CITY OF GRAND RAPIDS | Office of Sustainability

Committee of the Whole

Sustainability Update

August 27, 2024

Presented by:
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Office of Sustainability

Highlighted Sustainability Milestones

- **1980** – Mobile GR begins reduce single occupant vehicle usage and transportation-related carbon emissions with financial support for the DASH
- **2002** – Community Master Plan encourages smart growth principles, moving away from sprawling development in favor of revitalizing the central core and strengthening long-established neighborhoods
- **2005** – Grand Rapids is one of the first cities in the country to adopt sustainability as a priority
- **2006** – Grand Rapids is the second city in North America to be designated by the United Nations University as a Regional Center for Expertise and Sustainability
- **2010** – The City becomes one of the first municipalities to provide free curbside single stream recycling for residents and was honored by the U.S. Chamber of Commerce as the Most Sustainable Mid-Sized City
- **2013** – The City commits nearly $15 million to improve flood walls in response to the 2013 flood that caused $1.4 million in damage

Highlighted Sustainability Milestones

- **2014** – In partnership with the West Michigan Environmental Action Council (WMEAC), the City publishes the West Michigan Climate Resiliency Report
- **2015** – The City is one of the first and only cities to have successfully separated stormwater and wastewater systems, at a cost of $400 million, preventing untreated sewage from being discharged into the Grand River during intense rain events.
- **2019** – City invests $85 million to construct a biodigester at the Water Resource Recovery Facility (WRRF) that will reduce emissions at the WRRF by 32%
- **2020** – City formally creates Office of Sustainability within the Executive Office
- **2022** – The City completes construction of a ~1 MW behind-the-meter solar array at the Lake Michigan Filtration Plant that will generate net savings of approximately $1.2 million over 24 years and increase our City's renewable energy performance
- **2024** – City completes its multi-year conversion of streetlighting systems to low-power LED lights, [35% reduced electrical consumption, ~$350K annual savings]
- **2024** – Mobile GR launches EV micromobility pilot in targeted neighborhoods

Grand Rapids Projected Climate Changes

Great Lakes Integrated Sciences and Assessments (GLISA) in partnership with the City created a summary of historic as well as projected changes in climate specific to Grand Rapids. This information is valuable in helping us understand what changes we have already experienced as well as what changes we anticipate. For a look at the full report, click here. The main takeaways are:

Increasing Temperature

- Average air temperature is projected to rise 3°F to 5°F by 2050, with summer having the greatest increases of 4°F to 7°F.
- Historically Grand Rapids had on average 7.9 days per year over 90°F; by 2050 this is projected to rise from 20-38 days per year over 90°F.

Increasing Precipitation

- Total annual precipitation has increased by 16%.
- Average annual precipitation in Grand Rapids is projected to increase by up to 3 inches by 2050 and by up to 7 inches by 2100, though types of precipitation will vary (i.e., more winter precipitation in the form of rain).

Increasing Extreme Weather Events

- The total volume of rainfall in extreme events (heaviest 1% of storms) has increased by 52%.
- Grand Rapids is projected to experience an increase of up to 1.7 days of heavy precipitation (days with over 1” of rainfall) per year by 2050 and by up to 3 days per year by 2100.

Essentially, Grand Rapids will see more days over 90°F in the summer and warmer days in the winter. Grand Rapids will also experience more rain and extreme weather events in shorter bursts that could cause an increase in flooding and droughts.

