



AGENDA
BIRMINGHAM AD HOC ENVIRONMENTAL SUSTAINABILITY COMMITTEE
MONDAY APRIL 29th, 2024
BIRMINGHAM CITY HALL, 151 MARTIN ST, COMMISSION ROOM, BIRMINGHAM MI *
******* 6:00 PM*******

The City recommends members of the public wear a mask if they have been exposed to COVID-19 or have a respiratory illness. City staff, City Commission and all board and committee members must wear a mask if they have been exposed to COVID-19 or actively have a respiratory illness. The City continues to provide KN-95 respirators and triple layered masks for attendees.

- 1) **Call to Order**
- 2) **Roll Call**
- 3) **Review of the Agenda**
- 4) **Approval of the AHESC Minutes of [March 7th, 2024](#)**
- 5) **Study Session**
 - A. **[GHGI Report](#)**
 - B. **[SCAP Draft Goals](#)**
 - C. **[Survey Draft](#)**
- 6) **Open to the Public for Items Not on the Agenda**
- 7) **Miscellaneous Communications**
 - A. **[Updated Project Schedule](#)**
- 8) **Draft Agenda – [May 13th, 2024](#)**
- 9) **Adjournment**

Future Meeting Dates:

May 13th, 2024
June 17th, 2024
July 29th, 2024

*Please note that board meetings will be conducted in person once again. Members of the public can attend in person at Birmingham City Hall, 151 Martin St., or may attend virtually at:

Link to Access Virtual Meeting: <https://bhamgov-org.zoom.us/j/87587439403>

Telephone Meeting Access: 877 853 5247 US Toll-free

Meeting ID Code: 875 8743 9403

Notice: Individuals requiring accommodations, such as interpreter services for effective participation in this meeting should contact the City Clerk's Office at [\(248\) 530-1880](tel:2485301880) at least on day in advance of the public meeting.

Las personas que requieren alojamiento, tales como servicios de interpretación, la participación efectiva en esta reunión deben ponerse en contacto con la Oficina del Secretario Municipal al [\(248\) 530-1880](tel:2485301880) por lo menos el día antes de la reunión pública. (Title VI of the Civil Rights Act of 1964).

A PERSON DESIGNATED WITH THE AUTHORITY TO MAKE DECISIONS MUST BE PRESENT AT THE MEETING.

City Of Birmingham
Regular Meeting Of The Ad Hoc Environmental Sustainability Committee
March 11, 2024

City Commission Room
151 Martin Street, Birmingham, Michigan

Minutes of the regular meeting of the City of Birmingham Ad Hoc Environmental Sustainability Committee held on March 11, 2024. The meeting was convened at 6:00 p.m.

1) Roll Call

Present: Harvey Bell, Lara Edwards, Rachna Gulati, Debra Horner, Jess Newman, Danielle Todd (arrived 6:20 p.m.); Student Representatives Josie Carroll, Will Clemans

Absent: Lois DeBacker, Joe Mercurio, Dani Torcolacci

Staff: City Planner Blizinski; Planning Director Dupuis, Department of Public Services Director Zielinski

The AHESC welcomed the student representatives.

2) Review of the Agenda

3) Approval of the AHESC Minutes of January 29, 2024

Motion by Mr. Bell

Seconded by Ms. Horner to approve the minutes of the regular Ad Hoc Environmental Sustainability Committee meeting of January 29, 2024.

Motion carried, 5-0

VOICE VOTE

Yeas: Bell, Horner, Edwards, Newman, Gulati

Nays: None

4) Study Session

A. SCAP Draft Intro and Outline

PD Dupuis and CP Blizinski introduced the item. Staff answered questions from the AHESC.

AHESC members' comments were as follows:

- Air quality should be included in the objectives. Rain gardens would reduce the amount of flooding experienced by residents. The phrase 'nature-based solutions' could use clarification. Decarbonization should be a priority. Offering free electric vehicle charging in the downtown area could encourage shopping in Birmingham and the use of electric vehicles.
- Air quality should be included in the quality of life section instead of in the objectives section. Optimizing vehicle trips would be important.
- The Plan Development and Emissions sections should be moved below the Action Plan.

- The public engagement summary could include more of the data collected.
- Finding a way to compare Birmingham’s plan to other referenced plans would be helpful.
- Clarifying sustainability commitments extant in other Birmingham plans would be helpful.
- The objectives should be represented in a way that does not indicate prioritization.
- The potential roles of businesses and individuals in community sustainability should be clarified.
- Using this process to look for opportunities to partner with the school system and neighboring communities as appropriate would be beneficial.
- There should be a next steps and recommendations section. There should also be a section demonstrating how the proposed actions would meaningfully impact the climate problems being faced.
- It should be emphasized that sustainable solutions also result in cost savings and other benefits wherever possible.
- Adding solar cells across the City would cost-effectively expand capacity.
- The next steps section should potentially include a consultant-run public education and information campaign.

5) Open to the Public for Items Not on the Agenda

6) Miscellaneous Communications

A. GHGI Update

CP Blizinski summarized the update. Staff answered questions from the AHESC.

B. Updated Project Schedule

CP Blizinski summarized the schedule. Staff answered questions from the AHESC.

AHESC members’ comments were as follows:

- The survey draft should be provided to the AHESC in advance so feedback can be provided to staff.
- The survey should aim to reveal actionable goals beyond the GHGI.

7) Draft Agenda

8) Adjournment

No further business being evident, the meeting was adjourned at 7:24 p.m.

Leah Blizinski, City Planner



Laura Eichenhorn, City Transcriptionist



**City of
Birmingham
2021 Inventory of
Community &
Government
Operations
Greenhouse Gas
Emissions**

April 8th, 2024

**Produced by the City of
Birmingham Planning
Division**

With Assistance from ICLEI – Local
Governments for Sustainability USA

Credits and Acknowledgements

Nicholas Dupuis, Planning Director
Leah Blizinski, City Planner
Summer Aldred, Planning Intern

Elaine Mclain, Mayor
Katie Schafer, Mayor Pro-Tem
Clinton Baller, Commissioner
Andrew Haig, Commissioner
Brad Host, Commissioner
Anthony Long, Commissioner
Therese Longe, Commisioner

Jessica Newman, Chair, Ad Hoc Environmental Sustainability Committee
Debra Horner, Vice Ad Hoc Environmental Sustainability Committee
Harvey Bell, Member, Ad Hoc Sustainability Committee
Lois Debacher, Member, Ad Hoc Environmental Sustainability Committee
Lara Edwards, Member, Ad Hoc Environmental Sustainability Committee
Rachna Gulati, Member, Ad Hoc Environmental Sustainability Committee
Joseph Mercurio, Member, Ad Hoc Environmental Sustainability Committee
Danielle Todd, Member, Ad Hoc Environmental Sustainability Committee
Daniella Torcolacci, Member, Ad Hoc Environmental Sustainability Committee
Melissa Fairbairn, Ex-Officio Member, Assistant City Manager
Melissa Coatta, Ex-Officio Member, City Engineer
Scott Zielinski, Ex-Officio Member, Department of Public Services Director

Cory Borton, Assistant City Engineer
Patti Chapman, Data Translator & Analytic Storyteller, Consumer's Energy
Aaron Ford, Parking Manager
John Galik, Superintendent – Building Facilities
Judi Helm, Principal Business Support Consultant Lead, Consumer's Energy
Lesli Maes, Operations Engineer, Oakland County Water Resources Commissioner
Jeff McKeen, General Manager, South Oakland County Resource Recovery Authority
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Christina Woods, Human Resources Manager

Carly Doolittle, ICLEI Program Officer
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Executive Summary

The City of Birmingham recognizes that greenhouse gas (GHG) emissions from human activity are catalyzing climate change, the consequences of which pose substantial risks to the future health, wellbeing, and prosperity of our community.

On January 23rd, 2023 ([Agenda](#) – [Minutes](#)), the City Commission unanimously passed a resolution to declare a climate emergency, establish the Ad Hoc Environmental Sustainability Committee (“ESC”), and direct City Staff to facilitate the immediate development of a greenhouse gas emissions inventory to set a baseline and develop greenhouse gas emission reduction targets. This report represents the completion of the first task of the ESC and will serve as the City of Birmingham’s baseline for developing greenhouse gas emission reduction targets.

In alignment with this resolution the City of Birmingham, as directed by City Commission, is developing a sustainability and climate action plan. Sustainability plans help an organization meet its goals to reduce resource use and other environmental impacts. Climate action plans (CAP) are tools designed to help state and local governments mitigate and adapt to the effects of climate change on their community. They tend to build upon information compiled through greenhouse gas inventories (GHGI) and focus on those activities that can achieve the greatest emissions reductions cost-efficiently. This GHGI report represents completion of a major milestone in the SCAP project schedule.

This report provides estimates of greenhouse gas emissions resulting from activities in the City of Birmingham as a whole in 2021 (the most recent year for which data was available) as well as emissions specifically from the City’s government operations.

Key Findings

Figure 1 shows communitywide emissions by sector. The largest contributor is Residential Energy with 40% of emissions. The next largest contributors are Transportation & Mobile Sources (23%) and Commercial Energy (22%). Actions to reduce emissions in all of these sectors will be a key part of a sustainability and climate action plan. Industrial Energy, Solid Waste and Water & Wastewater were responsible for the remaining (15%) of emissions.

Figure 2 shows local government operations emissions. The Buildings and Facilities sector accounts for a vast majority (48%) of these emissions. The next largest contributor is Employee Commute (22%), followed by vehicle fleet (20%). Actions to reduce emissions from these sectors will be a key part of any future climate action plan developed by the City of Birmingham. Streetlights & Traffic signals were responsible for the remainder (8%) of local government operations emissions. Water & Wastewater Treatment Facilities were responsible for less than 1% of local government operations emissions.

The Inventory Results section of this report provides a detailed profile of emissions sources within the City of Birmingham; information that is key to guiding local reduction efforts. These data will also provide a baseline against which the city will be able to compare future performance and demonstrate progress in reducing emissions.

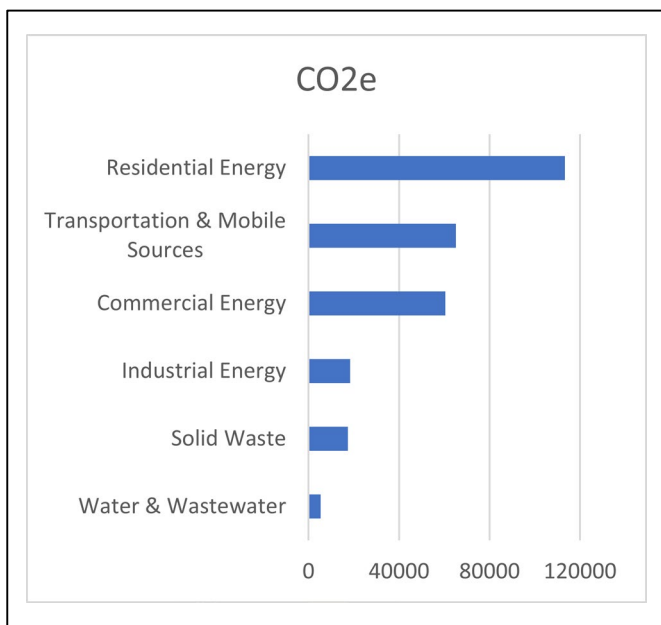


Figure 1: Community-wide Emissions by Sector

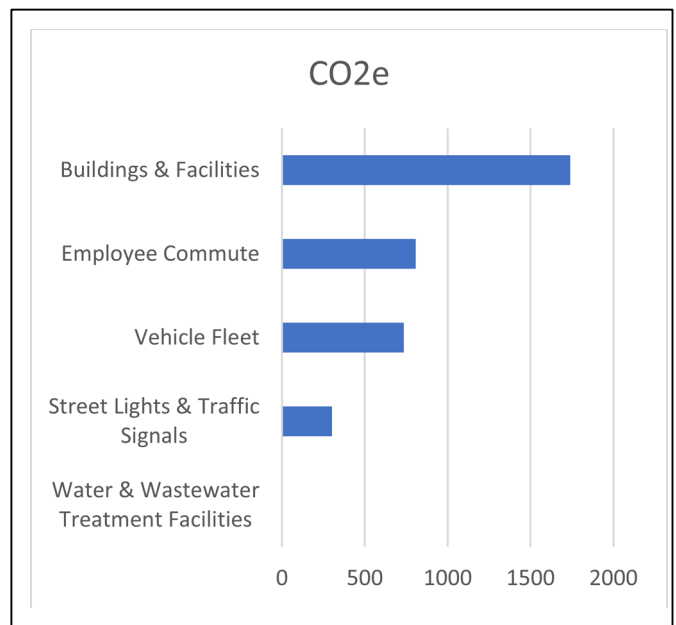


Figure 2: Government Operations Emissions by Sector

Introduction to Climate Change

Naturally occurring gases dispersed in the atmosphere determine the Earth's climate by trapping solar radiation. This phenomenon is known as the greenhouse effect. Evidence shows that human activities are increasing the concentration of greenhouse gases and changing the global climate. The most significant contributor is the burning of fossil fuels for transportation, electricity generation and other purposes, which introduces large amounts of carbon dioxide and other greenhouse gases into the atmosphere. Collectively, these gases intensify the natural greenhouse effect, causing global average surface and lower atmospheric temperatures to rise, threatening the safety, quality of life, and economic prosperity of global communities. Although the natural greenhouse effect is needed to keep the earth warm, a human enhanced greenhouse effect with the rapid accumulation of GHG in the atmosphere leads to too much heat and radiation being trapped. The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report confirms that human activities have caused an increase in carbon emissions¹. Many regions are already experiencing the consequences of global climate change, and the City of Birmingham is no exception.

Human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C. Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate - (high confidence).

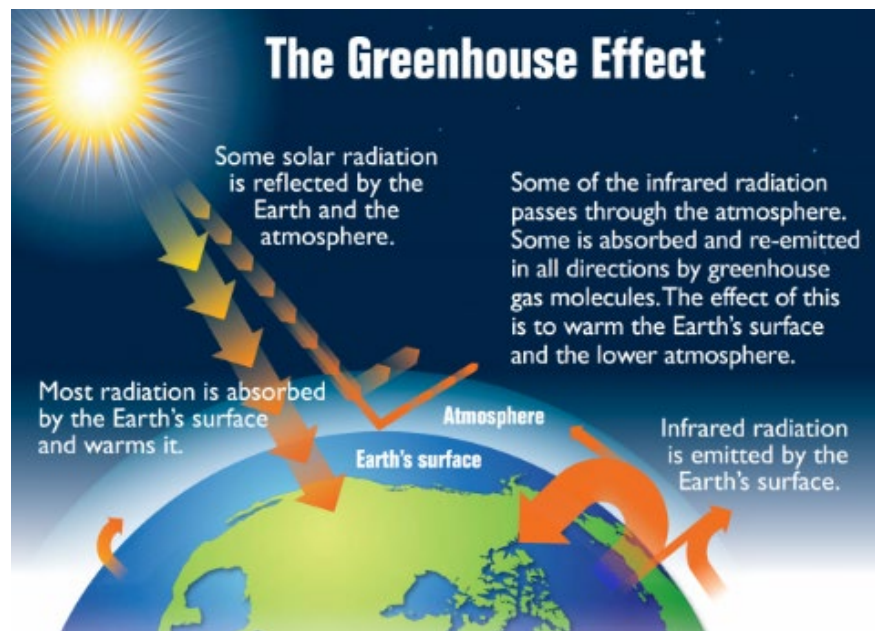


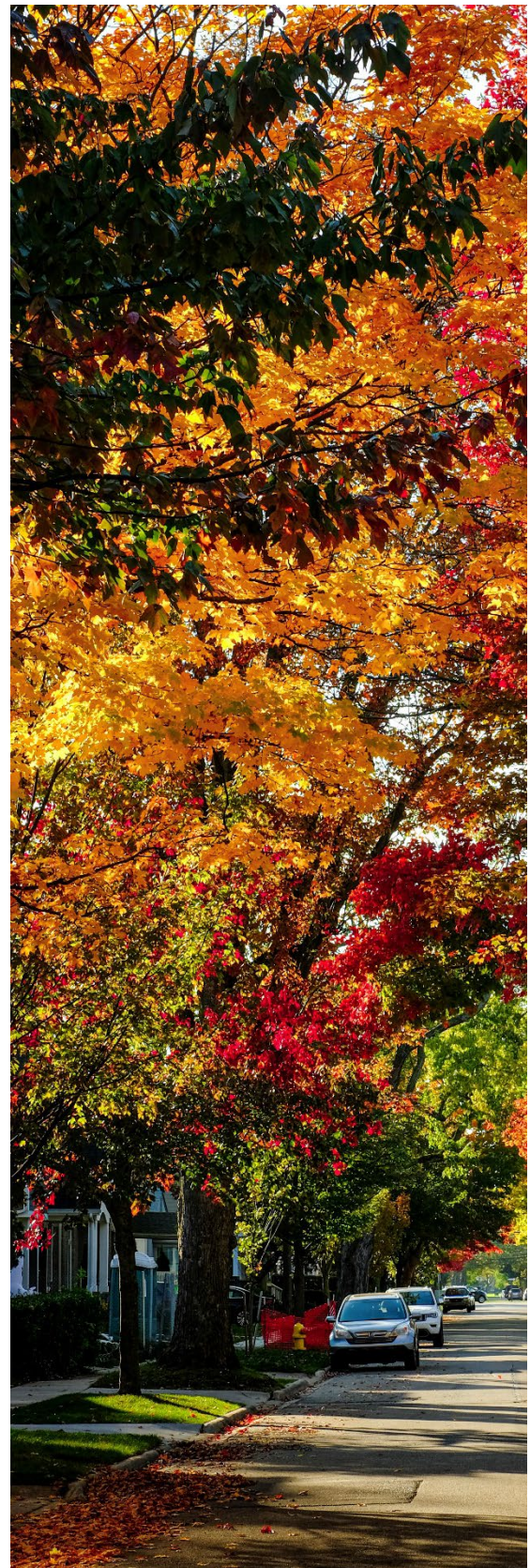
Figure 3: The Greenhouse Effect, EPA

¹IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press. In Press.

