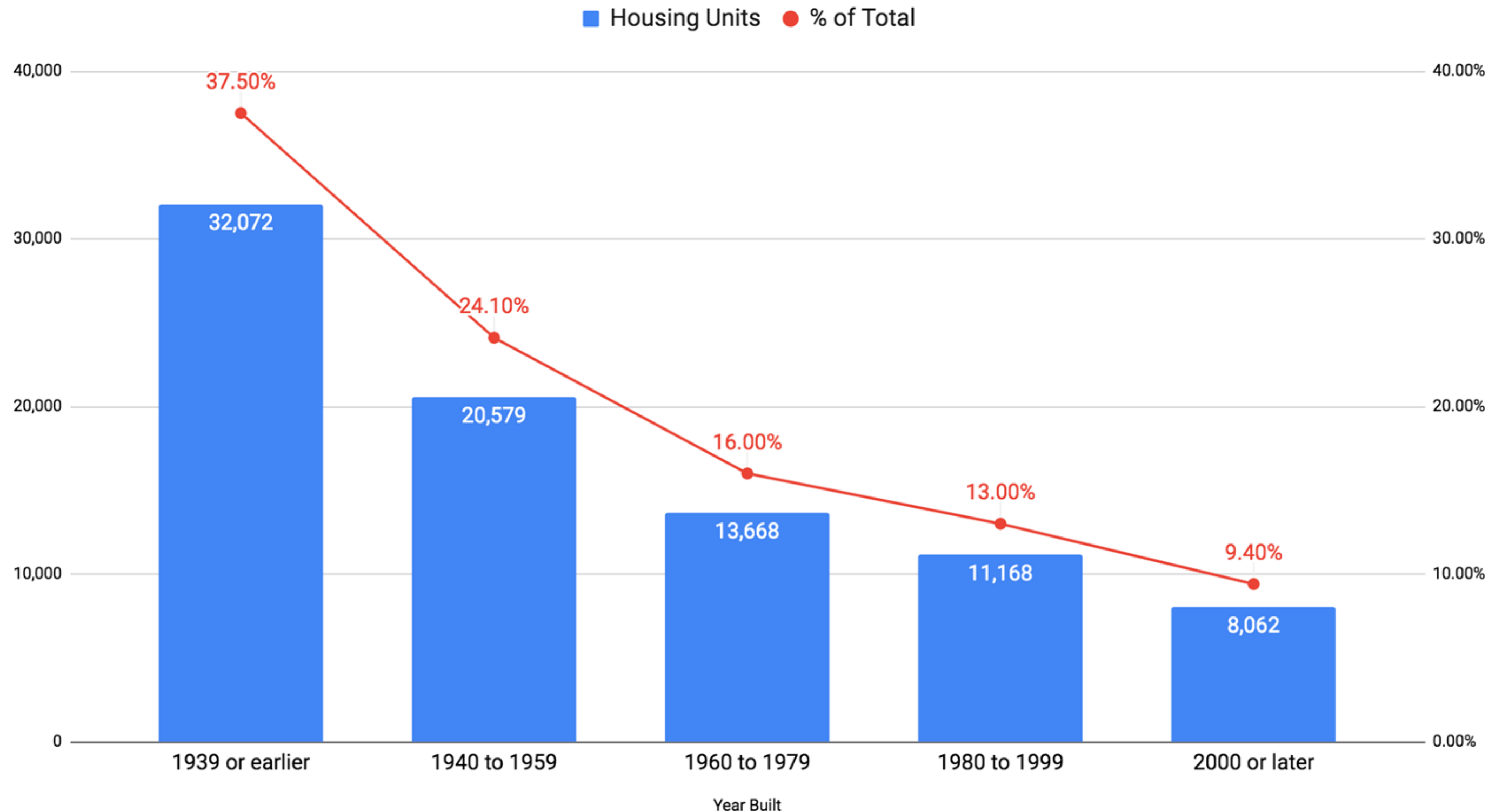
Kent County home energy burden (percent of annual income spent on home energy bills) among low income households



Source: Fisher, Sheehan, & Colton. (2019). Home Energy Affordability Gap, Michigan 2019. Retrieved from http://www.homeenergyaffordabilitygap.com/03a_affordabilityData.html.