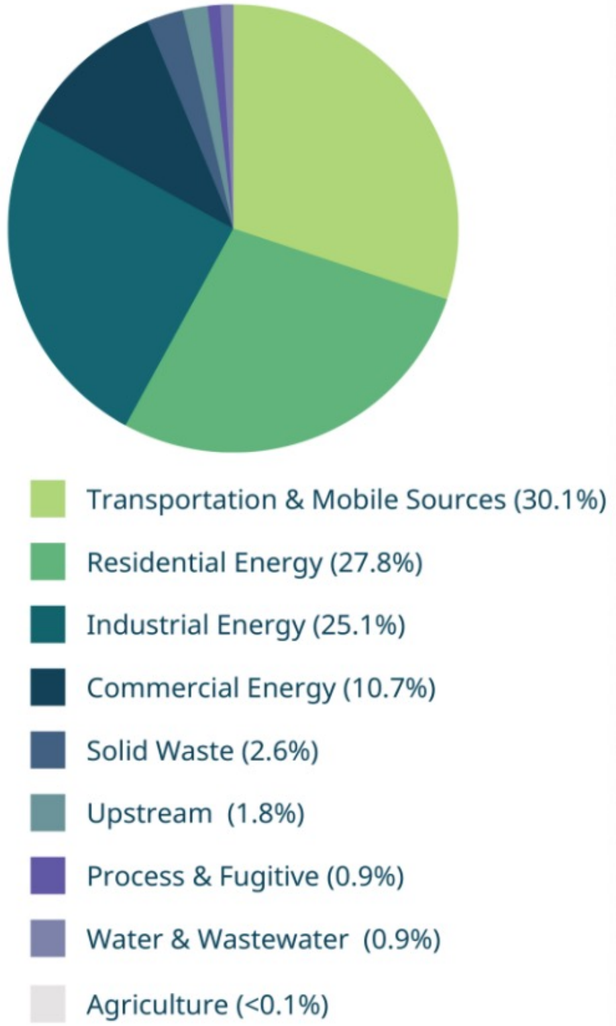
Greenhouse Gas (GHG) Emissions Targets

EMISSIONS AT A GLANCE

1 **Transportation** 30.1%

2 **Residential Energy** 27.8%

3 **Industrial Energy** 25.1%



- Inventory conducted in 2019
- Primary drivers are buildings, transportation and industrial uses
- Emissions are predominantly generated from fossil fuel consumption (natural gas, electricity, transportation fuel)
- City operations are a small proportion of community wide emissions (approximately 2.21%)