According to the Fifth National Climate Assessment (2023), the Midwest, including the City of Birmingham, is at particular risk for extreme precipitation events that degrade riparian ecosystems, erode river and stream banks, disperse contaminants, disrupt plant and animal cycles, and spread invasive species. Climate-driven changes in heavy rainfall are magnified by land use, with pronounced negative effects in urban and agricultural watersheds. Extreme precipitation events have adverse impacts on aquatic and terrestrial ecosystems, human health, infrastructure, and economies. Conservation and management strategies can help moderate these impacts.

The health of Midwestern populations is at risk from increased extreme heat, precipitation, drought, and flooding, along with reductions in air quality and increased incidence of vector- and waterborne illnesses. In addition, rising temperatures can increase the production of ground-level ozone and particulate matter. Projected increases in extreme heat events across the Midwest amplify the risk of heat-related, respiratory and cardiovascular illnesses. Climate change will continue to produce warmer seasons and extreme temperatures and precipitation that threaten many areas within the City of Birmingham and the greater region, most notably, public health, tourism and buildings & infrastructure².

Many communities in the United States have started to take responsibility for addressing climate change at the local level. More efficient use of energy decreases utility and transportation costs for residents and businesses. Retrofitting homes and businesses to be more efficient creates local jobs. In addition, when residents save on energy costs, they are more likely to be spend at local businesses and add to the local economy. Reducing fossil fuel use improves air quality, and increasing opportunities for walking and bicycling improves residents' health.



² U.S. Global Change Research Program. 2023. National Climate Assessment – Ch 24: Midwest. Retrieved from <https://nca2023.globalchange.gov/chapter/24/>

Greenhouse Gas Inventory as a Step Toward Carbon Neutrality

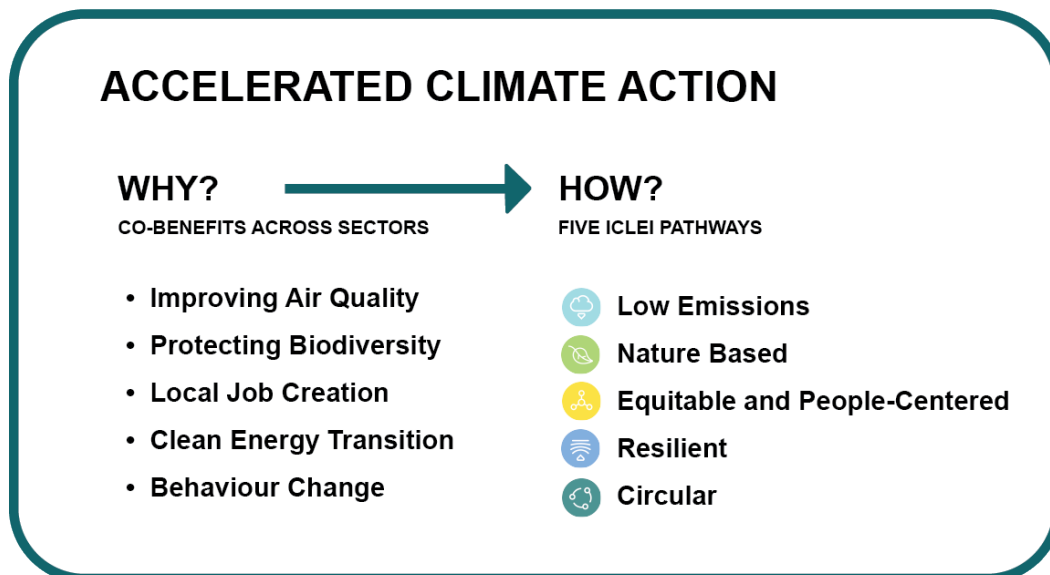
Facing the climate crisis requires the concerted efforts of local governments and their partners, those that are close to the communities directly dealing with the impacts of climate change.

Cities, towns and counties are well placed to define coherent and inclusive plans that address integrated climate action — climate change adaptation, resilience and mitigation. Existing targets and plans need to be reviewed to bring in the necessary level of ambition and outline how to achieve net-zero emissions by 2050 at the latest. Creating a roadmap for climate neutrality requires the City of Birmingham to identify priority sectors for action, while considering climate justice, inclusiveness, local job creation and other benefits of sustainable development.

To complete this inventory, the City of Birmingham utilized tools and guidelines from ICLEI - Local Governments for Sustainability (ICLEI), which provides authoritative direction for greenhouse gas emissions accounting and defines climate neutrality as follows:

The targeted reduction of greenhouse gas (GHG) emissions and GHG avoidance in government operations and across the community in all sectors to an absolute net-zero emission level at the latest by 2050. In parallel to this, it is critical to adapt to climate change and enhance climate resilience across all sectors, in all systems and processes.

To achieve ambitious emissions reduction, and move toward climate neutrality, the City of Birmingham will need to set a clear goal and act rapidly following a holistic and integrated approach. Climate action is an opportunity for our community to experience a wide range of co-benefits, such as creating socio-economic opportunities, reducing poverty and inequality, and improving the health of people and nature.



Inventory Methodology

Understanding a Greenhouse Gas Emissions Inventory

The first step toward achieving tangible greenhouse gas emission reductions requires identifying baseline emissions levels and sources and activities generating emissions in the community. This report presents emissions from both the City of Birmingham community as a whole, and from operations of the Birmingham government. The government operations inventory is mostly a subset of the community inventory, as shown in Figure 4. For example, data on commercial energy use by the community includes energy consumed by municipal buildings, and community vehicle-miles-traveled estimates include miles driven by municipal fleet vehicles.

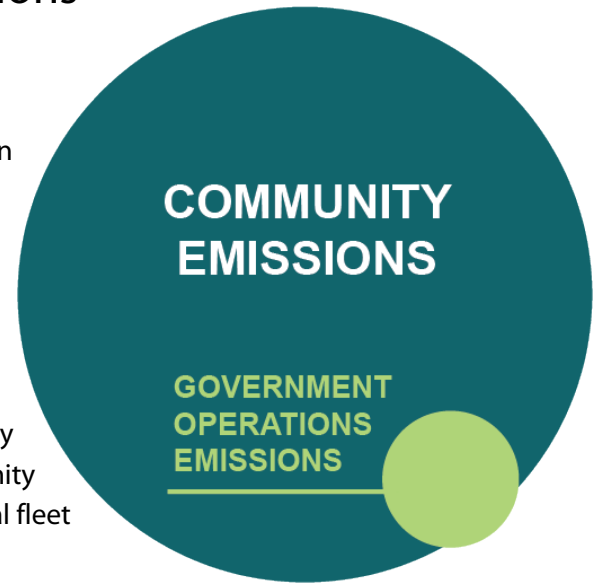


Figure 4: Sample Relationship of Community and Government Operations Inventories

As local governments continue to join the climate protection movement, the need for a standardized approach to quantify GHG emissions has proven essential. This inventory uses the approach and methods provided by the U.S. Community Protocol for Accounting and Reporting Greenhouse Gas Emissions (Community Protocol) and the Local Government Operations Protocol for Accounting and Reporting Greenhouse Gas Emissions (LGO Protocol), both of which are described below.

Three greenhouse gases are included in this inventory: carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). Many of the charts in this report represent emissions in “carbon dioxide equivalent” (CO₂e) values, calculated using the Global Warming Potentials (GWP) for methane and nitrous oxide from the IPCC 6th Assessment Report:

Table 1: Global Warming Potential Values (IPCC, 2023)

Greenhouse Gas	Global Warming Potential
Carbon Dioxide (CO ₂)	1
Methane (CH ₄)	27.2
Nitrous Oxide (N ₂ O)	273

Community Emissions Protocol

Version 1.2 of the U.S. Community Protocol for Accounting and Reporting GHG Emissions³ was released by ICLEI in 2019, and represents a national standard in guidance to help U.S. local governments develop effective community GHG emissions inventories. It establishes reporting requirements for all community GHG emissions inventories, provides detailed accounting guidance for quantifying GHG emissions associated with a range of emission sources and community activities, and provides a number of optional reporting frameworks to help local governments customize their community GHG emissions inventory reports based on their local goals and capacities.

The community inventory in this report includes emissions from the five Basic Emissions Generating Activities required by the Community Protocol. These activities are:

- Use of electricity by the community
- Use of fuel in residential and commercial stationary combustion equipment (e.g. HVAC, etc.)
- On-road passenger and freight motor vehicle travel
- Use of energy in potable water and wastewater treatment and distribution
- Generation of solid waste by the community

Carbon dioxide represents the vast majority (93.8%) of the community emissions and is produced from burning fossil fuels such as coal, gasoline, diesel, and natural gas. Nitrous oxide accounts for about .3% of communitywide emissions, primarily from grid electricity (from fuel combusted to create electricity) and gasoline used for passenger vehicles. Methane accounts for about 5.9% of community-wide emissions, and comes primarily from grid electricity (from fuel combusted to create electricity), gasoline used for passenger vehicles, the methane-to-energy plant, flaring of digester gas, and leakage from the local natural gas distribution system.

Local Government Operations (LGO) Protocol

In 2010, ICLEI, the California Air Resources Board (CARB), and the California Climate Action Registry (CCAR) released Version 1.1 of the LGO Protocol.⁴ The LGO Protocol serves as the national standard for quantifying and reporting greenhouse emissions from local government operations. The purpose of the LGO Protocol is to provide the principles, approach, methodology, and procedures needed to develop a local government operations greenhouse gas emissions inventory.

The following activities are included in the LGO inventory:

- Energy and natural gas consumption from buildings & facilities

³ ICLEI. 2012. US Community Protocol for Accounting and Reporting Greenhouse Gas Emissions. Retrieved from <http://www.icleiusa.org/tools/ghg-protocol/community-protocol>

⁴ ICLEI. 2008. Local Government Operations Protocol for Accounting and Reporting Greenhouse Gas Emissions. Retrieved from <http://www.icleiusa.org/programs/climate/ghg-protocol/ghg-protocol>

- Wastewater treatment processes
- On-road transportation from employee commute and vehicle fleet

Quantifying Greenhouse Gas Emissions

Sources and Activities

Communities contribute to greenhouse gas emissions in many ways. Two central categorizations of emissions are used in the community inventory: 1) GHG emissions that are produced by “sources” located within the community boundary, and 2) GHG emissions produced as a consequence of community “activities”.

Source	Activity
Any physical process inside the jurisdictional boundary that releases GHG emissions into the atmosphere	The use of energy, materials, and/or services by members of the community that result in the creation of GHG emissions.

By reporting on both GHG emissions sources and activities, local governments can develop and promote a deeper understanding of GHG emissions associated with their communities. A purely source-based emissions inventory could be summed to estimate total emissions released within the community’s jurisdictional boundary. In contrast, a purely activity-based emissions inventory could provide perspective on the efficiency of the community, even when the associated emissions occur outside the jurisdictional boundary. The division of emissions into sources and activities replaces the scopes framework that is used in government operations inventories, but that does not have a clear definition for application to community inventories.

Base Year

The inventory process requires the selection of a base year with which to compare current emissions. City of Birmingham’s community greenhouse gas emissions inventory utilizes 2021 as its baseline year, because it is the most recent year for which the necessary data are available.

Quantification Methods

Greenhouse gas emissions can be quantified in two ways:

- Measurement-based methodologies refer to the direct measurement of greenhouse gas emissions (from a monitoring system) emitted from a flue of a power plant, wastewater treatment plant, landfill, or industrial facility.
- Calculation-based methodologies calculate emissions using activity data and emission factors. To calculate emissions accordingly, the basic equation below is used:

$$\textit{Activity Data} \times \textit{Emission Factor} = \textit{Emissions}$$

Most emissions sources in this inventory are quantified using calculation-based methodologies. Activity data refer to the relevant measurement of energy use or other greenhouse gas-generating processes such as fuel consumption by fuel type, metered annual electricity consumption, and annual vehicle miles traveled. Please see appendices for a detailed listing of the activity data used in composing this inventory. Known emission factors are used to convert energy usage or other activity data into associated quantities of emissions. Emissions factors are usually expressed in terms of emissions per unit of activity data (e.g. lbs CO₂/kWh of electricity). For this inventory, calculations were made using ICLEI's ClearPath tool.



Community Emissions Inventory Results

The total communitywide emissions for the 2021 inventory are shown in Table 2 and Figure 5.

Table 2: Communitywide Emissions Inventory

Sector	Fuel or source	2021 Usage	Usage unit	2021 Emissions (MTCO _{2e})
Residential energy	Electricity (Detroit Edison)	99,096,629	kWh	54,910
	Natural Gas (Consumer's Energy)	1,097,738	MMBtu	58,381
Residential energy total				113,291
Commercial energy	Electricity	68,619,884	kWh	38,023
	Natural gas	421,229	MMBtu	22,402
Commercial energy total				60,425
Industrial energy	Electricity	33,284,300	kWh	18,443
	Natural gas	Included w/	Commercial per	Consumer's Energy
Industrial energy total				18,443
On-road transportation	Gasoline (passenger vehicles)	119,012,889	VMT	47,470
	Diesel (freight trucks)	12,325,924	VMT	17,685
Transportation total				65,155
Solid Waste	Waste Generated (Landfilled)	9561.02	Tons	16,616
	Waste Generated (Composted)	5179.91	Tons	715
Solid waste total				17,331
Water and wastewater	Water Treatment Energy Usage	51,602	kWh	30
	Wastewater Treatment Energy Usage	1,202,577	kWh	5248
	Wastewater Treatment	.26	MT (N ₂ O)	72
	Nitrogen Discharge	.0048	MT (N ₂ O)	1
Water and wastewater total				5351
Total community-wide emissions				279,996

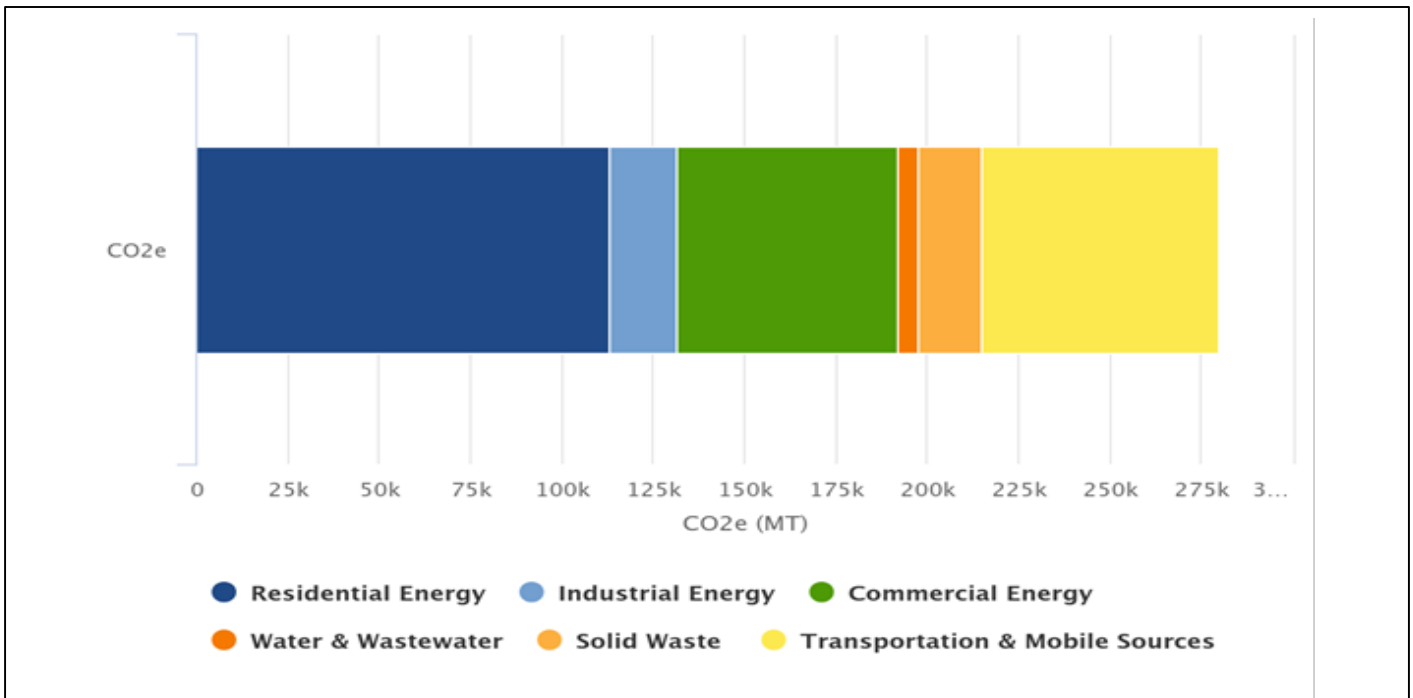


Figure 5: Community-wide Emissions by Sector

Figure 5 shows the distribution of communitywide emissions by sector. Residential Energy is the largest contributor, followed by Transportation & Mobile sources & Commercial Energy.