ENERGY COST BURDEN

Age of Housing Stock in Grand Rapids, Michigan



Source: U.S. Census Bureau. American Community Survey. (2019). Retrieved from <https://data.census.gov/cedsci/table?q=housing&g=1600000US2634000&tid=ACSDP1Y2019.DP04&hidePreview=false>

SUBSTANDARD HOUSING AND EXPOSURE TO HEALTH RISKS

Zero Cities Data

4. Substandard Housing and Exposure to Health Risks

KEY TAKEAWAYS: People of Color are more likely to live in substandard housing that increases their exposure to health risks like mold, lead, poor indoor air quality, and asthma triggers. Investments in reducing carbon emissions from a city's building stock should consider how to also mitigate these risks.

SUBSTANDARD HOUSING: A 2005 study using data from the American Housing Survey illustrates the breakdown of individuals living in moderately or severely substandard housing by race/ethnicity (see Figure 8).

The data shows that the percentage of non-Hispanic Blacks and Hispanics that reside in moderately substandard housing is >3 times higher than the percentage of whites who live in moderately substandard housing. The percentage of People of Color that live in severely substandard housing

disparities are tied to the conditions affecting poor, highly racially-segregated neighborhoods - substandard housing, environmental hazards, and a lack of financial resources.⁴² Substandard housing on its own is often responsible for poor indoor air quality, mold, mildew, dust, and pests, which are all triggers for asthma attacks.

There are profound racial disparities in both the prevalence and impacts of asthma in the United States. African Americans, for example, not only have a higher prevalence of asthma than

Figure 8. Prevalence of severe and moderate substandard housing by race and ethnicity.⁴³ Source: American Housing Survey, 2005.

is nearly 2 times greater than the percentage of whites.⁴⁴ whites; they also experience higher rates of asthma-associated morbidity and death.⁴⁵

EXPOSURE TO HEALTH RISKS: Populations in substandard housing are more likely to have environmental diseases and injuries.⁴⁶ In particular, low-income communities and communities of color across the country face disproportionately higher rates of asthma than other communities. These

One source of indoor air pollution with a direct connection to household energy use and emissions is the substandard fossil fuel burning appliances that are more common in low-income homes. These appliances burn natural gas, propane, oil,

causal relationship between indoor exposure and the exacerbation of asthma. *Action Against Asthma*, supra note 1, at 8 (linking asthma exacerbations to indoor allergens such as pets and cockroaches, and outdoor pollutants such as ozone and diesel exhaust); Cary-Trust & Myers-Kastowitz, *Socioeconomic Status and Health: The Potential Role of Environmental Risk Exposure in The Nation's Health* 93, 97 (Philip R. Lee & Carroll L. Esses eds., 2010) (linking asthma to presence of cockroaches and pollen, particularly in low-income communities).

