

EAST GRAND RAPIDS Climate Action Plan



NOVEMBER 2024

CITY OF EAST GRAND RAPIDS

CO₂
neutral





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MESSAGE FROM THE MAYOR: KATIE FAVALE



In East Grand Rapids (EGR), we pride ourselves on our relationship to the nature around us. As a community that is deeply connected to our local environment, there is a strong desire amongst residents to be stewards of our environment^[1]. Throughout our history, we have relied on Reeds Lake for business and recreation alike, and residents of EGR have long enjoyed the natural beauty of our tree-covered parks. We pride ourselves for being a community that is walkable and has plentiful access to green space and outdoor recreation areas. However, as many scientists agree, human-generated activities are causing damage to the global environment, including our beautiful community.

In recent years, we have observed more intensity in terms of our local climate impacts: hotter summers, lack of snow in winters, and an increase of intense weather events^[2]. For many in the community, it is clear that we must take more immediate action. In the recent past, we have made significant progress towards a more sustainable future—so great, in fact, that we received the MI Green Communities Challenge Gold recognition in 2023 and 2024^[3]. We committed to reducing our carbon footprint by being the first municipality in the state to participate in DTE Energy’s CleanVision Natural Gas Balance program^[4], which helps customers and municipalities address their buildings’ greenhouse gas emissions. We were recognized by the Arbor Day Foundation for our ninth year in a row due to its Tree City USA program^[5], which recognizes our sustainable forestry operations. Our progress is more visually evident than ever before through the installation of solar arrays^[6] on City-owned buildings, which also helps reduce the City’s reliance on fossil fuels to power our operations.

However, we recognize that there is a need to continue with the work that is being done. As many cities globally are now on track to become carbon neutral in the near future, we wish to also function as leaders in this capacity. Thus, we have issued a Proclamation of Support for climate action goals to reduce energy use, reduce greenhouse gas emissions and reduce government operation costs. In so doing, the City has taken its crucial first step in the process of local climate action and set a goal to achieve carbon neutrality for City operations by 2040. Carbon neutrality is an immense responsibility for the City to undertake, but we see this challenge as an opportunity to demonstrate our leadership as an adaptable and resilient community.

The enclosed Climate Action Plan is designed to help our City meet our strategic environmental goals and implement necessary actions and measures to achieve carbon neutrality by 2040. By implementing these actions, EGR will join leading municipalities in doing our part to deliver on our commitments to a sustainable future. We encourage residents of EGR to join the City in taking steps to foster sustainability in your own homes and businesses, and together, we will make great strides in contributing to sustainability at home, at work, and in our community.

Sincerely,

Katie Favale

Mayor of the City of East Grand Rapids





INTRODUCTION



East Grand Rapids is a vibrant, diverse community that is closely connected to its natural surroundings. EGR is highlighted by our safe neighborhoods, active community, and recreational activities. No matter where you work or live, EGR has something to offer. Most of our community is tight-knit and within close proximity, which values the strengthening of communal activities. EGR's population continues to shift and evolve which is influencing the preferences and needs of the community when it comes to our development strategies. The community is reliant upon the numerous facilities and services that are available, including the library, local nature trails, and the excellent school systems. The convenience of our infrastructure has facilitated a community that is “family-oriented and civically engaged^[7].”

Since its early settlement in 1833, EGR has been a forward-thinking, lively community. In recent years, we have begun to work toward inclusivity and enhancing the already innovative character of the City. EGR recognizes that evolution is constantly underway, and in order to keep up, we too must always be changing. In our 2018 Master Plan, we reinforced our underlying goal:

“To create a community atmosphere that reinforces the residential character and the high standards of excellence that have come to be the symbols of East Grand Rapids.”

Objectives involved in the 2018 Master Plan included improving walkable infrastructure; attracting desired reinvestment and new development; increasing the amount of attached residential; and ensuring new development is compatible with the existing character of Gaslight Village and the City's neighborhoods. In the future, we will continue to work toward the successful completion of these goals, as well as taking into consideration our environmental impacts so we can be better prepared for the necessary transition to climate-friendly infrastructure in the near future.





CLIMATE CHANGE

Following the Industrial Revolution, greenhouse gas (GHG) emissions have been steadily increasing. While many of these impacts do occur naturally, human activities have exacerbated the production of these gases at an unstable rate. To prevent the most significant consequences of climate change, leading cities worldwide have committed to driving action to reduce GHG emissions and energy consumption. The City of East Grand Rapids finds that it is imperative to join these leaders in responding to this call to action and commit to a sustainable future. This commitment is a result of the City's dedication to being a leader in environmental stewardship, along with engaged community members that brought carbon neutrality to the forefront of the City's agenda.

Scientists agree the planet is facing a climate emergency, and this emergency stems from human activity, most prominently from the release of greenhouse gases into the atmosphere. The three major GHG's—carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O)—have already caused large-scale changes in every inhabited region around the world, from air temperature changes to coral reef damage. Climate scientists agree that without rapid changes, from world governments to individual actions, the impacts will be irreversible. The most recent Intergovernmental Panel on Climate Change (IPCC) report has acknowledged that human influence has warmed the atmosphere, ocean, and land, and the goal of 1.5-degree to 2-degree Celsius warming will be exceeded during this century unless reductions in GHG emissions occur^[8].

These goals of 1.5- to 2-degree Celsius warming are significant indicators of the impacts that climate change will have on the planet. These numbers may seem small in isolation, but the 1.5-degree threshold is an important goal because with every additional 0.5-degree Celsius of warming, there are expected to be increases in the frequency of heat extremes, agricultural and ecological droughts, and extreme weather events^[9]. There have also been observed impacts on natural ecosystems. Biome shifts have already begun to disrupt species range and abundance, creating an imbalance of biodiversity in both water-based and terrestrial ecosystems^[10]. One of the major ecosystems already feeling this disruption are ocean ecosystems, where framework organisms—organisms that are essential to the success of the ecosystem—have been unable to adapt to changing temperatures, which has threatened food systems on all levels^[11]. More locally, evidence suggests that the Great Lakes region of North America will experience its own unique set of challenges with regard to temperature extremes, precipitation, and weather extremes^[12].

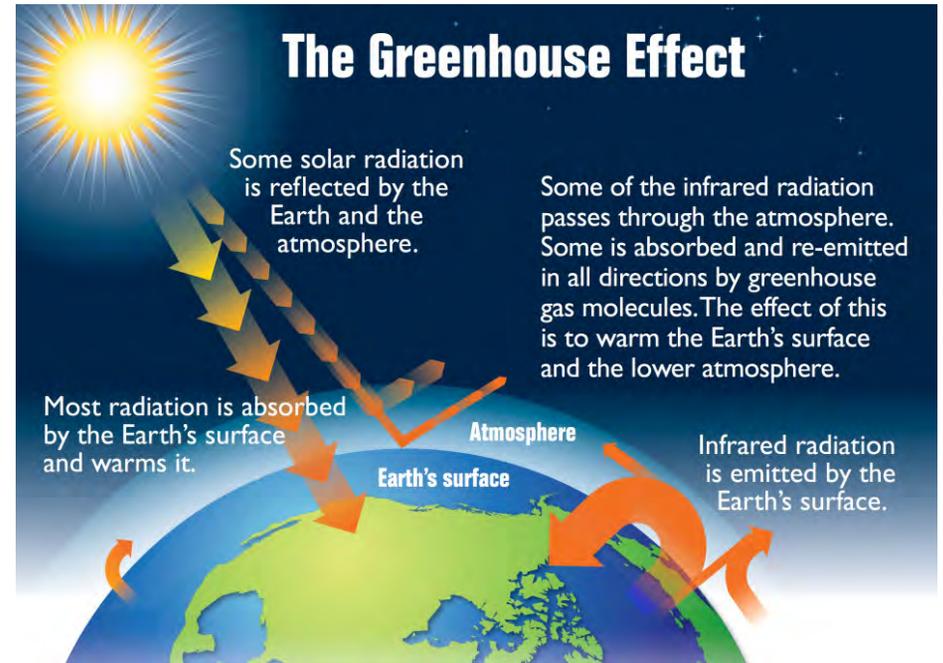
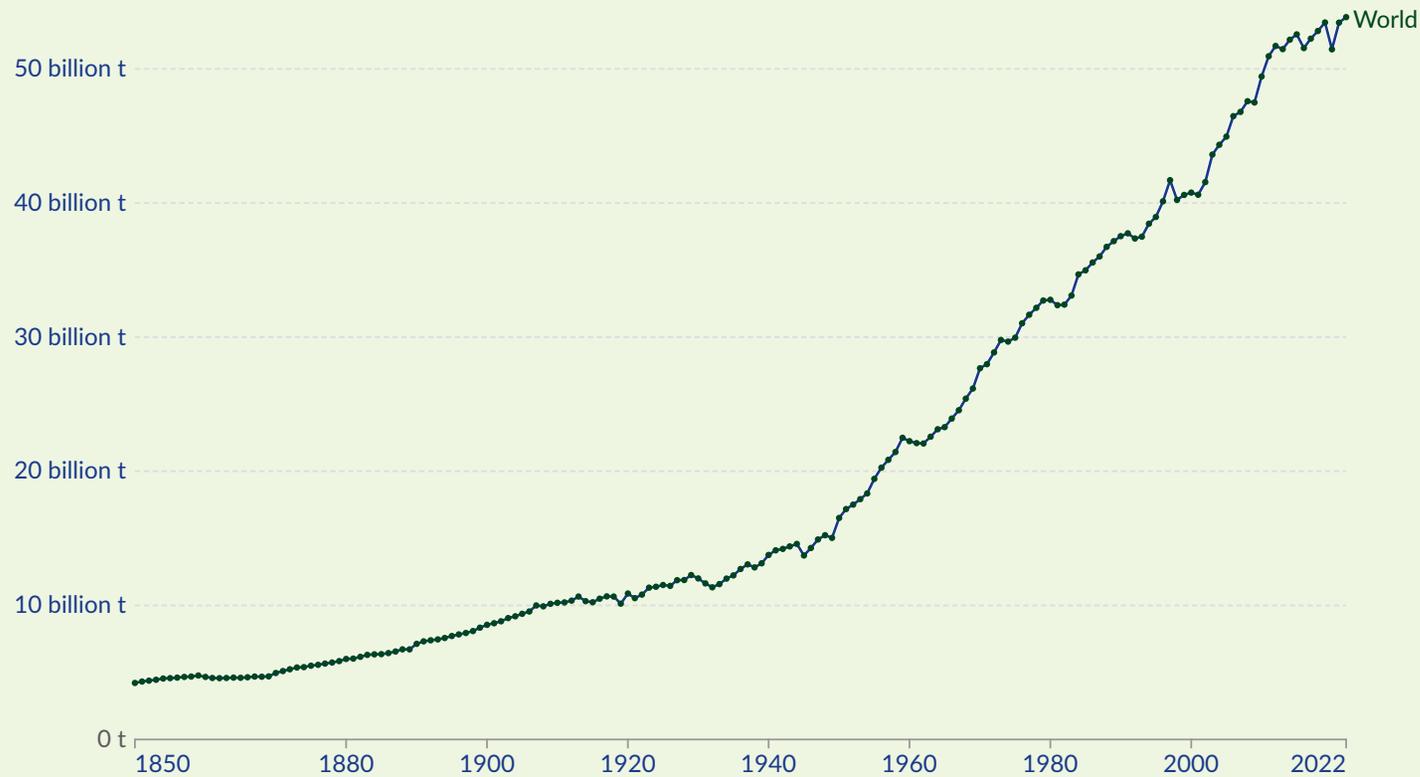


Photo credit: Visual from the USEPA

Greenhouse gas emissions

Greenhouse gas emissions¹ include carbon dioxide, methane and nitrous oxide from all sources, including land-use change. They are measured in tonnes of carbon dioxide-equivalents² over a 100-year timescale.



