



**DETROIT
SUSTAINABILITY
ACTION AGENDA**

2019



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Letter from the Mayor

One city for all of us. That is the principle that drives all of our work in Detroit. We have come a long way as a city in just a few years. Now is the time to begin laying out our long-term vision for the city we all want to create together.

This Sustainability Action Agenda builds upon the work we have done as a City government since 2014 but just as importantly upon the community-led efforts to grow more food in our city, clean and care for vacant lots, and install rain barrels, to give just a few examples. We celebrate the efforts of all the non-profits, faith-based institutions, foundations, City Council, businesses, and many others that have worked tirelessly to improve our city.

Throughout the development of this Agenda we interacted with over 6,800 Detroiters to understand your vision for a more equitable, prosperous, and environmentally sustainable city. We hired two Sustainability Ambassadors in each Council district to talk face-to-face with their neighbors and attend community events. We created a Sustainability Advisory Commission with representatives from 20 community, business, and non-profit organizations to advise on the development and implementation of the Agenda. Your voices drove this process and will guide us as we implement this Agenda.

Our Sustainability Action Agenda is organized to achieve four outcomes, with people at the heart:

- **HEALTHY, THRIVING PEOPLE**
- **AFFORDABLE, QUALITY HOMES**
- **CLEAN, CONNECTED NEIGHBORHOODS**
- **EQUITABLE, GREEN CITY**



This Agenda is focused on helping to deliver on our vision, but it cannot be achieved through the 43 actions in this document alone. This plan is intended to complement, not supplement other City efforts, such as those focused on public safety, workforce development, education, or public health.

There are 43 total actions and 10 measurable goals. We will track our progress towards these goals through a series of indicators and publish on our progress publicly.

Finally, we want to thank the Kresge, Wilson, and Erb Foundations and the Community Foundation for Southeast Michigan for your support of this effort.

Mike Duggan

Mayor, City of Detroit

“

We chose to center equity and the voice and experiences of residents throughout this process.



Letter from the Director

I am very excited to share the very first sustainability strategy for the City of Detroit, the Sustainability Action Agenda, with you. This agenda will help advance our city towards more equitable access to opportunity and a healthier, more resilient environment for all Detroiters.

The Agenda was formed by the voices and efforts of many. Thank you to the thousands of residents who contributed energy, thoughts, and input to the engagement process and to those non-profit and community leaders who contributed wisdom from their years of experience “walking the talk.” Thanks also to my fellow City of Detroit employees who contributed their time and expertise to help hone a set of actionable recommendations. Last, I am grateful to our foundation partners, who contributed resources that made this all possible.

At the beginning, we acknowledged that how we created the Agenda was as important as what was in the final product. We chose to center equity and the voice and experiences of residents throughout this process. Our 14 Sustainability Ambassadors allowed us to reach a number of Detroiters in all corners of the city that would have otherwise been difficult to reach. Still, when we saw that the reach of our first survey wasn’t representative of our city’s diversity, we pivoted to meet those intentions. We added another, targeted round of engagement, including focus groups, workshops, and online survey questions, to make sure we heard from the many diverse resident perspectives.

Looking ahead, the goals and actions shared here can only be accomplished through a concerted, collaborative, and consistent effort by all parties that played a role in crafting them.

- We in City government must lead by example and move forward to create the legal and policy framework that makes the sustainable choice the preferred choice.



- Business must lead the way at reducing greenhouse gas pollution, creating welcoming environments for residents and employees alike, and creating economic opportunities for Detroiters in the green economy.
- Community groups form the backbone of neighborhoods, working neighbor to neighbor to ensure that each neighborhood is clean and connected to the broader city.
- Residents practicing sustainability is essential, but also and more importantly, they must hold business and government accountable for making the necessary contributions to becoming a more sustainable city.

There is already powerful work happening across the city. Let’s continue to grow this movement towards a healthier, greener, more equitable Detroit for all. I, for one, can’t wait to get started.

Joel Howrani Heeres

Director, Office of Sustainability
Office of Mayor Mike Duggan, City of Detroit

Guiding Principles

The development of the Sustainability Action Agenda has been guided by seven key principles that will also shape its implementation.

01. Honoring People and Place: Our work will honor the political, cultural, environmental, and economic contributions of all Detroiters and give their voice priority in our decision-making processes.

02. Prioritizing People: Our work will be oriented to address people's most pressing needs and support them to be resilient.

03. Stewarding the Earth: Our work will acknowledge the interconnected nature of human actions and earth stewardship.

04. Establishing Equity: Our work will strive to ensure everyone is included in realizing the benefits of sustainability in our city by focusing on:

Procedural Equity: Inclusive, accessible authentic engagement and representation in processes to develop or implement programs and policies.

Distributional Equity: Programs and policies result in fair distribution of benefits and burdens across all segments of our community, prioritizing those with the highest need.

Structural Equity: Decision-makers institutionalize accountability; decisions are made with a recognition of the historical, cultural and institutional dynamics and structures that have routinely advantaged privileged groups in society and resulted in chronic, cumulative disadvantage for others.

Transgenerational Equity: Decisions consider generational impacts and do not result in unfair burdens on future generations.¹

Racial Equity: Decisions are informed by the historic legacies and perpetuation of racism and disinvestment. Our work will focus on building new legacies of inclusion and racial equity.

05. Acting with Transparency and Accountability: We are committed to sharing progress toward our goals through open, regular, and accessible reporting and community engagement.

06. Driving to Outcomes and Making Data-Driven Decisions: Our work will be informed by the ethical use of data, outcome-oriented and measurable, to ensure we are improving the quality of life for all Detroiters.

07. Collaborating with Partners and Stakeholders: Our work will be developed and implemented in partnerships with a broad array of partners within, across, and outside of government.



Community Voice

WE ASKED

“How can Equity be demonstrated in the final document/plan? What does an equitable Sustainability Action Agenda include?”

YOU TOLD US

“Provide transparency of information.”

Anonymous Resident,
Sustainability Town Hall August 21, 2018

“Aggressive honesty and transparency.”

Anonymous Resident,
Sustainability Town Hall August 25, 2018

WE LISTENED

One of our guiding principles for the Agenda and our work moving forward is “Acting with Transparency and Accountability”



Sustainability Challenges

Detroit is a vibrant, dynamic place to call home, but like many cities, there is room to improve. Our effort to create a more sustainable Detroit must start by addressing the long-standing challenges that hinder the health and prosperity of Detroiters, our communities, and our city overall. Poor public health, high unemployment, income insecurity, poor and unaffordable housing options, blighted properties, aging infrastructure, environmental pollution, and a changing climate each pose significant risks to our residents today and to our future growth.

Public Health

Too many Detroit residents struggle with chronic health issues caused by their environments and economic insecurity. Life expectancy in Detroit is nearly 6 years less than for the State of Michigan and infant mortality rates are over 80 percent higher.²

Poor air quality, both indoors and out, exacerbates the high prevalence of asthma among Detroiters. Between 2012 and 2014, for every 10,000 people in the City of Detroit there were approximately 41 hospitalizations for asthma per year. This rate was as much as 3.5 times higher than the rate for the State of Michigan over the same period.³ Due to unabated lead paint in Detroit's housing stock, nearly 9 percent of Detroit children tested for elevated levels of lead tested positive — the most of any city in the state.⁴

Health burdens are not shared equally throughout the city: Asthma hospitalizations are more prevalent for African American residents, and some neighborhoods on average have nearly 60 fewer good air quality days a year than the city overall.⁵ Poor air quality makes Detroiters less healthy and also keeps them from spending more time in the classroom and at work.

Unemployment & Income Insecurity

Detroit has recently seen visible economic growth and increasing investments. An improving economy caused unemployment to decrease to 7.9 percent as of November 2018, down from a high of nearly 29 percent in June 2009.⁶ However, many Detroiters continue to struggle to support themselves and their families. In 2017, over a third of Detroiters were living in poverty and fewer than half of Detroit households were earning a living wage.⁷

Poor & Unaffordable Housing

Those who remained in Detroit through our significant population decline struggle to find affordable, quality housing.

Approximately 60 percent of renters in Detroit spend more than 30 percent of their income on housing expenses — the level considered a “rent burden” by the Federal government.⁸ In a ranking of all U.S. cities with more than 100,000 residents, Detroit ranked fourth in terms of median gross rent as percent of household income.⁹ This is caused, in part, by the fact that wages have not kept pace with increased rents.

Poor quality building stock also contributes to a lack of affordable, quality housing options. 80 percent of Detroit's housing was built before 1960, and deferred maintenance has led homes to become energy inefficient, raising living costs for already rent burdened residents.¹⁰

As a result, half of Detroiters spend more than 10 percent of their income on utilities, which the Environmental Protection Agency considers to be the ceiling for affordability.¹¹ Additionally, damage from frequent flooding takes a toll on many homes: 1 in 3 surveyed Detroiters are impacted by urban flooding very or somewhat often in their neighborhoods. Another third are impacted occasionally.¹²

“

We have the knowledge, tools, and motivation to tackle these complex issues.

Blight

Neighborhoods throughout the city are being cleaned up and beautified, but too many people still see visible signs of physical decay in their communities. We have made substantial progress on rebuilding and revitalizing our neighborhoods, transferring ownership of more than 12,170 vacant side lots to adjacent homeowners and partners, and demolishing over 17,420 vacant buildings since 2014. But, there are still more than 42,000 vacant residential structures and more than 106,050 publicly owned, vacant lots spread throughout the city, too often left to neglect.

Aging Infrastructure & Pollution

Much of our infrastructure was built for the last century and needs to be modernized for today's needs. Historic investments have been made in modernizing 65,000 streetlights with LED fixtures and in our water and sewer network, but more investment is needed.

Approximately 60 percent of the 1,611 lane miles of City roads in Detroit were rated to be in poor pavement condition.¹³ This lack of investment has contributed to over 12,900 auto, pedestrian, and bicyclist crashes on Detroit roads (highways excluded) in 2016, resulting in over 420 severe or fatal injuries.¹⁴

Our transit system is improving after a long period of disinvestment, but it still lags behind our peer cities in terms of route connectivity, access, and frequency. Approximately 8 percent of Detroiters use transit, with almost 2,000 trips per week compared to Cleveland where over 10 percent of residents use transit, taking over 8,000 trips per week.¹⁵

Like other cities, much of our water and sewage infrastructure is well past its expected service life. Combined sewer overflows (CSO) are a result overwhelming the city's system during rain events. In 2017, Detroit recorded 77 CSO events into the Detroit and Rouge Rivers. While over 96 percent of the sewage released into the Detroit waterways met regulatory requirements, 722 million gallons of untreated sewage were released during these events.¹⁶ These discharges create water quality and potential quality of life impacts for residents.

Changing Climate

The Great Lakes provide a large supply of freshwater, and more intense hurricanes and receding coastlines will not affect us as they will coastal states, but the changing climate will test and overwhelm our infrastructure and threaten our health in other ways. Flooding will continue to affect Detroit homes and streets due to projected increases in intense precipitation, seen as recently as Spring 2019 in the Jefferson Chalmers neighborhood. Detroit will also see a significant increase in very hot days, with as many as 65 days above 90°F by the end of this century, exacerbating the burden of heat and poor air quality on our most vulnerable residents.¹⁷

We have the knowledge, tools, and motivation to tackle these complex issues. This Agenda is the strategic roadmap to address these issues and create a city in which all Detroiters can thrive.



Recent Sustainability Advances

Achieving our goals will not be easy. But we are already making significant progress.

Over the past decade, several of our city's community and non-profit organizations have championed sustainability initiatives that serve as the foundation of this Agenda and have helped improve the lives of thousands of Detroiters. Their work resulted in Detroit's first Food Security Policy, the Detroit Environmental Agenda, and the Detroit Climate Action Plan. We honor these efforts and are committed to building upon them and working with the residents, businesses, and organizations that supported them to meet their ambitions.

Under Mayor Duggan, the City has improved services and made historic investments in our infrastructure. We launched the MoGo bike share program, expanded our bus fleet with hybrid buses, converted all of our streetlights to LEDs, embarked on the fastest expansion of a bike network of any city in the U.S., installed the city's first utility scale solar installation at O'Shea Park, committed \$3 million a year to green stormwater infrastructure, renovated 40 neighborhood parks over two years, and created a \$250 million Affordable Housing Leverage Fund that will preserve 10,000 units and develop 2,000 new units.

In 2018, we released a Strategic Plan for Transportation that over three years will rehab or resurface 300 miles of streets, increase bus service on ten high-capacity routes, and expand protected bike lanes. All of this is happening as we continue to invest in our neighborhoods and residents to create economic opportunities for all Detroiters.

Recognizing the importance of a coordinated approach to address the ongoing challenges facing Detroit residents, Mayor Duggan created the City's first Office of Sustainability in 2017 to coordinate and lead the City's sustainability initiatives. With this Agenda, Detroit joins other major cities around the world in demonstrating their commitment to advancing economic, environmental, and social sustainability through strategic investments and initiatives.



Detroit City Council Green Task Force

Detroit City Council Green Task Force was founded in 2007 by Councilman Ken Cockrel Jr. to examine how to improve the environmental sustainability of the city. This voluntary council advances Detroit sustainability goals through research and policy advisory. Currently chaired by Councilmember Scott Benson, the subcommittees of the Task Force focus on recycling and waste reduction, water, renewable energy, climate resilience, and composting. Some successful efforts that grew from the Task Force included a recycling pilot with 30,000 homes, increased bicycle and pedestrian infrastructure, ordinances that support environmentally-preferred procurement, and the development of the Office of Sustainability.

CITY OF DETROIT Sustainability Timeline

2009



Food Security

The Detroit Food Policy Council is established, after the Detroit Black Community Food Security Network drafts the city's first food security policy

2010



Upgrades

City of Detroit invests \$9.5 million in energy efficiency and conservation upgrades into 19 of its buildings

2011



Curbside Recycling

Public Works launches a Curbside Recycling Pilot program for single family homes in response to Zero Waste Detroit's multi-year campaign

2012



Ordinance

City Council passes Urban Agriculture Ordinance

2013

2015



Greenhouse Gas

First Greenhouse Gas Inventory is completed for Detroit

2014



Green Demolition - Healthy Demolition

City of Detroit adopts Green Demolition - Healthy Demolition practices in partnership with the US EPA and Michigan Department of Environmental Quality

2016



Parks

City of Detroit announces plans to renovate 40 neighborhood parks

LED

City of Detroit completes city-wide LED streetlight conversion



Solar Park

Ground breaking on O'Shea Solar Park, the city's first urban solar array

2017

2018



Paris Accord

Mayor Duggan commits the City of Detroit to meet the Paris Agreement goals



Office of Sustainability

City of Detroit creates the Office of Sustainability



2030 District

Detroit's 2030 District launches



MoGo

MoGo bike share launches



Climate Plan

Detroiters Working for Environmental Justice release the Detroit Climate Action Plan

2019



Affordable Housing

City of Detroit announces \$250 million Affordable Housing Leverage Fund that will preserve 10,000 units and develop 2,000 new units in five years.



Transportation

City of Detroit releases Strategic Plan for Transportation



Green Stormwater

City spends \$3 million on green stormwater infrastructure and requires private properties to control stormwater on site



Waste Incinerator

Closing of the Detroit Renewable Energy Waste Incinerator

Developing the Agenda

Community input was central to the creation of the Agenda. Throughout the development of the Agenda, we focused on engaging a diverse array of Detroiters in every neighborhood across the city – with a particular emphasis on communities that have been historically underrepresented in planning processes. In a year, we heard from thousands of Detroiters and their feedback on the challenges faced by residents and businesses, opportunities to improve the quality of life for Detroiters, and suggestions on how to build a more sustainable city.

Community Voice

YOU TOLD US

“Equity means language access.”

Anonymous Resident, Sustainability
Town Hall August 25, 2018

“People [youth] not feeling heard”

Anonymous Resident, Sustainability
Town Hall August 28, 2018

WE LISTENED

We added a new phase of engagement to better reach these groups and create an equitable engagement process.