Next Steps:

The inventory should be used to focus and prioritize actions to reduce emissions. Based on the inventory results, the following areas have the greatest potential for emissions reduction:

- Residential Energy
- Transportation & Mobile Sources
- Commercial Energy

Completion of another GHG inventory in five years is recommended in order to assess progress resulting from any actions implemented. The detailed methodology section of this report, as well as notes and attached data files in the ClearPath tool will be helpful to complete a future inventory consistent with this one.

Government Operations Emissions Inventory Results

Government operations emissions for 2021 are shown in Table 3 and Figure 6.

Table 3: Local Government Operations Inventory

Sector	Fuel or source	2021 Usage	Usage unit	2021 Emissions (MTCO _{2e})
Buildings & Facilities	Electricity	3,090,005	kWh	1712
	Natural Gas	1,128	MMBtu	28
Buildings & Facilities total				1740
Street Lights & Traffic Signals	Electricity	1,331,607	kWh	302
Street Lights & Traffic Signals total				302
Vehicle Fleet	Gasoline	6525	MMBtu	459
	Diesel	3764	MMBtu	278
Vehicle Fleet total				737
Employee Commute	Gasoline	1,767,803	VMT	771
	Diesel	55,893	VMT	31
	Hybrid Gasoline	11,561	VMT	4
Employee Commute Total				806
Solid Waste	Waste Generation	Data was not	received	to calculate LGO waste
	Compost	LGO waste is	included	in community-wide totals
Solid waste total				N/A
Water and wastewater	Water Tower Energy Usage	13,228	kWh	7
Water and wastewater total				7
Total government emissions				3592

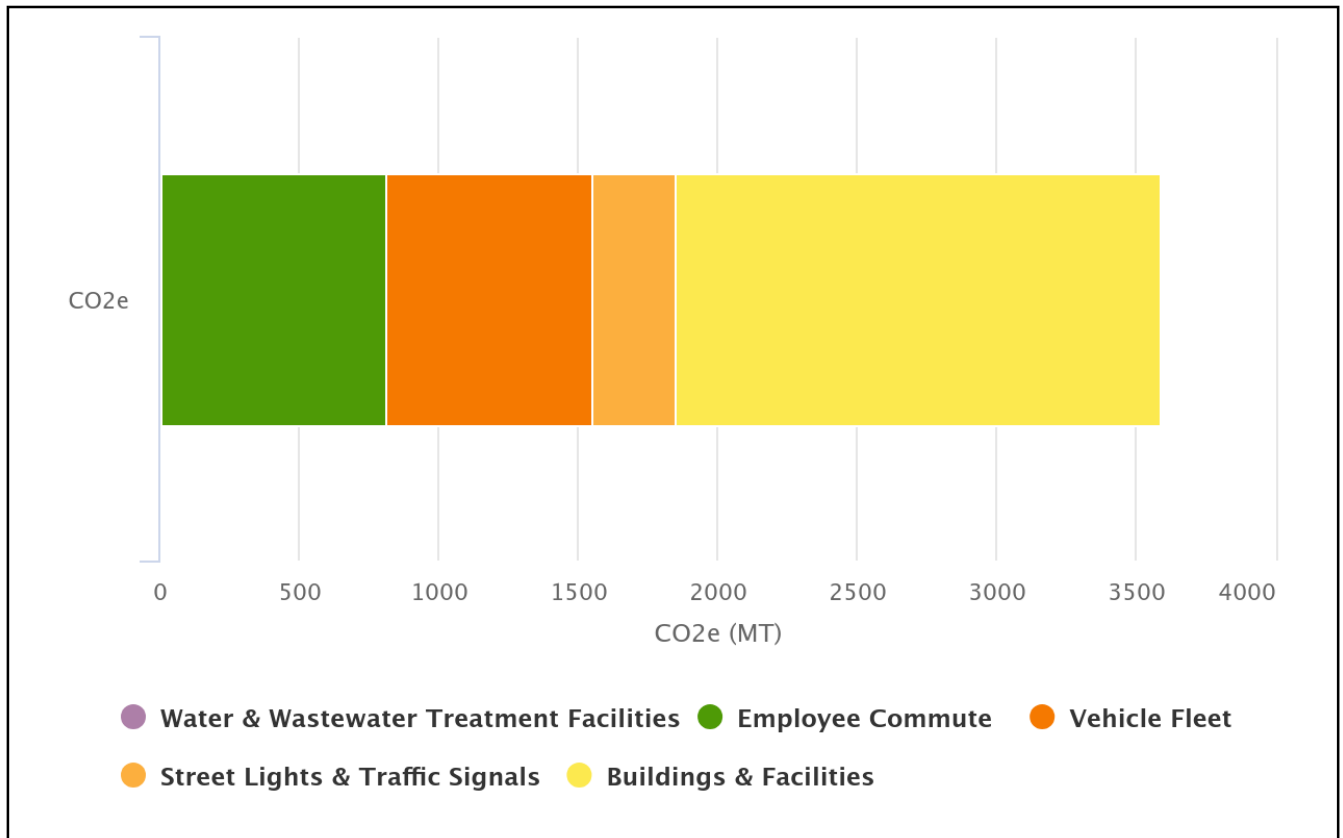


Figure 6: Local Government Operations Emissions by Sector

Figure 6 shows the distribution of emissions among the four sectors included in the inventory. Buildings & Facilities represents the majority of emissions, followed by Employee Commute and Vehicle Fleet. Streetlights & Traffic Signals and Water & Wastewater account for a small portion of emissions.

Next Steps:

The local government operations emissions inventory points to a need to focus and prioritize actions to reduce emissions. Based on the inventory results, the following areas have the greatest potential for emissions reduction:

- Buildings & Facilities
- Employee Commute
- Vehicle Fleet

Completion of another GHG inventory in five years is recommended in order to assess progress resulting from any actions implemented. The detailed methodology section of this report, as well as notes and attached data files in the ClearPath tool will be helpful to complete a future inventory consistent with this one.

Conclusion

This inventory marks the completion of the first milestone of the City of Birmingham’s sustainability and climate action planning process. The next steps are to forecast emissions, set an emissions-reduction target, and develop and adopt the Birmingham Green: Healthy Climate Plan that identifies specific quantified strategies that can cumulatively meet that target.

In addition, the City of Birmingham will continue to track key energy use and emissions indicators on an on-going basis. It is recommended that communities update their inventories on a regular basis, especially as plans are implemented to ensure measurement and verification of impacts. Regular inventories also allow for “rolling averages” to provide insight into sustained changes and can help reduce the change of an anomalous year being incorrectly interpreted. This inventory shows that residential and commercial energy as well as communitywide transportation patterns will be particularly important to focus on. Through these efforts and others, the City of Birmingham can achieve environmental, economic, and social benefits beyond reducing emissions.

Appendix: Methodology Details

Energy

The following tables shows each activity, related data sources, and notes on data gaps.

Table 4: Energy Data Sources

Activity	Data Source	Data Gaps/Assumptions
Communitywide		
Residential, commercial, and industrial electricity consumption	DTE	
Residential, commercial, and industrial natural gas consumption	Consumer's Energy	
Local Government Operations		
Electricity consumption	DTE	
Natural gas consumption	Consumer's Energy	

Table 5: Emissions Factors for Electricity Consumption

Emissions Factor	CO ₂ (lbs./MWh)	CH ₄ (lbs./GWh)	N ₂ O (lbs./GWh)
Grid Electricity	1272.045	67	18

Transportation

Table 6: Transportation Data Sources

Activity	Data Source	Data Gaps/Assumptions
Communitywide		
Vehicle miles travelled	Google EIE	Local VMT was extrapolated from data model at the Oakland County level.
Transit ridership	N/A	No transit data received.
Local Government Operations		
Government vehicle fleet	Department of Public Services	Emissions estimates based on fuel consumption.
Employee commute	Employee Survey	Estimates developed by utilizing a voluntary employee survey, the total number of employees and ICLEI's calculation template.

For vehicle transportation, it is necessary to apply average miles per gallon and emissions factors for CH₄ and N₂O to each vehicle type. The factors used are shown in Table 7.

Table 7: MPG and Emissions Factors by Vehicle Type

Fuel	Vehicle type	MPG	CH ₄ g/mile	N ₂ O g/mile
Gasoline	Passenger car	24.1	.0183	.0069
Gasoline	Light truck	18.2	.0117	.0087
Gasoline	Heavy truck	5.38	.0719	.0611
Gasoline	Motorcycle	44	.0084	.0069
Diesel	Passenger car	25.3	.0005	.001
Diesel	Light truck	18.2	.001	.0015
Diesel	Heavy truck	6.56	.0051	.0048

Wastewater

Table 8: Wastewater Data Sources

Activity	Data Source	Data Gaps/Assumptions
Communitywide & Local Government Operations		
Nitrogen Discharge	Oakland County Water Resources Commissioner	Local data was extrapolated from SOCWA aggregate data based on population %.
Digester Gas Combustion/Flaring		
Energy used in wastewater facilities [if reported separately, omit if not]	GLWA	Local data was extrapolated from regional aggregate data based on population %.

Potable Water

Table 9: Potable Water Data Sources

Activity	Data Source	Data Gaps/Assumptions
Communitywide		
Potable Water	GLWA	Local data was extrapolated based on population %.
Potable Water	SOCWA	Local data was extrapolated based on population %.
Local Government Operations		
Potable Water	DTE	River gauge had zero usage per DTE.

Solid Waste

Table 10: Solid Waste Data Sources

Activity	Data Source	Data Gaps/Assumptions
Communitywide		
Solid Waste (Landfilled)	SOCORA	No waste characterization available, used National Average.
Solid Waste (Compost)	SOCORA	No waste characterization available, used National Average.
Local Government Operations		
Solid Waste (Landfilled)	SOCORA	LGO waste is included in community-wide.
Solid Waste (Compost)	SOCORA	LGO waste is included in community-wide.

Inventory Calculations

The 2021 inventory was calculated following the US Community Protocol and ICLEI’s ClearPath software. As discussed in Inventory Methodology, the IPCC Sixth Assessment was used for global warming potential (GWP) values to convert methane and nitrous oxide to CO2 equivalent units. ClearPath’s inventory calculators allow for input of the sector activity (i.e. kWh or VMT) and emission factor to calculate the final CO2e emissions.

BIRMINGHAM

HEALTHY CLIMATE PLAN

DRAFT

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Acknowledgments

City of Birmingham Sustainability and Climate Action Plan

The City of Birmingham would like to acknowledge the people that have contributed their time and expertise to creating the Birmingham Green: Healthy Climate Plan. Their continued dedication to sustainability and climate action are a valuable public service and the community of collaboration that has been built over this time will serve Birmingham for many years to come.

The Birmingham Community

To all of the members of the Birmingham community that have responded to surveys, participated in events, had important conversations, and supported this idea from the very beginning.

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Summer Aldred, City Planning Intern

Birmingham Ad Hoc Environmental Sustainability Committee

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Debra Horner, Vice Chairperson
Harvey Bell
Lois Debacher
Lara Edwards
Rachna Gulati
Joseph Mercurio
Danielle Todd
Daniella Torcolacci
Josie Carroll, Student Representative
Will Clemans, Student Representative

Birmingham City Commission

Elaine McLain, Mayor
Katie Shaffer, Mayor Pro Tem
Clinton Baller
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Andrew Haig
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City Manager's Office

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Scott Zielinski, Director of Public Services
Brendan McGaughey, Parks and Forestry Foreman
Brad McNab, Parks and Forestry Assistant Foreman

Public Safety

Scott Grewe, Police Chief
Paul Wells, Fire Chief



Welcome Letter

To the Birmingham Community,

These days, we are thinking green – Birmingham Green to be exact. In fact, the City has been thinking green since 1929 when the General Village Plan was adopted in part to study a growing population and ensure the preservation and protection of the natural beauty of Birmingham.

Fast forward nearly 100 years to 2024. The scientific consensus is clear that climate change is here, and that it could pose one of the greatest challenges of our time. The City Commission has taken quick and decisive action to begin a rigorous planning effort to draw back greenhouse gas emissions in the City while also building resiliency through more sustainable operations, deliberate improvements to public space, and collaboration across the board.

Recognizing that Birmingham is in an excellent position to become a leader in sustainability and climate action, we can start by building on our strengths. Birmingham has been a Tree City USA community for over 45 years. Protecting and expanding our tree canopy has always been important to our community and will continue to be so. Additionally, parks, trails and green space cover more than 10% of the City's total acreage alone. Included in this is a jewel, the Rouge River corridor, which provides not only recreational opportunities for people, but also a habitat for thousands of species of flora and fauna.

With that, we are proud to introduce the Birmingham Green: Healthy Climate Plan. This plan combines broad sustainability and climate action concepts into an actionable, equitable and far-reaching effort to ultimately achieve carbon neutrality in 2050. Birmingham Green challenges us to shed our dependence on fossil fuels, build resilience against extreme weather, cultivate flourishing biodiversity, and maintain our thriving urban tree canopy.

We invite you to engage with this plan and use it to become our partner in creating a stronger, more sustainable and resilient Birmingham.