Data source: Jones et al. (2024)

OurWorldInData.org/co2-and-greenhouse-gas-emissions | CC BY

Note: Land-use change emissions can be negative.

1. Greenhouse gas emissions A greenhouse gas (GHG) is a gas that causes the atmosphere to warm by absorbing and emitting radiant energy. Greenhouse gases absorb radiation that is radiated by Earth, preventing this heat from escaping to space. Carbon dioxide (CO₂) is the most well-known greenhouse gas, but there are others including methane, nitrous oxide, and in fact, water vapor. Human-made emissions of greenhouse gases from fossil fuels, industry, and agriculture are the leading cause of global climate change. Greenhouse gas emissions measure the total amount of all greenhouse gases that are emitted. These are often quantified in carbon dioxide equivalents (CO₂eq) which take account of the amount of warming that each molecule of different gases creates.

2. Carbon dioxide equivalents (CO₂eq) Carbon dioxide is the most important greenhouse gas, but not the only one. To capture all greenhouse gas emissions, researchers express them in “carbon dioxide equivalents” (CO₂eq). This takes all greenhouse gases into account, not just CO₂. To express all greenhouse gases in carbon dioxide equivalents (CO₂eq), each one is weighted by its global warming potential (GWP) value. GWP measures the amount of warming a gas creates compared to CO₂. CO₂ is given a GWP value of one. If a gas had a GWP of 10 then one kilogram of that gas would generate ten times the warming effect as one kilogram of CO₂. Carbon dioxide equivalents are calculated for each gas by multiplying the mass of emissions of a specific greenhouse gas by its GWP factor. This warming can be stated over different timescales. To calculate CO₂eq over 100 years, we’d multiply each gas by its GWP over a 100-year timescale (GWP100). Total greenhouse gas emissions – measured in CO₂eq – are then calculated by summing each gas’ CO₂eq value.

LOCAL IMPACTS

Though impacts of the climate crisis will be felt worldwide, the Great Lakes region, including EGR, will face unique challenges in the next century. Impacts such as extreme temperatures, dam failures, wildfire, drought, and flooding are all predicted by mid- to end-century, as well as a decrease in snowfall.

- Currently, average temperatures in the area have increased by 2.3 degrees Fahrenheit since 1951, which is higher than the global and national average rates.
- By 2050, temperatures are projected to increase by another 3 to 6 degrees Fahrenheit.
- Temperatures are projected to warm at a pace near or faster than the current rate, so changes we are currently observing will only accelerate.
- In terms of weather, precipitation has increased by 14% since 1951. While this may not sound concerning, extreme precipitation events, meaning the heaviest 1% of storms, have also become more frequent since 1951. More intense storms are likely to continue in the future.

Models also predict extreme temperatures, both hot and cold, which can disturb processes like agriculture and general daily life^[13].

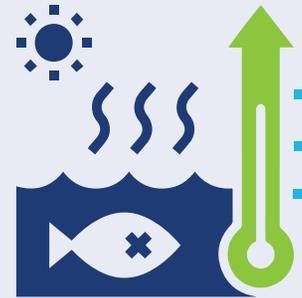
The City has already started to realize some of the impacts of climate change locally, most notably variability in weather conditions. East Grand Rapid's typical cold winters with lake effect snow have been less frequent year-over-year, yet summers are increasingly becoming hotter. From a GHG emissions perspective, we have observed a smaller footprint in the winter due to milder temperatures resulting in less heating and use of the City's snowmelt system. However, a larger footprint is observed in the summer due to higher temperatures and greater cooling (electricity) demand.



Increased temperature by 2.3°F since 1951



Temperatures increase another 3 to 6°F by 2050



Temperatures projected to warm at a faster pace

Precipitation increased by 14% since 1951 with more intense storm events



Extreme temperatures can disturb agriculture and daily life

The intensity of storms being experienced are also becoming more significant and unpredictable. More intense storms place a stress on stormwater management within the City, as well as water quality challenges. To address these challenges, EGR has completed a number of improvements throughout the City:

- Installation of storm sewer separators at John Collins Park in Gaslight Village, the Community Center Complex, and the Wealthy Street- Blodgett Hospital were funded by a Corewell Health, the City, and a grant through the Wege Foundation. Storm Separators remove sediment, oil, refuse, and debris from Reeds Lake, Fisk Lake, and the Silver Creek Drain System. Specifically, the installation of a Vortechs stormwater treatment system removes sediment, oil, and debris from stormwater runoff prior to outfall into Reeds Lake.
- In the winter, sensors determine the need for salt on the roads which has the potential to pollute the local water systems. If the temperature indicates that the use of salt on roads would be ineffective, it is not used.
- With over 50,000 storm drains that are a part of the Grand River Watershed, about 1,300 of these storm drains are located in EGR handling stormwater from rain and snowmelt which flows into drains that deliver it to nearby lakes, rivers, or streams. EGR implemented the Adopt-a-Drain program in partnership with Lower Grand Rapids Organization of Watershed (LGROW) encouraging residents to positively impact their community. Participation in the Adopt-a-Drain program involves keeping your drain free of leaves or other debris. Participants will ensure that their drain is free of trash, leaves, or other debris and that approximately 10 feet on both sides of the drain is clear.
- EGR has also implemented various green infrastructure elements within the City. Stormwater detention sites have been created at Breton Downs Ele-

mentary School, Kreiser Detention Basin, Boston, Elinor Lane, Laurel Circle, Amberly Court, and Arundel Road in order to minimize the risk of flooding and contamination of local waterways. Another benefit observed from these sites is the increase in wildlife habitat within the City. Also, EGR is in the process of creating additional rain gardens in the City. Currently, a rain garden is located in John Collins Park. Two additional curb cut right-of-way rain gardens were approved and installed in 2024 at Wealthy Street and Gladstone Avenue and Hall Street and Gladstone Avenue. The rain gardens primarily consist of native plants and work to improve both water and environmental quality.

Another form of action EGR has taken to address current and future impacts from climate change is through its forestry management program. EGR prioritizes tree maintenance and management practices in the public right-of-way area. Proper management strategies and programs can improve both public health and environmental quality. A tree inventory conducted by the Davey Resource Group in 2016 indicated that there were a total of 7,113 urban forest sites (including trees and stumps). This quantity of trees is responsible for improving air quality by removing 15,245.3 pounds of pollutants and managing 9,975,209 gallons of stormwater. In addition, the net total carbon sequestered and avoided is 4,410,593 pounds and 1,251.2 megawatt-hours of energy saved. To ensure that the tree population located in the public right-of-way is in good condition, EGR has implemented a right-of-way tree pruning maintenance program, and a right-of-way tree planting program.

Addressing the impacts of climate change involves a variety of actions to create a more resilient community. However, if GHG emissions are not reduced in a meaningful and timely fashion, the extent of actions needed to address more significant climate challenges will only increase and become more costly to the community over time.



MI HEALTHY CLIMATE PLAN

The State of Michigan has been actively taking steps to mitigate the impacts of climate change. One of the bold actions that Michigan has taken is the introduction of the MI Healthy Climate Plan^[14]. This plan is an all-encompassing, state-wide plan to address the climate crisis and the potential fallout that could come from the crisis. Michigan is one of 14 states with similar bold climate goals, including economy-wide carbon neutrality by 2050 and maintaining net negative emissions thereafter. This plan has positioned Michigan among the leaders in the climate space, and the statewide goals rely on cooperation from cities like EGR.

There are six categories of actions within the MI Healthy Climate plan:

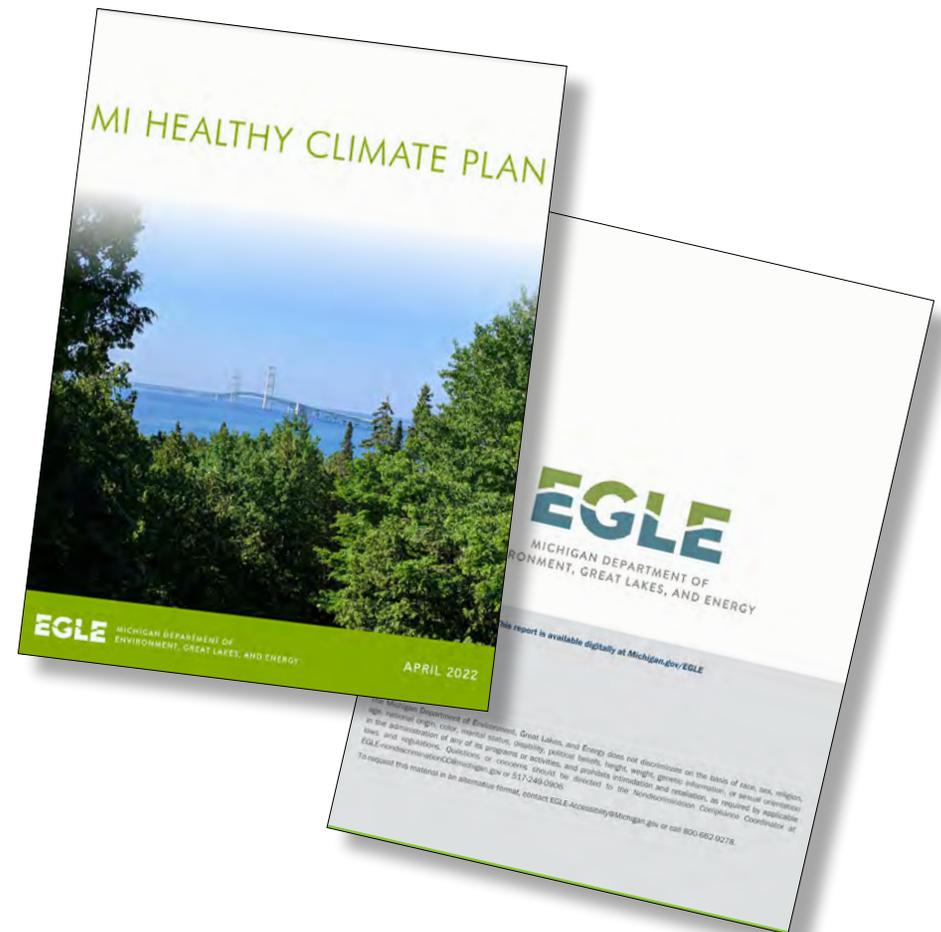
1. Commit to environmental justice and pursue a just transition;
2. Clean the electric grid;
3. Electrify vehicles and increase public transit;
4. Repair and decarbonize homes and businesses;
5. Drive clean innovation in industry; and
6. Protect Michigan's land and water.

Each of these goals reflects the goals that we in EGR hope to achieve. To drive participation in the plan, municipalities are eligible to receive funding and grants from the state to mobilize their sustainable development, including the GGRF, the Greenhouse Gas Reduction Fund^[15], and funding programs for energy efficiency improvements in homes and vehicles^[16]. Through development of this Climate Action Plan, it is our intent to position EGR to capitalize on these opportunities that fit within our strategy.