370

DETROITERS ENGAGED THROUGH

4 TOWN HALLS

7 FOCUS GROUPS

TARGETING UNDER-REPRESENTED COMMUNITIES

1,600 SURVEYS

COLLECTED IN SPANISH AND ENGLISH

860+ DETROITERS

MET WITH 14 SUSTAINABILITY AMBASSADORS

1,200 ONLINE COMMENTS

COLLECTED ON COURBANIZE

2,000 DETROITERS REACHED

BY ATTENDING 100+ EXISTING
COMMUNITY MEETINGS

50+ ORGANIZATIONS ENGAGED

DETROIT-BASED
THROUGH 8 PRACTITIONER WORKSHOPS

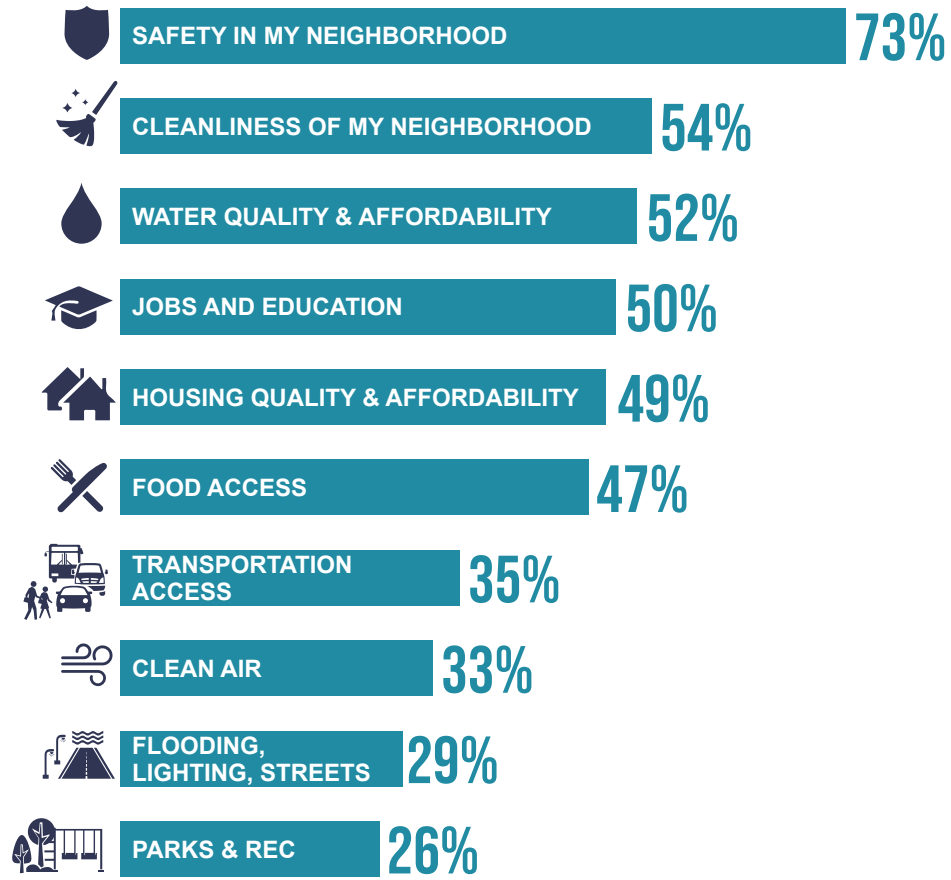
coUrbanize Platform

Throughout the project, we used coUrbanize, an online platform, to reach more Detroiters, create online dialogs, and provide accessible, transparent information on project status. The coUrbanize platform allowed Detroiters to:

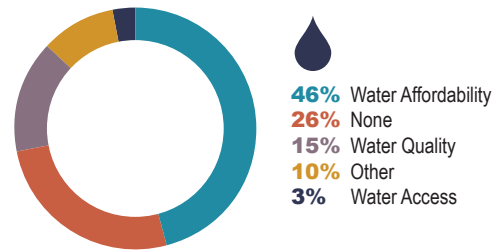
- Identify specific locations of the great and not-so-great things in their neighborhoods;
- Share details of their challenges, needs, and preferences;
- Interact with the City through the internet or text messages;
- Ask questions directly to the Office of Sustainability; and,
- Access information about upcoming events, project progress, and draft materials.

To encourage collaboration through transparency, the conversations and information collected on the coUrbanize platform can be viewed at coUrb.co/Detroit.

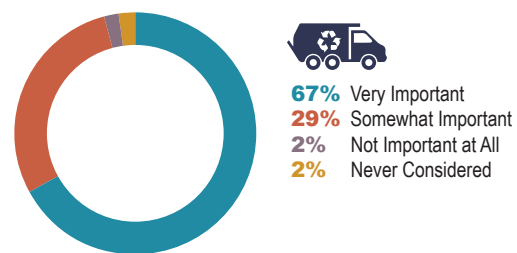
WHICH OF THESE TOPICS DO YOU MOST CONSIDER IN YOUR DAILY OR WEEKLY LIFE?



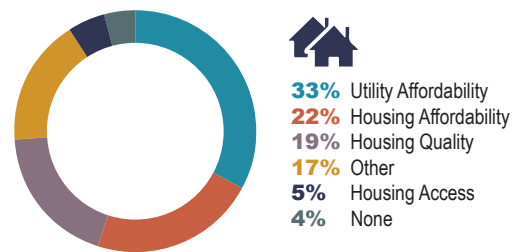
What is the top water challenge you have experienced in Detroit within the last 12 months?



How important is access to recycling, compost, and other waste reduction opportunities to you?



What is the top housing challenge you have experienced in Detroit within the last 12 months?



SURVEY SAYS...

“ I have seen community come together to clean up, but there are still abandoned houses and empty school buildings that should be torn down. ”

“ Living in District 6, clean air is always a concern of mine because we're so close to the plants - you can feel the harmful effects of the bad air quality in the area. ”

“ We need a network of multi-modal transportation options including bike paths. Our community needs to be more walkable with safe crossings and streets. ”

“ We have a lot of youth hanging out when school is not in session. We need more youth programs and jobs to prepare the youth for their future. ”



“ Create job pipelines for students in sustainability careers, beginning in middle school. ”

“ 57% said City government wasn't addressing food access issues well enough. ”

“ Over 95% said access to parks/green space is important to community health. ”

ENGAGEMENT HIGHLIGHTS

Sustainability Survey

In May and June, Detroiters completed our Sustainability Survey. It was available on-line and on paper in 5 languages. The survey was distributed at events, through email and social media, and by 14 Sustainability Ambassadors. We received 1,600 responses from Detroiters across the city.

The survey included the question, “Which of these topics do you consider in your daily or weekly life?” Respondents could choose multiple options.

Nearly half of survey respondents named water and housing challenges as strong daily concerns- signaling a need to take action to ensure affordability for all Detroiters.

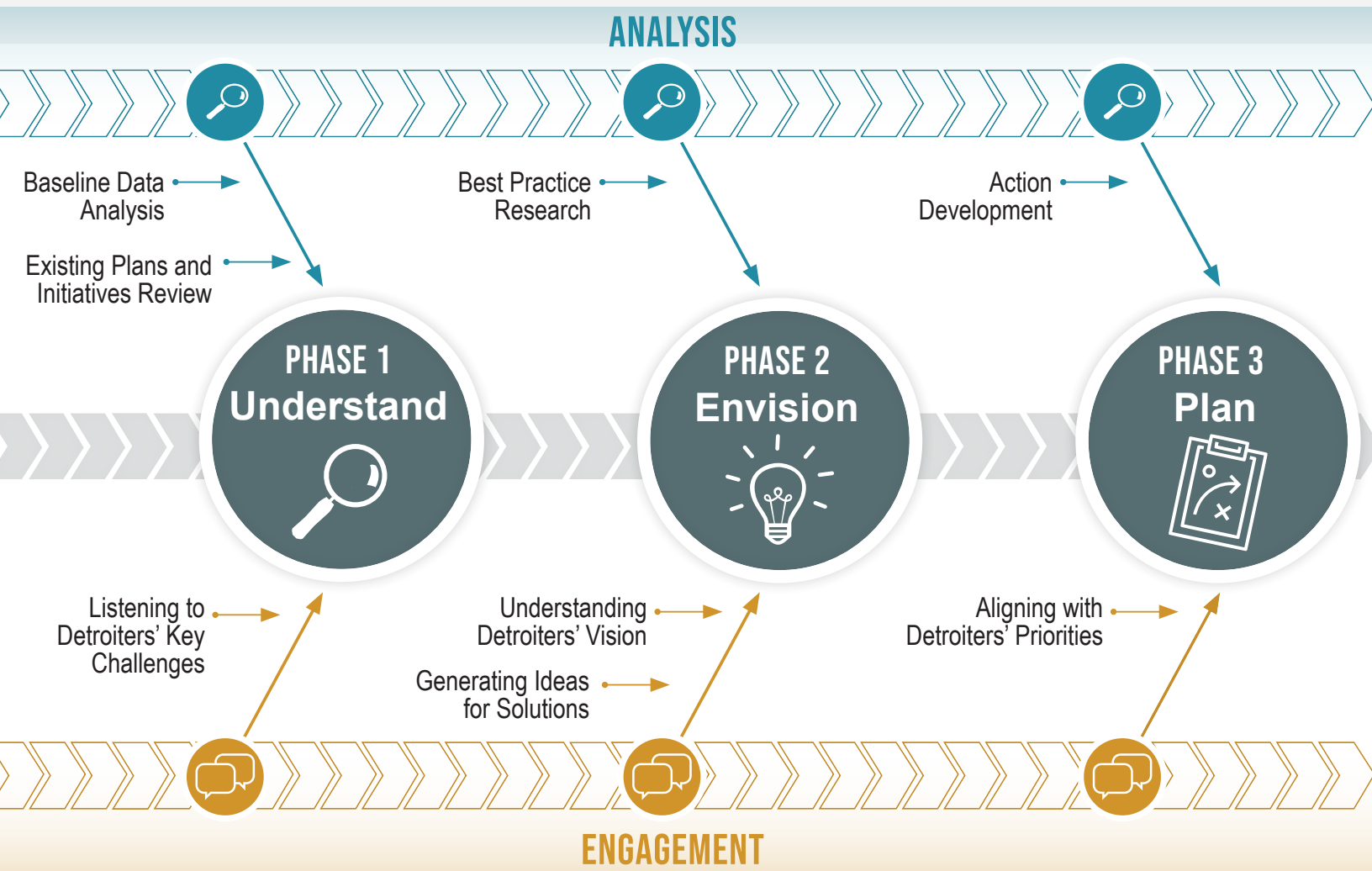
While community groups and volunteers clean up and transform vacant properties in their neighborhood, abandoned buildings, empty lots and cleanliness came up repeatedly in conversations with residents. Residents cited these issues as impacting their sense of safety.

The results signal that Detroiters' concerns span multiple topics: their homes, health, neighborhoods, and economic opportunities. The Agenda addresses each of these topics.



Process Overview

Recognizing that sustainability in Detroit is not a new concept, we inventoried 39 existing, Detroit-focused strategic plans and documents to build upon existing work and address the identified needs of Detroiters.



Sustainability Ambassadors

Sustainability programs have the potential to improve the lives of all Detroiters—but without input from communities and a channel to engage them, they can fall short. To keep a finger on the pulse of our neighborhoods and empower them to join the movement, the Office of Sustainability employed Sustainability Ambassadors in the creation of the Agenda. These Detroiters reached out to members of their own neighborhoods to inform and listen. Our ambassador team, listed in the Acknowledgements section, is as diverse as the city it engages.

Ambassadors shared information with residents on the many green and quality-of-life initiatives the city can offer them, from energy-efficiency measures like free refrigerators to recycling education to fresh fruits and vegetables. They also gathered insights from residents to inform city policy on everything from transportation and housing to community gardens. As we create and refine the programs that will affect all of Detroit, Sustainability Ambassadors ensured that every group in our city is visible and heard.

These efforts were guided by a Sustainability Advisory Commission, co-chaired by Sandra Turner-Handy and Khalil Ligon representing the Detroit Environmental Agenda and Darlene Strickland from Bedrock Detroit, with representation from 20 local organizations, businesses and community groups. In addition, a Sustainability Interdepartmental Working Group, which consists of 23 City departments, met monthly to help shape and develop the Agenda. These two advisory bodies will continue to meet to support implementation of the Agenda.

SUSTAINABILITY ADVISORY COMMISSION MEMBERS

- Jeff Baxa and Dannis Mitchell, Barton Malow
- David Tulauskas, General Motors
- Scott Benson, Detroit City Council
- Alessandra Carreon, PizzaPlex
- Sandra Turner-Handy and Khalil Ligon, Detroit Environmental Agenda
- Hector Hernandez, Southwest Solutions
- Brian Hogle, Kresge Foundation
- Nick Leonard, Great Lakes Environmental Law Center
- Sonya Mays, Develop Detroit
- Dayna McGuire, EcoWorks Detroit Youth Energy Squad
- Alycia Meriweather, Detroit Public Schools Community District
- Nancy Moody, DTE Energy
- Rick Pruiss, I.B.E.W. Local 58 Detroit, 1
- Jodee Raines, Erb Foundation
- Louis Pliskar, Wayne Metro Community Action Agency
- Maria Salinas, Congress of Communities
- Ned Staebler, Wayne State University
- Darlene Strickland, Bedrock Detroit
- Kimberly Dawn Wisdom and Chip Amoe, Henry Ford Hospital

INTERDEPARTMENTAL WORKING GROUP MEMBERS

- Bridging Neighborhoods
- Building Authority
- Buildings and Safety
- Planning Commission
- Fire
- General Services
- Health
- Emergency Management
- Housing
- Human Resources
- Technology
- Land Bank
- Law
- Mobility
- Neighborhoods
- Operations (Public Works)
- Planning and Development
- Police
- Chief Financial Officer
- Public Works
- Parks and Recreation
- Transportation
- Water and Sewerage

DETROIT'S SUSTAINABILITY FRAMEWORK

The Agenda is a strategic roadmap to create a more sustainable city, a Detroit where our collective vision can be realized:

All Detroiters thrive and prosper in an equitable, green city; have access to affordable, quality homes; live in clean, connected neighborhoods; and work together to steward resources.

Across four outcomes we are committed to achieving 10 goals and implementing 43 actions to address many of the most pressing challenges facing Detroiters today.

This Agenda is intended to compliment, not supplant, other City efforts, such as those focused primarily on public safety, education, or economic development. All of these must be addressed to increase our sustainability and ensure an equitable city. The achievement of our vision will require the leadership and coordination of all City of Detroit departments.