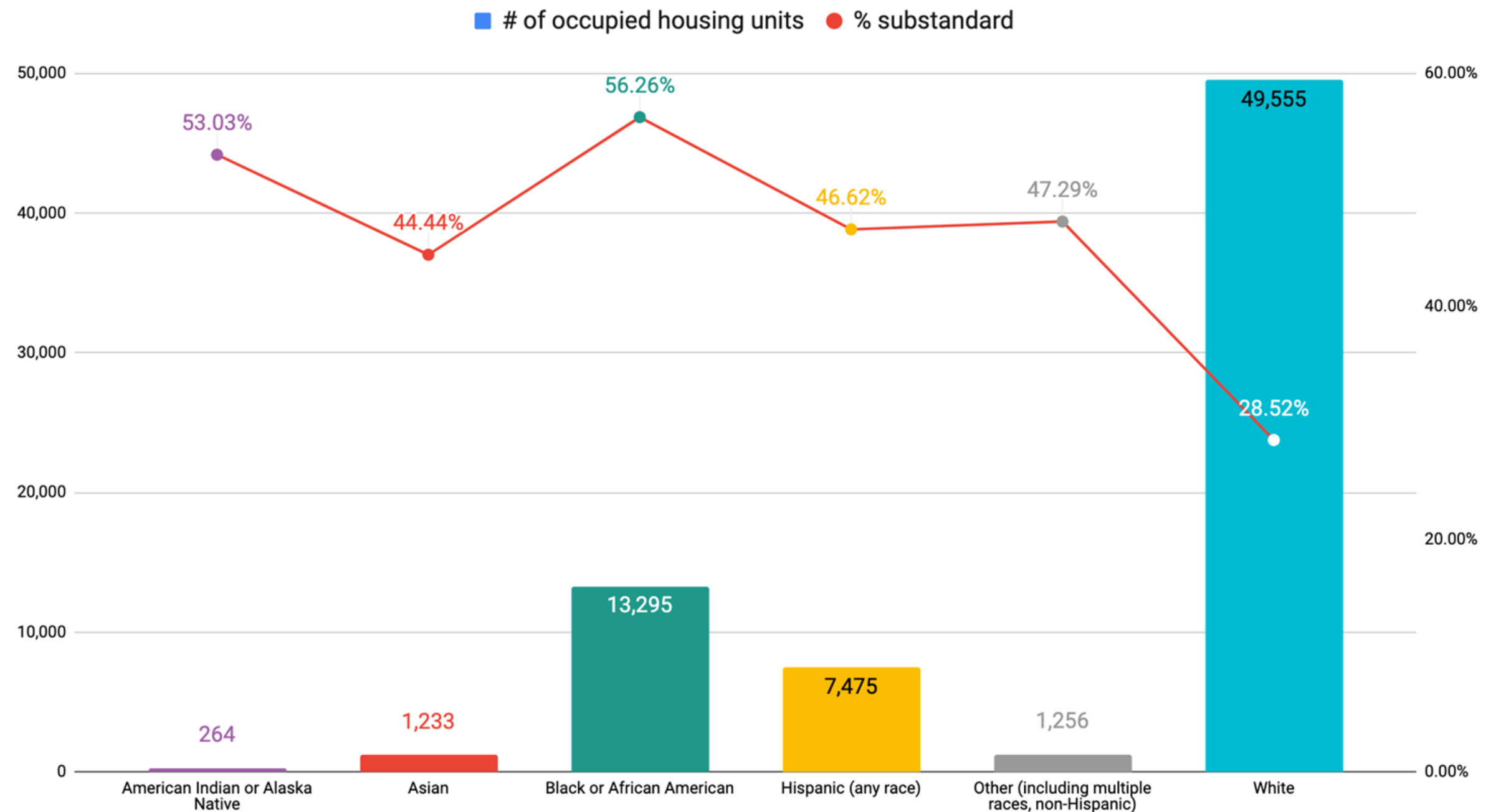
⁴² *Asthma in African Americans: What can we do about the higher rates of disease?* Tracy K. Stivers, MD and David M. Langford, Cleveland Clinic *Journal of Medicine*, 2012, March 2012, 2012, <https://www.clevelandclinicjournal.com/asthma-in-african-americans-what-can-we-do-about-the-higher-rates-of-disease>

⁴³ *Lead in Homes: On the Issues of Asthma & Indoor Air Quality*, *Clearing the Air: Asthma and Indoor Air Exposure* 9 (U.S. EPA) (showing

INTEGRATED LEAD AND ASTHMA PROJECT 2016

Grand Rapids Landscape

Prevalence of Substandard Housing



Source: Department of Housing and Urban Development. (2019). Comprehensive Housing Affordability Strategy (CHAS) data, 2012-2016. Retrieved from https://www.huduser.gov/portal/datasets/cp.html#2006-2016_data.



ACKNOWLEDGEMENTS

Thank you to Maris Brummel, Becky Jo Glover, Ethan Boelkins and Zachary Thiel for their assistance with GR Equity Assessment data collection.



E.H.Zero

**Policies and Programs
for Equitable, Healthy,
Zero Carbon Buildings**

EQUITABLE. HEALTHY. ZERO CARBON BUILDINGS.