Strategic Overview

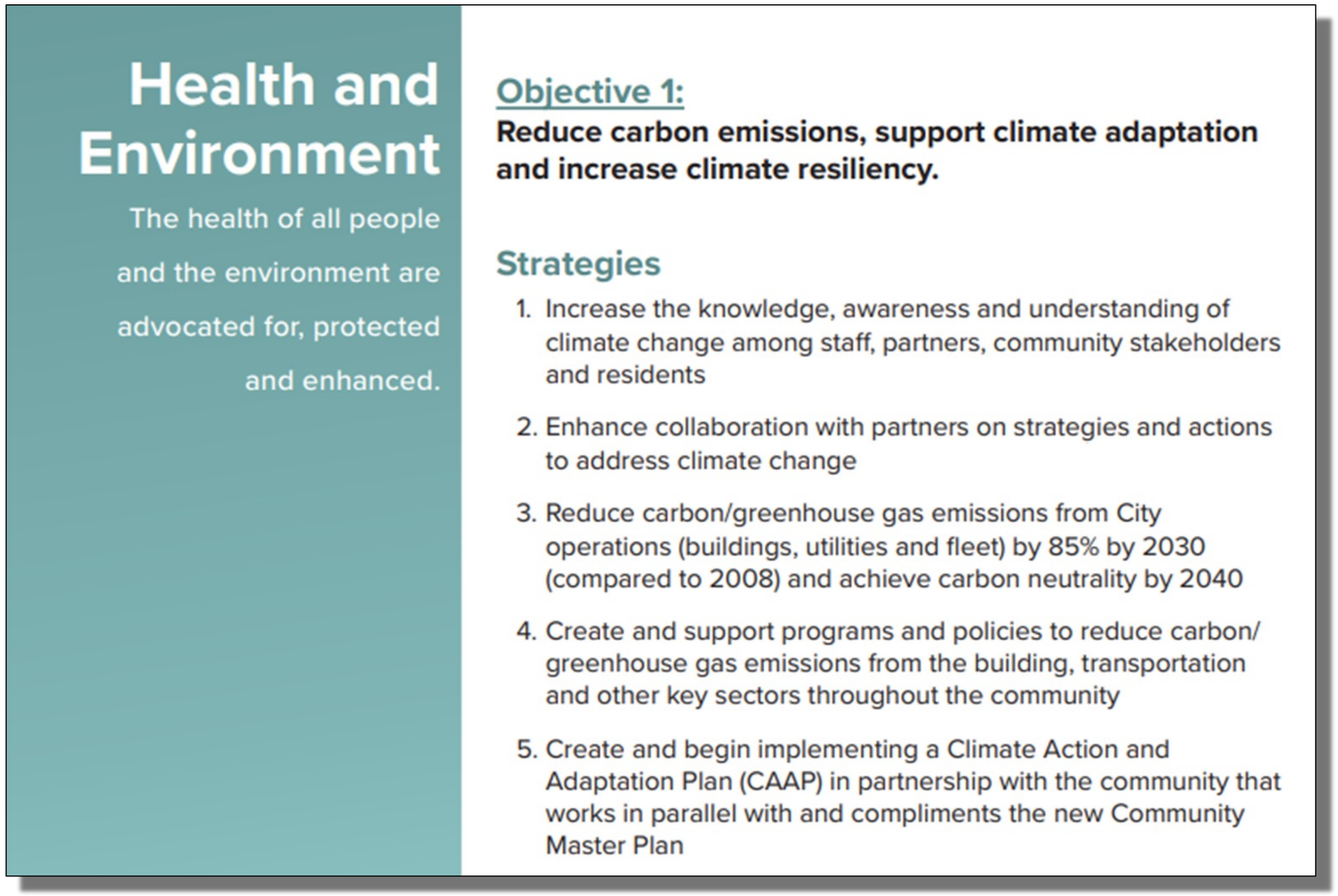
City of Grand Rapids Strategic Plan

Sustainability is one of our six core values that guides all City work.

"Making decisions with the goal of achieving long-term net positive benefits that are informed by an understanding of how those decisions will impact climate resiliency, the environment, people and communities, and finances both today and in the future."

City of Grand Rapids Strategic Plan

In addition, the City Commission's 2024 Legislative Priority Agenda includes responsibly protecting the health of all people and the environment through policies and investments that reduce carbon emissions; supporting climate adaptation and increasing climate resiliency including support for legislation authorizing community solar; enhancing distributed generation and grid reliability; and eliminating any cap on the installation of distributed solar.



Greenhouse Gas (GHG) Emissions Targets

- **City Municipal Operations GHG Reduction Targets**
  - 85% GHG reduction by 2030 from 2008 emissions (30% as-of 2020)
  - 100% GHG reduction by 2040 from 2008 emissions
- **City Municipal Operations Renewable Energy Target**
  - 100% renewable energy by 2025 (100% for 2025/2026 via renewable energy credits)
- **Communitywide GHG Science-Based Targets***
  - 62.8% per capita GHG reduction communitywide by 2030 from 2019 emissions
  - 100% per capita GHG reduction by 2050 from 2019 emissions

** ICLEI – Local Governments for Sustainability is a global network of > 2,500 local and regional governments committed to sustainable urban development was contracted to employ an internationally accepted methodology to measure communitywide emissions and calculate science-based targets (SBT) for emissions reductions*

Municipal Energy & GHG Reduction

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- **Energy Reduction Metrics**
  - Working with National Renewable Energy Lab (NREL) on a goal for % year-over-year reduction in energy consumption by City facilities, utilities and fleet
- **2030 Automated Benchmarking System (ABS) Membership**
  - U.S. Green Building Council of West Michigan is providing support to track and analyze data for 60 municipal buildings
- **Energy Efficiency and Conservation Block Grant (EECBG) Energy Audits**
  - Department of Energy (DOE) grant for $235,280 to fund a contractor to perform municipal energy audits in FY25
- **Exploring Renewable Energy Programs for City after 2025**
  - Working in partnership with Consumers Energy
- **LEED Policy Analysis**
  - Office of Sustainability to draft an update for consideration to the existing green building policy to focus on modern best practices that incorporate climate mitigation and resiliency into new municipal facility buildings and major renovations

The Energy & Carbon Specialist to be hired will primarily act as lead for this work