Sincerely,

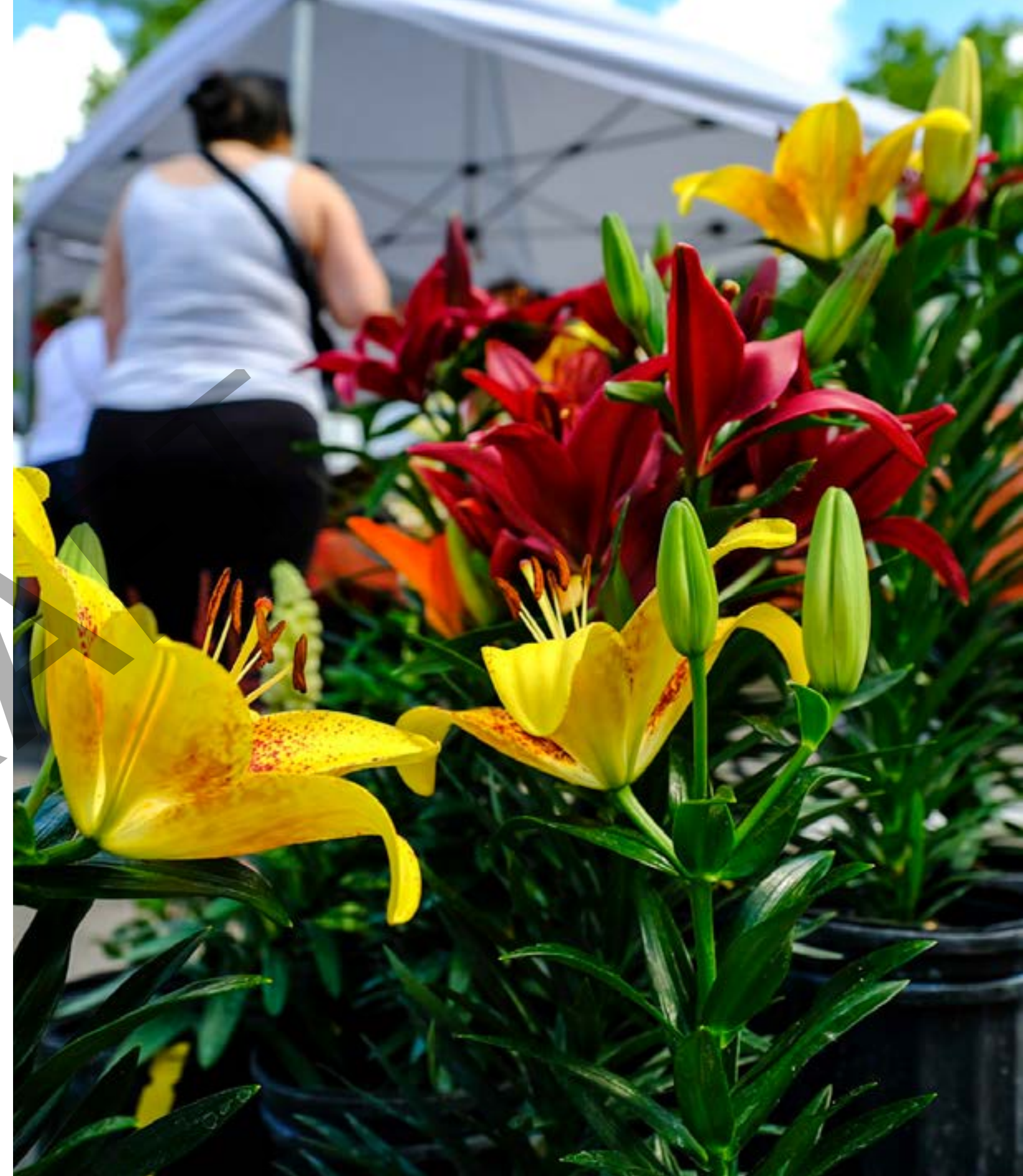


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GLOSSARY

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EXECUTIVE SUMMARY



Birmingham Creen Healthy Climate Plan Vision Statement

The Birmingham community will be a regional leader in sustainability and climate action by instituting policies and practices that enhance the natural & built environment, improve quality of life, and foster equity & resiliency towards a vibrant future.



Birmingham Creen Healthy Climate Plan Objectives

Facilitate transition to renewable energy and decarbonization



Integrate equity and address environmental injustices



Restore natural areas and increase native biodiversity



Promote nature-based solutions as standard practice



Increase materials management and reduce waste



Mitigate extreme weather impacts on the community



Prioritize sustainable practices in all municipal and private projects





Plan Overview

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Summary of Key Actions

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Summary of Key Actions

	Initial Cost	Potential Partners	GHG Reduction
2030 and 2050 carbon reduction & land goals			
Reduce carbon emissions by 25% by 2030			
Carbon neutral by 2050			
Increase pervious surface area by 20% by 2030			
Become 65% pervious by 2050			
Water & Stormwater			
Infiltrate or capture an additional 100,000 gallons of stormwater by 2035			
Adopt a subsidized residential rain garden program			
Reduce barriers to local stormwater rebate programs			
Develop a tracking system for green stormwater infrastructure			
Form new alliances and improve existing alliances with municipalities and organizations that address stormwater runoff to the Rouge River			
Require green infrastructure installations in every public infrastructure and development project			
Incentivize green stormwater infrastructure installations on commercial properties			
Reduce indoor & outdoor potable water usage			
Require stormwater retention or infiltration on all new single-family construction			
Adopt Oakland County stormwater standards for all developments city-wide .5 acre or more			
*Based on about 25% of 7,216 improved single family residential properties doing at least 50 gallons.			

	Initial Cost	Potential Partners	GHG Reduction
Waste			
Reduce total landfilled solid waste by 2,390 tons (25%) by 2035			
Develop a city-wide food waste composting program			
Increase and improve quality of recyclables in curbside carts through direct education campaigns and audits			
Invest in new local facilities and services for recycling food waste, electronics, textiles, hazardous materials and other specialty recycling			
Create a deconstruction ordinance to encourage the reuse and repurposing of building material during construction projects			
Lobby Southeastern Oakland County Resource Recovery Authority to improve data collection for its member communities			
Expand recycling opportunities in all new commercial and multifamily development projects			
Develop bi-annual recycling events for hard to recycle materials			
Pilot a zero-waste policy for City-managed events			
Buildings & Facilities			
Reduce greenhouse gas emissions from buildings and facilities by 57,500 metric tons (50%) by 2035			
Revise and expand ordinances related to solar photovoltaics and other alternative energy sources			
Remove any barriers to the use of geothermal energy strategies in the City			
Increase EV charging network city-wide			
Produce feasibility studies for solar photovoltaics on all city buildings and/or sites			
Expand the City's historic preservation program to protect existing buildings and character.			
Develop a process for comprehensively monitoring energy usage for all city buildings			

Summary of Key Actions

	Initial Cost	Potential Partners	GHG Reduction
Natural Resources			
Increase native and naturalized areas in the City by as much as 450 acres by 2035*			
Protect and expand the tree canopy in each census tract of the City to at least 40%			
Promote the transition of private gardens and landscapes to native species and remove any barriers to such			
Study the issue of clear-cutting of lots in the City with special attention tree removal during construction projects			
Transition 100% of municipal plantings to native plantings			
Revisit streetscape standards to include better environments for street trees and plantings			
Prioritize the health of the Rouge River corridor and follow the recommendations of the Birmingham Plan 2040 related to the Rouge River			
*1,084 impervious acres, goal is 768 impervious acres, which is 25% of the City.			
Municipal Operations			
Institutionalize carbon reduction and climate resilience in City government by 2035			
Transition all administrative and light-duty municipal internal combustion engine vehicles and equipment to alternative fuel			
Hire a full-time sustainability staff person			
Create a sustainability fund for use by multiple City Departments			
Establish a sustainable purchasing program and an internal administrative regulation			
Decrease vehicle miles traveled by municipal staff by XXX miles through incentive programs			
Adopt an anti-idling policy for all non-emergency City vehicles			
Identify and maintain a database of new and recurring grant opportunities geared towards sustainability and climate action.			

	Initial Cost	Potential Partners	GHG Reduction
Create, by ordinance, an Environmental Sustainability Committee to oversee and make recommendations on a variety of issues related to sustainability and climate action.			
Provide recycling opportunities in all public parks and other public spaces.			
Phase out the use of all chemical pesticides and fertilizers on city property and in park maintenance operations			
Increase or require specialized training for all workers who manage natural spaces			
Create a sustainability web page to act as a landing page for all city sustainability initiatives as well as to inform and educate residents on sustainable topics, best practices and relevant state and regional programs			
Quality of Life			
Publish citywide and community-level quality-of-life metrics on equity and sustainability by 2030			
Develop the newly acquired YMCA building and St. James Park into a nexus of intergenerational recreation opportunities including a resilience hub that will serve as a warming and/or cooling center as needed and better connect residents to city services.			
Permit community gardens in select parks and public open space			
Include educational opportunities in sustainability and climate action projects that are accessible to everyone			
Install one air quality monitoring station in the City and connect to the EGLE network			
Consider internal air quality monitoring systems in and around all municipal buildings			
Continue to implement the City's multi-modal transportation goals			
Support and expand upon the sustainable land use decisions of the Birmingham Plan 2040			
Remove barriers to food production in residential zones and on residential properties			

INTRODUCTION

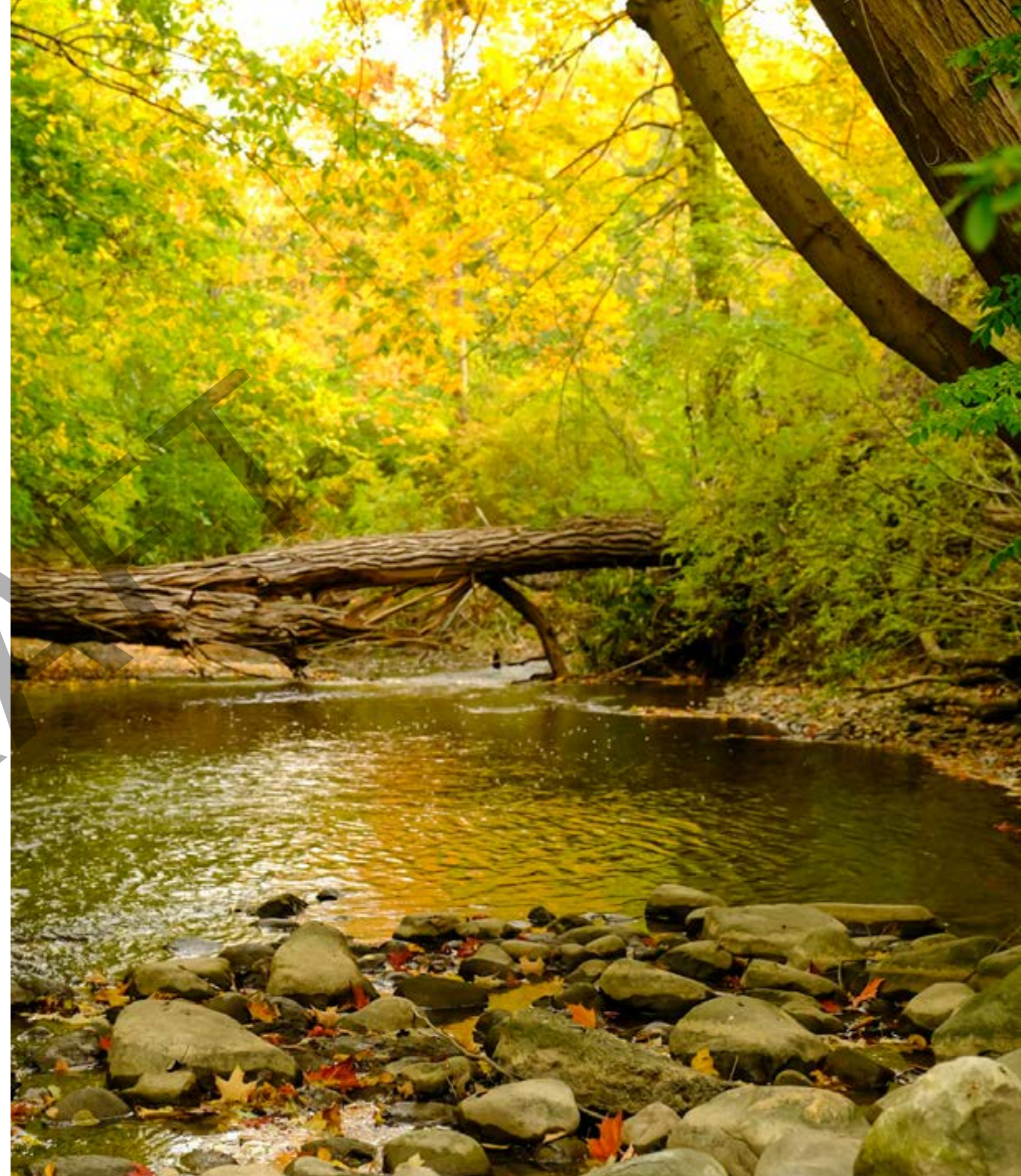


Land Statement

Birmingham, Michigan sits on land made by shallow seas and glacial formations, with the last glaciers receding about 14,000 years ago. Birmingham is situated on the traditional land of the Anishinaabek – Three Fires Confederacy, the Odawa (Ottawa), Ojibwe (Chippewa), and Bodewadmi (Potawatomi). We recognize that these lands have served as a site of gathering and exchange for Indigenous communities since time immemorial.

We acknowledge the resilience, strength, and ongoing presence of the Indigenous peoples who have stewarded this land throughout the generations. We also recognize the impacts of settler colonialism and the importance of understanding the history of this land. We are committed to learning more about the history and cultures of the Indigenous peoples of this area and to working towards a more just and inclusive future for all who call Birmingham, Michigan, home.

Insert map here



Sustainability & Climate Change

Sustainability in the context of a city such as Birmingham refers to the our ability to meet the needs of our current population without compromising the ability of future generations to meet their own needs. This concept encompasses various aspects of urban life, including environmental, economic, and social sustainability.

Environmental Sustainability: Cities need to minimize their environmental impact by reducing pollution, conserving resources, and protecting natural habitats. This involves initiatives such as promoting renewable energy, implementing green building practices, and establishing efficient public transportation systems to reduce carbon emissions.

Economic Sustainability: Sustainable cities prioritize economic development that benefits all residents while also preserving resources for future generations. This may involve supporting local businesses, fostering innovation and entrepreneurship, and investing in industries that promote sustainability, such as clean technology and green infrastructure.

Social Sustainability: Social sustainability focuses on creating inclusive and equitable communities where all residents have access to essential services, opportunities for education and employment, affordable housing, and a high quality of life. This includes promoting social cohesion, addressing issues of inequality and poverty, and ensuring that urban planning and development initiatives prioritize the needs of marginalized populations.

Cultural Sustainability: Cultural sustainability involves preserving and celebrating the cultural heritage and diversity of acity’s residents. This includes protecting historic landmarks, supporting cultural institutions and events, and promoting intercultural dialogue and understanding.

Achieving sustainability in all these aspects requires collaboration and coordination among various stakeholders, including government agencies, businesses, non-profit organizations, and community members. It involves long-term planning, innovation, and a commitment to balancing economic growth with environmental and social responsibility for the benefit of current and future residents of the city.



Climate Change

Naturally occurring gases dispersed in the atmosphere determine the Earth’s climate by trapping solar radiation. This phenomenon is known as the greenhouse effect. Evidence shows that human activities are increasing the concentration of greenhouse gases and changing the global climate. The most significant contributor is the burning of fossil fuels for transportation, electricity generation and other purposes, which introduces large amounts of carbon dioxide and other greenhouse gases into the atmosphere.

Collectively, these gases intensify the natural greenhouse effect, causing global average surface and lower atmospheric temperatures to rise, threatening the safety, quality of life, and economic prosperity of global communities. Although the natural greenhouse effect is needed to keep the earth warm, a human enhanced greenhouse effect with the rapid accumulation of GHG in the atmosphere leads to too much heat and radiation being trapped. The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report confirms that human activities have caused an increase in carbon emissions . Many regions are already experiencing the consequences of global climate change, and the City of Birmingham is no exception.