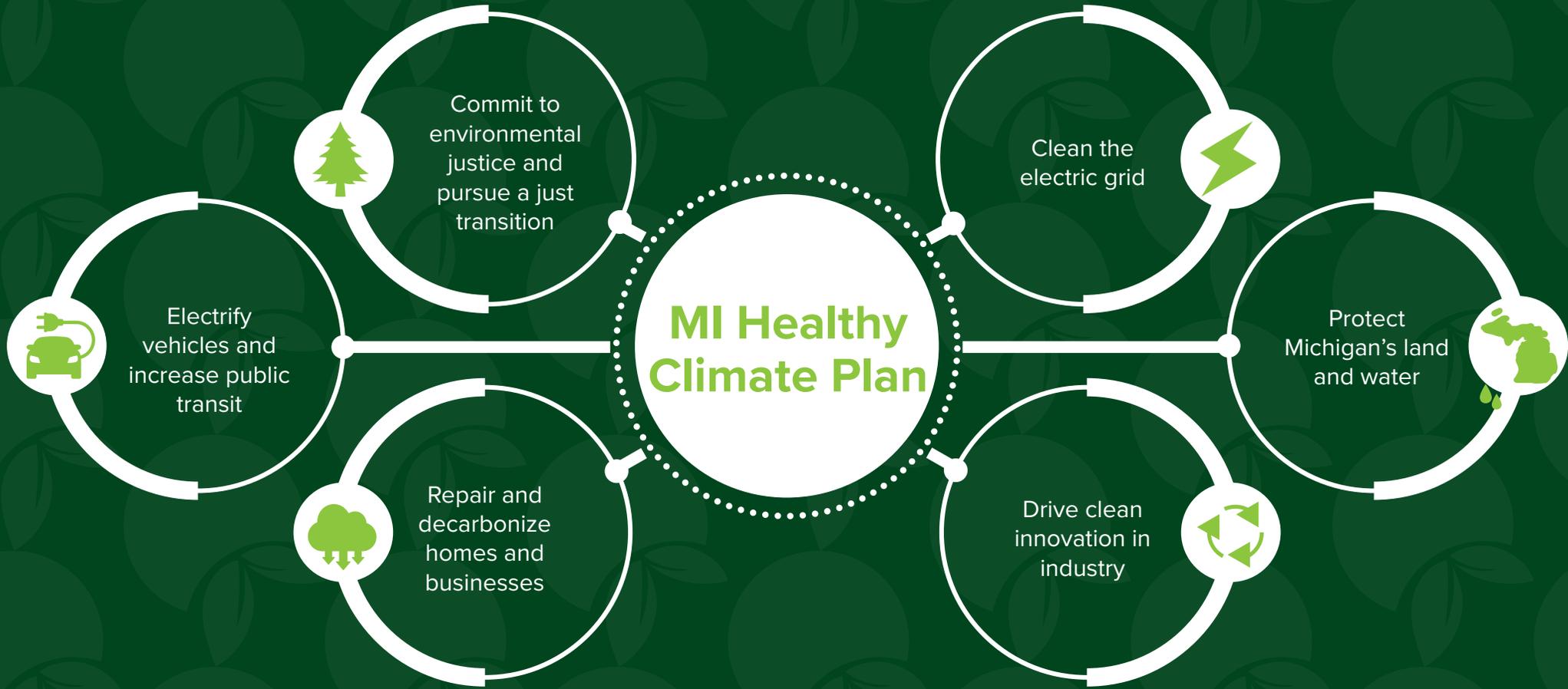
ENERGY INDEPENDENCE

Many cities, including EGR, are working to mutually gain energy independence while working toward mitigating GHG emissions through advancements in energy efficiency and conservation. From simple, individual practices like turning off lights when you leave the room, to city-wide initiatives, like our clean energy partnership with DTE, we are committed to moving toward more adequate energy sources that support the transition to a low-carbon economy. Beyond increased resiliency, there are many benefits to city-wide energy efficiency improvements including reduced operation costs and emissions. Though the City has already begun reducing energy usage and switching to more efficient sources, additional action will be needed in order to achieve the City's carbon neutrality goal and vision for 2040.

Energy independence is not only important from a climate protection perspective; transitioning to primarily clean energy sources will usher the community into greater independence and security. By leveraging broader availability of domestic clean energy sources—like solar, hydroelectric, and wind power—we can move away fossil fuel use as a primary source of GHG emissions. In the United States, currently about 20% of energy consumption is generated from renewable sources, and many municipalities around the nation are working to increase that number^[17]. Clean energy also has the potential to grow the economy by decreasing reliance on foreign energy sources and development of new clean energy infrastructure. In order to transition our grid to clean energy sources, new jobs in sectors such as manufacturing will be created, which supports the prosperity and growth of our communities and the U.S. as a whole. Renewable energy is the most cost-effective source of energy in many situations, so the transition would result in cost savings.



MI Healthy Climate Plan



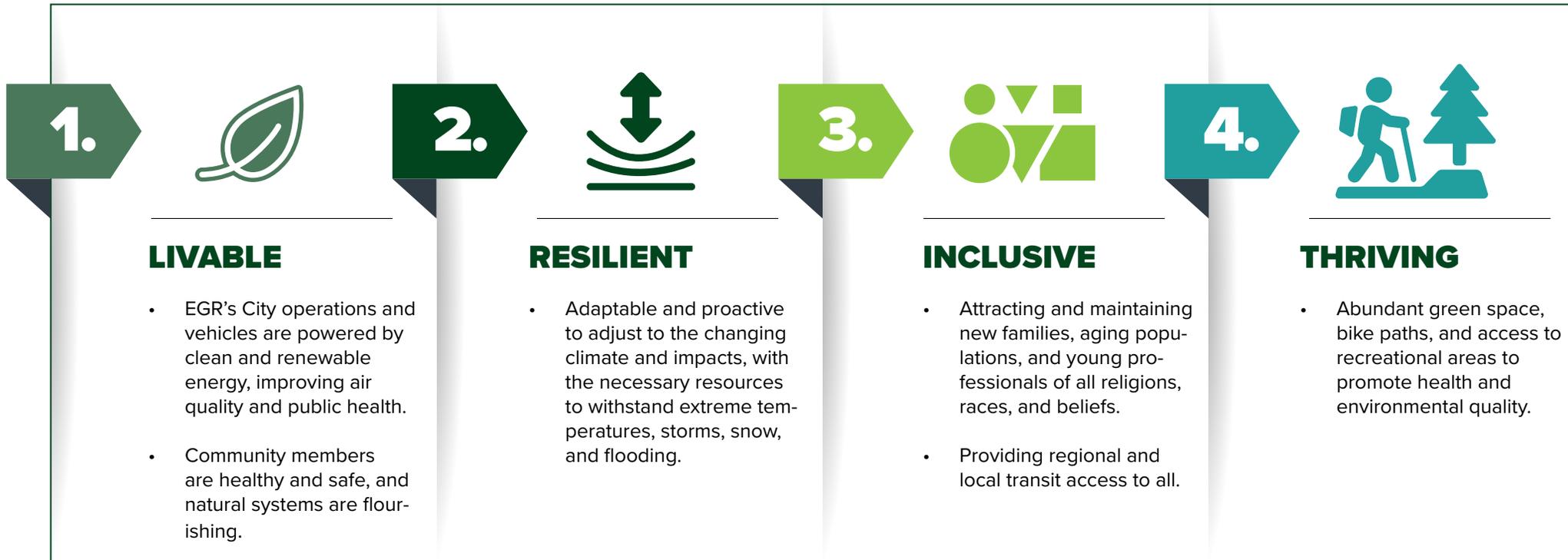
EAST GRAND RAPIDS IN 2040



OUR VISION AND PRINCIPLES

Our vision for City operations is a derivative of EGR's desire to maintain the beautiful character of the City from the traditional gaslights that light Gaslight Village to the serene Collins Park with abundant greenspace and views of Reeds Lake – all while planning for a future in which the community can transition away from non-renewable energy sources and improve air quality and public health.

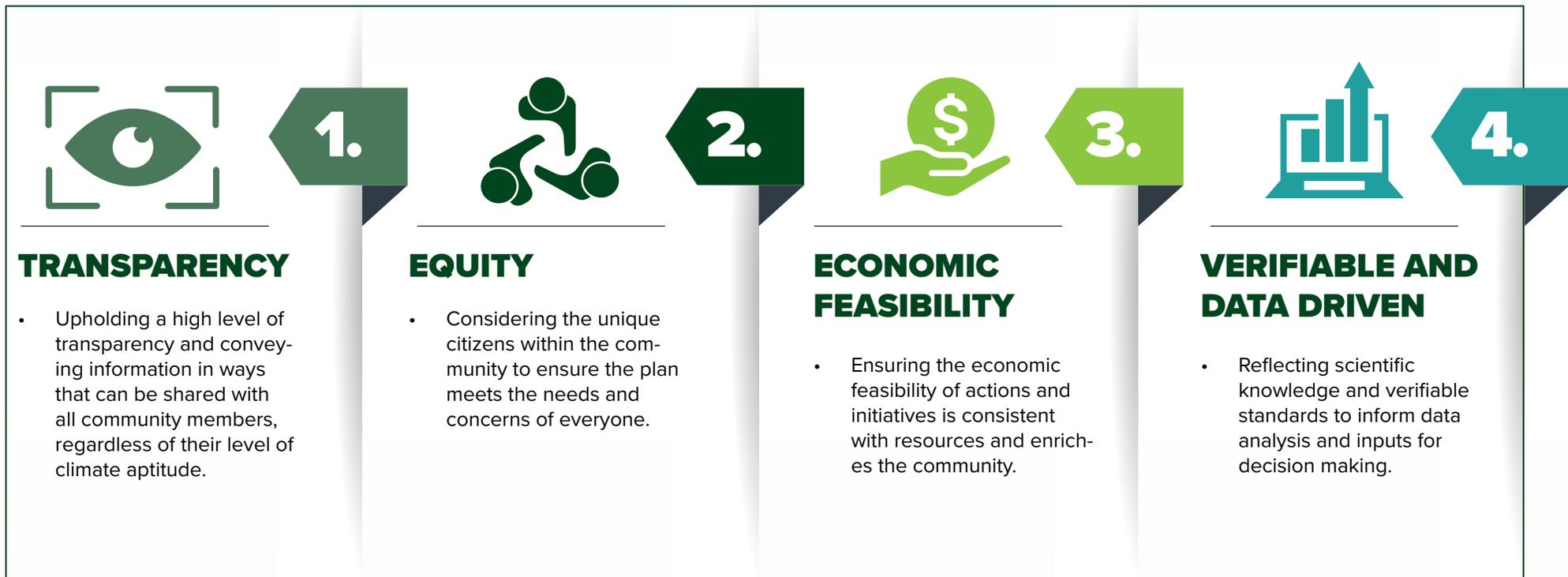
VISION



The elements of this vision set the foundation for where EGR is headed in 2040 and what carbon neutrality will mean for the community.