Staffing/Support for Strategy Implementation

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1. **Chief Sustainability Officer**
   - Recruitment in fall 2024
2. **Energy & Carbon Specialist (HE Strategy 1.3)**
   - 1.5-year grant-funded position from EGLE and The Wege Foundation
   - Will primarily focus on municipal energy and carbon reduction strategies
3. **Education/Engagement Specialist (HE Strategy 1.1)**
   - 3-year grant-funded position from The Wege Foundation
   - Will primarily focus on increasing climate change education and engagement
4. **Community Energy Coordinator (HE Strategy 1.2, 1.5)**
   - Applied for and accepted a 2024-2025 MI Healthy Climate Corps Member (Americorps Program) who will work from November 2024 – October 2025 full time
   - Will focus on creating an equitable "solarize" program assisting residents in acquiring solar, as well as working on increasing accessibility to the City's Property Assessed Clean Energy (PACE) program for businesses

Operational Initiatives

Butterworth Solar

Currently finalizing an RFP with Engineering to hire an engineer of record to conduct a more detailed site analysis and 30% designs in order to release ar RFP for behind-the-meter solar on the site this fall. This is following success in securing $3 million in state funding to complete an extension of the primary circuit to the site. Currently awaiting information on multiple supportive state and federal grant applications (Fall 2024).

Facilities

Current Projects

- Installing a new lighting control system at 300 Monroe, along with a more efficient substation replacement
- Feasibility Study for CARC solar panels system
- 18 new EV chargers at 1500 Scribner (32 ports)
- Replacing (and potentially electrifying) four boilers at GRPD, along with 10 more efficient heat pumps
- Trane Tracer Ensemble – optimization building management and energy monitoring software to increase efficiency potential

Future Projects

- Solar installations at 1500 Scribner and Community Archives Center
- Additional EV chargers to support the city's EV fleet
- 300 Monroe HVAC system replacement
- Demand limiting for select facilities to maintain current electric rates and peaks

Five EPA ENERGY STAR® certified buildings in 2023.

In FY24 City facilities reduced energy consumption by 6%

Fleet

- In FY24, the City fleet increased from nine full-electric sedans to 25. City fleet is now at 43% low to no emissions and expects to be over 50% in FY25.
- This summer Fleet worked with the Catalyst Leadership Circle Fellowship in partnership with the University of Michigan to develop a fleet electrification roadmap, which will assist in identifying the most logical candidates for electrification as well as determining the appropriate amount of charging infrastructure needed.
- Fleet has launched a telematics program in all new equipment (outside of police and fire) put into service. This monitors idle time, vehicle usage, and vehicle health remotely to maintain maximum fuel economy. It also provides recommendations for vehicles to electrify based on real world usage of the equipment.

CATALYST COMMUNITIES

CITY OF GRAND RAPIDS

Current Fleet Status

- ***6 CNG vehicles***
  11 more CNG refuse trucks on order
- ***1 RNG vehicle***
  Four being outfitted now to bring our total up to 5 RNG
- ***25 Full electric***
  Expecting to get 3-5 more soon
- ***4 Plug-in hybrid (PHEV)***
  Expecting to get 3-5 more soon
- ***147 Tier 4 Diesel***
- ***17 EV chargers for city fleet with 34 total Ports***

Environmental Services (Wastewater)

- Produced a total of 111,832 MMBtus in biogas in FY24
- Environmental Services (ESD) put a proposal in to The Rapid for provision of Renewable Natural Gas (RNG) a part of The Rapid's recent RFP
- Concurrently, ESD has a contract in place with Weaver for development of a process for our own Renewable Identification Numbers (RINs) generation and reporting as well as a private RNG wholesaler on possibilities for partnership for marketing and distribution
- Submitted congressionally directed spending request for additional RNG skid to increase cleaning and producing capacity for RNG

In FY23, ESD completed their Phosphorus Recovery System – separating 40,000 pounds of phosphorus from biosolids. Currently working on a partnership with a fertilizer company that will purchase the phosphorous

Environmental Services (Stormwater)

- Current large scale green infrastructure projects;
  - Bank restoration projects in Plaster Creek
  - Stream daylighting projects in City parks
  - Installation of porous pavements and bioswales in urban centers such as Seymour Square and S. Division Ave.
- Currently working with EGLE on a climate resiliency program and plan update
- FEMA-supported flood mitigation work near Woodlawn Cemetery and Alger Heights (applied for additional FEMA support for Indian Mill Creek).
- Prioritizing the installation of Green Infrastructure in areas experiencing environmental injustices, with a focus on rain gardens, tree canopy improvements, and green space enhancements