GUIDING PRINCIPLES

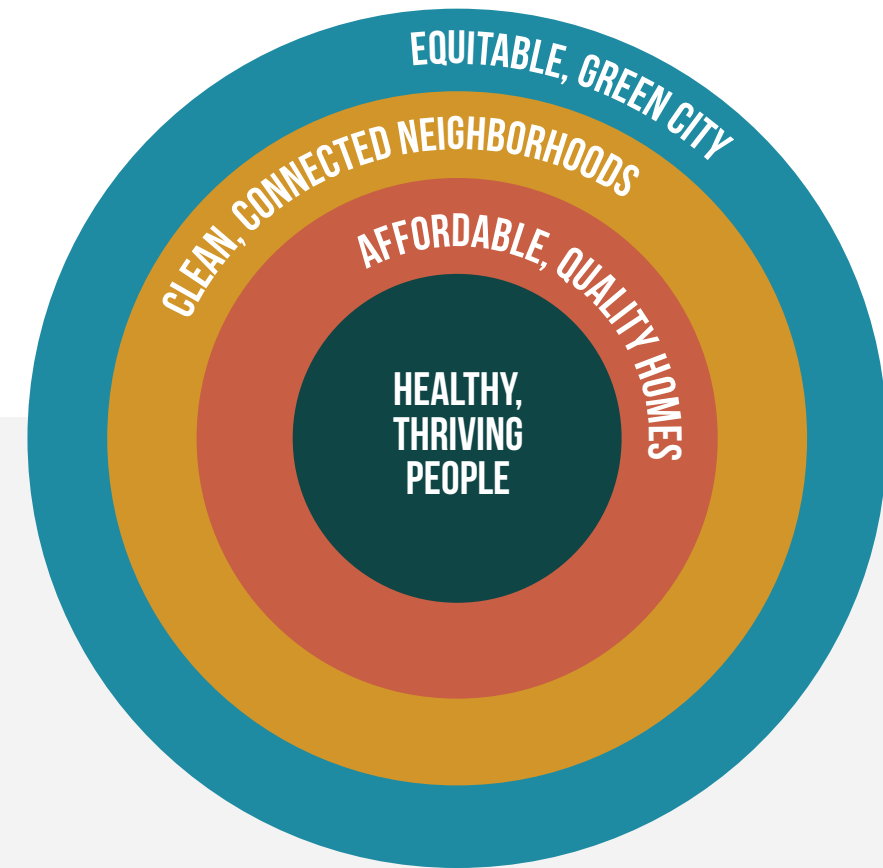
VISION

4 OUTCOMES

10 GOALS

43 ACTIONS

OUTCOMES



Together, we can achieve the following 10 goals:



Healthy, Thriving People

- 1: Increase access to healthy food, green spaces, and recreation opportunities
- 2: Improve air quality and reduce exposure to pollution
- 3: Advance equity in access to economic opportunity



Affordable, Quality Homes

- 4: Reduce the total cost of housing, including utilities
- 5: Improve the health and safety of existing and new housing



Clean, Connected Neighborhoods

- 6: Transform vacant lots into safe, productive, sustainable spaces
- 7: Reduce waste sent to landfills
- 8: Make it easier and safer to get around Detroit without a personal vehicle

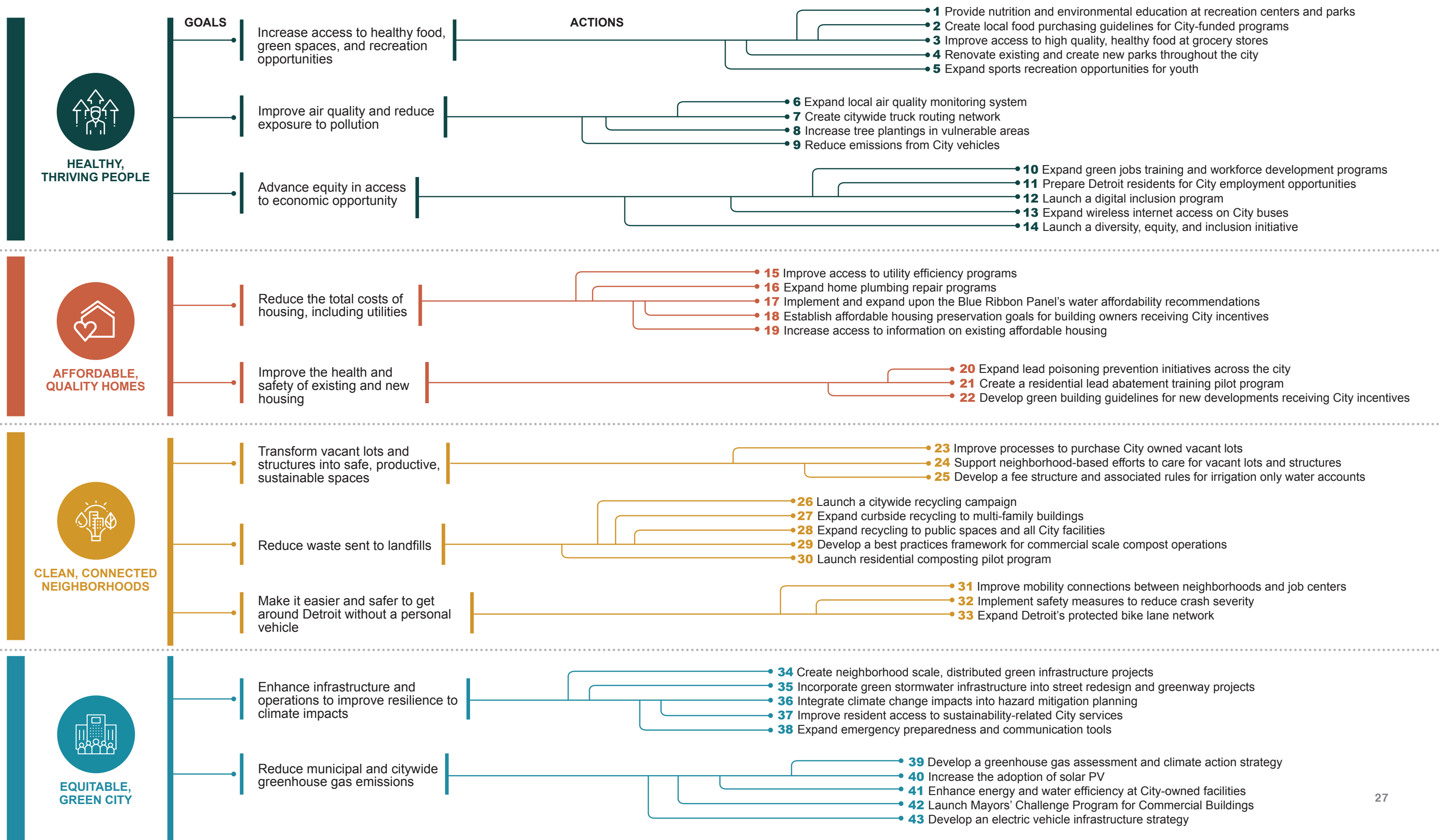


Equitable, Green City

- 9: Enhance infrastructure and operations to improve resilience to climate impacts
- 10: Reduce municipal and citywide greenhouse gas emissions

How to Read the Agenda

Our vision for a sustainable Detroit serves as the foundation for the 4 outcomes, 10 goals, and 43 actions for residents, businesses, the City, and community partners to implement. The actions build on existing efforts to enhance sustainability in Detroit.



Subsequent chapters in this Agenda are organized by the 4 outcomes. There are multiple goals, actions, indicators, and targets that support each outcome. Each of the 43 actions are described using the following details:

HEALTHY, THRIVING PEOPLE

#5

1 **Expand sports recreation opportunities for youth**

LEAD: **4** **PARKS AND RECREATION**

5 **CO-BENEFITS**

+ **Improved Public Health**

3 **TIMEFRAME**
Mid 3-5 years

2

Access to recreation and outdoor activity significantly contributes to improved health outcomes for youth. The City currently operates 311 parks and 11 recreation centers, providing recreation opportunities like swimming, tennis, basketball and a number of other activities for residents of all ages. Parks and Recreation will expand upon its current programming to increase recreation opportunities for youth.

Additionally, we will increase sports programming by increasing the number of youth playing soccer in Detroit from 1,700 to 8,000 by 2022, starting with the successful recruitment of 1,000 young people by Fall 2019. We are creating 44 new soccer fields in addition to the 20 existing soccer fields available for use, with the capacity for 6,400 youth dispersed throughout the city. In addition to our soccer programming, the Parks and Recreation will undertake a City wide programming needs assessment that will inform additional sports and recreation programming.

1 ACTION TITLE
Short name identifying the initiative

2 DESCRIPTION
Summary that includes what sustainability challenges the action addresses, how the action will be implemented, and why it will be effective

3 TIMEFRAME
Amount of time it will take to implement the action: Near (0-2 years), Mid-term (3-5 years), Long-term (6-8 years)

4 LEAD
The City Agency/Department(s) spearheading the action

5 CO-BENEFITS
Additional direct and indirect environmental, economic, and equity related benefits the action supports

- +** Improved Public Health
- 🛡️** Improved Public Safety
- \$** Increased Utility Efficiency & Affordability
- 📈** Increased Access to Economic Mobility
- 🏛️** Increased Government Efficiency & Transparency
- 🍴** Improved Food System & Access
- 💧** Improved Water/Wastewater Quality & Management
- 🌍** Reduced Greenhouse Gases
- 🌬️** Improved Air Quality

In addition, as part of our ongoing commitment to transparency and accountability, the Agenda outlines how we will track our progress moving forward:

INDICATORS: Each goal is linked to quantifiable indicators with 5-year (2024) and 10-year (2029) targets to measure progress toward our longer-term goals. A full Indicator Table can be found in the appendix.

IMPLEMENTATION TABLE: The Implementation Table in the appendix of the Agenda includes additional detailed information on each action such as implementation partners and funding status.



HEALTHY, THRIVING PEOPLE

A healthy, thriving city is only possible with healthy, thriving residents.

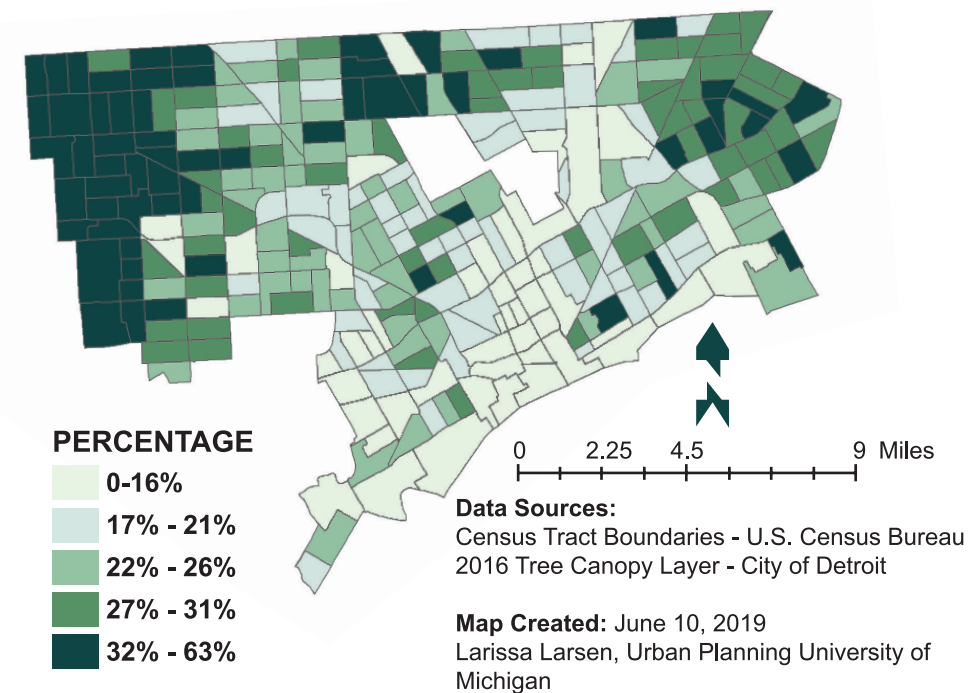
City government, institutions, nonprofits, and community organizations must put the people of Detroit at the center of our strategy to create a more sustainable Detroit. We must create equitable access to opportunities, services, and basic needs.

While there are many factors that contribute to a person's ability to live a healthy, thriving life, access to economic opportunities and public health are Detroiters' two most significant barriers today. In 2016, asthma hospitalization rates were more than three times higher than the state average, and the rate of asthma hospitalization for Detroit's African American community was 35% higher than for its Caucasian community.¹⁸ Additionally, less than half

of Detroit residents earn a living wage and, out of the 100 largest cities in the U.S., Detroit ranks 88th for access to green space.¹⁹

This chapter outlines initiatives and goals to improve air quality, health outcomes, and economic opportunities for Detroiters. Examples include initiatives to advance equity in City decision making, reduce the digital divide through improved internet access, better track and monitor air quality, and provide families with healthier food options. The chapter also details the performance indicators that will be used to track progress towards achieving our goals.

PERCENTAGE TREE CANOPY BY DETROIT CENSUS TRACTS



GOAL 1

Increase access to healthy food, green spaces, and recreation opportunities

Healthy food and exercise are essential to Detroiters' ability to thrive in their communities. By focusing on expanding access to and programming in parks, sourcing nutritious, local food for City programs, and making healthy food available in more stores, the City can provide more options for Detroiters to live healthy lifestyles and build strong, sustainable communities.

MEASURING PROGRESS

Increase percent of residents within a 10-minute walk to a park to 90 percent

In 2018, out of the 100 largest cities in the U.S., Detroit was ranked 88th in terms of providing park spaces for residents. Parks and green spaces are a vital part of a healthy, thriving lifestyle. In 2018, 77 percent of residents lived within a 10-minute walk to a park.²⁰ By 2024, 85 percent of Detroit residents will be within a 10-minute walk of a park and, by 2029, this percentage will increase to 90 percent.

Increase the number of grocery stores performing well in availability, price and quality of healthful foods

In 2017, 71 grocery stores in Detroit were surveyed for availability of healthful foods, lower prices for healthful foods, and quality of fresh produce by the Detroit Food Map Initiative with support from the Detroit Food Policy Council and Wayne State University. Out of 47 available points, the average grocery store score for Detroit was 26.7 (range from 16 to 35). The top tier of stores scored at least 30 points. Only 15 stores out of 71 fell within this top tier of "healthfulness".²¹ We will work to increase the number of stores in Detroit that meet this threshold for healthfulness.



THE PARKS

Public spaces bring people together. That's why in 2016, Detroit invested in a \$12 million initiative to revitalize 40 of its neighborhood parks with thoughtful landscaping and things to do, including walkways and benches, picnic shelters, playground equipment, and athletic courts. We know that great design goes beyond beauty: Viola Liuzzo Park on the city's northside, for example, includes bioretention gardens, strategically placed depressed plots of soil and sand that trap stormwater runoff and absorb its contaminants. This natural filter prevents stormwater from flooding onto streets and sidewalks, all the while helping to maintain the integrity of the park itself.

OUT OF THE
100 LARGEST CITIES IN THE US
DETROIT RANKS 88TH
FOR THE ACCESS TO
GREEN SPACE

#1

Provide nutrition and environmental education at recreation centers and parks

LEAD: **PARKS AND RECREATION**

CO-BENEFITS



Improved Public Health



Improved Food System & Access

TIMEFRAME

Near 0-2 years

More than one in three Detroiters are obese, which is well above the national average and can contribute to severe health risks. This risk can be particularly acute for children. Detroit youth often are not exposed to the breadth of nutritional education they need to help them develop healthy eating habits and live healthier lifestyles. We already provide conservation education at The Den in Palmer Park to supplement science, technology, engineering, and math education that is provided in schools and instill the importance of environmental stewardship. We will build on this successful program and provide nutrition educational at our 11 recreation centers to help youth and their families improve their diets and make healthier lifestyle choices. We will begin by engaging children who receive meals through the Parks and Recreation Department's Summer Meals program and build partnerships with Detroit based organizations that specialize in ecology, conservation, and nutrition education programming to provide after-school and summer programming.

#3

Improve access to high quality, healthy food at grocery stores

LEAD: **PLANNING**

CO-BENEFITS



Improved Public Health



Improved Food System & Access

TIMEFRAME

Mid 3-5 years

In 2017, nearly 95 percent of Detroiters had access to a full-line grocery. Despite the quantity of stores in the city, quality and overall experience remains a persistent issue for consumers. Thus, Detroiters face a unique challenge where the overriding issue is not access to grocery stores, but access to high quality, healthy food options within these establishments.

Detroit Economic Growth Corporation's Green Grocer program supports existing grocers to improve the quality of and shoppers' experience in stores. The Detroit Food Policy Council also operates a Grocery Store Coalition to address issues of quality and access. These programs have engaged more than 50 of the independent grocery stores in the city. We will build on these efforts and work with existing grocery operations to stock healthier food options. This will include technical assistance, local sourcing support, and attracting additional funding for the Green Grocers store improvement matching grant programs. We will also prioritize healthy food businesses in commercial corridor investment strategies to increase residents' food options.

#2

Create local food purchasing guidelines for City-funded programs

LEAD: **PROCUREMENT**

CO-BENEFITS



Improved Public Health



Improved Food System & Access

TIMEFRAME

Mid 3-5 years

Food insecurity is a major challenge for Detroit families. Nearly 75 percent of Detroit children depend on free or reduced lunches at school for meals. During the summer, this critical food source is not available. To reduce child hunger in the summer, the Parks and Recreation Department became a Summer Food Service Program sponsor (Meet Up and Eat Up) and started participating in the Child and Adult Care Food Program. Last year, the City served nearly 100,000 meals through the Summer Food Service Program alone. This represented more than \$600,000 in meals.

To ensure that participants are receiving fresh, healthy food through these programs and that they are being leveraged to support local food businesses, we will develop purchasing guidelines to secure more locally-sourced food for the Summer Food Service Program and Child and Adult Care Food Program. In addition, we will educate department staff, build connections with local growers and producers, and create a procurement tracking system to monitor City money reinvested in the local food economy.