Furthermore, this plan is guided by the following key principles:

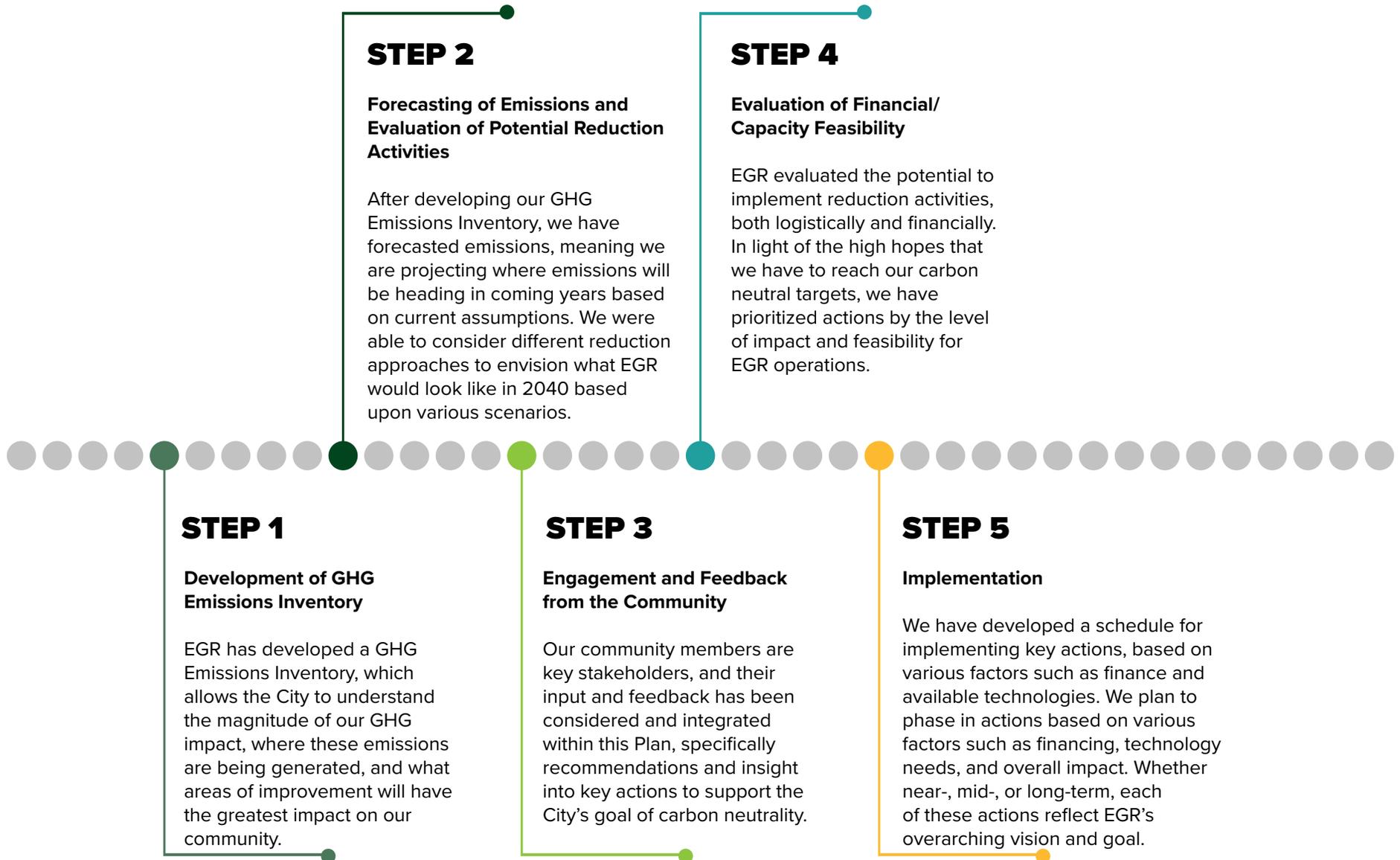
PRINCIPLES



These principles are intended to effectively guide the overall strategy and plan.

HOW WE'LL GET THERE

Achieving the City's overall vision and goal of achieving carbon neutrality by 2040 takes careful analysis, planning, and engagement in order to develop a plan that meets the City's ambitious goal and is suitable for the community's unique needs and resources. The City is committed to reaching this goal and will do so through the following key activities the City has completed, which are outlined within this Climate Action Plan.





Members Only
Grand Rapids
EST. 1931
Yacht Club

GREENHOUSE GAS EMISSIONS

4

Measuring and managing GHG emissions is integral to properly track progress and achieve the stated goal. GHG emissions are gases that trap heat in the atmosphere, therefore creating a greenhouse effect that is triggering changes to the climate. Primary greenhouse gases include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases, such as SF₆, HFCs, and PFCs.

There are various reasons why a City – or any organization – conducts a GHG Emissions Inventory. EGR plans to use the GHG Emissions Inventory to satisfy the following objectives:



OBJECTIVE 1

Demonstrate environmental leadership for broader community action.

OBJECTIVE 6

Compare performance against peers.

OBJECTIVE 2

Support LGO near-term energy and/or GHG emission reduction targets.

OBJECTIVE 7

Support partnerships and collaborative opportunities.

OBJECTIVE 3

Consider strategies to reduce and/or offset GHG emissions.

OBJECTIVE 8

Ensure alignment with industry best practices and global initiatives (e.g., UN SDGs, GRI, SBTN, etc.).

OBJECTIVE 4

Identify a long-term plan and schedule to achieve carbon neutrality.

OBJECTIVE 9

Manage climate risk by documenting actions to reduce GHG emissions.

OBJECTIVE 5

Support community engagement and stakeholder education.

OBJECTIVE 10

Prepare a framework to follow for other environmental sustainability initiatives (e.g., water consumption).

The GHG Emissions Inventory has been developed consistent with the following standards and guidance:

- ICLEI Local Government Operations Protocol (LGO Protocol) Version 1.1
- The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition);
- The Greenhouse Gas Protocol: GHG Protocol Scope 2 Guidance;
- The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard; and

These frameworks have been adopted by cities globally and are preferred given their focus on local government operations.

In order to assess EGR's impact, a GHG Emissions Inventory was conducted for calendar years 2017-2023, specific to the emissions directly associated with Local Government Operations (LGO) within the jurisdictional borders of the City. City owned buildings and operations were included in the GHG emissions inventory boundary as defined in accordance with the ICLEI LGO Protocol. EGR has elected to apply an Operational Control approach to set its organizational boundary. Under the operational control approach, a local government accounts for 100 percent of the GHG emissions from operations over which it has the full authority to introduce and implement its operating policies at the operation.

EGR has determined it maintains operational control of the Community Center Complex, Public Safety building, Public Works building and operations (i.e., water distribution and sanitary collection system), streetlights, snowmelt system, and the City's vehicle fleet. The Community Center Complex consists of the EGR branch of the Kent District Library, as well as the City's administrative offices, engineering operations, Parks and Recreation Department, and several multi-purpose rooms used for programs, meetings, events, and rentals. The Public Works operations include the Public Works building, as well as the City's water distribution and sanitary collection operations.

Emissions sources from these City operations include fuel and electricity usage from the aforementioned buildings, vehicle fleet, streetlights, and snowmelt system. GHG emissions are limited to CO₂, CH₄ and N₂O, from each of these sources. Emissions for other gases, such as SF₆, HFCs and PFCs, were considered but it has been uncommon for communities to account for these emissions given they are not typically material or present within government operations.

The GHG Emissions Inventory was conducted over the calendar year 2017-2023 timeframe as this provides an adequate number of years to evaluate how emissions are trending. This timeframe also represented the availability of data need-

ed to calculate the City's emissions. Energy consumption data is available for the 2009-2021 timeframe, however, fleet data is only available beginning in 2017. A baseline for measuring progress earlier than 2017 is likely unnecessary as a 7-year lookback provides a sufficient frame of reference to understand trends and develop a representative baseline for target-setting and other initiatives.



A GHG Emissions Inventory calculation system has been developed to support this initial Emissions Inventory, as well as future annual updates. This calculation system is supported by an Inventory Management Plan (IMP). The IMP maintains information in a single location related to how EGR defines, quantifies and reports GHG emissions. The intent is for EGR to maintain and update this IMP over time to reflect organizational and operational changes, as well as the City's evolving climate change and sustainability strategies.

The inventory groups emissions into three categories based on where they occur: Scope 1, Scope 2, and Scope 3 emissions.

Scope 1: Direct GHG emissions from activities at facilities that are owned or operated by EGR. A portion of the fleet is leased under an Operating Lease arrangement which falls under EGR's operational control and GHG emissions inventory.

Scope 2: Please add the following verbiage under paragraph 4 detailing Scope 2: Indirect GHG emissions from the generation of purchased or acquired energy (e.g. electricity, heating, cooling, etc.) which is consumed at facilities that are owned or operated by EGR. There are two types of Scope 2 emissions: location-based emissions (LB) and market-based emissions (MB). Location based emissions method reflects the average emissions intensity of grids on which energy consumption occurs (using mostly grid-average emission factor data). A market-based method reflects emissions from electricity that companies have purposefully chosen (or their lack of choice). It derives emission factors from contractual instruments, which include any type of contract between two parties for the sale and purchase of energy bundled with attributes about the energy generation, or for unbundled attribute claims.^[18]

Scope 3: Other indirect emissions that occur in EGR's value chain (i.e., emissions from sources that are upstream or downstream of EGR's owned and controlled operations).

EGR views these Scope 3 emissions calculations as advanced and voluntary given most municipalities do not address Scope 3 emissions in their inventory. We have estimated impacts from the following Scope 3 categories at this time:

Scope 3 Category 1: Purchased goods and services – emissions resulting from the extraction, production, and transportation of goods and services purchased or acquired by the City.

Scope 3 Category 2: Capital goods – emissions resulting from the extraction, production, and transportation of capital goods purchased or acquired by the City.

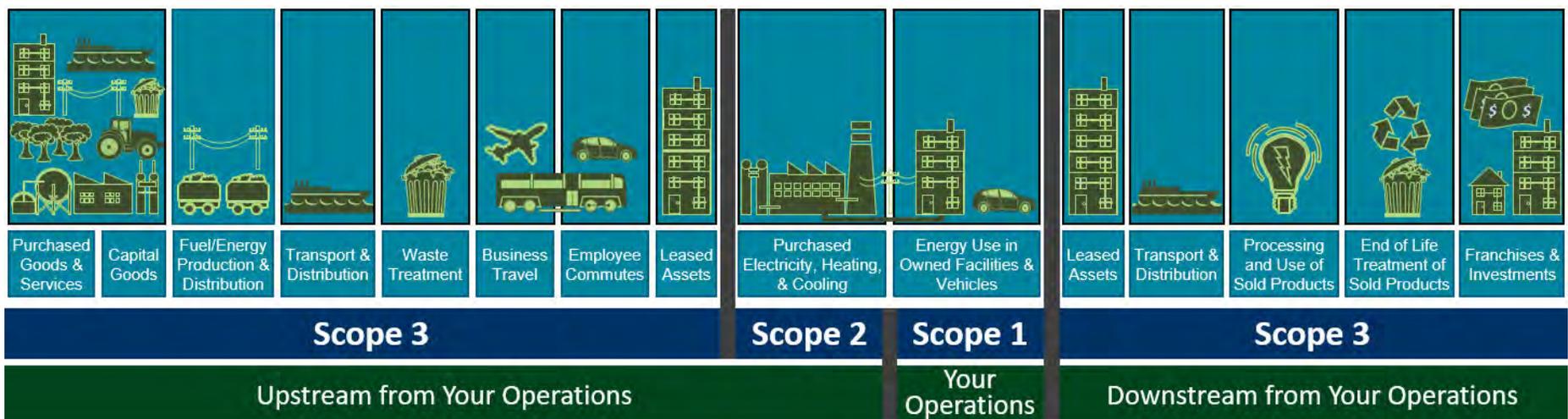
Scope 3 Category 3: Fuel-and-energy-related activities – emissions resulting from the extraction, production, and transportation of fuels and energy purchased or acquired by the City, not already accounted for in Scope 1 or 2.

Scope 3 Category 4: Upstream transportation and distribution – emissions resulting from transportation and distribution.

Scope 3 Category 5: Waste generated in operations – emissions resulting from the disposal and treatment of waste generated in the City's operations.

Scope 3 Category 7: Employee commuting – emissions resulting from commuting by EGR employees to-and-from work.

EGR will explore additional, relevant Scope 3 categories as needs arise and data becomes available. However, we believe the only remaining Scope 3 categories that may be relevant include Category 6 (business travel) and Category 9 (downstream transportation and distribution). Most downstream Scope 3 categories are typically not applicable to municipalities as they do not produce a good that contains a downstream impact, maintain leased assets, or have franchise or investment options.