Designed by: Dot Design & Providentia Imagining MKTG

The E.H.Zero initiative is a partnership of



desired outcome



Residential and commercial building policies and programs co-created and supported by community (residents and commercial building stakeholders) focused on equitably achieving increased affordability, beneficial health outcomes and resilience while reducing energy consumption and carbon emissions.

key objectives



Lead with equity in the development of policies and programs that will reduce carbon emissions from buildings and homes



Educate all interested stakeholders on Zero Cities Project outcomes and possible policy options



Engage all interested stakeholders in co-creation of policies and programs



Enhance and expand building policy modeling dashboard to support data driven decisions



Complete a housing renovation pilot on at least 5 homes



Present to the City Commission in 2023 a package of policies that will achieve equitable decarbonization within buildings

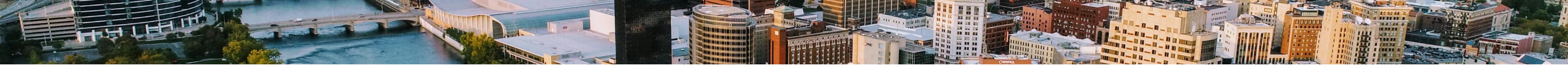


Create a plan for and begin implementing programs and policies, including a “Whole Homes” navigator style program



Incorporate building sector specific goals and key strategies into the Climate Action and Adaptation Plan





E.H.Zero tasks by leading organization

city of grand rapids

- Education/promotion
- Policy/program research
- Develop equity-focused menu of policies
- Complete a Building Carbon Emissions Inventory and Vulnerability Assessment
- Assist with engagement
- Finalize policy recommendations from feedback
- Create implementation plan
- Share knowledge

urban core collective

- Original ZCP Process education
- Energy utility education & promotion
- Engagement with network and residents on policy menu options
- Coordinate small BIPOC equity consultation team from trusted organizations in community
- Provide recommendation for selection of BIPOC marketing firm to coordinate outreach, promotion and education to BIPOC communities
- Equity consultant and thought partner for policy creation

usgbc west michigan

- Original ZCP process education
- Development of marketing and education materials
- Commercial sector education
- Host conference or workshop to educate on how commercial decarbonization affects all residents
- Commercial sector group and one-on-one engagement
- Data tracking
- Exploration on compliance and enforcement

total 3-year project budget of \$1,319,250



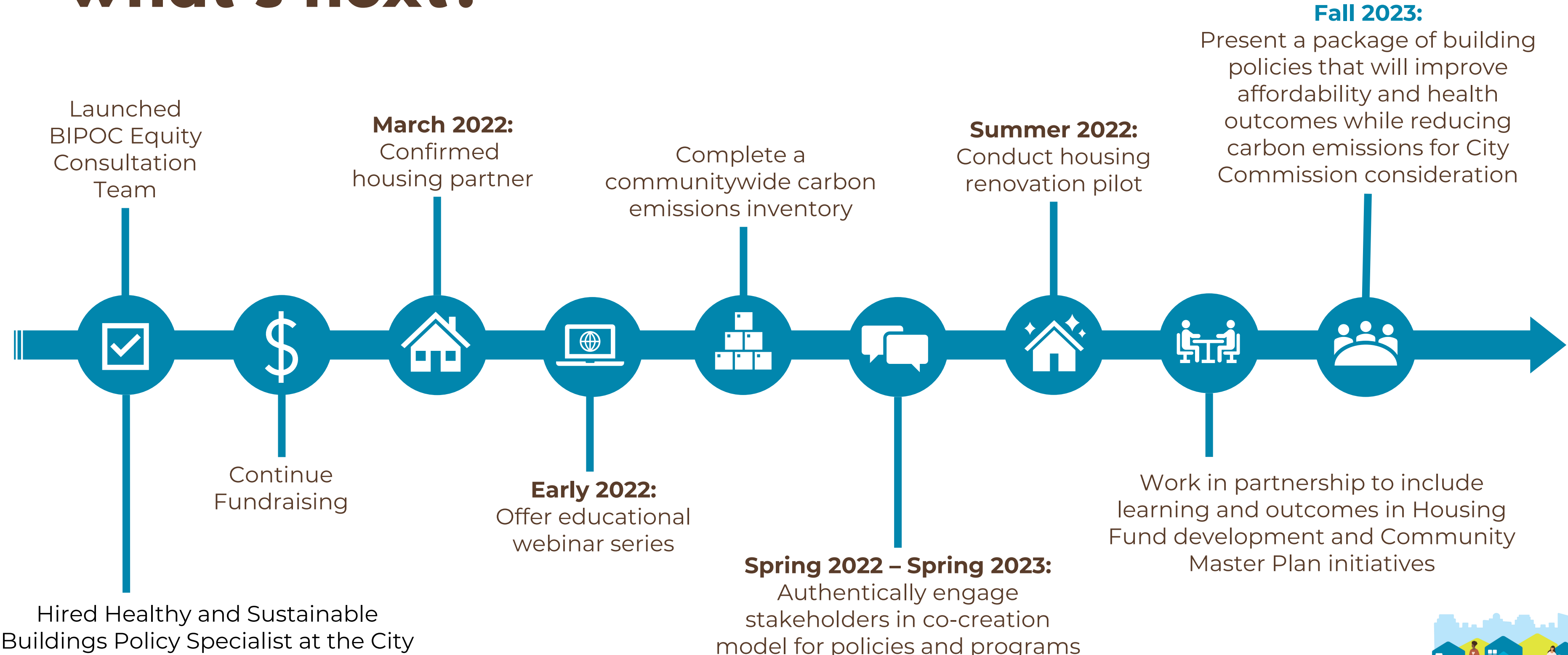
Full time staff person at the City of GR for 3 years (\$330,000)
GR2030 project management, events, and administration (\$270,000)
UCC project leadership (\$50,000)
BIPOC equity consultation team and events (\$50,000)
5 home housing renovation pilot (\$150,000)
Residential housing partner project leadership (\$60,000)