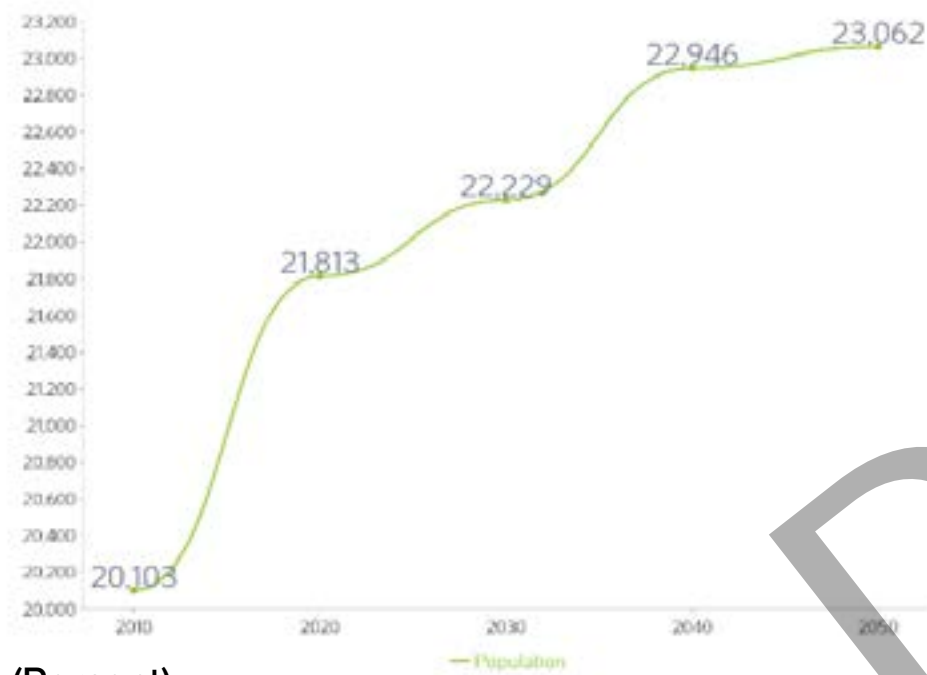


Birmingham Context

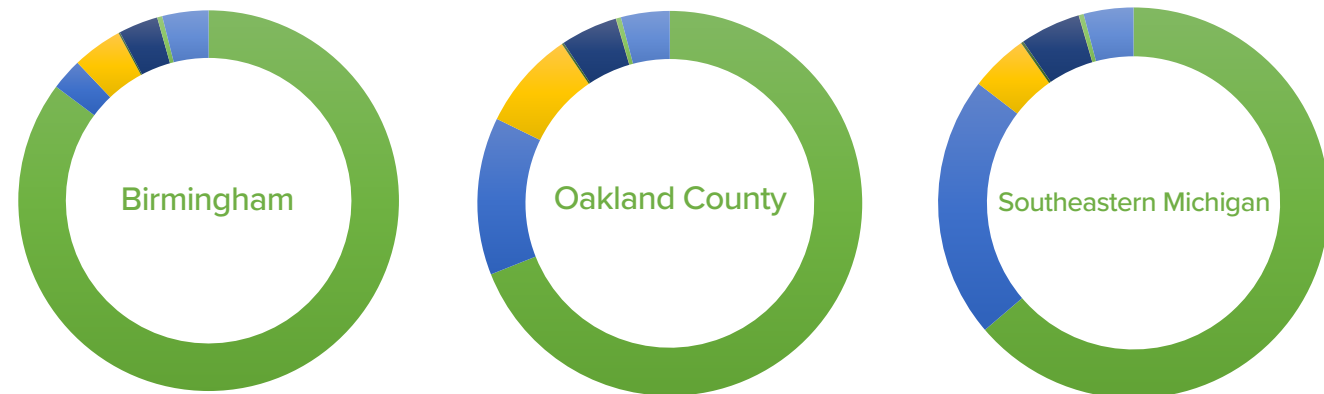
The city of Birmingham, Michigan is located in Oakland County, and is bordered by five communities: Beverly Hills, Bloomfield Hills, Bloomfield Township, Royal Oak, and Troy. Birmingham is vibrant community, with a small-town feel while still being connected to all of the cultural and recreational amenities that an urban area provides. Birmingham boasts a thriving, walkable downtown, providing retail and business opportunities for both the local community and the region. Birmingham is 4.8 square miles in size and is centrally located in Southeastern Michigan between the major cities of Detroit and Pontiac.

Demographics

Population Projection of Birmingham through 2050



Race (Percent)



Population & Age Demographics

21,738 2022 Birmingham Population	42.0 2022 Birmingham Median Age
1,272,264 Oakland County	41.1 Oakland County
4,392,041 Southeastern Michigan	40.1 Southeastern Michigan

Household Demographics

5,432 2010 Families	5,628 2021 Families	\$151,556 2022 Birmingham Median Household Income
2.91 2010 Average Family Size	3.12 2021 Average Family Size	\$90,564 Oakland County \$71,265 Southeastern Michigan
		9,383 2022 Birmingham Households
		530,638 Oakland County 1,762,104 Southeastern Michigan

Economic Demographics

5.5% 2022 Birmingham Poverty Rate	76.3% 2021 Own their home
8.1% Oakland County 13.8% Southeastern Michigan	23.7% 2021 Rent their home

- White
- Black or African American
- Asian
- American Indian and Alaska Native
- Hispanic or Latino
- Native Hawaiian and Other Pacific Islander
- Some Other Race
- Two or more races



Other Recent Planning Efforts

The **Birmingham Plan 2040** (“2040 Plan”) was adopted in May 2023. The 2040 Plan is a comprehensive master plan, which is a document and policy guide designed to help Birmingham conceive a vision of what they want to look like in the future. The City of Birmingham is required to adopt and maintain a comprehensive master plan pursuant to the Michigan Planning Enabling Act. The Birmingham Green: Healthy Climate Plan will exist under the umbrella of the 2040 Plan and will build upon the recommendations within the 2040 Plan while also considering its predecessors, other master plans and sub area plans within the City of Birmingham.

The **Birmingham Parks and Recreation Master Plan** was adopted in December of 2023. The updated plan prioritizes sustainability as one of its core guiding principles. Sustainability is defined in the plan as “a commitment to environmentally responsible practices, ensuring that our parks and recreation facilities continue to thrive for years to come.” The City of Birmingham is required to update its Parks and Recreation plan every 5 years to maintain eligibility for state and federal grants.

Southeast Michigan GREEN is an initiative, led by SEMCOG, to address some of the region’s most pressing challenges – managing floods, fostering climate resilience, improving community health, protecting our natural assets—all while creating vibrant places where people want to live and where businesses will thrive. The report focuses on implementation and provides a regional framework that demonstrates the impact of local projects, positioning them for successful

funding and partnership opportunities. An interactive GREEN Dashboard, online mapping tool, accompanies the report and is a useful tool for looking at specific implementation opportunities within each locality. The GREEN Report and GREEN Dashboard will provide the basis of some site specific implementation recommendations for Birmingham’s Sustainability and Climate Action Plan.

With funding from the Inflation Reduction Act through the US EPA’s Climate Pollution Reduction Grant (CPRG), SEMCOG will develop a **Healthy Climate Plan for Southeast Michigan**. This plan is intended to connect and uplift existing state, regional and local plans, while preparing communities to be competitive for \$4.6 billion in implementation grant funding for the policies and programs it identifies. The plan will cover the eight-county region of Southeast Michigan, including Wayne, Oakland, Macomb, St. Clair, Livingston, Lapeer, Washtenaw, and Monroe. As part of the CPRG, SEMCOG will develop two action plans, a distinct priority plan and comprehensive action plan to reduce carbon emissions by 2050. This plan is expected to be completed in the summer of 2025.

The **Michigan Healthy Climate Plan** is the state’s roadmap that charts a path to a prosperous, healthy, equitable, carbon-neutral Michigan by 2050. The plan, created by EGLE, was released in April 2022 and includes an interim target of 52% greenhouse gas (GHG) emissions

reductions by 2030, from baseline 2005 levels, as part of a “Roadmap to 2030” outlining intermediate actions needed to meet Michigan’s climate goals. The objectives of the plan are to:

1. Mitigate the worst impacts of climate change
2. Spur economic development and create good-paying jobs
3. Protect and improve the health of Michiganders
4. Position Michigan as a leader in climate action
5. Safeguard our natural resources and wildlife
6. Make Michigan energy independent
7. Address environmental injustice.

The City has spent a considerable amount of time and resources implementing the 2013 **Multi-Modal Transportation Plan** (MMTP), which has provided for many miles of new and improved sidewalks, bike lanes and shared use paths, as well as other infrastructure such as bike racks and repair stations. These are all valuable additions to a multi-modal network and provide necessary last-mile infrastructure and support sustainable modes of transportation. Because the City does not operate public mass transit, the MMTP focused its recommendations on improving the environment for transit through connectivity, enhanced transit stops, and safety. The Birmingham Green: Healthy Climate Plan will support the recommendations within the current and future iterations of the City’s MMTP.



PLAN DEVELOPMENT



Green Beans

3.00 qt

Background

The City of Birmingham, Michigan has introduced environment-friendly planning schema since the General Village Plan was adopted in 1929 to address rapid urban growth and protect the then-village's natural beauty. In response to industrial pressure and development impacts of industrial uses in Detroit and Pontiac, the General Village Plan recognized the function and importance of preserving open space and natural areas such as the Rouge River Valley, a regional park system, and the urban tree canopy, and suggested that zoning be immediately adopted to preserve them through single-family residential districts. Nine decades later, Birmingham has perpetuated environmental ideals through plans such as the Downtown 2016 Master Plan, Multi-Modal Transportation Plan, Parks and Recreation Master Plans, Triangle District Urban Design Plan, and the Birmingham Plan 2040, as well as its focus on mixed use and walkability, urban design, and other quality examples, all of which contain virtues of sustainable development and eco-friendly objectives.

The Birmingham Green: Healthy Climate Plan was developed at the direction of the Birmingham City Commission. The process started with a declaration of a climate emergency in 2023 and the creation of the Ad Hoc Environmental Sustainability Committee. The committee was tasked with drafting the plan and performing a local greenhouse gas inventory (GHGI). This decision was predicated by the adoption of City Commission's strategic goals in 2022, which elevated sustainability as one of three overall strategic goals that will guide the decision-making process at the Commission level through the year 2027.



City Commission Goals

Engaged and Connected Community - Birmingham is a community that is connected to one another and engaged in the decision making process.

- Bridge the divide that Woodward Avenue creates in the City and transform the Woodward environment
- Offer City services and amenities that enrich the lives of residents of all ages
- Encourage robust resident engagement with their government and community
- Increase Connectivity between the Rouge River trail system, downtown, and the neighborhoods

Environmental Sustainability - The City of Birmingham positions itself for a changing future by instituting policies and practices that protect the natural environment and reduce extreme weather impacts on the community.

- Create a sustainability board to review projects, investigate funding opportunities, and offer public education opportunities
- Maintain and upgrade infrastructure to prepare for future climate conditions
- Modernize City facilities for energy efficiency and sustainability

Efficient and Effective Services - Birmingham will address the needs of the community in a timely and respectful manner.

- Incorporate new technologies to improve service delivery for residents including digitization of public records and museum materials
- Build and retain an effective and professional staff who serve the community
- Create community risk reduction policies and programs that emphasize citywide increased safety and security

Public Engagement Activities

A major component of drafting the City of Birmingham SCAP was community engagement. A dedicated and comprehensive approach to community engagement provides for a plan that is collaborative, enhances communication and understanding, and fosters a sense of community and accomplishment. This section of the plan consolidates and summarizes all of the feedback we heard during the process and builds the backbone upon which this plan was created.

Public Engagement Phase 1

- **Day on the Town** – The Environmental Sustainability Committee hosted a table during the City’s annual Day on the Town event, which was intended to introduce people to the ESC and the SCAP, as well as advertise for the community survey. Overall, several persons engaged with staff and ESC members, and the City was able to disperse over 30 cards with a QR code to the survey.
- **Farmers Market** – In addition, a table was hosted at the Birmingham Farmers Market. Similar to the Day on the Town event, the focus was to get people engaged with the process, and advertise for the community survey. The heavy rainfall events in mid-August seemed to spur a robust engagement throughout the day, and as a result the City was able to inform many persons about the SCAP and the survey.
- **Community Survey #1** – The City of Birmingham hosted a survey on Engage Birmingham that was designed to get a preliminary look into the feelings of the community as it relates to sustainability and climate action as a whole. In addition, the survey provided space for respondents to elaborate on any additional issues that they might feel is important for the City to consider while drafting the SCAP.



- **Municipal Round Tables** – As a major stakeholder in the SCAP and the goals that will be developed within it, the municipal staff was engaged at a series of round tables to get a more in-depth look into different departments and their operations/concerns. Overall, the turnout was very encouraging, and it became very clear that the municipal staff is on-board and very aware of the challenges ahead, as well as the interconnectedness of various approaches to sustainability and climate action.
- **Community Visioning Session** – The Environmental Sustainability Committee held a community visioning session in the fall of 2023. The session was split into an introduction, an activity, and a facilitated discussion with the Chief Environmental Sustainability Officer for Oakland County. Members of the community were able to provide feedback on six elements from the City Commissions Strategic Goal #2. The facilitated discussion enabled the facilitator to clarify several points of feedback and provide an opportunity for elaboration.
- **Newsletters & Social Media** – Since the ESC was created, the Planning Division has provided regular updates in the City’s Around-Town E-Newsletters, Birmingham Beat printed newsletters, social media, and Constant Contact email services. In addition, the City has taken advantage of opportunities to speak to other media outlets such as the Birmingham-Bloomfield Eagle.

Public Engagement Phase 2

- **Community Survey #2** – The City of Birmingham hosted a second survey on Engage Birmingham that provided a deeper dive into the goals of the plan as they were developed at the time. This survey provided the opportunity for people to comment on measurable goals and how they may or may not affect different parts of the community.
- **Board and Commission Reports** – As partners in furthering the goals of the SCAP, the Environmental Sustainability Committee provided regular communications to different boards and commissions in the City to solicit feedback, but also to build bridges and ensure that the vast network of collaboration between decision makers in the City started strong and remained strong.
- **Department of Public Services** – The Environmental Sustainability Committee hosted a table at the popular DPS Open House event in the spring of 2024. At this point, the SCAP was more developed, which provided an opportunity to hear about preferences related to certain goals and objectives of the SCAP, as well as any other content that visitors found interesting.
- **Stakeholder Engagement** – In addition to soliciting feedback from the general public, the Environmental Sustainability Committee also reached out to several key stakeholder groups such as NEXT, the Birmingham Public Schools, and the business community. These groups represent people that may be particularly vulnerable to climate change and those that will play a major role in the implementation of the SCAP.



Public Engagement Summary

In summary, it is very clear that stakeholders feel that sustainability and climate action is important and should be a very high priority in the City of Birmingham. Overall, 82.3% of respondents felt as though the City of Birmingham should be a regional leader or increase community commitment to sustainability and 77.1% of respondents are very or somewhat concerned about addressing sustainability and climate action issues.

Quotes

“We have the money and education in this town to take major action. We need to work fast and think boldly about addressing climate issues.”

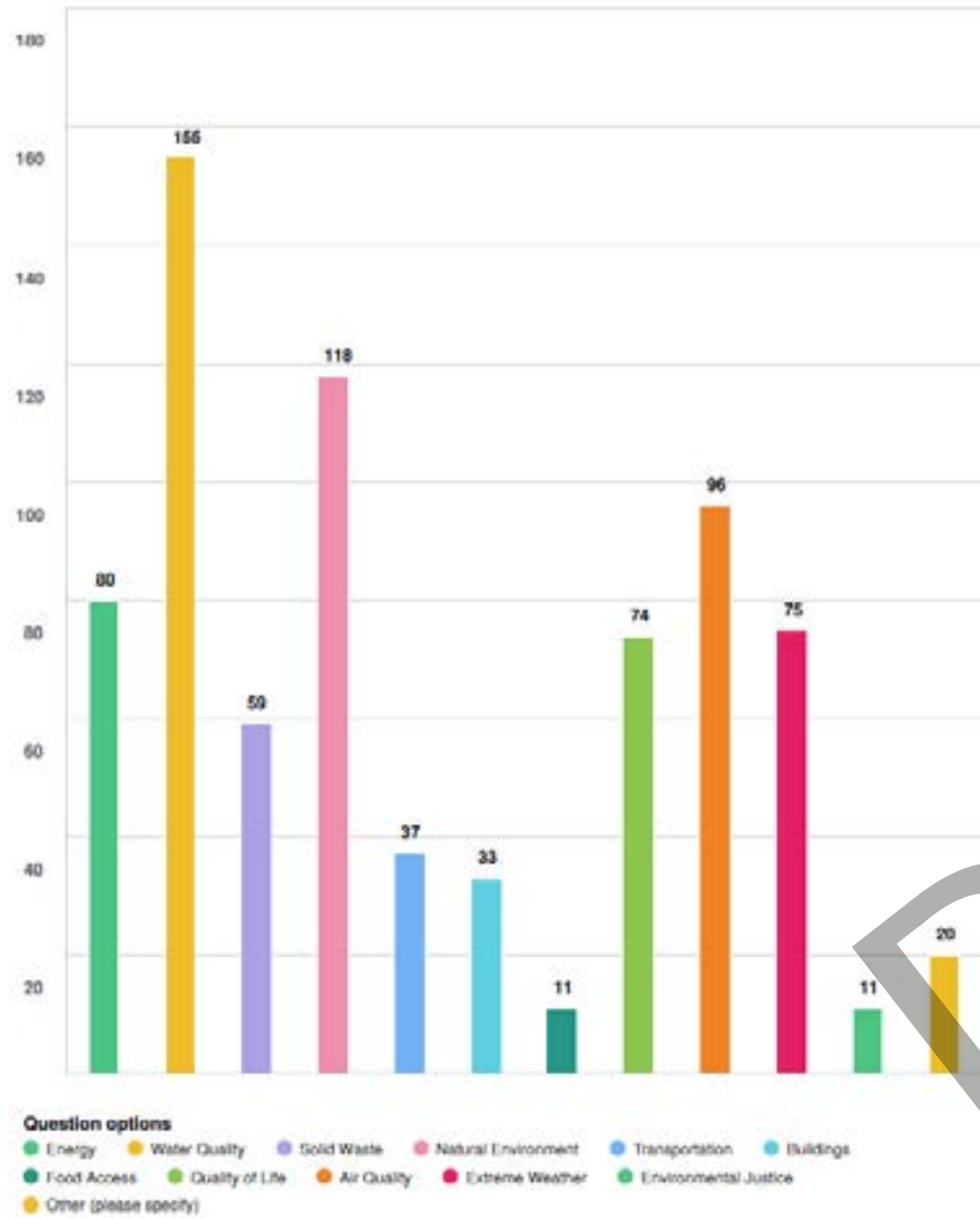
“I would like to see the city of Birmingham’s commitment to sustainability and climate action extend into surrounding areas and other municipalities. Many of these changes need to be implemented on a regional and statewide level to be most effective. How can we use our resources to model sustainability and make it possible for nearby communities as well?”