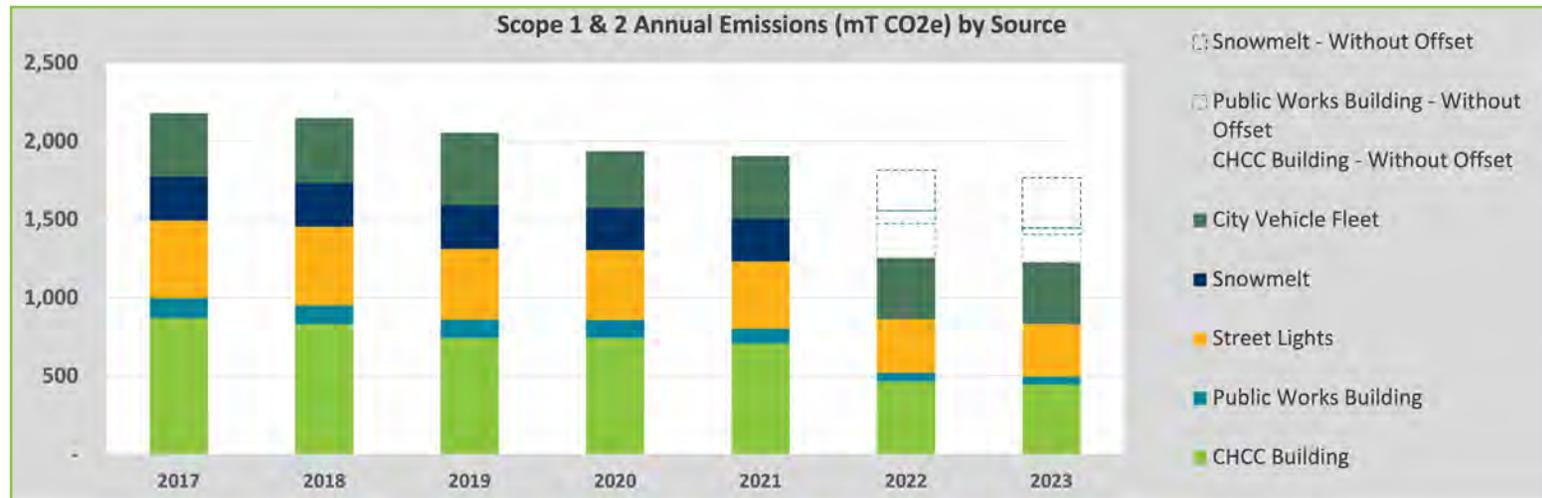
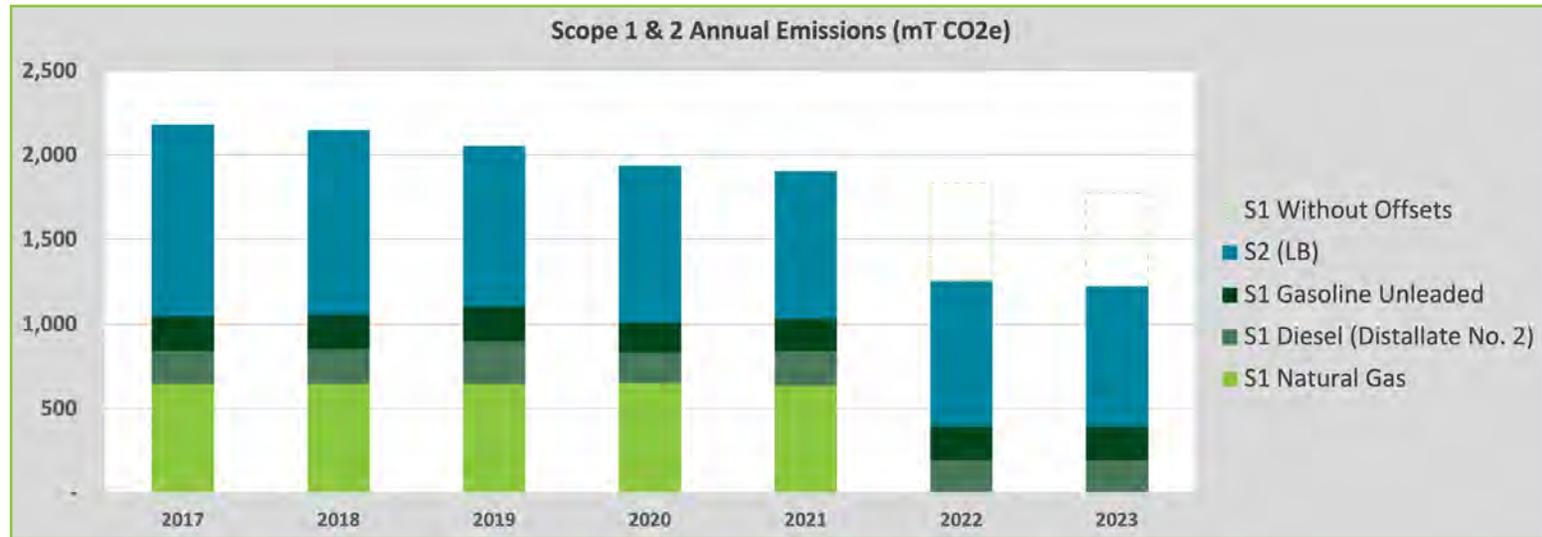


EMISSIONS FROM LOCAL GOVERNMENT OPERATIONS

Based on the GHG Inventory results, in 2023, EGR produced 1,225 metric tons of carbon dioxide equivalent (mtCO₂e) emissions which represents a 44% reduction from 2017 levels of 2,178 mtCO₂e. Emissions have decreased year-over-year since 2018. One significant action that has resulted in meaningful reductions has been the purchase of carbon offsets beginning in 2022.

Energy consumption is a significant contributor to EGR's GHG emissions footprint. To the right, you will find the energy use trend over the 2017-2023 timeframe.

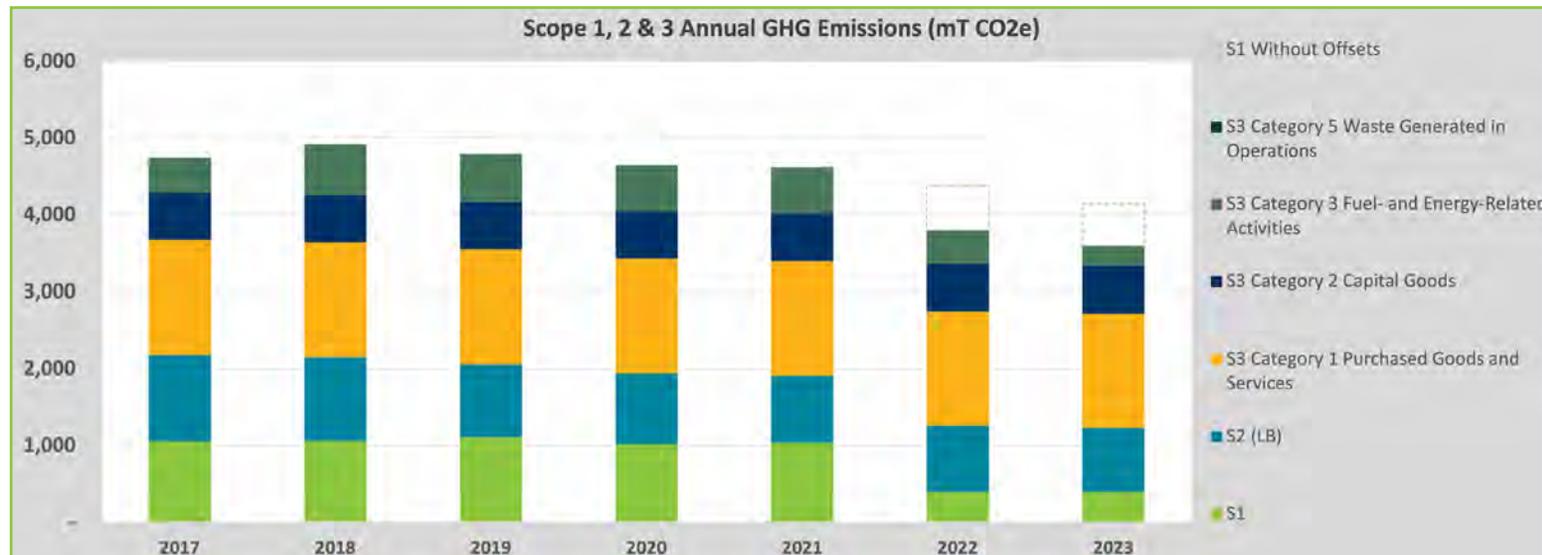
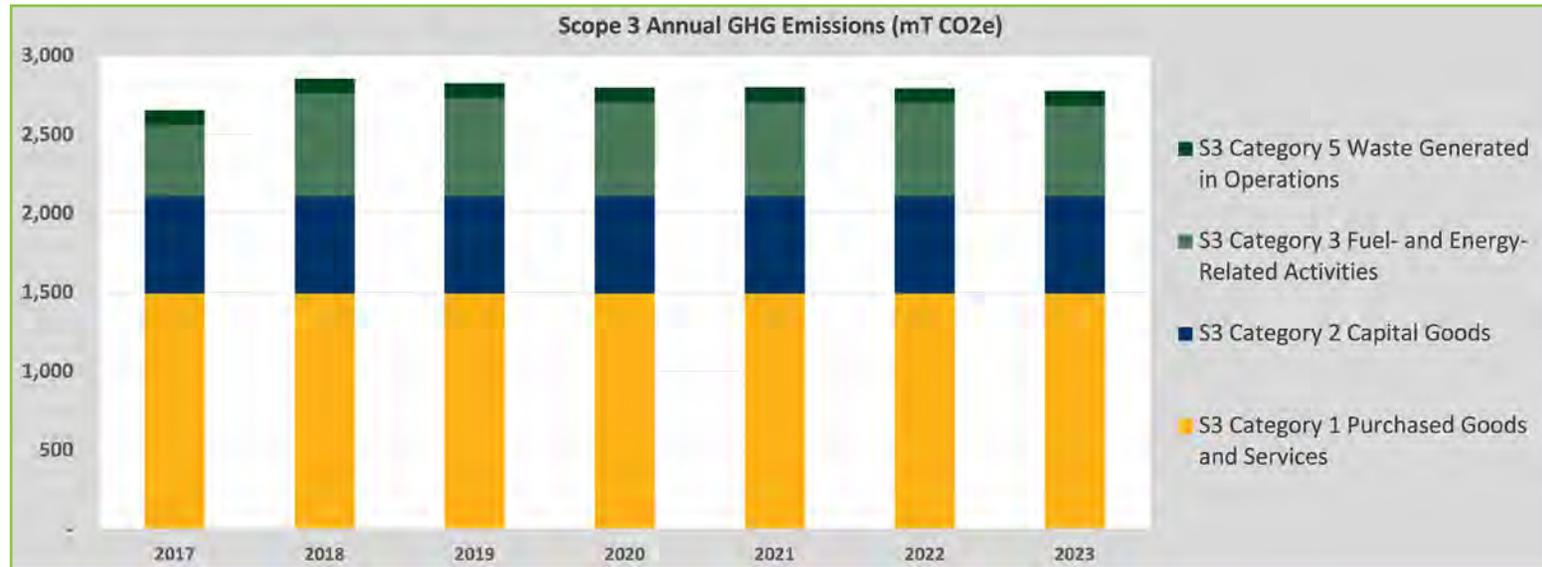
When evaluating emissions results by emissions source, we find the Community Center Complex, Public Works Building and City Vehicle Fleet are the leading contributors to EGR's footprint.



Beyond evaluating the City's Scope 1 and 2 emissions, Scope 3 emissions were also evaluated. Although Scope 3 emissions are not included in EGR's carbon neutrality target, these are emissions that EGR can influence by carefully selecting partners or suppliers with a commitment to the environment (such as purchasing low-carbon and sustainable chairs for City facilities, working with waste operations that use renewable energy, and more). Ultimately, selecting low-carbon partners will have a ripple effect on EGR's Scope 3 emissions, therefore supporting a decrease in the City's Scope 3 emissions.