secured funding

\$600,000 from The Wege Foundation
\$150,000 from the Kresge Foundation
\$65,000 from the Summit Foundation

**budget
and
fundraising**

what's next?



single family

Energy audit and lead sampling for residential rental license certification program

Disclosure of 12 months of utility data or an energy label at point of sale or lease

Certification for environmentally friendly design and construction training for contractors and designers

Comprehensive all-electric ready new construction requirements

Whole Homes concierge service for repairs, safety, health, energy/carbon, financing

commercial

Building performance standards (based on carbon reduction)

Building owners complete and disclose energy efficiency assessment of buildings prior to sale

Mandatory energy & water benchmarking and disclosure for large commercial buildings (>10,000 Ft²)

Adopt stricter building energy code if allowed by the state (zero code)

Incentivize renewable electricity for large commercial buildings



policy options to explore

educational opportunities



GRAND RAPIDS
2030
DISTRICT®

February 24, 2022

Policies and Programs for Equitable, Healthy, Zero Carbon Buildings

March 3, 2022

Energy Benchmarking and Transparency: Disclosure for City-Wide Progress Tracking

March 24, 2022

Building Performance Standards: A Win-Win Scenario

April 7, 2022

Point of Sale: Energy & Operational Disclosure Requirements for Investor Decision Making

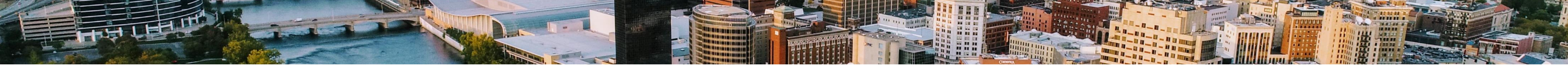
April 21, 2022

Renewable electricity for Large Commercial Buildings

May 5, 2022

Compliance Pathways for Carbon Neutral Buildings - Zero Code





stakeholders to engage

project initiation

- Investors
- City's Economic Development, Community Development, and Planning Departments
- Project developers

design & construction

- Designers, Engineers, Contractors
- City's Design Team, Dev. Center, and Building Inspections
- Construction Companies
- Building Owner/Operator
- City Residential Rental Cert. Program
- Real Estate Companies
- Building Management Companies

people

- Tenants & Residents
- Neighbors
- Employees
- Community-based organizations and Neighborhood Associations

a holistic approach





Photo by Ashley Wierenga



thank you!

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