Burton Breton Drain Restoration

Grand Rapids is leading the nation on green infrastructure with over nine million gallons of stormwater infiltrated since 2014 at a cost of $60 million

Public Works

- **Organics** – 30,770 tons of yard waste and 874 tons of food waste processed at the free yard compost site at Domtar (Nov 22 – Oct 23)
- **NextCycle Michigan Cohort** – Partnering with Innovation Lead in a circular economy innovation accelerator program to develop a shovel-ready project to fund (focused on food scrap pilot drop-off program)
- **Partnership with Prairie Robotics** – Smart Technology that uses cameras in recycling trucks to reduce contamination.
- **Neighborhood Cleanups** – Including diversion options for neighborhood cleanups outside of dumpsters including recycling, metal scrap, and partnership with Goodwill for clothing donations.
- **Fleet** - In partnership with Fleet moving to low to no emission vehicles from diesel including two all electric sweepers and full conversion to CNG refuse garbage trucks

Mobile GR

Lime Access Program

- 501 actively riding since the start of the pilot
- 879 new lime access users (up from an average of 40 per month prior to the pilot)
- 7,391 Lime Access trips since the start of the pilot

Public Transportation Resources

- 60 stops to be upgraded to ADA compliance and shelter installs

DASH Buses

- Fueled with Reclaimed Natural Gas from the biodigester at the WRRF
- 3 diesels to be retired by 2026 or end of service life

DART - EV Car Share Program

Six locations

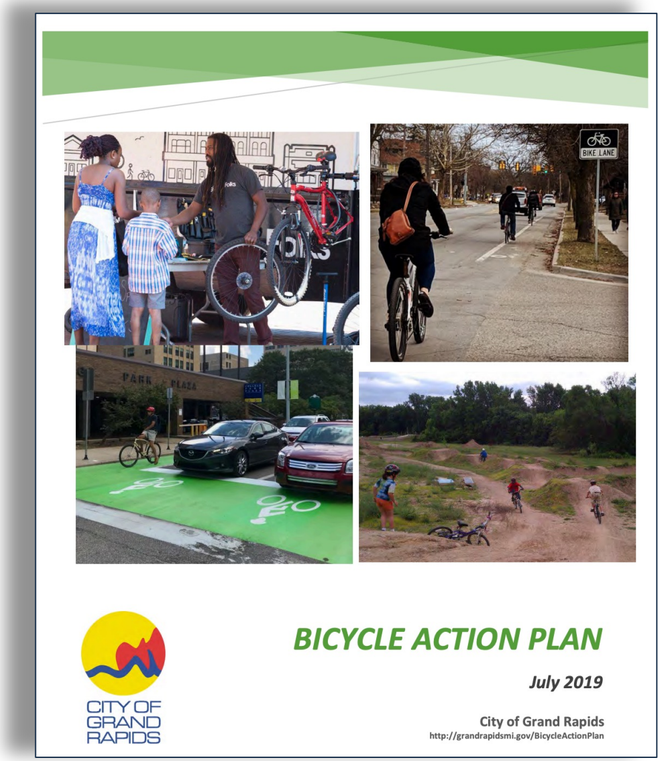
- *(Madison Square Lot, Burton-Division Lot, West Fulton St W Lot, Eastown Ethel Lot, Weston Commerce Ramp, Ottawa Fulton Ramp)*

Four new charger installations

Site selections were chosen by analyzing Climate and Economic Justice Screening Tool, Neighborhoods of Focus, car ownership rates, proximity to transit, geographic equity by Ward and location on City-owned facilities

Vital Streets

- Currently 113 miles of bicycle lanes
- Submitted a grant application to the U.S. Department of Transportation Active Transportation Infrastructure Investment Program (ATIIP) to continue extension of bike network. The proposed grant project would construct over 9.5 miles that extend or close gaps in existing facilities. These segments would link schools, businesses districts and neighborhoods. Complementary sidewalk and crosswalk facilities would be built in some locations to provide multi-modal design that supports all users.



The City's 2019 Bicycle Action Plan calls for over 100 miles of new bicycle facilities.