For this evaluation, a spend based approach was utilized using life cycle GHG emissions by commodity and EGR's spend data for various purchased goods and services, fuel-and-energy related activities, capital goods, transportation and distribution, and waste. [19]

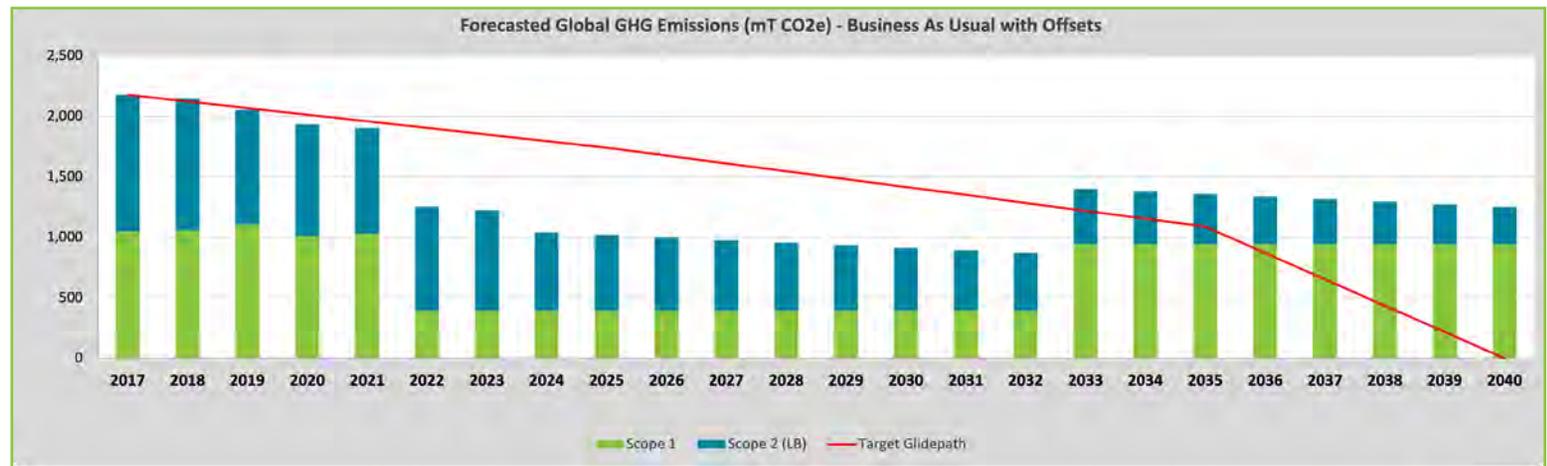
Overall, purchased goods and services represents over 50% of the City's Scope 3 emissions, followed by capital goods and fuel-and-energy related activities.



FORECASTED EMISSIONS

The City of East Grand Rapids' GHG Inventory also calculates emissions from activities that are related to the City's operations from 2017-2023. Utilizing data from 2023, the City prepared a business-as-usual (BAU) forecast of future estimated GHG emissions through 2040. The intention of the BAU scenario is to show projected emissions if the City does not implement further initiatives to reduce emissions.

Additionally, the City has two different scenarios depending on whether or not EGR pursues natural gas offsets by 2033, which is when the current contract expires. The result of this forecast demonstrates that EGR will need to take additional actions to achieve its goal of being carbon neutral by 2040. As mentioned above, a majority of emissions in 2023 is derived from purchased electricity; so, the current implementation of solar panels will be a significant driver of reduction in future years.



Jump in emissions that occurs in 2033 is a result of the DTE partnership for renewable natural gas ending

CLIMATE GOALS



Understanding EGR’s GHG emissions impact and progress achieved through past and current reduction initiatives has been instrumental in assessing the “gap” to meeting EGR’s carbon neutrality goal by 2040. Simply put, carbon neutrality means cutting carbon emissions through the procurement and/or generation of renewable energy and technological advances and removing any remaining carbon emissions through carbon offsets or renewable energy certificates (RECs), ultimately leaving zero emissions in the atmosphere on a net basis.

For the City, our goal to achieve carbon neutrality by 2040 is specifically limited to reducing energy use and GHG emissions within government operations. Therefore, the GHG emissions that are a focus of reduction are as follows:

- **Scope 1:** Natural gas combustion from the Community Center Complex, Public Safety building, Public Works building and operations (i.e., water distribution and sanitary collection system), and snowmelt system
- **Scope 1:** Fossil fuel mobile fuel source combustion from the City’s vehicle fleet
- **Scope 2:** Purchased electricity consumption from the Center Complex, Public Safety building, Public Works building and operations (i.e., water distribution and sanitary collection system), and streetlights.

The Community Center Complex consists of the EGR branch of the Kent District Library, as well as the City’s administrative offices, engineering operations, Parks and Recreation Department, and several multi-purpose rooms used for programs, meetings, events, and rentals. The Public Works operations include the Public Works building, as well as the City’s water distribution and sanitary collection operations.

Ultimately, this goal is intended to institute sustainability practices that translate into savings for EGR and taxpayers, while also paving the way for a more sustainable future and inspiring commitment and action from the broader community.

So far, more than 140 countries, including the United States, have set a net-zero target, as well as over 1,000 cities^[20]. Committing to carbon neutrality is integral to the EGR community as it will allow us to join a global community of municipalities that work as one to “avert the worst impacts of climate change and preserve a livable planet^[21].” With 2040 in our sights, this will require the implementation of additional key strategies and actions to put the City on the path to carbon neutrality by 2040, as well as ensuring maintainable solutions to city-wide issues now.





STRATEGIES AND ACTIONS



PAST & CURRENT ACTIONS

EGR has been proactive in reducing energy consumption and GHG emissions over the years. These actions position EGR in an ideal situation to achieve its carbon neutrality aspiration. Several key actions are beginning to significantly improve our GHG emissions output:

- The EGR Community Center Complex was built to achieve Leadership in Energy & Environmental Design (LEED) Silver Certification status. The building was assessed and scored on a point system that analyzed adherence to carbon, energy, water, waste, transportation, materials, and health and indoor environmental quality standards. Due to the advanced construction attributes, EGR has been able to avoid a more significant GHG emissions footprint from its operations since 2006.
- One of our most successful actions has been our participation in DTE's Clean Vision Partnership. EGR was the first municipality in Michigan to participate in the Clean Vision Natural Gas Balance voluntary program. This program gave us the opportunity to purchase Renewable Natural Gas-Environmental Attributes (RNG-EA) and Nature-Based Carbon Offset Credits (COCs) to reduce the emissions of our Natural Gas usage. We opted to purchase 95% carbon offsets and 5% renewable natural gas, creating 100% offset of natural gas carbon emissions for City operations. The RNG-EA component creates a greater local impact by leveraging our existing partnership with the City of Grand Rapids' Biodigester. This action is evaluated by the Midwest Renewable Energy Tracking System (M-RETS) which verifies the RNG-EA component. Meanwhile, the COCs are sourced from the Pigeon River forest near Gaylor, MI which is tracked by the American Carbon Registry (ACR). These evaluation and tracking processes ensure that our goals for carbon offsetting are being reached.
- Solar panels are installed on city-owned facilities, including our Community Center Complex and Public Works buildings. Through our partnership with BluePath Solar, we have executed a Power Purchase Agreement that will last for 25 years, with the potential for renewal for two, 5-year extensions. It is estimated the savings for the City will be over \$240,000, and as this program grows, it will be an important partnership to generate reductions toward our carbon footprint. The solar arrays will generate 24% of the current annual

electricity usage for the Community Center Complex and 100% or more of the Public Works building annual electricity usage.

- EGR purchased three F-150 Ford Lighting Supercrew electric vehicles for use by the Departments of Public Works, Public Safety and Parks and Recreation. These vehicles will be tested to provide necessary feedback to help determine the opportunity to transition the remaining fleet to electric vehicles.

We have many other actions that have been completed city-wide that encourage environmental protection and GHG emission reductions, including:

- The gaslights in EGR's historic Gaslight Village were converted from natural gas to electricity in 2020.
- A new high-efficiency boiler for the City's snowmelt system was installed. Another boiler is planned for installation to replace the remaining two natural gas-fired boilers.
- Through a partnership with Hage Automotive of Detroit, MI, EGR has installed four Level 2 Electric Vehicle charging stations at no cost to the City. These charging stations are available for public use and EGR will maintain these spaces and, in the future, work toward expanding this program as our electric vehicle fleet grows. These stations will provide valuable data on the extent of charging station use within the community.

FUTURE ACTIONS

Current reduction initiatives will play a key part in supporting EGR's path to carbon neutrality. However, additional actions and strategies will be necessary to meet EGR's 2040 carbon neutrality goal. However, this strategy needs to be met with a sense of flexibility. New technologies are consistently evolving and new partnerships for decarbonization will continue to arise. The costs for implementing these actions are also certain to change. While the following actions support decarbonization by 2040, these actions may shift or be modified based on emerging technologies, solutions and cost effectiveness.



REDUCTION STRATEGIES KEY

REDUCTION POTENTIAL

Low = 0-5 MT CO₂e 
 Moderate = 5-75 MT CO₂e 
 High = >75 MT CO₂e 

REDUCTION POTENTIAL

Low = <\$25k 
 Moderate = \$25k- \$250k 
 High = >\$250k 

TIMEFRAME

Near-term = 0-3 years
Mid-term = 4-9 years
Long-term = 10 or more years
Ongoing = Present through 10 years or more

Although Scope 3 emissions are not part of the City's carbon neutrality goal, there is opportunity to support reductions as these are areas that can be influenced by partnering and selecting environmentally-focused suppliers, as well as pursuing internal adjustments to support Scope 3 reductions.

SCOPE 1 - VEHICLE FLEET

CATEGORY	STRATEGY	REDUCTION POTENTIAL	FINANCIAL INVESTMENT	POTENTIAL PARTNER(S)	TIMEFRAME
Fleet Strategy	Properly Maintain Vehicle Fleet			EGR Staff/Police/Fire Department	Short-term
EGR should ensure the vehicle fleet is properly maintained in order to save fuel usage. Keeping tires properly inflated can improve gas mileage by 0.6% on average. The proper tire pressure for vehicles can be found in the owner's manual for the vehicle. Additionally, vehicle gas mileage can improve by 1-2% by using the manufacturer's recommended grade of motor oil. These simple maintenance techniques are minimal in cost, but improve vehicle efficiency.					
Fleet Strategy	Electrify Vehicles			Local Dealerships	Long-term
Based on total cost of ownership, vehicles up for retirement in a 15-year timespan, and ICE vehicles with a comparable electric option, there are roughly 10 current fleet vehicles that could be electrified from 2024-2039. However, new technologies and options may be available for specific vehicles' needs (street sweeper, vocational truck, etc.) as organizations continue to advance technologies, so continue to evaluate new options as they reach the market.					
Fleet Strategy	Support EV Infrastructure			HAGE Automotive	Mid-term
Continue to support infrastructure improvements and funding opportunities to install more charging stations to facilitate the transition to an electric vehicle fleet (and broader community-wide electric vehicle conversions).					
Fleet Strategy	Offsets			DTE	Long-term
If complete EV conversion is not reasonable by 2040, fuel offsets can support carbon neutrality. Given the longer lifetime of the City's vehicles and the challenge of cost-effectively converting the entire fleet, this strategy will likely be needed to achieve carbon neutrality by 2040. However, the City should continue to convert the fleet beyond 2040 to eliminate the need to purchase offsets.					