#4

Renovate existing and create new parks throughout the city

LEAD: **GENERAL SERVICES**

CO-BENEFITS



Improved Public Health



Improved Water/Wastewater Quality & Management

TIMEFRAME

Mid 3-5 years

The City currently owns 311 parks in Detroit, many of which have not had capital improvements in more than ten years. In 2017, General Services and Parks and Recreation created a strategic plan to improve the City's parks and recreation centers. As the first phase of this plan, we invested \$11.7 million to renovate 40 neighborhood parks and created three new parks, adding over 12 acres of parkland to our system. Over the next ten years, we will renovate 99 existing parks and will create 18 new parks, including developing eight multisport parks, spending over \$100 million in capital improvement funds.

These parks were selected based on several key criteria, including which parks had the highest concentrations of children and senior citizens living nearby. Renovations will include new playgrounds, equipment, walkways, landscaping, and the installation of new sports facilities. All of these improvements will enable residents, young and old, to become and stay active. One of the major improvement strategies is to offer residents more natural parkland opportunities to address the relatively low percentage of parkland in the city that is natural open-space compared to active recreational parkland.

GOAL 2

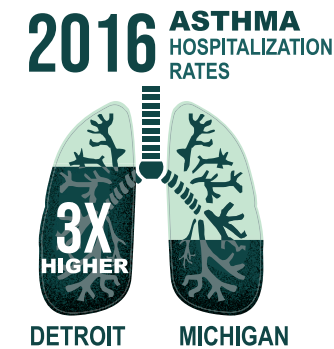
Improve air quality and reduce exposure to pollution

Poor air quality and consistent exposure to pollution have negative impacts on health. For Detroiters to live healthier lives, we must ensure they can breathe clean air. By reducing pollution from transportation, creating natural buffers, and increasing the ability for residents to understand current air quality conditions, we can improve health outcomes throughout Detroit.

MEASURING PROGRESS

Reduce asthma hospitalization rates by 20 percent

Between 2012 and 2014, for every 10,000 people in the City of Detroit there were approximately 41 hospitalizations for asthma per year. This rate, over the same period, was as much as 3.5 times higher than the rate for the State of Michigan and higher for African American residents of Detroit.²² We aim to reduce the hospitalization rate by 10 percent to 37 hospitalizations per 10,000 residents by 2024 and 20 percent to 33 hospitalizations per 10,000 residents by 2029.



Increase average number of good air quality days

Detroit had an annual average of approximately 290 good air quality days between 2014 and 2016, with some neighborhoods lagging behind with nearly 60 less good days.²³ Poor air quality negatively impacts Detroiters' health as well as school and work attendance. Detroit commits to reducing the average number of days reaching unhealthy for sensitive groups or above on the Air Quality Index.



Increase targeted tree plantings to 15,000 trees

A more continuous tree canopy in Detroit can improve stormwater management, reduce urban heat island effect, reduce localized air pollution, provide wildlife habitat, and increase property values. In 2016, Detroit's average percent tree canopy coverage per block group was just 24.6 percent.²⁴ Detroit aims to plant 5,000 trees by 2024 and 15,000 by 2029 in the top 20 census tracts with highly vulnerable populations most impacted by pollution and heat island effects.

#5

Expand sports recreation opportunities for youth

LEAD: **PARKS AND RECREATION**

CO-BENEFITS



Improved Public Health

TIMEFRAME

Mid 3-5 years

Access to recreation and outdoor activity significantly contributes to improved health outcomes for youth. The City currently operates 311 parks and 11 recreation centers, providing recreation opportunities like swimming, tennis, basketball and a number of other activities for residents of all ages. Parks and Recreation will expand upon its current programing to increase recreation opportunities for youth.

Additionally, we will increase sports programing by increasing the number of youth playing soccer in Detroit from 1,700 to 8,000 by 2022, starting with the successful recruitment of 1,000 young people by Fall 2019. We are creating 44 new soccer fields in addition to the 20 existing soccer fields available for use, with the capacity for 6,400 youth dispersed throughout the city. In addition to our soccer programing, the Parks and Recreation will undertake a City wide programing needs assessment that will inform additional sports and recreation programing.

#6

Expand local air quality monitoring system

LEAD: **HEALTH**

CO-BENEFITS



Improved Public Health



Improved Air Quality

TIMEFRAME

Mid 3-5 years

Detroit's current air quality monitoring network was designed to measure citywide concentrations of air pollutants tracked by the EPA. The State Department of Environmental Quality currently operates eight air quality sensors within Detroit. The size and placement of this network does not provide good neighborhood-level granularity to understand how air pollution concentrations can vary between and within neighborhoods. Better neighborhood-level data will enable us to better target our air quality efforts in high-pollution areas and address local sources of pollution.

We will launch two new air quality monitoring efforts to expand the local air quality monitoring system in Detroit. In partnership with the Michigan Department of Environment, Great Lakes, and Energy and the Southwest Community Benefits Coalition we installed three new air quality monitors in Southwest Detroit. We will continue to add more air quality monitors throughout the city that will provide real-time, location-based data to understand air quality conditions at a more localized level. The City will work with community and technical experts to determine optimal placement of these new sensors and analyze collected data.

#8

Increase tree plantings in vulnerable areas

LEAD: **GENERAL SERVICES**

CO-BENEFITS



Improved Public Health



Improved Water/Wastewater Quality & Management



Improved Air Quality

TIMEFRAME

Mid 3-5 years

The health burden of air pollution is substantial for residents. Annually, nearly 1 percent of all hospital visits in Detroit are attributed to ambient air pollution.²⁶ Average tree canopy coverage throughout Detroit was almost 25 percent in 2017, yet some areas were as low as 1 percent and some as high as 52 percent. Trees can serve as buffers to pollution and have been shown to reduce health impacts from pollution when planted within 500 feet of roadways and other pollution sources. Areas with a high percentage of impervious surfaces and low tree canopy experience much higher temperatures, causing injury and death.

We will identify neighborhoods in the city where tree planting could have the greatest impact on ambient air temperature and air quality and increase the tree canopy coverage in these areas. Vegetative buffers, such as strips of planted trees, will be planted between sources of pollution and residential areas, schools, and other areas of high cumulative impact to reduce pollution exposure. Our goal is to plant 1,000 additional trees annually, targeted strategically to mitigate local air pollution and the effects of heat.

#7

Create citywide truck routing network

LEAD: **PUBLIC WORKS**

CO-BENEFITS



Improved Public Safety



Improved Public Health



Improved Air Quality

TIMEFRAME

Mid 3-5 years

There are a number of pollution sources contributing to Detroit's high rates of asthma, including truck traffic. Truck traffic is a primary source of PM2.5 (particulate matter less than 2.5 micrometers in diameter), which can get deep into people's lungs. Exposure to PM2.5 has been linked to premature death in people with heart or lung disease, nonfatal heart attacks, aggravated asthma, decreased lung function, and other respiratory issues. Community Action to Promote Public Health estimates that diesel exhaust from on-road vehicles totals 725 tons a year and vehicle-associated emissions of PM2.5 as dust, silt and road wear are estimated to be 573 tons a year in Wayne County.²⁵

The City will redesign a truck route network that balances the needs of commerce and truckers while minimizing the impacts on public health and addressing environmental justice inequities. Based on a study underway, we will reconfigure the truck route network in neighborhoods with high truck activity, beginning with a pilot in Southwest Detroit. Results of this pilot will be measured and, based on the results, a citywide truck route network will be developed as part of the 2020 Transportation Master Plan.



#9

Reduce emissions from City vehicles

LEAD: **GENERAL SERVICES**

CO-BENEFITS

-  **Improved Public Health**
-  **Reduced Greenhouse Gases**
-  **Increased Government Efficiency & Transparency**
-  **Improved Air Quality**

TIMEFRAME
Mid 3-5 years

The City of Detroit owns and operates more than 2,700 vehicles, including police pursuit vehicles, fire apparatus, ambulances, dump trucks, street sweepers and ride-on mowers. While this represents a small percentage of the overall on-road vehicles driving in the city, we are committed to leading by example and fully-leveraging our assets to achieve the goals outlined in this Agenda. In addition to air pollution, the City's municipal fleet is responsible for over 65,000 tons of CO₂e annually, which is more than 5 percent of municipal GHG emissions. We recently piloted four Plug-In Hybrid Electric light duty vehicles to assess fitness for service in the City's fleet.

We will reduce vehicle fleet emissions by right-sizing the City's fleet. We will also integrate electric, clean-diesel, hybrid, and other low-emissions vehicles into future vehicle purchases, retrofit our heavy trucks with clean diesel technology, and pilot test alternative fuels. As part of this effort, we will develop a list of recommended low-emission vehicles that meet current vehicle needs and requirements.

GOAL 3

Advance equity in access to economic opportunity

For Detroiters to thrive, they must have access to opportunities. However, economic opportunity is not equitably accessible by all Detroiters. To improve access, we will focus on training programs to connect residents to jobs, investing in local minority and women owned businesses, and making sure people have the tools they need, such as Wi-Fi, to participate in today's educational system and economy.

MEASURING PROGRESS

Increase the number of Detroiters earning a living wage to 68 percent

In 2016, only 48 percent of Detroit households were earning a living wage, defined as 125 percent of the federal poverty level.^{27,28} For Detroit to thrive, it must first ensure that its residents are earning wages that allow them to meet their basic needs and thrive. By 2024, Detroit aims to have 58 percent of Detroit households earning a living wage and will continue to advance initiatives and policies to reach a target of 68 percent by 2029.

Increase the share of active city contracts with Minority, Women, and Detroit-Based vendors to 44 percent of total contracts

A sustainable Detroit is one where diverse entrepreneurs have access to opportunity. In 2018, roughly \$660 million of City contracts, out of nearly \$2 billion, went to Minority, Women, and Detroit-Based vendors. We aim to increase this amount from 34 percent to 44 percent of total contracts by 2024.

10

Expand green jobs training and workforce development programs

LEAD: **WORKFORCE**

CO-BENEFITS



Increased Access to Economic Mobility

TIMEFRAME

Mid 3-5 years

Nearly 9 percent of Detroiters are unemployed, which is more than double the Michigan and national unemployment rates. Many unemployed Detroiters lack the skills and training necessary for employment opportunities in a rapidly changing economy, including green industries. Green jobs are those that contribute to environmental and social outcomes and include a wide range of industries in Detroit, including but not limited to deconstruction, weatherization, renewable energy, green stormwater infrastructure, sustainable manufacturing, and environmental conservation.

The City has supported some training programs to help Detroiters transition into green industries. In 2016, with support from the Fred A. and Barbara M. Erb Foundation, the Detroit Economic Growth Association launched a contractor training program to train small and medium-sized contractors on green stormwater infrastructure. More than 40 contractors and landscapers graduated from this program. Building on this and other efforts, we will launch a green jobs track in the Grow Detroit's Young Talent Program to identify local employers for apprenticeship opportunities. We will also expand the green jobs track to the Detroit At Work initiative, including training and job placement, and recruit non-local green industry employers to operate in Detroit.

LESS THAN 1/2 OF DETROIT RESIDENTS EARN A LIVING WAGE



11

Prepare Detroit residents for City employment opportunities

LEAD: **CIVIL RIGHTS AND WORKFORCE**

CO-BENEFITS



Increased Access to Economic Mobility



Increased Government Efficiency & Transparency

TIMEFRAME

Near 0-2 years

Employers consistently cite a skills gap in Detroit residents, which contributed to the high unemployment rate. To address this, the Civil Rights, Inclusion and Opportunity Department monitors employers with local hiring requirements. Employers that do not meet hiring requirements contribute to the Workforce Training Fund. Through the fund, Detroit Employment Solutions Corporation provides training in construction and skilled trades to Detroit residents. In 2018 fiscal year, 2,500 Detroiters were trained and 5,000 placed in jobs through workforce initiatives.

We will leverage the Workforce Training Fund and other workforce training programs to ensure that Detroiters have access to workforce development training opportunities for high-demand industries. In addition to expanding training and career pathways, we are also working to eliminate employment barriers through the City's Project Clean Slate initiative, which is helping eligible residents expunge their criminal records to assist in better access to job opportunities, and a driver responsibility fee forgiveness policy. We will also conduct employment fairs to matchmake city residents with employers who are bidding on City contracts.

12

Launch a digital inclusion program

LEAD: **TECHNOLOGY**

CO-BENEFITS



Increased Utility Efficiency & Affordability



Increased Access to Economic Mobility



Increased Government Efficiency & Transparency

TIMEFRAME

Mid 3-5 years

According to the 2017 American Community Survey, Detroit is one of the least connected cities in America with more than 100,000 residents. Approximately 42 percent of Detroiters do not have a cellular data plan and 32 percent do not have access to internet of any kind. The cost of data plans and the lack of digital skills are two of the main barriers for internet adoption. The City recently hired its first Digital Inclusion Fellow in the Department of Innovation and Technology to help coordinate community stakeholders, internet service providers, and other partners to address these challenges and increase digital access in the city.

We will work to increase access to low-cost internet plans and devices and work with community partners, such as the Detroit Digital Justice Coalition, to expand grassroots efforts to improve internet access. We will also convene City departments, private and non-profit partners, and residents to better understand the gaps and challenges that result in the lack of connectivity.

13

Expand wireless internet access on City buses

LEAD: **TRANSPORTATION**

CO-BENEFITS



Increased Access to Economic Mobility

TIMEFRAME

Near 0-2 years

Digital connectivity is an essential part of modern life, underpinning access to jobs, healthcare, and educational opportunities. In 2018, we installed Wi-Fi service on six City buses to provide a link for Detroiters. Building on the success of this effort, we will expand Wi-Fi access to 120 City buses. Many bus riders spend commute time on the bus daily, Wi-Fi-enabled buses will make this time more productive for them and help close the digital divide for Detroiters.

14

Launch a diversity, equity and inclusion initiative

LEAD: **CIVIL RIGHTS**

CO-BENEFITS



Increased Access to Economic Mobility



Increased Government Efficiency & Transparency

TIMEFRAME

Long 6-8 years

Racial inequity remains a pervasive issue for Detroit and cities across the nation. While Detroit is over 85 percent minority, only 6 percent of total City contracts were awarded to minority business enterprises in 2018. White Detroiters earn almost \$3,000 more annually than African American Detroiters.²⁹ While multiple factors contribute towards inequality, addressing racial disparities requires government institutions to take an active role in ending the perpetuation of institutional racism through equity-based policy and decision making. When racial equity is advanced, it produces better outcomes for people of color and all communities as a whole.

We will develop and launch a diversity, equity, and inclusion initiative to enable City processes to explicitly address issues of racial equity in neighborhood planning efforts, hiring and recruitment, budgeting, and contracting. To begin, we will design a racial equity assessment tool to increase equitable outcomes in City policy and decision-making processes. The tool will support users to identify how initiatives or plans will benefit or burden particular communities, what are the potential disproportionate impacts on communities of color, and how to proactively address disproportionate impacts. Its application will help decision makers remain accountable for ensuring equitable outcomes for all residents. In order to ensure that the tool is being applied, we will provide training for City staff to build competencies around diversity, equity, and inclusion.





AFFORDABLE, QUALITY HOMES



AFFORDABLE, QUALITY HOMES

Housing is key to building healthy and stable residents and communities.

As Detroit grows, we must ensure that all residents can afford efficient, quality homes free of hazardous materials. We must work to minimize the involuntary displacement of longtime Detroiters, who have been central to our city's growth, and to maintain affordable housing options throughout the city. We can bolster existing affordability strategies by reducing utility costs and eliminating exposure to toxic materials in homes. Through these efforts, Detroit residents will not only have affordable housing options, but also quality ones.