Parks & Forestry

- The Forestry Operations and Management Plan has commenced will be completed by July 2025.
- Maintenance and removal of hazardous trees to enhance overall health of tree canopy. Trimmed 2,391 trees through P2, storm-related, and regular production efforts in FY24. Goal is a 2:1 ratio of tree plantings to removals. As of CY23, 475 trees have been removed and 1,598 have been planted, resulting in a ratio of more than 3:1.
- Increasing use of native planting in design plans in partnership with ESD for Green Infrastructure Projects within parks such as Garfield (now having two projects completed) and Mulick, both of which feature newly installed rain gardens
- Reducing wood waste from city forestry operations through reuse (supplying Kid's Food Basket for composting and community gardens woodchips and collaborating with Public Works to develop a long-term strategy for utilizing a forced air burner. This will transform old logs into valuable material for composting at the City yard waste site.

Since 2015, the City and our partners have planted nearly 9,000 trees at a cost of $2.5 million in an effort to reach our 40% tree canopy goal (we are currently at 34%). These trees are estimated to provide $2.6 million annually in ecosystem services

Emergency Management & Planning

Emergency Management

- Working in partnership with Neighborhood Associations and CBO C4 to conduct Emergency Preparedness Focus Groups across the city with a focus on climate resiliency
- Created Community Emergency Response Team (CERT) Program to train volunteers to assist families, neighbors, and community members during emergencies when professional responders may not be immediately available to provide assistance
- Partnering with Office of Sustainability to integrate climate resiliency into Emergency Management Plans including Threat and Hazard Identification and Risk Assessment (THIRA) and Regional Hazard Mitigation Plan (HMP)

Planning

- Working in partnership with the Office of Sustainability to ensure the Community Master Plan incorporates sustainability and climate resiliency
- Working in partnership with the Office of Sustainability to ensure the applicable Community Master Plan recommendations are reflected in the Climate Action and Adaptation Plan

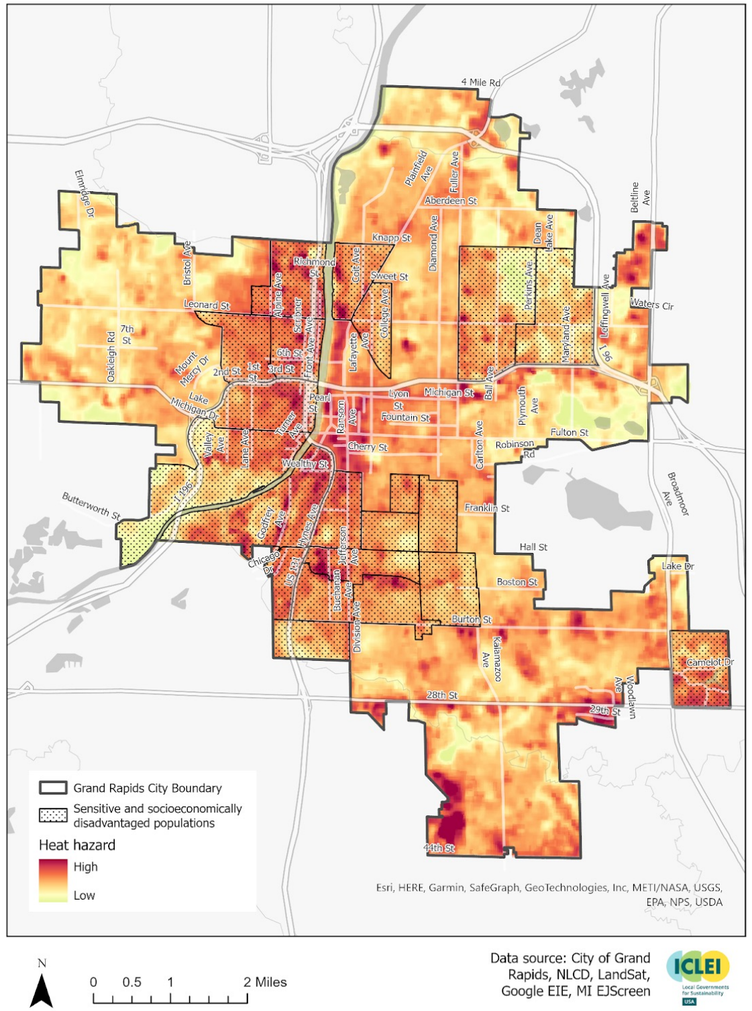
Communitywide Work

Climate Risk & Vulnerability Assessment

Climate risk and vulnerability assessments (CRVAs) are local studies that identify current and future risks associated with climate change and help inform climate resilience actions in future projects and planning efforts, including the City's Climate Action and Adaptation Plan (CAAP).