SCOPE 1&2 - ENERGY AND BUILDINGS

CATEGORY	STRATEGY	REDUCTION POTENTIAL	FINANCIAL INVESTMENT	POTENTIAL PARTNER(S)	TIMEFRAME
Electricity Strategy	LED Lighting Improvement - Streetlights and Community Building			Consumers Energy	Near-term
Streetlights, depending on the location, are either owned or maintained by Consumers Energy or the City. The gaslights in Gaslight Village are owned and maintained by the City. The gaslights were converted from natural gas to electric in 2020 and are entirely LED lights. The remaining streetlights throughout the City that are being converted to LED over time by Consumers Energy. Approximately 50% of these streetlights have not yet been converted to LED. The last form of lighting improvements will take place in community buildings where approximately 20% of the lighting remains for conversion to LED. The proposed reduction action of upgrading conventional lighting to LED also includes occupancy sensors to reduce lighting based on occupancy in office buildings to reduce energy consumption.					
Electricity Strategy	Solar Arrays			Blue Path Solar, Harvest Solar, Consumers Energy	Mid-term
EGR is currently installing solar arrays that will generate 24% of the current annual electricity usage for the Community Center Complex and 100% or more of the Public Works building annual electricity usage. This will have a meaningful positive impact on EGR's footprint. Implementation of additional solar arrays, including rooftop, ground mount, and carports to decarbonize the remaining 250 mT CO2e from electricity usage offers great potential. Consumers Energy also offers a renewable energy program (solar blocks) that offers an alternative to on-site solar array installations.					
Electricity Strategy	Grid Decarbonization			Consumers Energy	Short-term through long-term
Dearbonization of the grid will be a cornerstone of our reduction actions that is expected to take place regardless of EGR's actions, but this will offer reduction potential to EGR's footprint by relying upon a cleaner grid to power our operations.					
Natural Gas Strategy	Efficiency Improvements - HVAC and Building Envelope			DTE	Mid-term
EGR should evaluate additional efficiency improvements, such as HVAC and building envelope improvements (e.g. retrofits and improvements to building envelope materials). EGR installed a new high-efficiency natural gas boiler in 2023 to support the snowmelt system. A second high-efficiency boiler is also planned for installation later in 2024. The installation of these two new boilers will allow the City to decommission the existing third boiler. Overall, these changes are projected to further reduce natural gas consumption from the snowmelt system. In the interim, EGR should consider working with DTE for a comprehensive tune-up. This is a service that DTE provides by sending contractors to perform an advanced diagnostic test to fully analyze your systems and identify issues that rob your system of efficiency or present potential health and safety issues. In the future, as these boilers reach the end of their useful life as 2040 approaches, the City should consider alternatives to move away from natural gas completed by employing the use of heat pump technologies or other alternative technologies that are expected to become more cost effective and technologically feasible by this timeframe.					
Natural Gas Strategy	Efficiency Improvements - Smart Sensing Technology			DTE	Short-term
The implementation of smart sensing technology can increase building efficiency and reduce utility bills. According to the American Council for an Energy Efficiency Economy (ACEEE), the following smart sensing technologies can help to reduce emissions by increasing efficiencies. <ul style="list-style-type: none"> • Installing occupancy-based wireless thermostats. This can save 5-10% of HVAC energy costs if programmed to allow the HVAC system to reduce its operation when the building or zone is unoccupied. • Advanced rooftop unit (RTU) controls. RTUs have the potential to cut HVAC energy use by 20-40%, depending on how they are set up and what components are used. • O2 demand-controlled ventilation (DCV) sensors, which can be coupled with sensors that detect a building's occupancy and adjust ventilation accordingly. Though costly to install, they can make the most sense in a building retrofit. 					
Natural Gas Strategy	Convert Space Heating to Heat Pumps				Long-term
Heat pumps are a technology that can provide heating and cooling without the use of fuels. According to DTE, geothermal heat pumps, for example, are estimated to save between 30-60% on heating and cooling costs and are four times more efficient than conventional systems. Consumers Energy currently provides rebates on equipment (including air-source pumps and ground-source heat pumps).					
Natural Gas Strategy	Evaluate New Technologies and Equipment As Needed				Mid-to-long term
Evaluate opportunities to replace existing equipment with low-carbon solutions, such as monitoring systems, snowmelt biofuels, and other emerging technologies. This will be a major strategic move to reduce emissions, as efficiency improvements will be long-lasting.					
Natural Gas Strategy	Renewable Natural Gas and Carbon offset Program			DTE	Long-term
Pursue continuation of the 100% renewable natural gas and carbon offset program through 2040 through the DTE Clean Energy program, if the implementation of electrifying equipment and efficiency measures are not sufficient. While renewable natural gas and carbon offsets are effective at eliminating near-term natural gas emissions until other technologies are more cost and technically feasible, it is recommended to pursue long lasting solutions which will benefit the City without an added cost.					

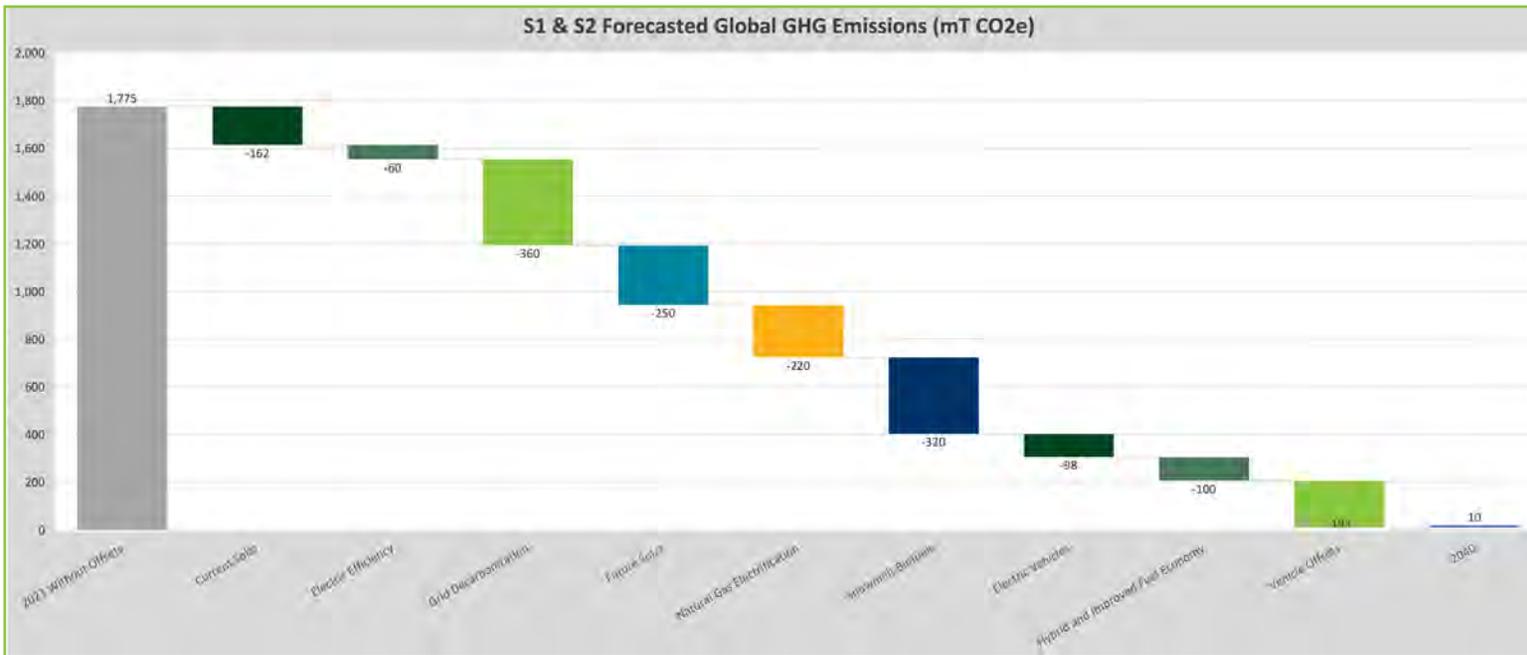
SCOPE 3 (VALUE CHAIN EMISSIONS)

CATEGORY	STRATEGY	REDUCTION POTENTIAL	FINANCIAL INVESTMENT	POTENTIAL PARTNER(S)	TIMEFRAME
Scope 3: Purchased Goods and Services	Select Partners with Reduction Initiatives and Targets		\$0		Ongoing
<p>Purchased goods and services represents 54% of EGR's emissions. Many of these purchases are related to cement/asphalt for road work, finance and professional services, electronic equipment, and salt for roads. Carefully selecting partners and suppliers that have low-carbon products, emissions reductions initiatives, and GHG reduction targets would help to reduce these emissions. In order to reduce EGR's Scope 3 footprint, suppliers need to focus on reducing their own Scope 1 and 2 emissions. Many organizations have sustainability reports or information on their website regarding their environmental commitments. Additionally, inquiring about an organization's environmental practices during the RFP period will help to select the best partner.</p>					
Scope 3: Capital Goods	Select Partners with Reduction Initiatives and Targets and Low Emissions Equipment		\$0		Ongoing
<p>Capital goods represents 22% of EGR's Scope 3 emissions. Many of these emissions are resulting from construction, machinery, and transportation equipment. These emissions can be reduced by selecting suppliers that utilize lower-emissions technologies like electric equipment. These actions will likely be taken by environmentally conscious organizations. Similar to purchased goods and services, identifying partners with GHG reduction targets that are actively mitigating their impacts will help to reduce these emissions. By inquiring with suppliers, this may influence or inspire suppliers to prioritize working to reduce emissions.</p>					
Scope 3: Waste Generated in Operations	Waste Disposal Education		\$0		Ongoing
<p>Waste generated in City operations accounts for 12% of the City's Scope 3 emissions. Tracking waste types and implementing waste disposal education can reduce the amount of recyclables accidentally sent to landfill and promote mindful consumption in City buildings. Many organizations and municipalities alike have implemented educational material around disposal bins identifying how waste should be sorted to promote proper waste disposal, and work to eliminate or reduce materials (water bottles, handouts, etc.) in City operations that may require disposal.</p>					
Scope 3: Employee Commutes	Work from Home Policy		\$0		Ongoing
<p>Although employee commutes account for less than 1% of the City's Scope 3 emissions, there is opportunity to reduce this further, if desired. If the City were to allow employees to work-from-home 1 day a week, this would reduce employee commutes by roughly 20% for this category.</p>					
Scope 3: Upstream Transportation and Distribution	Electric Distribution Trucks/ Offsets		\$0		Transportation Suppliers
<p>Upstream and downstream distribution accounts for less than 1% of the City's Scope 3 upstream emissions, but there is opportunity to reduce this further. EGR could work with transportation and distribution companies to see if they use electric trucks to deliver materials. Additionally, transportation companies may offer the opportunity to offset delivery emissions at an additional cost</p>					
Scope 3: Fuel-and-Energy Related Activities	Reduce Fuel and Electricity Usage		\$0		Ongoing
<p>EGR's fuel-and-energy related activities emissions account for 11% of the City's Scope 3 emissions. These emissions are a result of the production of fuels and energy purchased and consumed. Therefore, in order to reduce the associated emissions with fuel and energy, EGR should continue to focus on reducing it's reliance on natural gas and fuels and non-renewable electricity. As EGR reduces energy consumption and becomes more efficient and moves away from fossil fuels, these emissions will naturally decrease.</p>					
Upstream Scope 3	Quantify Scope 3 Reductions to Measure Progress			Preferred Service Provider/ Internal Staff	Near-Term
<p>For the quantification of Scope 3 emissions, a spend based approach was utilized using life cycle GHG emissions by commodity and EGR's spend data for various categories. While this approach is valuable as an initial step to get an estimate of emissions and understand hotspots, it is recommended that in the future EGR pursues using activity data in order to calculate the specific Scope 3 category, as recommended through The Greenhouse Gas Protocol's Scope 3 Methodology. This will yield more accurate results, and allow the City to track and measure progress. It is recommended that an evaluation occurs every 2-3 years to capture updates.</p>					

ROADMAP TO CARBON NEUTRALITY

In terms of forecasting future emissions in EGR, the City is not anticipating any change to its footprint looking out to 2040. The community buildings and services are expected to remain viable without any significant change. Despite certain planned developments, overall the City's population is also projected to remain relatively steady given the mature status of the community.

Ultimately, a roadmap to achieve carbon neutrality must involve a suite of options. Illustrated below are projections of achievable reductions based on currently viable projects.