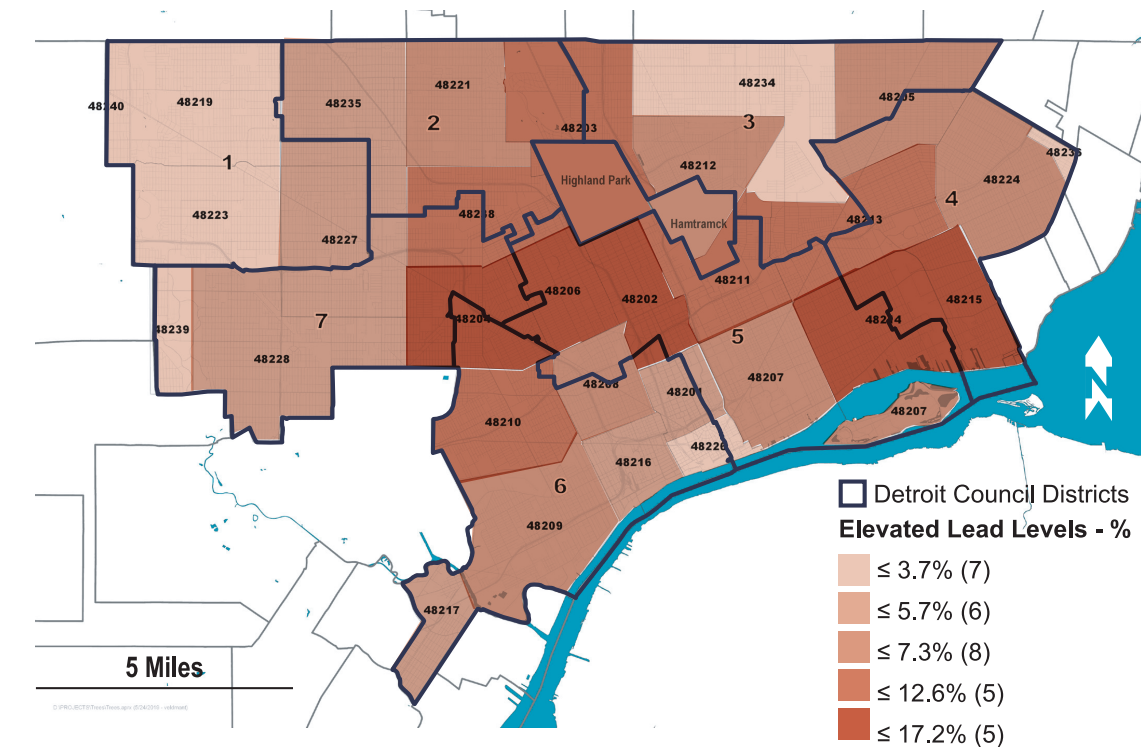
As Detroit's population decline slows and we enter a new phase of growth, demand is driving significant new construction, with over 2,000 new multifamily residential units completed in 2016 and 2017. Increased housing investment and demand places pressure on our existing affordable housing stock,

particularly in resource rich neighborhoods. This sharply increases rents and property values, which is problematic for many Detroiters.

In 2016, an estimated 48 percent of Detroit residents spent more than 30 percent of their monthly income on housing and utility costs—a level defined by the U.S. Department of Housing and Urban Development as housing-cost burdened.³⁰

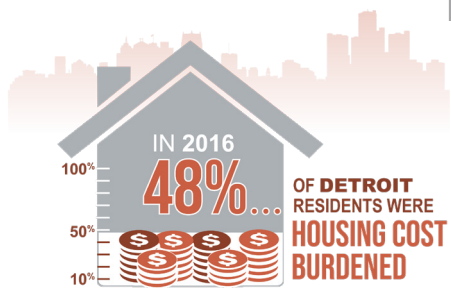
To minimize the displacement of long-term residents and protect the health and well-being of residents, this chapter focuses on actions that complement the recently released the Detroit Multifamily Affordable Housing Strategy. This includes initiatives to improve water affordability, lower energy bills, and reduce lead exposure in homes.

CITY OF DETROIT LEAD LEVELS BY ZIP CODE ³¹



GOAL 4

Reduce the number of residents paying more than 30 percent of their income for housing, including utilities



OVER 2,000 NEW MULTIFAMILY RESIDENTIAL UNITS



COMPLETED IN 2016 & 2017 IN DETROIT

In 2016, an estimated 48 percent of Detroit residents spent more than 30 percent of their monthly income on housing and utility costs—a level defined as a burden by the U.S. Department of Housing and Urban Development. This level of spending on basic housing needs is not sustainable for residents or the city. Detroit aims to decrease the number of residents paying more than 30 percent of their monthly income on housing and utilities.

MEASURING PROGRESS

Reduce the number of residents paying more than 30 percent of their income for housing, including utilities

In 2016, an estimated 48 percent of Detroit residents spent more than 30 percent of their monthly income on housing and utility costs—a level defined as a burden by the U.S. Department of Housing and Urban Development.³² This level of spending on basic housing needs is not sustainable for residents or the city. Detroit aims to decrease the number of residents paying more than 30 percent of their monthly income on housing and utilities.

Create 12,000 new and preserved affordable housing units

The preservation and creation of affordable housing is the cornerstone to Detroit's growth strategy. Detroit aims to build a portfolio of 10,000 preserved affordable housing units and 2,000 new affordable units in Detroit by 2024.

Reduce cost of water service for 15,000 residential low income customers

Water consumption per capita in Detroit is much lower than the national average. Despite this, 48 percent of Detroiters pay more than 3 percent of their income for water.³³ Average residential water bills increased by 8 percent annually from 2013 through 2017. As of 2018, the City had reduced water service costs for 1,100 households through the home plumbing repair program. Our goal is to reduce the amount of the total, effective water bills for 5,000 low income households (as defined by 150 percent of federal poverty line) by 2024 and for 15,000 households by 2029.

Reduce average residential energy consumption per capita by 20 percent

Detroit's residents rely on electricity and natural gas to power, heat, and cool their homes. If the homes are poorly insulated, have inefficient appliances, and if residents do not practice energy-saving behaviors, energy bills can represent a major cost burden to households. In 2016, annual residential energy use was 9 MMBtu per capita.³⁴ In order to reduce this burden, Detroit aims to reduce energy consumption per capita by 10 percent by 2024 and by 20 percent by 2029.

WE ASKED

"What is the single most important sustainability action?"

YOU TOLD US AND WE LISTENED

"Providing access to affordable and safe utilities, such as water, to everyone"

- Anonymous Resident, coUrbanize comment question



15

Improve access to utility efficiency programs

LEAD: **SUSTAINABILITY**

CO-BENEFITS



Improved Public Health



Increased Utility Efficiency & Affordability



Increased Government Efficiency & Transparency



Reduced Greenhouse Gases

Almost half of Detroit households spend more than 10 percent of their income on utilities—the level defined as “affordable” by the U.S. Environmental Protection Agency and other experts. This adds a significant burden to household budgets, particularly for lower-income residents. In 2017, more than 100,000 Detroit households participated in programs to help pay utility bills or enhance the water and energy efficiency of their homes to achieve recurring utility savings. These programs, however, have long waitlists and inadequate funding to meet the demand from qualifying residents. In addition, a recent study found that 75 percent of applicants who qualified for Federally-funded weatherization programs, which invest an average of \$10,000 in homes to increase energy efficiency, were turned away from the program because of needed repairs in their homes beyond the scope of weatherization.

Leveraging utility assistance programs in concert with home repair and other city programs would enable residents to further reduce their monthly expenses. We will work to streamline the processes for residents to access utility efficiency programs to make it easier for qualifying households to participate in these programs. This will include investigating opportunities to integrate efficiency programs in existing home repair and foreclosure prevention programs.

TIMEFRAME
Mid 3-5 years

16

Expand home plumbing repair programs

LEAD: **WATER AND SEWERAGE**

CO-BENEFITS



Improved Public Health



Increased Utility Efficiency & Affordability



Improved Water/Wastewater Quality & Management

TIMEFRAME
Near 0-2 years

Many low-income households in Detroit struggle to pay their water bills. Approximately 46 percent of respondents to our survey indicated that water affordability was their top water challenge. Water and Sewerage has several programs to help customers reduce their water use, including the Water Residential Assistance Program (WRAP), which provides up to \$1,000 in assistance and a \$25 monthly bill credit to qualifying customers.

Low-income households enrolled in WRAP whose water usage is more than 120 percent of the average household in Detroit can also qualify for minor home plumbing repairs. These repairs, which are managed by the Great Lakes Water Authority, have resulted in an average 19 percent reduction in bills for participating households. Nearly 2,000 Detroit households have received home water audits and over 1,000 of those received minor home plumbing repairs through this program to date. Water and Sewerage also recently completed a pilot toilet replacement program that resulted in comparable savings for participants.

Existing water conservation efforts have helped thousands of Detroiters lower their bills, but the demand for these programs far exceeds current resources. We will work with our partners to expand these programs and launch a citywide low-income home plumbing repair program. Each participating household will receive a home visit, including a water audit, conservation education, leak repair, and toilet and fixture replacement with more efficient fixtures.



17

Implement and expand upon the Blue Ribbon Panel's water affordability recommendations

LEAD: **WATER AND SEWERAGE**

CO-BENEFITS



Increased Utility Efficiency & Affordability



Increased Government Efficiency & Transparency

The average monthly cost of water has increased approximately 60 percent since 2010.³⁵ In 2015, the City convened a Blue Ribbon Panel on Affordability, composed of national experts and local stakeholders, to identify options to address low-income customers' challenges in paying water and sewer bills. The Panel issued 14 recommendations in 2016.³⁶ The City has been working to implement these recommendations: some of which have been delayed due to legal or regulatory constraints. We will continue to work with stakeholders to implement the Panel's recommendations and develop new steps to improve water affordability in Detroit.

TIMEFRAME

Near 0-2 years

18

Establish affordable housing preservation goals for building owners receiving City incentives

LEAD: **HOUSING**

CO-BENEFITS



Increased Access to Economic Mobility

TIMEFRAME

Near 0-2 years

Residential construction in Detroit has increased in recent years, with nearly 2,800 new units constructed between 2015 and 2018. This represents a significant increase from previous years. Only 630 of these units were affordable to households with incomes at or below 60 percent of the area median income. As new market rate homes are added to the market and our existing housing stock ages, the city is at risk of losing homes that are currently affordable to Detroiters. Between 2005 and 2016, average rents in Detroit increased 26 percent and rents in Greater Downtown rose 37 percent.

City incentives remain a critical resource for major redevelopment projects. To minimize involuntary displacement, we will develop goals and displacement prevention strategies that require building owners seeking incentives for redevelopment of an occupied building to create a retention plan with an affordable housing outcome for every resident.

19

Increase access to information on existing affordable housing

LEAD: **HOUSING**

CO-BENEFITS



Increased Access to Economic Mobility



Increased Government Efficiency & Transparency

Currently, there is no easily accessible and well-publicized information for residents about affordable housing options. Residents who may qualify for units in regulated affordable housing are often unaware of their options outside of traditional public housing. We will develop a variety of tools that provide residents with information on existing and new affordable housing, to assist in their housing search. These tools will be designed using analysis of existing sources and gaps in information; input from housing placement providers; feedback from resident focus groups; and, assessment of current market conditions.

TIMEFRAME

Near 0-2 years



GOAL 5

Improve the health and safety of existing and new housing

The health and safety of homes can significantly impact the sustainability of Detroiters. Lead represents one of the greatest health threats in Detroit housing. Understanding the city's lead exposure is essential to reducing the irreversible damage it has to our children and their ability to grow up and have long healthy lives. By expanding lead training, abatement, and testing, we can create healthier homes for Detroiters.

MEASURING PROGRESS

Achieve universal testing of elevated blood lead levels in children

More than 90 percent of homes in Detroit were built before the 1978 federal ban on lead in paint and likely contain lead-based paint or other materials. Testing for elevated blood lead levels (EBLL) in children is important for targeting public health interventions. In 2017, we tested 23,333 children, 32 percent of those eligible. We aim to have 50 percent of eligible children tested twice before age 3 by 2024, with a goal of universal testing (100 percent of children tested twice before age 3) by 2029.

Reduce elevated blood lead levels in children to 3.8 percent

In 2017, of children tested for EBLL in Detroit, 7.5 percent had EBLL. We also aim to have EBLL among the tested population reduce to 5 percent by 2024 and 3.8 percent by 2029.

#20

Expand lead poisoning prevention initiatives across the city

LEAD: **HEALTH**

CO-BENEFITS



Improved
Public Health

TIMEFRAME

Near 0-2 years

More than 8 percent of Detroit children had elevated blood lead levels (EBLL) in 2016. In some zip codes, over 20 percent of children tested in 2016 were lead-poisoned. Lead exposure is most common from swallowing house dust or soil contaminated by leaded paint, which is often found in old and dilapidated buildings. High blood lead levels can lead to developmental problems, behavioral disorders, and learning difficulties. While the number of children with EBLL in Detroit has decreased by about half since 2009, lead still remains a significant health challenge among children in Detroit.

In 2016, the Health Department launched Lead Safe Detroit, a coalition of City departments and community partners to coordinate childhood lead prevention and removal in the city. Building on this effort, we will increase child testing, parent education, and the screening of lead hazards in homes, with the goal of ensuring all children in Detroit are tested for lead poisoning at least twice before the age of 3. This will include door-to-door outreach, testing, and education in Detroit zip codes with EBLL. We will also continue to conduct Lead Safe Detroit meetings to address barriers to case management for families with lead poisoned children.



#21

Create a residential lead abatement training pilot program

LEAD: **SUSTAINABILITY**

CO-BENEFITS



Improved Public Health



Increased Access to Economic Mobility

TIMEFRAME

Mid 3-5 years

An estimated 93 percent of Detroit homes were built prior to 1978, when lead paint was banned in the U.S., and carry a high risk of lead poisoning due to the anticipated presence of lead paint. Children can be exposed to lead paint during rehabilitation and construction, which can expose old paint and cause it to flake. City and non-profit programs remediate approximately 100 to 200 homes per year to reduce the risk of lead poisoning. More contractors are needed to increase the number of homes that can be safely remediated each year as part of Lead Safe programs and through other rehabilitation programs and homeowner repairs.

To ensure all construction projects in the city are conducted in compliance with Lead Safe standards, we will provide lead-safe abatement training to homeowners and general contractors, with an initial focus on low-income homeowners conducting home rehab work. Contractors who are trained and certified through this program will be eligible to participate in City-run abatement and construction programs.

#22

Develop green building guidelines for new developments receiving City incentives

LEAD: **SUSTAINABILITY**

CO-BENEFITS



Improved Public Health



Increased Utility Efficiency & Affordability



Improved Water/Wastewater Quality & Management



Reduced Greenhouse Gases

TIMEFRAME

Mid 3-5 years

Buildings and facilities accounted for 63 percent of citywide greenhouse gas (GHG) emissions in 2012. Finding ways to reduce building energy use – and associated GHG emissions – is critical to achieving our GHG reduction goals.

We will convene developers to identify the barriers to adopting green building practices in new developments in Detroit. Based on these discussions, we will develop and implement pilot green building practices in the development timeline (e.g., site plan review), the applications for tax abatements, and the Affordable Housing Leverage Fund. We will also promote existing financial tools to help developers meet these standards.





CLEAN, CONNECTED NEIGHBORHOODS

A neighborhood is an ecosystem.