Includes a review of local and regional climate science and planning documents, as well as input from the community, City staff, experts, and other local stakeholders informed the CRVA.

Expected completion September 2024.



Distribution of heat hazard in the City, calculated from land surface temperature, impervious surface coverage, and tree canopy coverage.

Climate Action & Adaptation Plan (CAAP)

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The Climate Action and Adaptation Plan (CAAP) is a roadmap for how the community of Grand Rapids will reduce greenhouse gas emissions and prepare for the impacts of climate change on public health, ecosystems, infrastructure and public spaces.

The CAAP is being co-created in partnership with community stakeholders and based on resident feedback.

Expected adoption February 2025.

Six Chapters

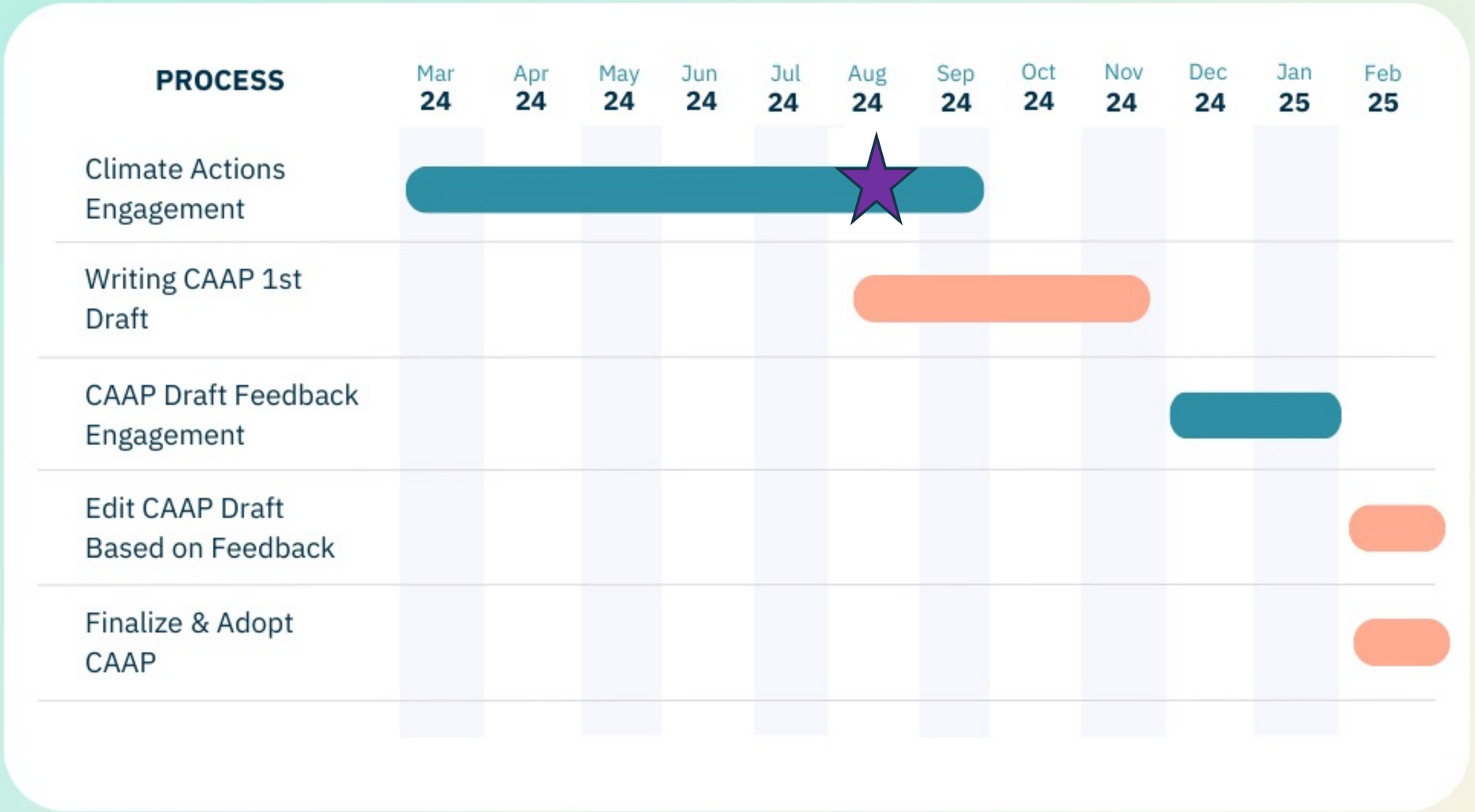
1. *Access to Renewable Energy*
2. *Healthy Homes*
3. *Commercial Buildings and Industry*
4. *Transportation and Vital Streets*
5. *Natural Systems*
6. *Food Systems*