“We should be approaching sustainability and climate action in an order that makes sense.”

“I think it is important for Birmingham to set an example as a leader on this issue. It matters to our community, to voters, and to future generations.”

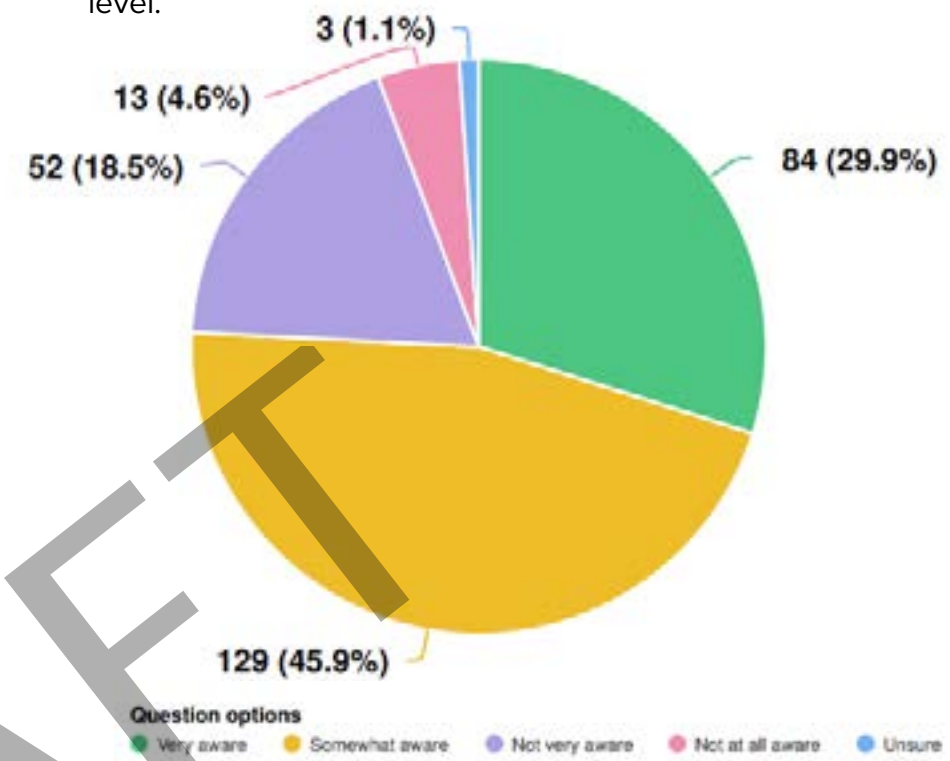
Public Engagement Summary (IN PROGRESS)

Responses to primary concerns related to sustainability and climate action in Birmingham (select up to 3)

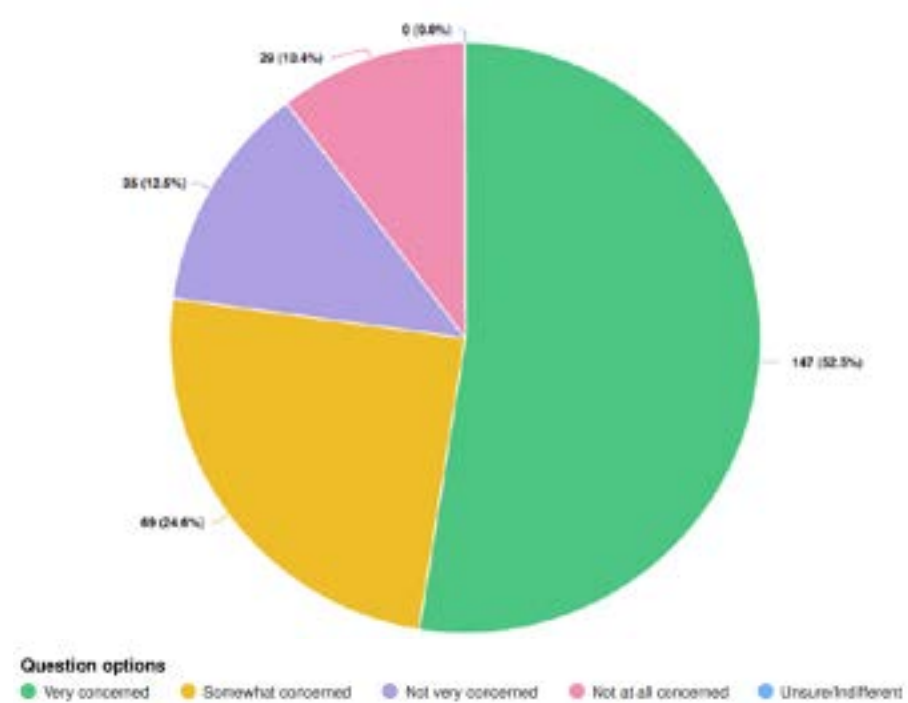


Optional question (279 response(s), 3 skipped)
Question type: Checkbox Question

Responses to describe awareness of sustainability and climate action, particularly at the local or community level.



Responses to how would you describe your overall level of concern about addressing sustainability and climate action issues?



Other Data

Air Quality

Air quality is one of the more prevalent and visible problems stemming from climate change. The 2023 Canadian wildfires sparked many conversations about air quality, and concerns about air quality have prompted 32 Clean Air Action Days in the Detroit region over the last 4 years. In general, Oakland County has ranked moderate to good on the EPA's AirNow Air Quality Index over the same span. As major air quality events happen, and as ozone and particulate matter continues to be an issue in this region, municipalities have an opportunity to decrease the emissions in their community, which are shared amongst its neighbors and general region.

Solar Readiness

To date Birmingham has issued only 17 permits for solar arrays on rooftops in the City in the last 10 years. With nearly 8,000 principal buildings in the City, our solar energy potential is much higher. Meanwhile, the State of Michigan is continuing to push solar and increase access through various programs, and DTE has planned a portfolio of 11 million solar panels by 2040.

Heat Indexes

According to the National Weather Service, the heat index, also known as the apparent temperature, is what the temperature feels like to the human body when relative humidity is combined with the air temperature. Birmingham is home to nearly 4,000 older adults (65+) who are particularly susceptible to extreme heat. In Michigan, a heat advisory is issued when heat index values are forecast to meet locally defined advisory criteria for 1 to 2 days. Extreme heat warnings are issued when heat index values are forecast to meet or exceed locally defined warning criteria for at least 2 days.

Tree Canopy

Preservation of and planting of new trees is an important part of climate adaptation. Trees provide a plethora of benefits to humans and the environment and for these reasons, monitoring and promoting a healthy urban tree canopy has become an increasingly common standard practice within local governments. Birmingham currently sustains a robust tree inventory and maintenance program with room for improvement. The city contracts a company to conduct a complete inventory of the city's public trees every four years on an ongoing basis (one quadrant of the city is completed per year). The city's arborist also updates tree inventory on a real-time basis as trees are removed and planted throughout the year. For this reason, the City of Birmingham has one of the healthiest and most abundant canopies in the region. SEMCOG's Green Report (released July 2023) includes a target metric for increasing regional tree canopy area in all urban census tracts (not including agricultural land) to 40% from the current 38%. The City of Birmingham overall, is in line with the current regional tree canopy coverage, having 38% tree canopy coverage within the city as a whole.



Other Data

Water Quality

According to the latest (2022) Consumer's Annual Report on Water Quality for Birmingham, Michigan, Birmingham's drinking water surpassed water quality standards as mandated by the Environmental Protection Agency (EPA) and the Michigan Department of Environment, Great Lakes, and Energy (EGLE). Birmingham's drinking water is sourced from the Detroit River and is treated by the Great Lakes Water Authority, who distributes it to SOCWA (South Oakland Water Authority) which then distributes water to its member communities, which include Birmingham.

SEMCOG, the designated water quality management agency for Southeast Michigan, is responsible for planning for the region's integrated water resources management. This includes advancing the 'blue economy,' natural resource protection and enhancement, and water infrastructure systems. In 2018, SEMCOG released its Water Resources Plan for Southeast Michigan, which sets the framework for 28 regional policies and provides 101 recommended actions. In 2023, SEMCOG released the updated Water Infrastructure Policies and Actions along with a Water Infrastructure guide as an addendum to the 2018 plan.

Average Annual Rainfall

According to the most recent weather data (2022), Birmingham, Michigan experiences on average 32.4 inches of rainfall annually. The average annual rainfall in the United States is 38.1 inches.

Impervious Surface

Impervious surfaces are defined as areas that prevent or hinder the entry of water into the soil mantle and/or cause water to run off the surface in greater quantities or an increased rate of flow that under natural conditions. Buildings, roads, driveways, and parking lots are all examples of impervious surfaces. As of 2020, Birmingham, Michigan's land cover is 47.8% impervious. Oakland County as a whole is 19.2% impervious.



CLIMATE RISKS AND VULNERABILITIES



Climate Risks & Vulnerabilities

According to the U.S. Climate Vulnerability Index, understanding climate risks and vulnerabilities (“CRV’s”) is an imperative part of defining future adaptation strategies at any scale. Assessing CRV’s in Birmingham will be a major determinant in resource allocation, action planning and advocacy. This will include identifying populations within our community that may be particularly susceptible to the hazards involved with climate change as well as a high level understanding of the physical development of the City while also attempting to address climate hazards and a community’s potential approach to coping with such.

This section provides an analysis of vulnerability and risk through the lens of exposure, sensitivity and adaptive capacity.

Definitions

Vulnerability: The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements, including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.

Exposure: The presence of people; livelihoods; species or ecosystems; environmental functions, services, and resources; infrastructure; or economic, social, or cultural assets in places and settings that could be adversely affected.

Hazard: The potential occurrence of a natural or human-induced physical event or trend that may cause loss of life, injury or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and environmental resources. See also Impacts and Risk.

Risk: The potential for adverse consequences for human or ecological systems, recognizing the diversity of values and objectives associated with such systems. In the context of climate change, risks can arise from potential impacts of climate change as well as human responses to climate change. Relevant adverse consequences include those on lives, livelihoods, health and well-being, economic, social and cultural assets and investments, infrastructure, services (including ecosystem services), ecosystems and species

Climate Risks (EPA)

Acute: Acute physical risks refer to those that are event-driven, including increased severity of extreme weather events, such as cyclones, hurricanes, heat or cold waves, or floods.

Chronic: Chronic physical risks refer to longer-term shifts in climate patterns (e.g., sustained higher temperatures, sea level rise, changing precipitation patterns) that may cause sea level rise or chronic heat waves.

Adaptive Capacity: The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities or to respond to consequences (MA, 2005).

Sensitivity: The degree to which a system or species is affected, either adversely or beneficially, by climate variability or change. The effect may be direct (e.g., a change in crop yield in response to a change in the mean, range, or variability of temperature) or indirect (e.g., damages caused by an increase in the frequency of coastal flooding due to sea level rise).



Exposure

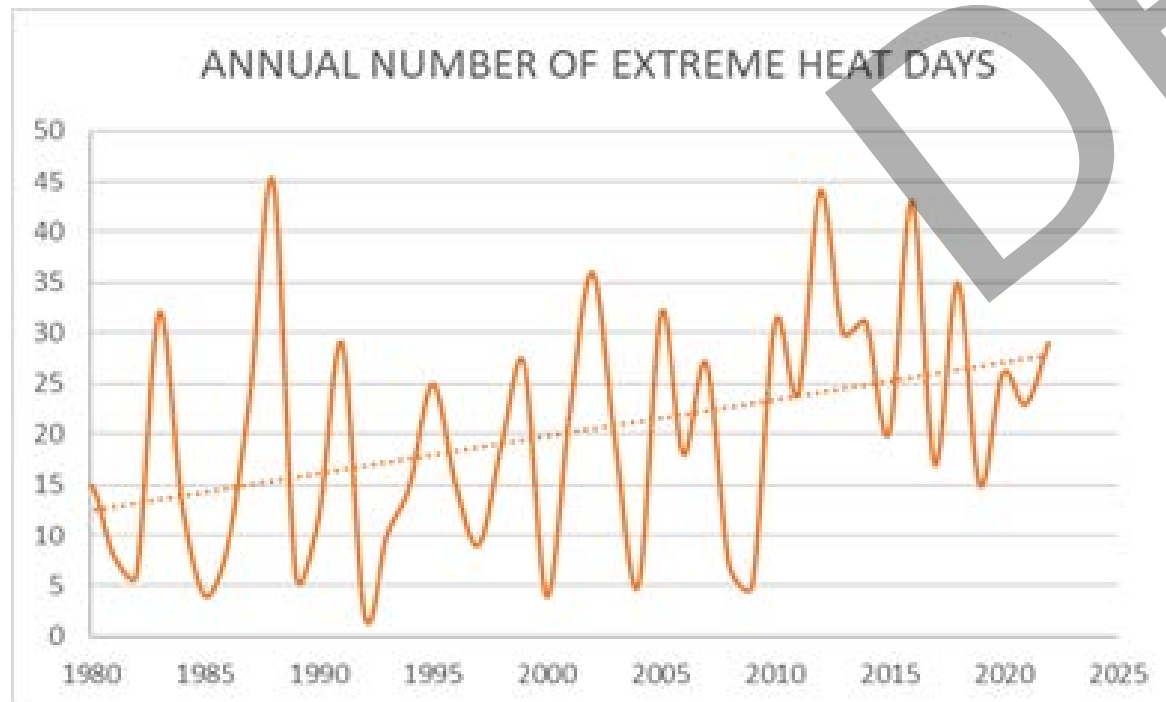
The City of Birmingham is 4.8 square miles in area. Comparatively, Birmingham's area is similar to that of Orchard Lake Village, Beverly Hills, and Bloomfield Hills, but is significantly smaller than its neighbors of Royal Oak (11.8 sq. mi.), Troy (33.6 sq. mi.), and Bloomfield (25.9 sq. mi.). Overall, Birmingham is 0.52% of the total area of Oakland County (927.6 sq. mi.). However, Birmingham's population density is the 8th largest in Oakland County, which may leave Birmingham with a higher exposure, but also a higher payback on a per capita basis for any adaptation strategies that are adopted. Overall, Birmingham is expected to experience similar climate hazards to that of southeast Michigan such as extreme heat and increased precipitation, which based on current trends, are expected to increase all the same.

Extreme Heat

As one of the more perceivable effects of climate change, extreme heat hazards can present themselves in a number of ways. There is a major public health component to extreme heat, particularly with vulnerable populations such as the elderly, children, and people working outside. For people in an urban area like Birmingham, the urban heat island effect poses a greater risk from the effects of a prolonged heat wave than are people living in rural areas. In addition to health risks, extreme heat can take out power

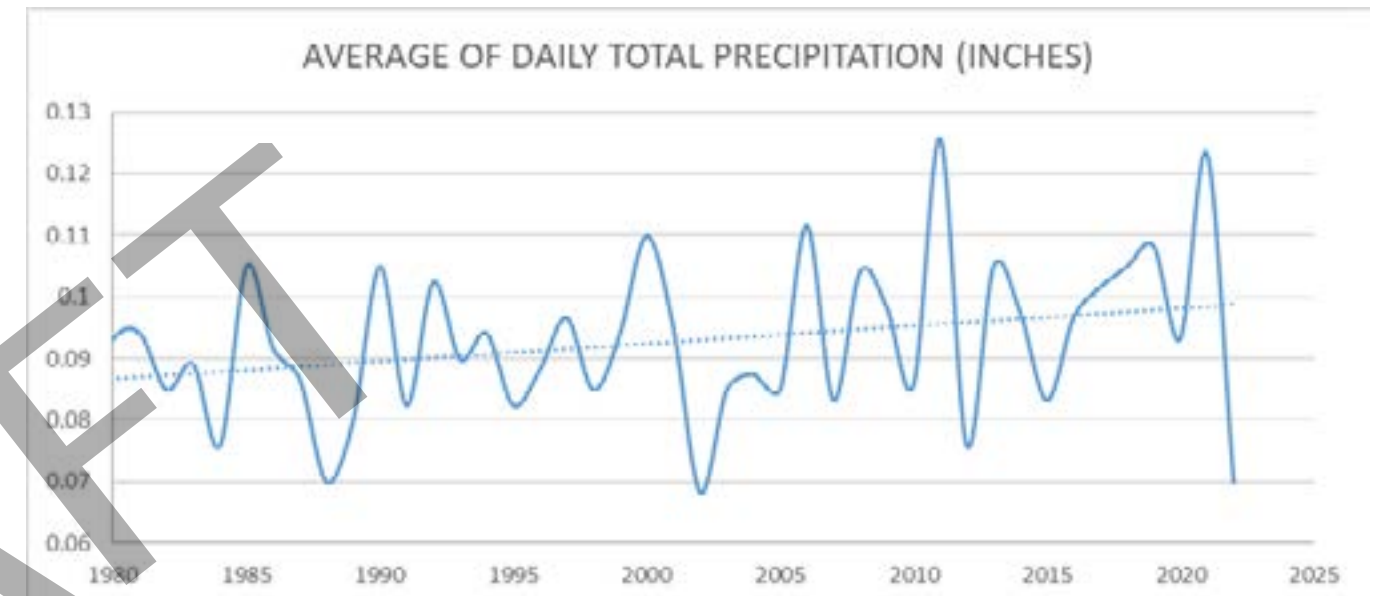
grids, decrease air quality, and damage water quality (CITATION).