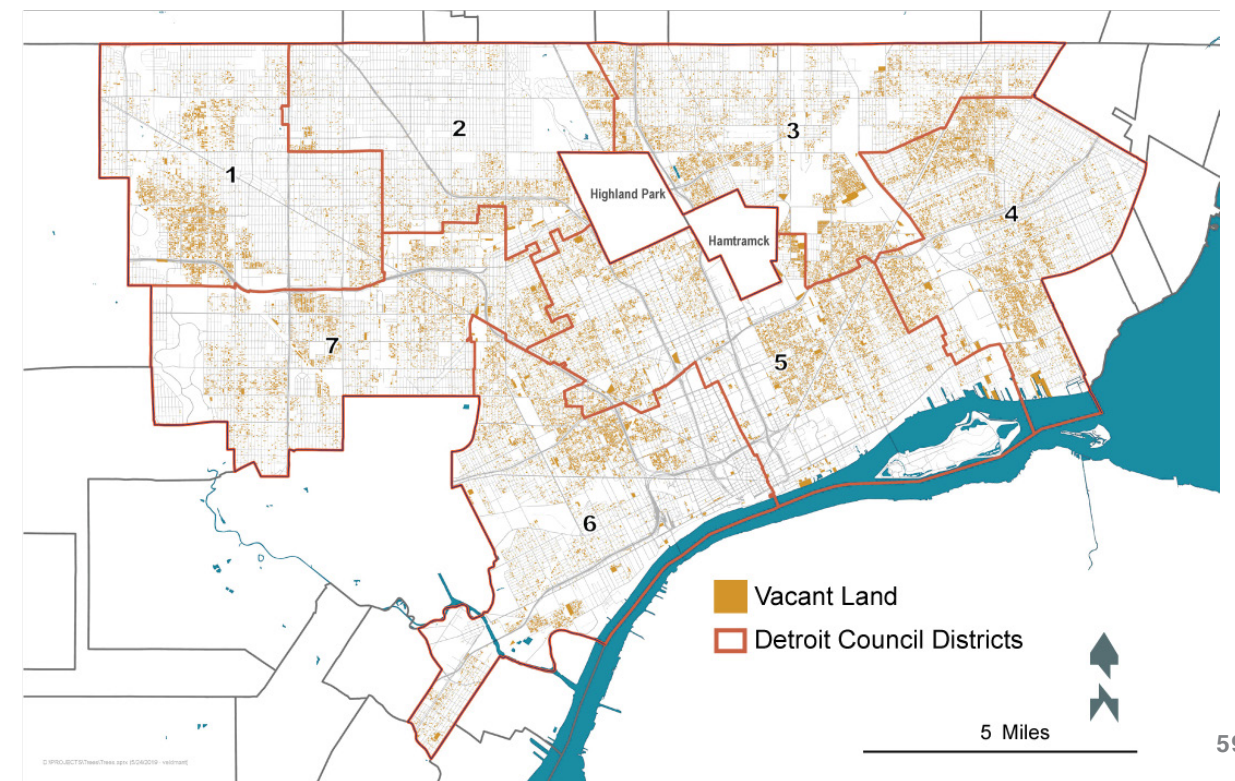
It should provide for the needs of those who live there. A clean, connected neighborhood offers easy access to stores, greenspaces, fresh food, and jobs. It provides recycling and composting, safe spaces, and beauty that encourages residents to walk and explore. This Agenda outlines our strategy, built on insights and direction from Detroiters, to foster neighborhoods that have these traits. Clean and attractive streets, sidewalks, and lots give residents pride in their community, inspiring us to come together in new and inspiring ways.

Detroit’s neighborhoods offer varying degrees of the amenities necessary to build sustainable neighborhoods. The Agenda focuses on improving three characteristics essential to creating Clean, Connected Neighborhoods: transforming vacant land and structures, reducing waste, and improving mobility.

Currently, Detroit has over 40 square miles of vacant land. These vacant lots, if left uncared for, can decrease residents’ sense of safety, encourage illegal dumping, and reduce the beauty of our neighborhoods. At the same time, over a quarter of Detroit households do not own a car, restricting their ability to access amenities in other neighborhoods. Finally, citywide, only 4 percent of residential waste is composted or recycled, impacting the cleanliness of our neighborhoods.

This chapter presents goals and initiatives to improve these neighborhood amenities and services and create cleaner and more connected neighborhoods throughout our city. This includes initiatives to increase recycling rates, create streets that are safer to walk and bike, and make it easier to maintain or purchase vacant lots.

CITY OF DETROIT PUBLICLY OWNED VACANT LAND ³⁷



GOAL 6

Transform vacant lots and structures into safe, productive, sustainable spaces

Many of neighborhoods have significant amounts of vacant land. Transforming these lots into safe, productive, sustainable spaces can increase the vibrancy of our neighborhoods. We will do this by making it easier for Detroiters to purchase, care for, and run businesses on vacant lots.

MEASURING PROGRESS

Increase total acres of productive agricultural land to 500 acres

Detroit has roughly 15,000 acres of vacant land that could be used for more productive purposes, such as urban agriculture and stormwater management. In 2016, the city had 165 acres being used to grow food with more than 1,500 urban gardens and farms, approximately 300 of those considered larger market and community gardens.³⁸ By continuing the conversion of vacant to productive land, Detroiters can realize the social, health, and economic benefits of local healthy food production. We aim to continue to increase this productive land to 300 acres by 2024 and to 500 acres by 2029.

Increase lots in Side Lot Adoption program

Detroit has a large inventory of vacant and unimproved parcels located in its residential areas. By making these lots available to the community, the city can improve surrounding real estate values and reduce crime. As of 2018, neighbors and community groups had adopted 12,179 side lots, equivalent to 986 acres. By the year 2024, our target is to have sold a total of 24,500 side lots and by 2029, 36,500 side lots cumulatively.

Sell all City-owned vacant property structures

We also aim to close on 2,500 vacant property structures each year across the Auction, Own It Now, Community Partners and Occupied programs, selling 12,500 by the year 2024, leaving only 2,500 structures in our inventory. By 2029, we aim to have no structures in our inventory.

WE ASKED

“What would you say adds to or takes away from your sense of safety?”

YOU TOLD US

Knowing the neighbors adds to it. Vacant homes and buildings take away from it.

District 1 Resident, Sustainability Survey, May 2018

“Vacant properties are a concern; block club/neighbors are an asset”

District 2 Resident, Sustainability Survey, June 2018

WE LISTENED:

We have developed specific actions aimed at improved maintenance of vacant lots, easier sale of vacant lots and structures, improved cleanliness of lots, and activation of vacant lots.



DETROIT HAS OVER
40 SQUARE MILES
OF



#23

Improve processes to purchase City owned vacant lots

LEAD: **PLANNING**

CO-BENEFITS



Improved Public Safety



Increased Access to Economic Mobility



Increased Government Efficiency & Transparency



Improved Food System & Access

Our Side Lot programs and demolition program has reduced blight and increased safety, led to \$500,000 in additional property taxes for the City, and helped create new playgrounds, gardens, and neighborhood gathering spaces. The Land Bank holds dozens of community events a year to encourage side lot sales and has streamlined the buying of lots to the point where the entire process can be completed in less than an hour. We will continue to facilitate side lot sales through Side Lot Fairs and neighborhood home sales events to reduce the amount of publicly-owned property and enhance our communities.

While the City has a successful model for side lot sales, navigating the land purchase process for non-adjacent properties can be difficult. This is due to a lack of publicly available information on the purchase process, zoning for land-based projects, conditional land use hearings, and land pricing transparency. We will streamline the process to purchase non-adjacent vacant lots to accelerate the disposition of publicly-owned vacant properties.

TIMEFRAME
Near 0-2 years

#24

Support neighborhood-based efforts to care for vacant lots and structures

LEAD: **LAND BANK**

CO-BENEFITS



Improved Public Safety



Improved Public Health



Increased Government Efficiency & Transparency



Improved Food System & Access

We perform some maintenance on properties currently in city inventory. As an example, our Board-up Brigade has boarded up over 18,000 homes over the last two years. However, the need is much greater than current capacity. Blighted properties invite illicit activity, attract rodents and other animals, and depress property values.

Many community organizations and individuals have taken it upon themselves to maintain vacant properties in their communities, including boarding up openings on vacant buildings, removing debris, or cutting grass in vacant lots. For property that cannot immediately be sold, we will develop a path for community-based groups to be compensated for their care and maintenance of lots and the exterior of vacant structures. This could include a lot leasing program, job training and employment opportunities, and coordination with City departments, philanthropy, and local businesses to support community efforts.

TIMEFRAME
Near 0-2 years



#25

Develop a fee structure and associated rules for irrigation only water accounts

LEAD: **WATER AND SEWERAGE**

CO-BENEFITS

 **Increased Utility Efficiency & Affordability**

 **Increased Access to Economic Mobility**

 **Improved Water/Wastewater Quality & Management**

Currently, Water and Sewerage does not have a formal policy in place for “irrigation only” accounts for land-based businesses, such as urban farms, that only use water for irrigation and have no sanitary sewer facilities. The use of water for irrigation purposes at some of these land-based businesses is currently highly dependent upon rainfall and stormwater capture. As sewerage rates are more than twice the commodity charge for water, the costs of sewerage represent a significant cost for businesses that do not generate sewage.

We will develop a fee structure for irrigation only accounts and associated rules for the permitting and use of water at these properties. Policy development will take into account peak and non-peak water consumption and the impact on charges for irrigation-only accounts. Analysis of this data will allow Water and Sewerage to set pricing and policies that direct water use in a manner that is beneficial for the community, utility operations, and resource management.

TIMEFRAME

Near 0-2 years



Urban Farming More than Gardens

Gardening and agriculture have been practiced in the region since the Huron, Odawa, Potawatomi and Iroquois peoples cultivated maize, squash and beans, fished, and hunted. Mayor Hazen Pingree’s potato patches, Victory Gardens, and Mayor Coleman Young’s Farm-a-Lot program continued the practice of farming in an urban setting to provide healthy food for Detroiters. In the 1980s, a group of African American women, dubbed the “Gardening Angels”, helped grow food in vacant lots and teach youth the importance of self-reliance. In 1992, Grace Lee Boggs founded Detroit Summer. This multicultural and intergenerational program aimed to rebuild, redefine,

and respirit Detroit. It became a movement that brought both young and old together to plant community gardens and paint community murals. This program inspired the creation of spin off bike programs and poetry workshops, proving the power of community and a garden to transform. Today, Detroit has a vibrant urban gardening movement, with over 1,500 gardens identified in 2016 which produced almost 350,000 lbs. of produce. This work is supported by groups such as Keep Growing Detroit, the Detroit Black Community Food Security Network, Earthworks Urban Farm, and many others.

GOAL 7

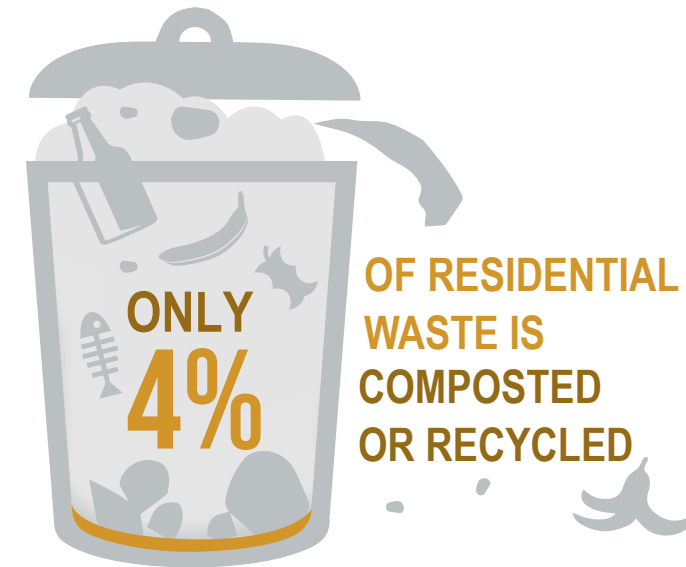
Reduce waste sent to landfills

Thriving neighborhoods should have access to amenities like trash collection, recycling, and composting that allow residents to practice sustainability in their daily lives. We can reduce waste sent to landfills by focusing on efforts to expand access to and awareness of recycling services and to create and test new composting programs for commercial and residential properties.

MEASURING PROGRESS

Increase recycling and composting diversion rate to 30 percent

Op-in rates for residential recycling have grown from 9 percent in 2014 to 27 percent in 2019. However, Detroit only composted or recycled 4 percent of its residential municipal solid waste citywide in 2017. This is significantly below the national average of approximately 35 percent diversion. Detroit will increase recycling and composting diversion rates of residential municipal solid waste to 15 percent by 2024 and 30 percent by 2029.



Waste Disposal

Detroit has this year taken the bold step of decommissioning its trash incinerator. With it, we also close the book on a waste disposal system that shifts the social costs of trash onto inner-city residents, who bore the undue burden of breathing in the harmful pollutants and off-putting smells of burned rubbish.

How do we create a system of sustainable waste management practices? Like any system transformation, it starts from the ground up with educated citizens. The Department of Public Works began offering a curbside recycling program to select areas in 2011, and the program became available citywide in 2014. To cultivate participation, they work with nonprofits to offer residents free recycling carts in exchange for them taking a short educational course on recycling, a program that over 15,000 residents have already taken part in. Since 2014, the number of Detroiters who recycle curbside has increased from 10% to 27%. We have a long way to go before we throw away our throw-away culture and create a truly sustainable waste disposal system. But thanks to activists and forward-thinking residents, we are already on a more sustainable path forward.

#26

Launch a citywide recycling campaign

LEAD: **PUBLIC WORKS**

CO-BENEFITS



Improved Public Health



Increased Government Efficiency & Transparency

TIMEFRAME

Near 0-2 years

While participation in Detroit’s current single-family recycling program has grown from 9 percent to 27 percent of eligible households over the last five years, overall just over 1 percent of waste from eligible households is recycled, far below our peer cities. We will launch a citywide, multi-channel campaign to increase participation rates in our single-family curbside recycling program. Our goal is to increase single-family home participation rates to 35 percent by 2020. We will also engage residents to reduce the amount of non-recyclable materials thrown out with recyclables (referred to as contamination rates), which can increase solid waste management costs and cause materials that would otherwise be recycled to be turned away from facilities. As part of these efforts, we will work with partners to distribute 16,000 new recycling containers and canvas neighborhoods to educate residents about what can and cannot be recycled.

#28

Expand recycling to public spaces and all City facilities

LEAD: **SUSTAINABILITY**

CO-BENEFITS



Improved Public Safety



Increased Government Efficiency & Transparency

TIMEFRAME

Mid 3-5 years

As we work to expand citywide recycling efforts and reduce the volume of trash sent to landfills, the City will lead by example and increase recycling efforts for municipal waste. Currently, recycling is only offered in a small number of City buildings, including fire stations, the Coleman A. Young Municipal Center, and some recreation facilities. We will expand recycling to all staffed City facilities, beginning with public safety and recreation facilities. We will also launch the City’s first public space recycling program at targeted parks, basketball courts, and high-traffic bus stops.

#27

Expand curbside recycling to multi-family buildings

LEAD: **PUBLIC WORKS**

CO-BENEFITS



Improved Public Health



Increased Government Efficiency & Transparency

TIMEFRAME

Near 0-2 years

Few multi-family buildings offer on-site recycling opportunities for residents, which represents a significant gap in our efforts to increase recycling and divert waste from landfills. We will work with property owners of multi-family buildings to provide on-site recycling options to tenants and provide curbside pick-up to over 2,500 multifamily units. We will also identify strategies to encourage the inclusion of recycling options in new multifamily buildings.

#29

Develop best practices guidance for commercial scale compost operations

LEAD: **BUILDINGS AND SAFETY**

CO-BENEFITS



Improved Public Health



Improved Food System & Access

TIMEFRAME

Mid 3-5 years

Each year, Detroiters send an estimated 40 to 100 thousand tons of organic materials to landfills. This costs the City money to collect and haul these materials, which once in landfills, release methane as they decompose. Methane is a greenhouse gas that is over 20 times more potent than carbon dioxide and a significant contributor to climate change.

Organic materials could be managed more sustainably through composting, which converts organic matter into a nutrient-rich soil amendment that could support the city's growing urban agriculture community, demolitions, and green infrastructure projects. The Michigan Department of Environment, Great Lakes, and Energy has clear regulations governing composting facilities and operations.

New state legislation has been proposed to strengthen policy, county planning, and market development. Additional clarity is needed to guide safe commercial composting operations within city limits. We will develop rules to ensure commercial composting operations are in line with best practices, for those facilities not currently regulated by Michigan Department of Environmental Quality (under 500 cubic yards). The rules will be tested through a commercial/institutional and community-scale pilot project targeting compostable mixed organics.

#30

Launch residential composting pilot program

LEAD: **SUSTAINABILITY**

CO-BENEFITS



Improved Public Health



Increased Government Efficiency & Transparency



Improved Food System & Access

TIMEFRAME

Mid 3-5 years

Residents can play a critical role in diverting organic materials from landfills. We will pilot a residential-scale compost program to reduce the amount of organic waste entering the municipal waste stream. As part of this effort, we will provide educational materials and resources like compost tumblers, mulching blades, and bin systems to interested residents and community-scale sites to facilitate composting at home. We will track participation, the volume of organics diverted, and the associated waste hauling savings to evaluate opportunities to expand the pilot.



GOAL 8

Make it easier and safer to get around Detroit without a personal vehicle

Creating more connected neighborhoods requires making it easier and safer to get around and between Detroit's neighborhoods. Specifically, Detroiters should be able to travel around the city without relying on a personal vehicle. To make this possible, we must make travel without a personal vehicle safer and easier. This involves improving mobility options to get to work, addressing severe crash locations, and creating more protected bike networks.