Five Overarching Themes

1. *Equity*
2. *Economic Prosperity*
3. *Health*
4. *Resilience*
5. *Collaboration*

Climate Action and Adaptation Plan

2024 -2025 CAAP TIMELINE



Increasing & Promoting Climate Knowledge

- Public e-newsletter
- Resources for residents on the City's climate change web page
- Staff and public climate change training series has launched with two videos
- Staff Innovation Challenge on Climate Change in partnership with Innovation Lead
- Partnering with Communications on social media and press releases
- Education & Engagement Events: CRVA Focus Groups with higher vulnerability populations (110 participants), CAAP Survey (440 responses) and seven CAAP Events (~260 participants)

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The new Education & Engagement Specialist (to be hired) will primarily act as lead for this work

E.H.Zero Initiative

- Policies & Programs for **E**quitable, **H**ealthy & **Zero** Carbon Buildings
- Focus on **commercial buildings** and **single-family housing** based on data and equity
- Purpose: create strategies related to buildings for the Climate Action & Adaptation Plan and propose recommendations to to City leadership that reduce carbon emissions from buildings
  - Strategy examples could include zoning, economic development incentives, voluntary programs, City Commission policy, City Administrative policy, state legislative and regulatory engagement, financial assistance opportunities, support for people with navigating resources
- Includes a Home Renovation Pilot program to test energy efficiency upgrades while improving health and housing affordability

E.H.Zero | Residential

URBAN CORE COLLECTIVE

- Key partners: Urban Core Collective, Elevate, Green Home Institute, Community Development Department (CD)
- Residential buildings account for 38% of building GHG emissions
- Includes single-family ≤4 units, both rental and owner occupied, with a primary focus on existing buildings (vs. new build)
- Residential Climate Advisory Team (R-CAT) launched March 2024
- Home Renovation Pilot
  - $250,000 raised through MSHDA MI-HOPE Program in partnership with CD to renovate at least 10 homes
  - Initial target area: South DICE Zone (Baxter area)
  - Plan to track economic and health outcomes over time
- Exploring opportunities to collaborate with County Community Action Agency (weatherization), Consumers Energy, and DTE
- Continue to explore federal and state funding opportunities

E.H.Zero | Commercial

- Key partner: Grand Rapids 2030 District managed by U.S. Green Building Council of West Michigan (USGBC-WM)
- Commercial buildings account for 48% of building GHG emissions, and multifamily buildings account for 14% of building GHG emissions
- Includes multi-family (>4 units), but not industrial or parking, focused on both new construction and existing buildings
- Focusing on large commercial buildings (> 10,000 sq ft; ~1,150 buildings)
- Commercial Building Climate Advisory Team (C-CAT) launched Feb. 2023

Regional Collaborations

- A member of the White House's Building Performance Standards Coalition, a first-of-its-kind partnership between 33 state and local governments dedicated to delivering cleaner, healthier, and more affordable buildings.
- Intervening in Michigan Public Service Commission (MPSC) cases regarding distributed generation and voluntary green pricing programs
- Providing testimony at Michigan State Senate Hearing for community solar bill
- Partnering with Grand Valley Metro Council (and other communities) to create an MSA-specific Comprehensive Climate Action Plan focusing on GHG reduction and sequestration
- Participated in a multi-state midwestern collaboration for Solar for All grant application – awaiting award details

Thank you!

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