Heat Island: Heat islands are urbanized areas that experience higher temperatures than outlying areas. Structures such as buildings, roads, and other infrastructure absorb and re-emit the sun's heat more than natural landscapes such as forests and water bodies. Urban areas, where these structures are highly concentrated and greenery is limited, become "islands" of higher temperatures relative to outlying areas (EPA CITATION).



Precipitation

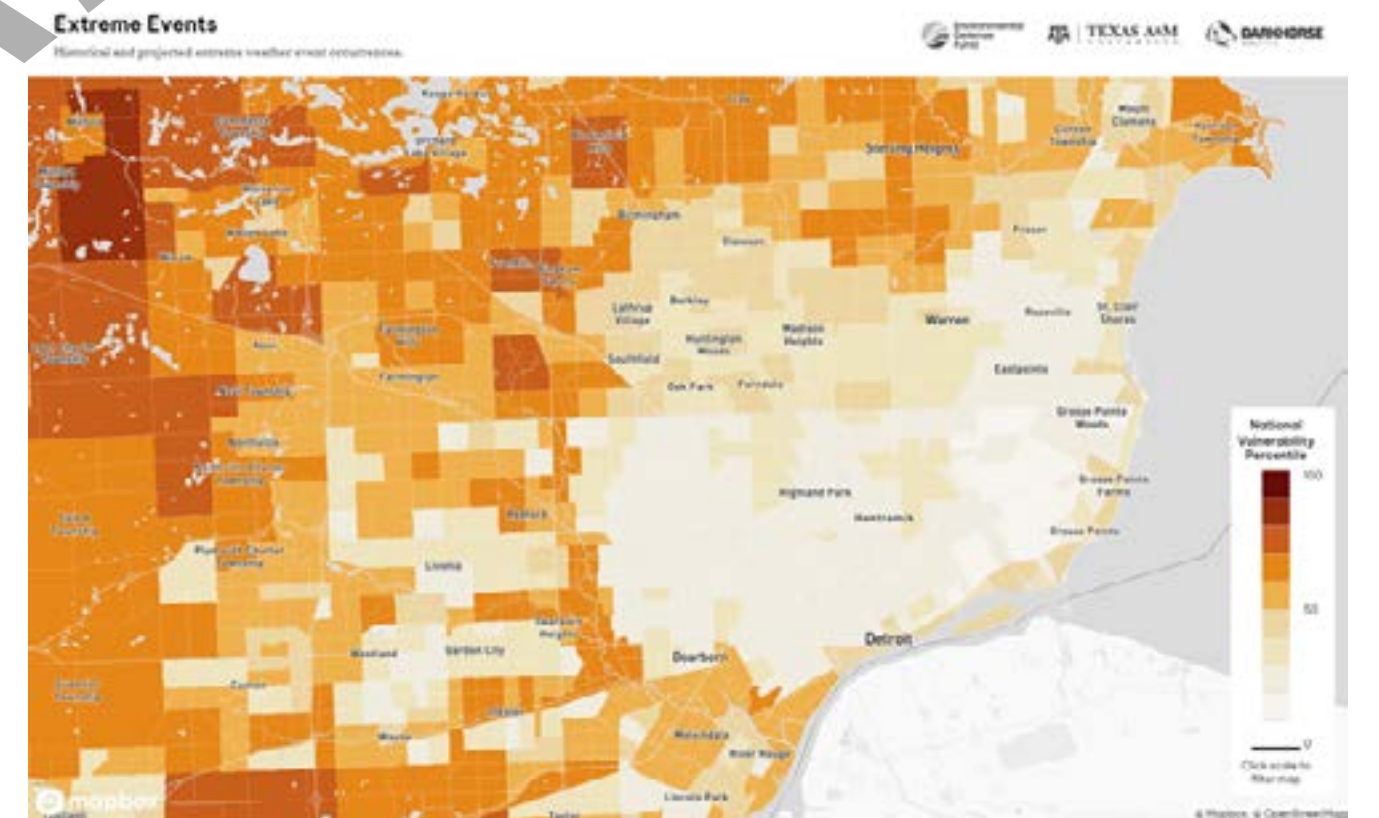
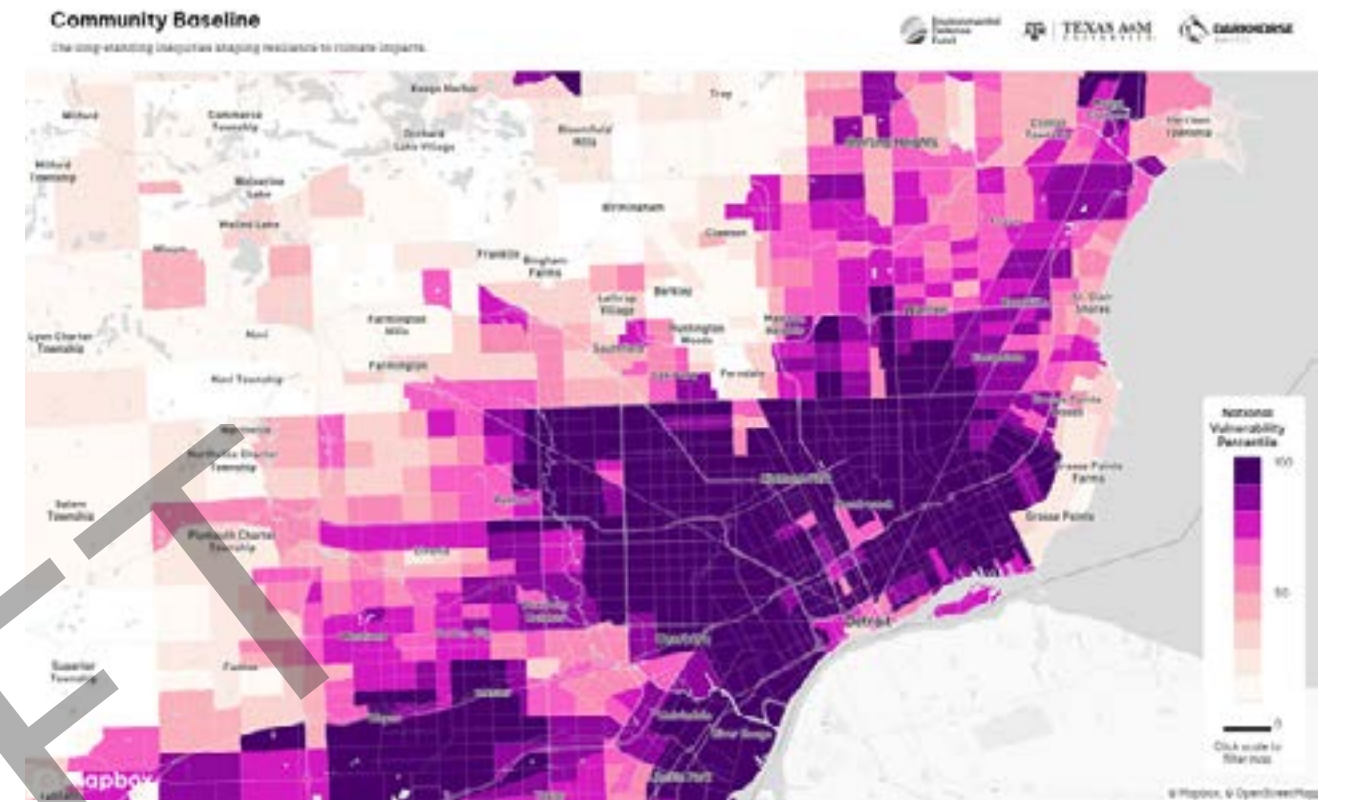
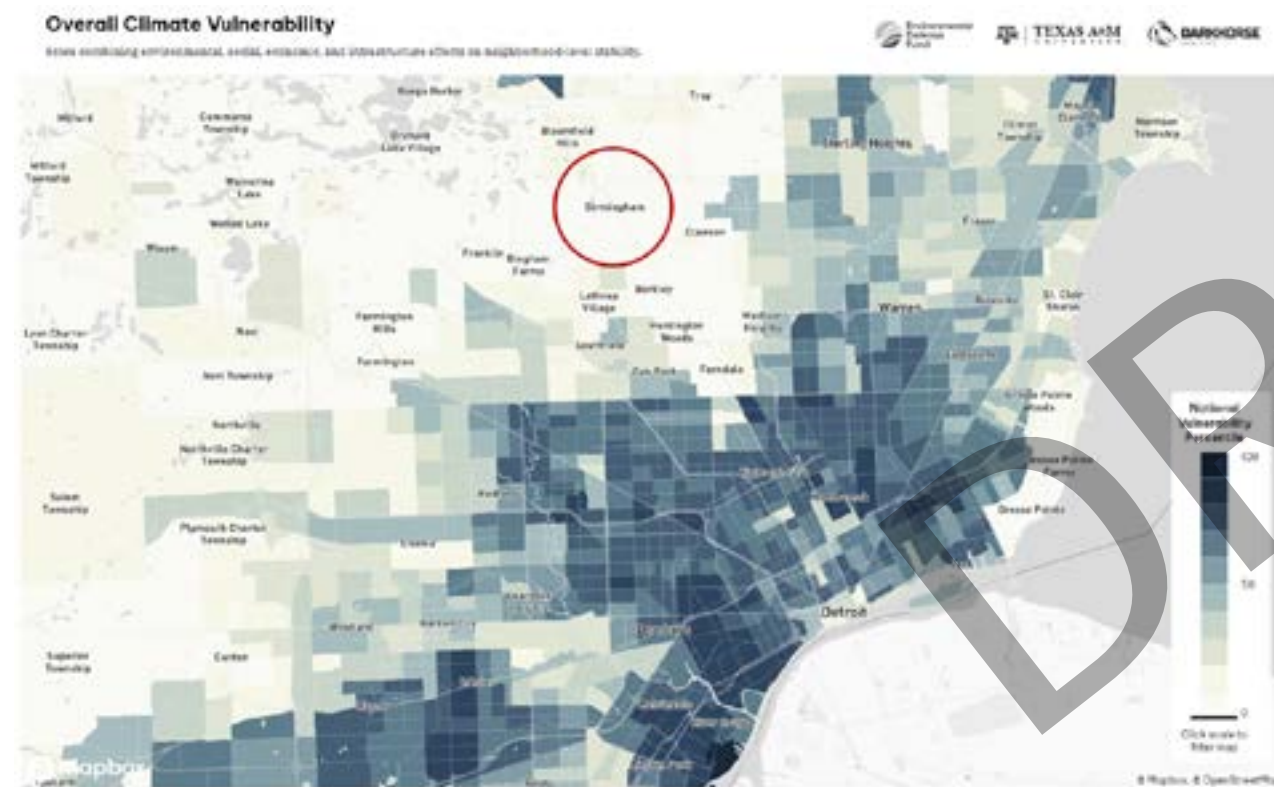
Similarly, changes in the frequency and intensity of rainfall are keenly felt by those affected. These unpredictable and often unyielding storm events put pressure on systems that were not designed at the capacity that is being demanded. This can cause significant damage to public property and infrastructure. In addition, water quality can be severely afflicted in areas where combined sewer system outflows discharge into water bodies like the Rouge River.



U.S. Climate Vulnerability Index

The U.S. Climate Vulnerability Index (CVI) visualizes how drivers of cumulative vulnerability disadvantage communities across the United States. Better understanding of the intersections between growing climate risks and pre-existing, long-term health, social, environmental, and economic conditions is critical to effectively building climate resilience for everyone and deploying targeted adaptation efforts.

Overall, Birmingham general ranks in the 1st and 2nd percentile for overall climate vulnerability, meaning that the majority of communities nationally are more vulnerable than Birmingham. Overall vulnerability factors together baseline vulnerabilities that reduce community resilience and climate change risks that directly or indirectly impact communities. However, Birmingham does rank more mid-range when it comes to more specific indicators such as extreme events (temperature, precipitation, storms, etc.) and the overall environment (land use, pollution sources, transportation, etc.).



Sensitivity and Adaptive Capacity

As alluded to above, the effects of climate change can have different impacts on different populations. Sensitivity and adaptive capacity are often inversely correlated, meaning more sensitive populations are less likely to have the ability to adapt in the event of acute or chronic hazards. This section will analyze Birmingham's high-risk populations and other determinates of sensitivity.

High Risk Populations

According to the U.S. Department of Health and Human Services, examples of at-risk populations may include but are not limited to children, pregnant women, older adults, people with disabilities, people from diverse cultures, people with limited English proficiency, people with limited access to transportation, people with limited access to financial resources, people experiencing homelessness, people who have chronic health conditions, and people who have

pharmacological dependency (CITATION). In Birmingham, we have proportionally high numbers of children and elderly persons. These populations are highest in the southeast portion of Birmingham.

Birmingham has some mechanisms to support the adaptive capacity of these populations. For example, NEXT provides services to the 50+ community such as transportation and a vast referral network to support various needs.



Community Assets

Along with people, a community's physical assets such as structures and infrastructure can also be susceptible to climate hazards. These assets can include public facilities, schools, religious institutions, roads, and other essential infrastructure that provide some level of service to a community and can contribute to its emergency preparedness. In addition, other structures that draw on these critical infrastructure elements can play a role in the community. Often times it is older structures that require more energy to heat and cool, while also having aging sewer connections that may not meet current standards. Birmingham has 5,842 structures that were built before 1975.

Key Findings

1. Birmingham is less vulnerable to the effects of climate hazards than other areas in southeast Michigan.
2. The climate hazards that are experienced by Birmingham will continue to increase in frequency and intensity.
3. Birmingham will need to target actions toward increasing the adaptive capacities of vulnerable populations in the City.
4. Buildings will have a large role to play in adaptive capacity in Birmingham.

EMISSIONS



Greenhouse Gas Emissions Inventory

In 2023, two greenhouse gas (GHG) emissions inventories were compiled for the 2021 baseline year; one for the Birmingham community as a whole and the other for municipal operations only. Data was obtained for these inventories from the local utilities (DTE, Consumer's Energy), South Oakland County Resources Recovery Authority (SOCRRA), South Oakland Communities Water Authority (SOCWA), Oakland County Water Resources Commissioner's office (OCWRC), Great Lakes Water Authority (GLWA), Southeast Michigan Council of Governments (SEMCOG), and the City of Birmingham. The data was then entered into software developed by ICLEI – Local Governments for Sustainability. The GHG inventory produced a baseline from which to measure the city's current emissions and future emissions reduction progress.

Three greenhouse gases are included in this inventory: Carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). The standard unit for measuring GHG emissions is metric tons of carbon dioxide equivalents (MTCO₂e). Therefore, methane and nitrous oxide emissions are converted to MTCO₂e to make comparison between emissions of the three gases possible. A full report explaining the importance, methodology and data gaps and assumptions for both GHG inventories is available on the Sustainability page of the city's website (publish & link).

Key Findings

The City of Birmingham's total 2021 community-wide GHG emissions were 279,996 MTCO₂e and the municipal operations (city government) GHG emissions were 3,592 MTCO₂e. The breakdown of Birmingham's community-wide GHG emissions for 2021 are shown in Figure x. The residential natural gas sector was the single largest contributor to community emissions (20.9%) followed by the residential electricity sector as a close second (19.6%). Residential energy, which includes both natural gas and electricity was the highest category contributor (40.5%).

As shown in Figure X, emissions from municipal operations only account for 1.3% of the total community-wide emissions. It's clear for Birmingham to meet its GHG reduction goals, the community will need to participate in strategies for reducing emissions. City government will lead by example and is actively engaged in energy waste reduction initiatives within municipal operations.