MEASURING PROGRESS

Reduce the deadliness of pedestrian and bicyclist crashes

A sustainable Detroit requires a well-planned mobility network through which residents can get where they need to go safely. In 2016, there were over 12,900 auto, pedestrian, and bicyclist crashes on Detroit roads (highways excluded), resulting in over 420 severe or fatality injuries.³⁹ We seek to reduce the overall crash number by 21 percent in 5 years. In the next 5 years, we are targeting a 30 percent reduction in the share of crashes involving bikes that result in severe or fatal injuries and a 20 percent reduction in the share of crashes involving pedestrians that result in severe or fatal injuries.

Increase AllTransit Performance Score to 8.3

The AllTransit Performance Score represents a location's transit connectivity, access, and frequency data on a scale from 1 to 10. Detroit's AllTransit score was 6.8 in 2016, below peer cities such as Pittsburg (8.3), Chicago (9.1), and Cleveland (7.6).⁴⁰ By 2024, we will increase our AllTransit score to 7.6, with a long-term target of increasing the AllTransit score to 8.3 through interventions that improve transit frequency and access.

Create "Very Walkable" Detroit neighborhoods

Walkable communities encourage fewer car trips, minimizing air and noise pollution, and increase physical exercise, improving the overall health of those working and living there. Neighborhood WalkScore represents the walkability of the area by analyzing population density and local metrics. Detroit's 2017 WalkScore was 55, which is considered to be "somewhat walkable", but this varies drastically by neighborhood.⁴¹ Detroit aims to have a city-wide WalkScore of 60 in 5 years and 75 in 10 years.

WE ASKED

"Where are things you would change about your everyday life — and why?"

YOU TOLD US AND WE LISTENED

"I love my neighborhood but we need a better public transportation network. My family of 6 do not own a car. In a modern city we should not be required to own one and should be able to quickly and efficiently get all around the city and the general Detroit region."

District 5 Resident, coUrbanize coMap



#31

Improve mobility connections between neighborhoods and job centers

LEAD: **MOBILITY**

CO-BENEFITS



Increased Access to Economic Mobility



Increased Government Efficiency & Transparency

TIMEFRAME

Near 0-2 years

Urban mobility is about more than infrastructure; it is about ensuring people can reach jobs and opportunities and employers can access a diverse workforce. We are committed to improving and expanding mobility options in the city to make it easier for Detroiters to get where they need to go and to ensure that everyone benefits from the city's resurgence. Last year, the City released its first *Strategic Plan for Transportation* to address many of the challenges facing transportation in Detroit. The plan has five main goals—economic opportunity, safety, vibrancy, community outreach, and city functionality. Reliable and affordable transit is critical to lowering household transportation costs and sustaining the city's growth.

As part of the *Strategic Plan for Transportation*, we will continue to increase transit frequency and reliability, providing bus routes with service every 15 minutes on major corridors. We will also expand programs that link residential and employment areas with transit, such as the Lyft pilot along the Woodward Corridor. In addition, we will implement our "Get to Work" program, which works with Detroit Employment Solutions Corporation clients to find more convenient ways to get to work and training opportunities. Finally, we will increase the number of mobility options available to Detroiters, including bike share, other micro-mobility solutions (such as electric assist bicycles and scooters), car share, and carpooling.

#32

Implement safety measures to reduce crash severity

LEAD: **PUBLIC WORKS**

CO-BENEFITS



Improved Public Safety



Improved Public Health



Increased Government Efficiency & Transparency

TIMEFRAME

Mid 3-5 years

In 2017, there were 620 crashes involving pedestrians and cyclists, resulting in 27 fatalities. We must make improvements in the safety of walking and bicycling to ensure that existing users of these modes are kept safe and new users feel welcome to use these ways of getting around.

We will identify the 50 most dangerous intersections and develop strategies to enhance pedestrian and traffic safety for these locations, including targeted traffic enforcement. A study is underway to develop a root-cause analysis of the "high-crash" areas where pedestrian/bike fatalities are occurring, which will help identify gaps in pedestrian and bicycle infrastructure for future capital improvements.

#33

Expand Detroit's protected bike lane network

LEAD: **PUBLIC WORKS**

CO-BENEFITS



Improved Public Safety



Improved Public Health



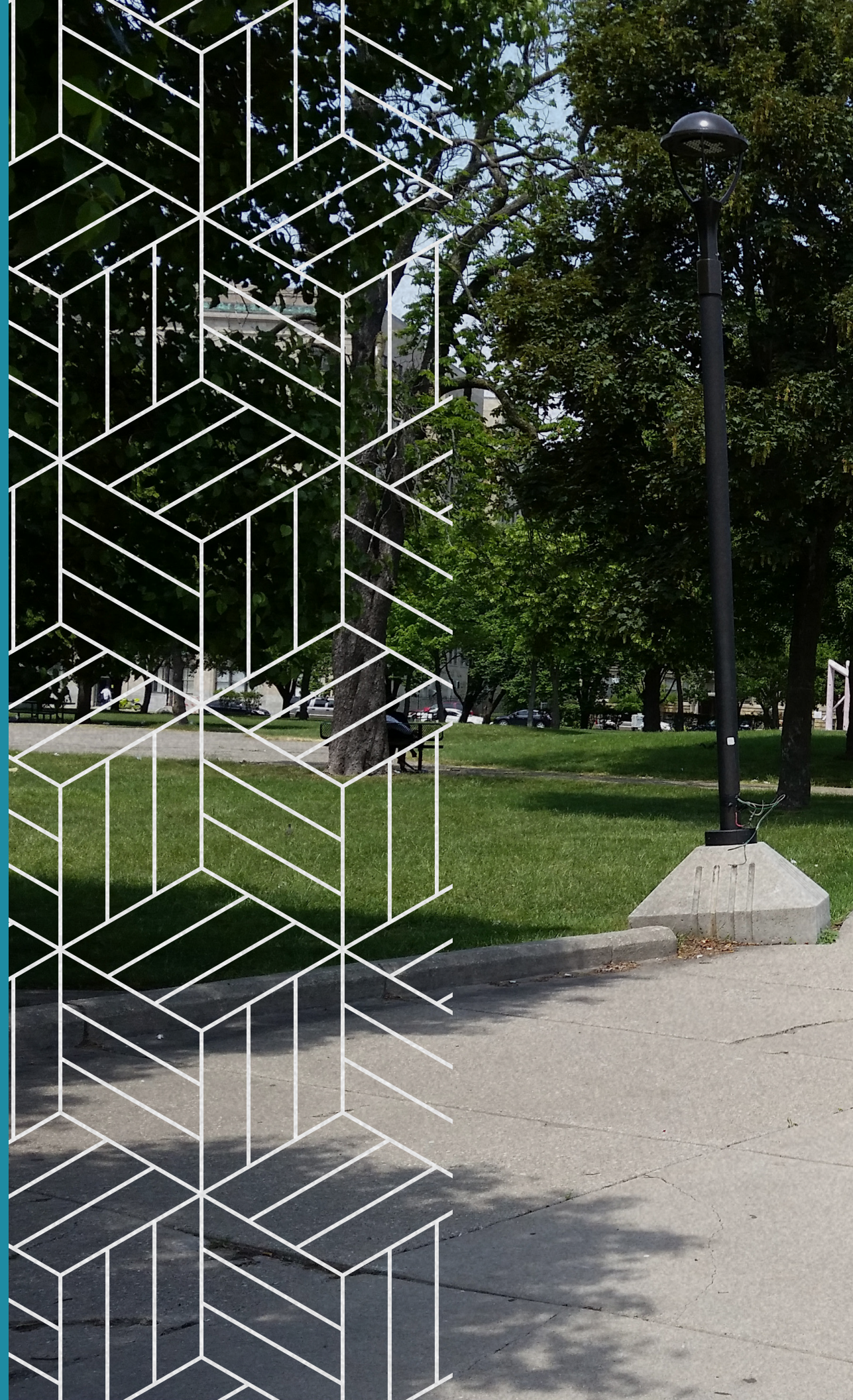
Increased Access to Economic Mobility

TIMEFRAME

Mid 3-5 years

Approximately 25 percent of Detroit households lack access to a car and use other methods of travel in the city, including cycling. The City has expanded our protected bicycle infrastructure at a rapid rate: we have built 53 new miles of bike lanes over the last three years, resulting in around 236 total miles of bicycle infrastructure. As part of this work, we have constructed 43 miles of new protected bike lanes, which use physical barriers like bollards or landscaped berms to physically separate bicyclists from cars and trucks. This represents the largest separated bike lane expansion in the U.S.

We will continue to upgrade existing bike lanes and add 20 additional miles of protected bike lanes to the city's network. As we expand the network, we will incorporate results from the East Jefferson pilot project into future community engagement efforts and construction standards.



EQUITABLE GREEN CITY

The City of Detroit must lead by example in creating a more equitable, green Detroit.

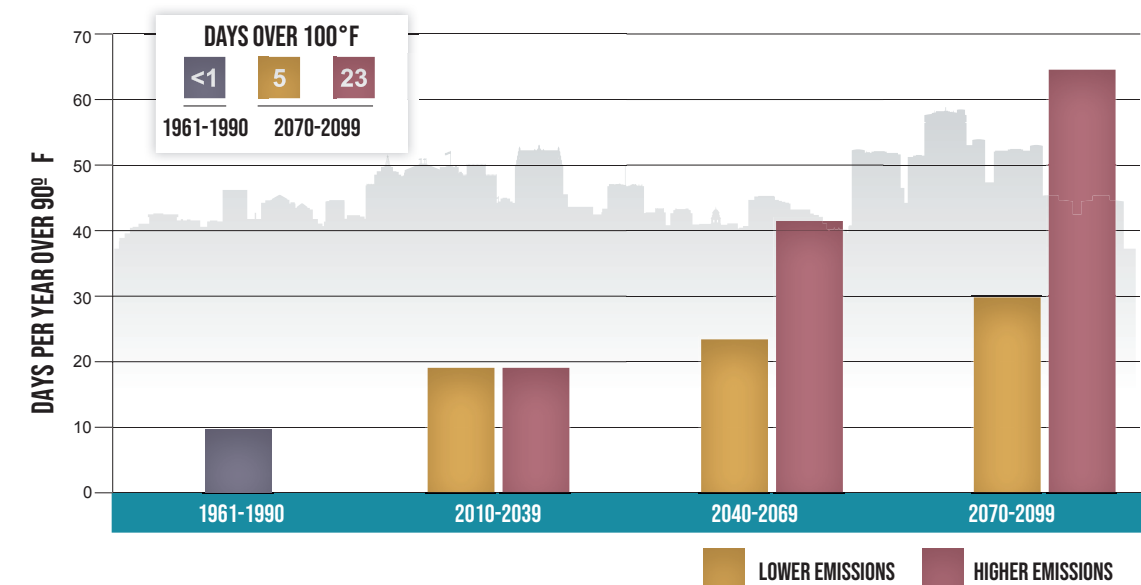
The City is working to advance equity and sustainability in all policies and operations and has already taken steps to align ourselves with global environmental standards, such as committing to the Paris Climate Agreement to reduce greenhouse gas emissions 30 percent by 2025 from a 2005 baseline.⁴² However, we still have work to do to ensure that our city, and its most vulnerable populations, are resilient to the impacts of climate change and to actively reduce our contributions to it.

As outlined in Detroit’s Climate Action Plan, created by Detroiters Working for Environmental Justice, climate change is expected to increase overall temperatures and precipitation in Detroit and increase the frequency and intensity of precipitation events.⁴³ These changes will exacerbate existing heat island and urban flooding challenges faced by Detroiters, which have a disproportionate impact on vulnerable populations, such as those with low

income, some communities of color, immigrant groups (including those with limited English proficiency), Indigenous peoples, children and pregnant women, older adults, vulnerable occupational groups, persons with disabilities, and persons with preexisting or chronic medical conditions.

This chapter outlines goals and initiatives to both reduce our greenhouse gas emissions and increase our resilience to climate change, with an emphasis on our most vulnerable populations. Initiatives aim to increase the use of renewable energy and green stormwater infrastructure, improve resident access to services, and reduce energy use and greenhouse gas emissions from city operations.

EXTREME HEAT BECOMES MORE FREQUENT ⁴⁴



GOAL 9

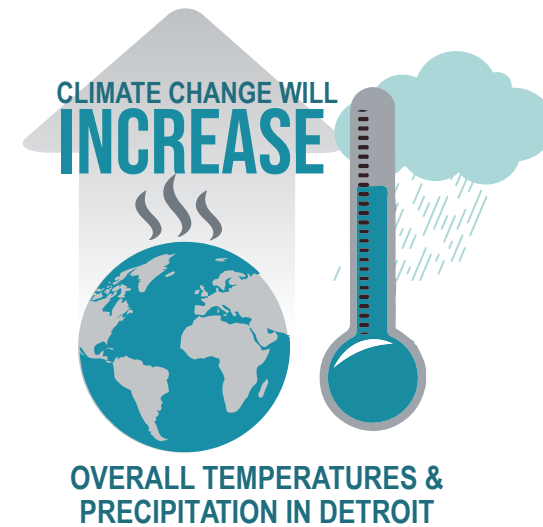
Enhance infrastructure and operations to improve resilience to climate impacts

As Detroit begins to experience more extreme precipitation events, our wastewater infrastructure can become overwhelmed. However, by focusing on expanding the amount of and targeting the location of green stormwater infrastructure throughout the city, we can help reduce the impacts of these events. Likewise, informed and prepared communities will be more resilient to climate impacts. We will make information easier to access and provide emergency training to help to prepare communities for extreme events.

MEASURING PROGRESS

Reduce volume of untreated combined sewer overflows

Untreated Combined Sewer Overflows (CSO) are a result of overwhelming the city's system during rain events. In 2017, the regional sewer system recorded 77 combined sewer overflow events into the Detroit and Rouge Rivers. While over 96 percent of the sewage released into the Detroit waterways met regulatory requirements, 722 million gallons of untreated sewage were released into Detroit waterways during these events.⁴⁵ These discharges create water quality impacts that could impact quality of life for residents, such as through beach closings. We will continue to take actions that reduce the volume of untreated discharges to local waterways.



Double the acres managed by green stormwater infrastructure

Green infrastructure is a key strategy for improved stormwater management, water quality, and neighborhood revitalization. As of 2018, Detroit managed approximately 900 acres through green stormwater infrastructure, direct discharge, and impervious removal (excluding demolitions). We aim to double the acres managed through green stormwater and related techniques citywide in 10 years, resulting in at least 1,800 acres managed by 2029.

Increase responsiveness to resident requests to 50 percent

Responding to resident requests in a reasonable timeframe is essential to building effective and inclusive city operations. The City has service level agreements (SLA) in place for most of the issues reported. However, City attainment of these SLAs is not consistent. In 2018, only about 15 percent were resolved within documented SLAs. By 2024, we will respond to 25 percent of service requests within the stated SLA and by 2029, 50 percent will be resolved within the stated SLA.

#34

Create neighborhood scale, distributed green infrastructure projects

LEAD: **WATER AND SEWERAGE**

CO-BENEFITS



Improved Public Health



Improved Water/Wastewater Quality & Management



Improved Air Quality

TIMEFRAME

Mid 3-5 years

Combined sewer overflow events are triggered when there is more precipitation than the sewage disposal system can handle, which may also cause neighborhood-level flooding. 68 percent of Sustainability Survey respondents indicated that they experience rainfall flooding in their neighborhood that disrupts their daily activity or damages property occasionally, often, or very often. Green stormwater infrastructure can create neighborhood amenities by adding green space to streets and adjacent properties and help manage stormwater by capturing and detaining rainwater, which keeps it out of the city's stormwater system.

In fiscal year 2017, Water and Sewerage invested over \$6 million in green stormwater infrastructure activities. Four Water and Sewerage construction projects reached substantial completion, including Stoepel Park No. 1, Liuzzo Park, transportation corridor projects (joint with Public Works) and Tireman bioswales. Water and Sewerage also initiated two projects with Parks and Recreation (Crowell and O'Shea) which began construction in fall 2017.