Carbon neutrality will take some financial investment as new technologies will be necessary to support this transition. There are opportunities through both the state and the federal government for financial support or assistance with some of the expenses associated with the transition to carbon neutrality. The City will continue to monitor funding opportunities to assist implementation.

DTE

EGR was the first municipality in the state to take part in a mutually beneficial partnership with Clean Vision through DTE. This collaboration aims to offset 100% of EGR's natural gas carbon emissions through the purchase of Renewable Natural Gas-Environmental Attributes (RNG-EA) and Nature Based Carbon Offset Credits (COCs).

BLUEPATH SOLAR

A partnership with BluePath Solar has been cultivated with the goal of generating electricity to reduce our carbon emissions and utility costs. A Power Purchase Agreement (PPA) has been established between EGR and BluePath Solar, with Harvest Solar taking up the mantle of installing and managing the City's own on-site solar array. This agreement will last for 25 years with no direct cost to the City, saving approximately \$241,000. EGR will evaluate the success of this program to consider additional opportunities for community solar in the future.

COLLABORATIONS AND PARTNERSHIPS

We understand that in order to achieve our goal of carbon neutrality by 2040, this will include greater partnership and collaboration with businesses (perhaps NGOs, community members, and more). We currently have a multitude of partnerships to leverage and build upon for implementation of future strategic actions.

HAGE AUTOMOTIVE

In another effort to reduce our greenhouse gas emissions, the City has collaborated with Hage Automotive of Detroit to provide Level 2 electric vehicle charging stations in EGR. Four stations have been installed at no cost to the community. Electric vehicles (EVs) create zero tailpipe emissions, and their total greenhouse gas emissions are much lower than a typical vehicle. This will help the City as well as residents to reduce carbon emissions as well as reduce noise pollution, as electric engines are typically much quieter. Additionally, there are economic benefits for the City, as electric charging stations will encourage EV owners to dine and shop in EGR. The City will maintain these parking spaces and receive revenue sharing from the stations.

The logo for HAGE Automotive, featuring the word "HAGE" in a bold, black, sans-serif font with a horizontal line through the middle of the letters.

TREE MAINTENANCE AND MANAGEMENT

In partnership with local vendors, the City wishes to ensure proper maintenance and management of trees in the public right-of-way area. In EGR, there are 7,113 urban forest sites (as indicated by an inventory conducted by the Davey Resource Group, 2016). This quantity of trees improves air quality by removing 15,245.3 pounds of pollutants, sequestering 4,410,593 pounds of carbon and manages 9,975,209 gallons of stormwater, as proper maintenance of our trees is imperative to sustaining the environment in EGR. With a cost between \$20,000-\$30,000 for this program, the tree population in EGR will remain in good condition and can continue to benefit the City in both visual appeal and reduction of harmful pollutants.

The logo for DTE Energy, consisting of the letters "DTE" in a bold, blue, sans-serif font.

CONSUMERS ENERGY AND ICF

The City purchased three F-150 Lightning Supercrew Electric Vehicles in 2024. These vehicles will be tested in various City operations and will provide necessary feedback regarding the overall experience and effectiveness of electric vehicles for our fleet. The City has partnered with Consumers Energy and ICF who have provided a fleet electrification assessment, which evaluated our current vehicles and identified potential electric vehicles that meet the City's needs along with an evaluation of the total cost of ownership. We recognize that electric vehicles have several advantages, including lower costs for fueling and maintenance over time, reduced vehicle emissions which improve local air quality and health, improved resiliency, and an overall reduction in the footprint for the City. We will continue to evaluate the potential for further integration of electric or hybrid vehicles in the City's fleet.

The logo for Consumers Energy (CE), featuring the letters "CE" in a bold, blue, sans-serif font inside a circular graphic with a blue and green gradient.The logo for BluePath, featuring the word "BLUEPATH" in a blue, sans-serif font above a stylized graphic of a blue path or road leading towards the horizon.

As we move forward, additional partnerships will be necessary to meet our goals. We will continue to prioritize local and regional partners to enhance our energy efficiency, advocate for sustainable improvements city-wide, and provide education and outreach opportunities. Potential partnership opportunities include the following:

- Nurturing and growing connections with our existing partnerships; for example, potentially growing the DTE Clean Vision partnership to offset fuel usage from our vehicle fleet and the BluePath Solar on-site solar array which could support additional solar panels on carports or other buildings (if feasible).
- Partnering with Consumers Energy to explore additional renewable energy options, including Consumer's Energy renewable energy program to support Michigan-based wind or solar energy and/or the renewable energy credit program.
- Working with the East Grand Rapids School District to integrate sustainable design into their practices, including solar panel expansion where applicable. The City plans to work with the school district on redevelopment plans and ensure that sustainable options are considered and chosen whenever possible.
- Working with public safety authorities, such as the police force and firefighters, to improve their internal sustainability practices, including vehicle use practices and equipment procurement.
- Connecting with our sustainability committee to discern areas through which community members can become involved.

COMMUNITY WORKSHOP

To supplement the City's analysis and proposed reduction actions, we felt it was important to garner participation and feedback from the residents of EGR. We invited residents to join the Climate Action Planning team on June 13, 2024 for a preview of the Climate Action Plan's development and to provide input on the strategies and actions they would like to see implemented by the City.

During our Community Workshop, we shared a preview of our Greenhouse Gas Inventory results and findings (2017-present), as well as projected emissions through 2040. We also shared the foundation for the Climate Action Plan, and how we envision EGR reaching its goal.

Input was requested from attendees through the following questions:

1. What drew you to attend this community workshop?
2. What are your initial thoughts on the City's emissions and actions completed to date?
3. What recommendations or actions do you have that you would like to see implemented within the community?
4. What types of concerns do you have regarding the reduction projects and implementation?
5. What would help ensure residents feel aware and updated on progress?

An afternoon and evening session was hosted by EGR and our consultant, GZA GeoEnvironmental, Inc., which included attendees from a variety of backgrounds, including citizens, members of EGR's EGreen sustainability initiative, City employees, and a member of the Michigan Healthy Climate Corps. We received insightful feedback from attendees, which has helped to focus and inform our strategies for achieving carbon neutrality.

Topics discussed varied with a focus on the impacts from upcoming developments within the City and how to expand our partnerships with other elements of the city's administration—for example, Public Safety, Public Works, and the East Grand Rapids Public School District. The school system operates independent of the City so greater collaboration on upcoming developments would support reductions to overall citywide impacts. Thanks to the feedback we received from EGR residents and workshop attendees, we are able to better understand the needs of the community which has been considered as part of our strategy to achieve our carbon neutrality goal.

We appreciate all of the feedback we received, and we hope that as we approach 2040, we can exhibit progress toward the evolving needs and expectations of the community.

IMPLEMENTATION TIMELINE

An integral aspect of the Climate Action Plan is how the Plan will be implemented. To achieve our commitments, we must take a multi-level approach toward implementing the strategy set forth herein. We will engage with a range of activities with the ultimate purpose of achieving our 2040 carbon neutrality target.

TASK 1

Timeline: Ongoing



Update and maintain EGR's Climate Action Plan interactive website.

TASK 2

Timeline: Annually



EGR's GHG Inventory for City Operations is updated.

TASK 3

Timeline: Ongoing



Engage with the community to enhance our city-wide sustainability.

TASK 4

Timeline: Regularly
Until 2040



Continue to support our collaborations and partnerships

TASK 5

Pursue energy efficiencies, to decrease energy used and realize cost savings.

Timeline: Regularly
Until 2040



TASK 6

Increase number of buildings completely powered by renewable energy.

Timeline: 2033



TASK 7

Continue to transition the vehicle fleet to electric or hybrid vehicles.

Timeline: Continually
Until 2040



TASK 8

Continue to implement offsets where efficiency and energy improvements cannot be made due to technology.

Timeline: Continually
Until 2040



As we move toward our 2040 target year, these implementation actions will evolve to reflect the progression of the City's sustainability efforts.

TASK 1

Update and maintain EGR's Climate Action Plan interactive website.
Timeline: Ongoing
Indicator of Success: Residents of EGR are up to date on our evolving climate goals and progress.

TASK 2

EGR's GHG Inventory for City Operations is updated annually to ensure the City is measuring progress and on track to achieve the carbon neutrality target.
Timeline: Annually
Indicator of Success: By 2040, City Operations achieve carbon neutrality.

TASK 3

Engage with the community and discern new ways to work with community members to enhance our city-wide sustainability.
Timeline: Ongoing
Indicator of Success: Community members feel empowered by the collaboration with city officials and able to make sustainable shifts to help accelerate the City's initiatives.

TASK 4

Continue to support our collaborations and partnerships, both new and existing. Each of these partners is essential to the City's success, so we will continue to nurture cooperation amongst EGR and our partners.
Timeline: Regularly until 2040
Indicator of Success: EGR and our partners will continue to successfully scale-up our sustainable operations as we reach the 2040 threshold. We will add new partnerships as needs arise, and work with local organizations to electrify our operations and vehicles.

TASK 5

Pursue energy efficiencies (such as LED replacements, tune-up evaluations of existing equipment, motion sensors, etc.) to decrease energy used and realize cost savings. Evaluating the potential for efficiency increases should occur routinely.
Timeline: Regularly until 2040
Indicator of Success: Efficiency gains are made on an annual basis as the result of tune-ups and smart technologies.

TASK 6

Electrify natural gas equipment by converting existing systems to heat pumps or other emerging technologies.
Timeline: As EGR has a natural gas offset program through 2033, electrifying equipment would be most beneficial to pursue by 2033. It is recommended that EGR monitors technological changes and works with utility partners to identify the most beneficial equipment based on energy needs and cost.
Indicator of Success: Natural gas equipment is electrified by 2033 and natural gas emissions are eliminated.

TASK 7

Continue to transition the vehicle fleet to electric or hybrid vehicles as resources and technology become available.
Timeline: Continually until 2040
Indicator of Success: 100% of EGR's vehicle fleet are hybrid or electric.

TASK 8

Continue to implement offsets where efficiency and energy improvements cannot be made due to technology and/or infrastructure challenges.
Timeline: continually until 2040
Indicator of Success: Any emissions not already accounted for will be addressed through high-quality, verifiable GHG offsets.

FOOTNOTES GLOSSARY

- [1] City Commission. [October 2, 2023.](#)
- [2] GLISA. [Climate Change in the Great Lakes Region and Grand Rapids, Michigan.](#)
- [3] City of East Grand Rapids. [EGR Recognized for Environmental Leadership.](#)
- [4] City of East Grand Rapids. [Environmental Sustainability Information.](#)
- [5] City of East Grand Rapids. [City of East Grand Rapids Again Earns Tree City USA Designation.](#)
- [6] City of East Grand Rapids. [State of the City.](#)
- [7] [Master plan](#)
- [8] Intergovernmental Panel on Climate Change. [Climate Change 2021. The Physical Science Basis.](#)
- [9] Ibid.
- [10] Intergovernmental Panel of Climate Change. [Impacts of 1.5-degrees Celsius of Global Warming on Natural and Human Systems.](#)
- [11] Ibid.
- [12] Ibid.
- [13] GLISA. [Climate Change in the Great Lakes Region and Grand Rapids, Michigan.](#)
- [14] [MI Healthy Climate Plan \(michigan.gov\)](#)
- [15] [Funding Opportunities \(michigan.gov\)](#)
- [16] [MI Healthy Climate Plan \(michigan.gov\)](#)
- [17] [Energy Independence and Security | Department of Energy](#)
- [18] [GHG Protocol Scope 2 Guidance | Greenhouse Gas Protocol](#)
- [19] [GZA Scope 3 Calculator](#)
- [20] United Nations. [A Beginner's Guide to Climate Neutrality.](#)
- [21] United Nations. [Net Zero Coalition.](#)
- [22] Ibid.



MEMORIAL FIELD



EAST GRAND RAPIDS Climate Action Plan