Next Steps

The inventory should be used to focus and prioritize actions to reduce emissions. Based on the inventory results, the following areas have the greatest potential for emissions reduction:

- Residential Energy
- Transportation & Mobile Sources
- Commercial Energy

Completion of another GHG inventory in five years is recommended in order to assess progress resulting from any actions implemented.

Community-Wide Greenhouse Gas Emissions Inventory

Category	Fuel or Source	MTCO ₂ e	Percent
Residential	Natural Gas	58,381	20.9%
Residential	Electricity	54,910	19.6%
Transportation	Gasoline	47,470	17.0%
Commercial	Electricity	38,023	13.6%
Commercial	Natural Gas	22,402	8.0%
Industrial	Electricity	18,443	6.6%
Transportation	Diesel	17,685	6.3%
Landfilling of Solid Waste		16,616	5.9%
Wastewater Treatment		5,321	1.9%
Composting of Organic Waste		715	0.3%
Potable Water Supply		30	0.01%
	Total	279,996	100.0%

Local Government Operations Greenhouse Gas Emissions Inventory

Category	Fuel or Source	MTCO ₂ e	Percent
Buildings & Facilities	Electricity	1,712	48%
Employee Commute	Gasoline	771	21%
Vehicle Fleet	Gasoline	459	13%
Street Lights & Traffic Signals	Electricity	302	8%
Vehicle Fleet	Diesel	278	8%
Employee Commute	Diesel	31	1%
Buildings & Facilities	Natural Gas	28	1%
Water Towers	Electricity	7	0%
Employee Commute	Hybrid		
Employee Commute	Gasoline	4	0%
	Total	3,592	100%

The local government operations emissions inventory points to a need to focus and prioritize actions to reduce emissions. Based on the inventory results, the following areas have the greatest potential for emissions reduction:

- Buildings & Facilities
- Employee Commute
- Vehicle Fleet

Completion of another GHG inventory in five years is recommended in order to assess progress resulting from any actions implemented



Forecasting

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Intentionally left blank - hold for forecasting

ACTION PLAN

Municipal Building

151

Overview

Hold for Goals Overview

Key

Hold for key.

S	M	A	R	T
Specific	Measurable	Achievable	Relevant	Time-bound
Be specific about what you want to achieve	Make sure that you can measure your success	Ensure your goal is realistic and achievable - don't set yourself a goal that's too easy or too difficult to complete	Set yourself a goal that's relevant to you	Assign a start and end date to your goal to encourage yourself to reach it with a deadline
Ask yourself questions about your goals following the five W's - Who, What, When, Where, and Why	You'll be able to track your progress by answering questions like how will you know when your goal is complete?	Look at your current situation and make sure you have what you need to achieve	Is your goal worthwhile to you? Are you the right person to achieve it? Is your goal applicable to your current situation, or is it unrealistic?	Think about what you can do today, tomorrow, months from now to achieve your goal
				

Water & Stormwater

Infiltrate or capture an additional 100,000 gallons of stormwater by 2035.

Infiltrate or capture an additional 100,000 gallons of stormwater by 2035.



The **Birmingham Plan 2040** (“2040 Plan”) was adopted in May 2023. The 2040 Plan is a comprehensive master plan, which is a document and policy guide designed to help Birmingham conceive a vision of what they want to look like in the future. The

City of Birmingham is required to adopt and maintain a comprehensive master plan pursuant to funding and partnership opportunities. An interactive GREEN Dashboard, online

- o Adopt a subsidized residential rain garden program.
- o Reduce barriers to local stormwater rebate programs.
- o Develop a tracking system for green stormwater infrastructure.
- o Form new alliances and improve existing alliances with municipalities and organizations that address stormwater runoff to the Rouge River.
- o Require green infrastructure installations in every public infrastructure and development project.
- o Incentivize green stormwater infrastructure installations on commercial properties.
- o Reduce indoor & outdoor potable water usage.
- o Require stormwater retention on all new single-family construction.
- o Adopt Oakland County stormwater standards for all developments city-wide 0.5 acre or more.

Waste

Reduce total landfill solid waste by 2,390 tons (25%) by 2035.

Reduce total landfill solid by 2,390 tons (25%) by 2035.



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- o Develop a city-wide food waste composting program.
- o Increase and improve quality of recyclables in curbside carts through direct education campaigns and audits.
- o Invest in new local facilities and services for recycling food waste, electronics, textiles, hazardous materials and other specialty recycling.
- o Create a deconstruction ordinance to encourage the reuse and repurposing of building material during construction projects.
- o Lobby Southeastern Oakland County Resource Recovery Authority to improve data collection for its member communities.
- o Require recycling in all new commercial and multifamily development projects.
- o Develop bi-annual recycling events for hard to recycle materials.
- o Develop a zero-waste policy for City-hosted events.

Buildings & Facilities



Reduce greenhouse gas emissions from buildings and facilities by 57,500 metric tons (50%) by 2035.

Reduce greenhouse gas emissions from buildings and facilities by 57,500 metric tons (50%) by 2035.



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- o Promote green development in large commercial districts in Birmingham through improved Zoning Ordinance standards.
- o Revise and expand ordinances related to solar photovoltaics and other alternative energy sources.
- o Remove any barriers to the use of geothermal energy strategies in the City.
- o Increase EV charging network city-wide.
- o Produce feasibility studies for solar photovoltaics on all city buildings and/or sites.
- o Expand the City’s historic preservation program to protect existing buildings and character.
- o Develop a process for comprehensively monitoring energy usage for all city buildings.

Natural Resources

Increase native and naturalized areas in the City by as much as 450 acres by 2035.

Increase native and naturalized areas in the City by as much as 450 acres in 2035.



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- o Protect and expand the tree canopy in each census tract of the City to at least 40%.
- o Promote the transition of private gardens and landscapes to native species and remove any barriers to such.
- o Restrict the clear-cutting of lots in the City and review all tree removal during construction projects.
- o Transition 100% of municipal plantings to native plantings.
- o Revisit streetscape standards to include better environments for street trees and plantings.
- o Prioritize the health of the Rouge River corridor and follow the recommendations of the Birmingham Plan 2040 related to the Rouge River.

Municipal Operations

Institutionalize carbon reduction and climate resilience in City government by 2035.

Institutionalize carbon reduction and climate resilience in City Government by 2035.



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City of Birmingham is required to adopt and maintain a comprehensive master plan pursuant to funding and partnership opportunities. An interactive GREEN Dashboard, online

- o Transition all administrative and light-duty municipal internal combustion engine vehicles and equipment to alternative fuels.
- o Hire a full-time sustainability staff person, preferably within the Planning Department.
- o Create a sustainability budget category for use by multiple City Departments.
- o Establish a sustainable purchasing program and an internal administrative regulation.
- o Decrease vehicle miles traveled by municipal staff by XXX miles through incentive programs.
- o Adopt an anti-idling policy for all City vehicles.
- o Identify and maintain a database of new and recurring grant opportunities geared towards sustainability and climate action.
- o Create, by ordinance, an Environmental Sustainability Committee to oversee and make recommendations on a variety of issues related to sustainability and climate action.
- o Provide recycling opportunities in all public parks and other public spaces.

Quality of Life



Institutionalize carbon reduction and climate resilience in City Government by 2035.

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- o Protect and expand the tree canopy in each census tract of the City to at least 40%.
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- o Prioritize the health of the Rouge River corridor and follow the recommendations of the Birmingham Plan 2040 related to the Rouge River.

Sustainability Goals

Engage Birmingham

Sustainability and Climate Action Goals

Solid waste in landfills contribute a significant amount of greenhouse gas emissions into our atmosphere. Diverting solid waste to different treatments such as recycling and composting can help reduce overall emissions.

Goal #1: Reduce total landfilled solid waste by 2,390 tons (25%) by 2035.

Do you agree with this goal?

(Choose any one option)

- Yes
- Neutral
- No
- Other (please specify)

Sustainability Goals

Engage Birmingham

Answer this question only if you have chosen Yes for Solid waste in landfills contribute a significant amount of greenhouse gas emissions into out atmosphere. Diverting solid waste to different treatments such as recycling and composting can help reduce overall emissions.Goal #1: Reduce total landfilled solid waste by 2,390 tons (25%) by 2035.Do you agree with this goal?

Which elements of solid waste reduction do you find most appealing (select all that apply)?

(Choose all that apply)

- Food waste composting
- New local facilities and municipal services
- Increased education
- New ordinances for deconstruction
- City hosted recycling events
- Zero-waste events
- Other (please specify)

An increase in the frequency and intensity of rainfall events creates numerous hazards to public health, safety and welfare. Infiltrating or capturing stormwater and keeping it out of pipes will reduce the strain put on the overall stormwater system.

Goal #2: Infiltrate or capture an additional 100,000 gallons of stormwater by 2035.

Do you agree with this goal?

(Choose any one option)

Sustainability Goals

Engage Birmingham

- Yes
- Neutral
- No
- Other (please specify)

Answer this question only if you have chosen Yes for An increase in the frequency and intensity of rainfall events creates numerous hazards to public health, safety and welfare. Infiltrating or capturing stormwater and keeping it out of pipes will reduce the strain put on the overall stormwater system.Goal #2: Infiltrate or capture an additional 100,000 gallons of stormwater by 2035.Do you agree with this goal?

Which elements of stormwater infiltration and capture do you find the most appealing (select all that apply)?

(Choose all that apply)

- Green infrastructure
- Stormwater rebate programs
- Updated stormwater standards
- Protecting the Rouge River corridor
- Unsure
- Other (please specify)

Inefficient buildings and facilities, as well as the usage of fossil fuels in such contribute a significant amount of greenhouse gas emissions to the atmosphere. Improving efficiency and promoting alternative energy sources can drastically reduce emissions.

Goal #3: Reduce greenhouse gas emissions from buildings and facilities by 57,500 metric tons (50%) by 2035.

Do you agree with this goal?

(Choose any one option)

- Yes
- Neutral
- No
- Other (please specify)

Sustainability Goals

Engage Birmingham

Answer this question only if you have chosen Yes for Inefficient buildings and facilities, as well as the usage of fossil fuels in such contribute a significant amount of greenhouse gas emissions to the atmosphere. Improving efficiency and promoting alternative energy sources can drastically reduce emissions. Goal #3: Reduce greenhouse gas emissions from buildings and facilities by 57,500 metric tons (50%) by 2035. Do you agree with this goal?

Which elements of improving buildings and facilities do you find the most appealing (select all that apply)?

(Choose all that apply)

- Promoting green development by ordinance
- Removing barriers to alternative energy
- Expand historic preservation programs
- Increase EV charging networks
- Unsure
- Other (please specify)

Native and naturalized areas play a big role in infiltrating stormwater and reducing the urban heat island effect, and also provide essential habitats for thousands of species.

Goal #4: Increase native and naturalized areas in the City by as much as 450 acres by 2035.

Do you agree with this goal?

(Choose any one option)

- Yes
- Neutral
- No
- Other (please specify)

Answer this question only if you have chosen Yes for Native and naturalized areas play a big role in infiltrating stormwater and reducing the urban heat island effect, and also provide essential habitats for thousands of species. Goal #4: Increase native and naturalized areas in the City by as much as 450 acres by 2035. Do you agree with this goal?

Which elements of native and naturalized landscapes do you find the most appealing (select all that apply)?

(Choose all that apply)

- Expanded tree canopy
- Planting native species
- More greenspace in the public rights of way
- Protection of the Rouge River corridor
- Unsure
- Other (please specify)

Municipal operations play a large roll in not only increasing sustainability and climate resilience, but also set the standard for approaches across the City. Ensuring that municipal operations are sustainable will further the resiliency of the City.

Goal #5: Institutionalize carbon reduction and climate resilience in City government by 2035.

Sustainability Goals

Engage Birmingham

Do you agree with this goal?

(Choose any one option)

- Yes
- Neutral
- No
- Other (please specify)

Answer this question only if you have chosen Yes for Quality of Life as a priority. Quality of life is a broad subject that can include anything from public health to air quality to education. Defining minimum quality of life standards for Birmingham residents will provide a valuable mechanism for the City to target resources. Goal #6: Publish citywide and community-level quality-of-life metrics on equity and sustainability by 2030. Do you agree with this goal?

Which elements of municipal operations do you find the most appealing (select all that apply)?

(Choose all that apply)

- Electric vehicle fleet
- Dedicated staff and oversight of sustainability
- Creative funding mechanisms to support projects
- Sustainable purchasing programs
- Reduction in pesticide and fertilizer usage
- Increased education
- Unsure
- Other (please specify)

Quality of life is a broad subject that can include anything from public health to air quality to education. Defining minimum quality of life standards for Birmingham residents will provide a valuable mechanism for the City to target resources.

Goal #6: Publish citywide and community-level quality-of-life metrics on equity and sustainability by 2030.

Do you agree with this goal?

(Choose any one option)

- Yes
- Neutral
- No
- Other (please specify)

Which quality of life elements do you find the most appealing (select all that apply)?

(Choose all that apply)

- Availability of a resilience hub
- Community gardens
- Air quality monitoring
- Multi-modal transportation
- Unsure
- Other (please specify)

Do you have any suggestions related to the goals of the sustainability and climate action plan?

Are you a resident of Birmingham or do you live outside the city's boundaries?

Sustainability Goals

Engage Birmingham

What type of housing is your residence?

(Choose any one option)

- Single-family house
- Townhome or duplex
- Apartment or condominium
- Don't know
- Prefer not to answer
- Other (please specify)

How many people, including yourself, live in your household?

(Choose any one option)

- 1
- 2
- 3
- 4
- 5
- 6 or more
- Prefer not to answer

Respondent gender

(Choose any one option)

- Male
- Female
- Prefer not to answer
- Prefer to self describe

What is your age?

(Choose any one option)

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-75
- 75 or older
- Prefer not to answer

What is the highest level of education you have completed?

(Choose any one option)

- 12th grade or less/no diploma
- High school graduate or GED
- Some college/Associate's degree
- Bachelor's degree
- Master's/Professional/Doctorate degree
- Prefer not to answer

Please check one or more categories below to indicate what race(s) you consider yourself to be. (check all that apply)

(Choose all that apply)

- White
- Black or African American
- American Indian or Alaskan Native
- Native Hawaiian or other Pacific Islander

Sustainability Goals

Engage Birmingham

- Asian
- Multiracial
- Prefer not to answer
- Other (please specify)



AGENDA
BIRMINGHAM AD HOC ENVIRONMENTAL SUSTAINABILITY COMMITTEE
MONDAY APRIL May 13th, 2024
BIRMINGHAM CITY HALL, 151 MARTIN ST, COMMISSION ROOM, BIRMINGHAM MI *
******* 6:00 PM*******

The City recommends members of the public wear a mask if they have been exposed to COVID-19 or have a respiratory illness. City staff, City Commission and all board and committee members must wear a mask if they have been exposed to COVID-19 or actively have a respiratory illness. The City continues to provide KN-95 respirators and triple layered masks for attendees.

- 1) **Call to Order**
- 2) **Roll Call**
- 3) **Review of the Agenda**
- 4) **Approval of the AHESC Minutes of April 29th, 2024**
- 5) **Study Session**
 - A. **SCAP Draft**
 - B. **Forecasts and Projections**
- 6) **Open to the Public for Items Not on the Agenda**
- 7) **Miscellaneous Communications**
 - A. **Updated Project Schedule**
- 8) **Draft Agenda – June 17th, 2024**
- 9) **Adjournment**

Future Meeting Dates:

May 13th, 2024
June 17th, 2024
July 29th, 2024

*Please note that board meetings will be conducted in person once again. Members of the public can attend in person at Birmingham City Hall, 151 Martin St., or may attend virtually at:

Link to Access Virtual Meeting: <https://bhamgov-org.zoom.us/j/87587439403>

Telephone Meeting Access: 877 853 5247 US Toll-free

Meeting ID Code: 875 8743 9403

Notice: Individuals requiring accommodations, such as interpreter services for effective participation in this meeting should contact the City Clerk's Office at [\(248\) 530-1880](tel:2485301880) at least on day in advance of the public meeting.

Las personas que requieren alojamiento, tales como servicios de interpretación, la participación efectiva en esta reunión deben ponerse en contacto con la Oficina del Secretario Municipal al [\(248\) 530-1880](tel:2485301880) por lo menos el día antes de la reunión pública. (Title VI of the Civil Rights Act of 1964).

A PERSON DESIGNATED WITH THE AUTHORITY TO MAKE DECISIONS MUST BE PRESENT AT THE MEETING.