We will work with private and public partners to develop neighborhood scale, distributed green stormwater infrastructure projects, focusing on neighborhoods that have high incidents of flooding and limited green space.



#35

Incorporate green stormwater infrastructure into street redesign and greenway projects

LEAD: **PUBLIC WORKS**

CO-BENEFITS



Improved Public Health



Increased Government Efficiency & Transparency



Improved Water/Wastewater Quality & Management

Road surfaces are the largest area of impervious surface in the city and present an opportunity to capture and divert stormwater from the sewer system. Four of seven current bond streetscape projects integrate green infrastructure into their design, implementation, and maintenance.

Building on this work, we will pilot green infrastructure on streetscape projects through incorporating street trees and vegetation into transportation projects whenever possible, with an emphasis on areas with high-flood risk. We will also integrate stormwater best management practices into trail planning efforts. Green streets guidelines will be incorporated into the City's Transportation Master Plan of Policies to be completed in 2020.

TIMEFRAME

Mid 3-5 years

#36

Integrate climate change impacts into hazard mitigation planning

LEAD: **EMERGENCY MANAGEMENT**

CO-BENEFITS



Improved Public Safety



Improved Public Health



Increased Government Efficiency & Transparency

As Detroit faces a changing climate, natural disasters such as extreme heat and cold events and heavy rainfall are expected to happen more often and with higher intensity. The risks associated with these extreme weather events are not equally distributed across the city, as evidenced by the 2014 floods. The City updates its Federally-mandated Hazard Mitigation Plan every five years to identify actions that will reduce losses caused by disasters, including natural disasters.

As part of the 2020 Hazard Mitigation Plan update, we will integrate information on climate change risks for residents and infrastructure and identify potential mitigation strategies. We will work with all relevant City departments to help them identify the areas where local climate projections can result in substantive policy and programmatic shifts in how departments operate.

TIMEFRAME

Near 0-2 years

#37

Improve resident access to sustainability-related City services

LEAD: **SUSTAINABILITY**

CO-BENEFITS



Increased Government Efficiency & Transparency

TIMEFRAME

Near 0-2 years

Half of the respondents to the City's Sustainability Survey said that City services are somewhat or very difficult to access. There currently is no central location or resource that provides residents with information on all sustainability-related services including recycling, home water and energy efficiency improvements, and vacant lot programs.

We will develop an online portal to streamline access to how-to documents, applications, and digital tools for sustainability-related services. Two resources that will be launched soon are a green infrastructure map and resource guide and a solar feasibility map to help residents and businesses understand the potential for solar on their properties. Physical copies of these materials will also be distributed through community partners and City programs like Motor City Makeover.

#38

Expand emergency preparedness and communication tools

LEAD: **EMERGENCY MANAGEMENT**

CO-BENEFITS



Improved Public Safety



Improved Public Health



Increased Government Efficiency & Transparency

TIMEFRAME

Mid 3-5 years

A changing climate will bring more intense and frequent natural disasters, like heat waves and flooding, to Detroit. The City will need to ensure that the residents who are most vulnerable to these climate-related risks have important information and sufficient time to act in an emergency situation.

We will review our current emergency notification procedures and evaluate current communication tools, including Nixle, Twilio, and GovDelivery, the Community Emergency Response Team (CERT) training program, and emergency preparedness education. Based on this evaluation, we will develop strategies to reach more vulnerable residents before emergencies through CERT training and emergency preparedness education and during emergencies with communication tools.

GOAL 10

Reduce municipal and citywide greenhouse gas emissions

To become a truly green city, we must reduce our greenhouse gas emissions. This includes reducing emissions from city operations as well as emissions from Detroit's residents and businesses. To do this, we will focus on consistent tracking of our greenhouse gas emissions, identifying targeted actions to address our largest emitting sectors, increasing the use of renewable energy, and ensuring efficient, green buildings operate and are constructed throughout the city.

Reduce citywide average industrial and commercial energy consumption per square foot by 30 percent

Industrial, institutional, and commercial buildings caused 40 percent of all greenhouse gas emissions in Detroit, making them prime candidates for impactful reductions.⁴⁸ In 2016, industrial energy consumption was 110 thousand BTUs per square foot and commercial energy consumption was 42 thousand BTUs per square foot.⁴⁹ Detroit aims to reduce average industrial and commercial energy consumption by square foot by 10 percent by 2024 and by 30 percent to 29 thousand BTU per square foot by 2029.

MEASURING PROGRESS

Reduce greenhouse gas emissions

In 2012, Detroit's municipal greenhouse gas emissions were 1.18 million tons of carbon dioxide equivalent (CO₂e) and community emissions were 10.6 million tons CO₂e.⁴⁶ Our goal, as a signatory of the Chicago Climate Charter, is to reduce community-wide greenhouse gas emissions by 30 percent by 2025 from a 2012 baseline. For municipal emissions, Detroit has a goal to reduce greenhouse gas emissions by 35 percent by 2024 and 75 percent by 2034 from a 2012 baseline.

Increase solar generation capacity to 10 MW

A sustainable Detroit means embracing the changing landscape of energy production towards more renewable options. Through the development of solar sites, Detroit can contribute to the local economy with green jobs and reduce greenhouse gas emissions and air pollution. As of April 2019, there was an estimated 3.3 MW of solar capacity in Detroit.⁴⁷ Detroit aims to double the total solar generation capacity in the city by 2024 and triple it to 10 MW by 2029.

Streetlights

When 40% of Detroit's sodium streetlights were dark in 2014 and it resolved to switch to an entirely new system of 65,000 LED lights, safer, well-lit streets were not the only benefit. This major citywide project, done in partnership with the U.S Department of Energy, also slashed carbon emissions by 40,000 tons per year. That's the equivalent of taking 11,000 cars off the street. Improving lighting in our neighborhoods also had other benefits: When Detroiters feel safe biking or walking through their neighborhoods, our city becomes better connected and healthier.



DETROIT
IS A SIGNATORY
OF THE

CHICAGO
CLIMATE CHARTER
30% REDUCTION BY 2025



#39

Develop a greenhouse gas assessment and climate action strategy

LEAD: **SUSTAINABILITY**

CO-BENEFITS

-  **Improved Public Health**
-  **Increased Government Efficiency & Transparency**
-  **Reduced Greenhouse Gases**
-  **Improved Air Quality**

TIMEFRAME

Near 0-2 years

Greenhouse gas (GHG) emissions are driving global climate change, and Detroit is committed to contributing its fair share to efforts led by cities around the world in mitigating the impacts of climate change. Under Mayor Duggan’s leadership, Detroit is one of more than 400 U.S. cities that have pledged to uphold the Paris Climate Agreement, which is an international commitment to limit global temperature increase to below 2 degrees Celsius. For the U.S., this equates to a 26 to 28 percent reduction in GHG emissions by 2025 from a 2005 baseline.

The City’s most recent GHG inventory was completed in 2012 by the University of Michigan School of Environment and Sustainability. At that time, citywide emissions were 10.6 million metric tons (million t) CO₂e. Municipal emissions were 11 percent of that total, or 1.18 million t CO₂e. While the City has taken a number of actions to reduce our emissions, such as the conversion of all of our 65,000 streetlights to LEDs, and numerous actions in this agenda will result in lower carbon emissions, we need an overall strategy to achieve our carbon reduction goals.

As a critical first step, we will conduct a new GHG inventory and Business-As-Usual (BAU) forecast of citywide GHG emissions. Based on the inventory, we will develop a quantitative emissions reduction pathway analysis and climate action strategy.

#40

Increase the adoption of solar PV

LEAD: **SUSTAINABILITY**

CO-BENEFITS

-  **Increased Utility Efficiency & Affordability**
-  **Reduced Greenhouse Gases**

TIMEFRAME

Near 0-2 years

The city has over 3.3 MW of installed solar, with significant opportunities for an expansion of solar throughout the city. Solar installations have grown between 4 percent and 240 percent annually since 2012, without targeted marketing or promotion. In 2016, in partnership with DTE Energy (DTE), we installed over 6,500 solar panels in O’Shea Park, constituting the largest urban solar installation in the country, generating 2 MW of power, enough to power 450 homes.

We will develop a streamlined solar permitting process in conjunction with DTE. We will publicize existing finance and funding opportunities for integrating solar development into private projects and encourage developers to consider solar PV or other renewable energy technology in new housing and commercial projects. We are also developing a solar potential map that will help property owners and developers quickly evaluate the opportunity to integrate solar PV into existing and new development projects. Finally, we will evaluate opportunities to install solar PV systems on municipal buildings and facilities to lead by example.



#41

Enhance energy and water efficiency at City-owned facilities

LEAD: **GENERAL SERVICES**

CO-BENEFITS

-  **Increased Utility Efficiency & Affordability**
-  **Increased Government Efficiency & Transparency**
-  **Improved Water/Wastewater Quality & Management**
-  **Reduced Greenhouse Gases**

TIMEFRAME
Near 0-2 years

The City of Detroit operates over 150 facilities, including police and fire stations, parking facilities, recreational centers, and office spaces. Currently, 88 facilities track and report their energy usage. These facilities spend approximately \$7.2 million a year on energy. Energy consumption is concentrated heavily among the City's largest facilities, with ten buildings consuming more than half of this energy. We estimate energy efficiency measures could result in \$2.1 million in annual savings at the ten largest facilities and an additional \$860,000 in savings across the remaining facilities. Previous utility bill management efforts identified over \$400,000 in incorrect billing information which went directly back to the City. Energy audits have been conducted at 60 of the largest facilities to identify efficiency opportunities and potential capital upgrades. Recommendations are being integrated into capital improvement projects where feasible.

We will implement both the large efficiency opportunities at the most energy-intensive facilities and the many no- or low-cost efficiency opportunities across all facilities. Beyond the 60 facilities that have already been evaluated, we will collect energy and water data for all City buildings to understand our baseline energy use. For smaller facilities, we will develop a set of standard measures and energy best practices, including LED lighting, low-flow hot water fixtures, and programmable thermostats, which can be implemented at a low cost. Finally, we will implement a utility bill management system to monitor utility bills and flag unexpected usage and cost information for further investigation.

#42

Launch Mayors' Challenge Program for Commercial Buildings

LEAD: **SUSTAINABILITY**

CO-BENEFITS

-  **Increased Utility Efficiency & Affordability**
-  **Improved Water/Wastewater Quality & Management**
-  **Reduced Greenhouse Gases**

TIMEFRAME
Near 0-2 years

Commercial and institutional buildings accounted for 33 percent of citywide greenhouse gas emissions (GHG) in 2012.⁵⁰ As the City invests in efficiency efforts in our own building stock, we will launch a challenge program to encourage private commercial buildings to increase their efficiency and reduce their GHG emissions. Similar Challenge programs in other cities such as Chicago, New York, and Atlanta have achieved significant energy savings in participating buildings.

We will launch a challenge program for large commercial buildings to reduce their energy and water usage by 50 percent by 2030 and to commit to measuring these reductions. Together with the Detroit 2030 District, we will facilitate a peer-to-peer technical assistance group of building owners and managers to share proven and cost-effective energy reduction strategies.

#43

Develop an electric vehicle infrastructure strategy

LEAD: **SUSTAINABILITY**

CO-BENEFITS

-  **Improved Public Health**
-  **Increased Access to Economic Mobility**
-  **Reduced Greenhouse Gases**

TIMEFRAME
Near 0-2 years

In 2018, the Environmental Protection Agency declared seven southeast Michigan counties in violation of ozone pollution standards, including Wayne County. Air pollution in Detroit is largely caused by emissions from industrial facilities and motor vehicles. Electric vehicles (EV) offer an opportunity to reduce harmful emissions from the transportation sector, which contribute to local asthma rates and other health issues and climate change.

A collaborative project with DTE Energy has already resulted in pilot charging infrastructure and EV education in Capital Park. We convened government, local utility, and third party stakeholders to identify the roles of each entity in the operation and maintenance of electric vehicle infrastructure in the city. We will work with this group to develop a comprehensive electric vehicle strategy to support and accelerate widespread adoption of clean energy transportation. This will include identifying priority locations for new electric vehicle infrastructure; the necessary upgrades to existing infrastructure to support electric vehicles; and local policies, codes and incentives needed to support adoption.

ACKNOWLEDGEMENTS

The Sustainability Action Agenda is the culmination of an incredible amount of hard work and collaboration. Leadership and staff from nearly all City departments and agencies, as well as numerous Detroit residents and community partners, contributed their ideas and expertise to shape the Sustainability Action Agenda.

City of Detroit Leadership

Mike Duggan, Mayor

The Honorable Detroit City Council

Sustainability Interdepartmental Workgroup

especially the leadership of

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The Sustainability Action Agenda was supported with funds from the Kresge Foundation, Ralph C. Wilson Jr. Foundation, Fred A. and Barbara M. Erb Family Foundation, and the Community Foundation for Southeast Michigan



APPENDIX

Related Resources

MULTIFAMILY AFFORDABLE HOUSING STRATEGY

City of Detroit, 2018

https://detroitmi.gov/Portals/0/docs/SOTC/Detroit_Multifamily_Affordable_Housing_Strategy_2018.pdf

STRATEGIC PLAN FOR TRANSPORTATION

City of Detroit, 2018

<https://detroitmi.gov/Portals/0/docs/deptoftransportation/DetroitStrategicPlanForTransportation.pdf>

DETROIT CLIMATE ACTION PLAN

Detroiters Working for Environmental Justice, 2017

https://detroitenvironmentaljustice.org/wp-content/uploads/2017/11/CAP_WEB.pdf

2017 PARKS AND RECREATION IMPROVEMENT PLAN

City of Detroit, 2017

<https://detroitmi.gov/Portals/0/docs/Parks/2017%20Parks%20and%20Recreation%20Improvement%20Plan.pdf>

CITY OF DETROIT GREENHOUSE GAS INVENTORY

University of Michigan Center for Sustainable Systems, 2014

<http://css.umich.edu/publication/city-detroit-greenhouse-gas-inventory-analysis-citywide-and-municipal-emissions-2011-and>

FOUNDATIONS FOR COMMUNITY CLIMATE ACTION: DEFINING CLIMATE CHANGE VULNERABILITY IN DETROIT

University of Michigan Taubman College of Architecture and Urban Planning, 2012

<https://detroitenvironmentaljustice.org/wp-content/uploads/2017/10/SmClimate-Change-Vulnerability-Detroit-Report-1.pdf>

Indicator Table

OUTCOME	GOAL	INDICATOR	BASELINE	TARGETS		
				2024	2029	Other
HTP	Increase access to healthy food, green spaces, and recreational opportunities	Percent of Residents within a 10-minute walk to a park	77%	85%	90%	---
HTP	Increase access to healthy food, green spaces, and recreational opportunities	Number of grocery stores performing well in availability, price and quality of healthful foods	15 of 71 stores	---	---	Increase
HTP	Improve air quality and reduce exposure to pollution	Asthma hospitalization rates	41 per 10,000 residents	37 per 10,000 residents	33 per 10,000 residents	---
HTP	Improve air quality and reduce exposure to pollution	Average number of good air quality days	288 days	---	---	Increase
HTP	Improve air quality and reduce exposure to pollution	Tree planting in the 20 most vulnerable census tracts	Approximately 500/year	5,000 trees	15,000 trees"	---
HTP	Advance equity in access to economic opportunity	Number of Detroiters earning a living wage	48%	58%	68%	---
HTP	Advance equity in access to economic opportunity	Share of active city contracts with Minority, Women, and Detroit-Based vendors	34%	44%	---	---
AQH	Reduce the total costs of housing, including utilities	Percent of residents paying more than 30% of their income for housing, including utilities	48%	---	---	Reduce
AQH	Reduce the total costs of housing, including utilities	Number of new and preserved affordable housing units	610 units (new)	10,000 units (preserved) 2,000 units (new)	---	---
AQH	Reduce the total costs of housing, including utilities	Reduced water bill cost for low income households	1,100 households	5,000 households	15,000 households	---
AQH	Reduce the total costs of housing, including utilities	Average residential energy consumption per capita	9.1 MMBtu	8.2 MMBtu	7.3 MMBtu	---
AQH	Improve the health and safety of existing and new housing	Testing of elevated blood lead levels in children	32% of eligible	50% of eligible	Universal	---
AQH	Improve the health and safety of existing and new housing	Elevated blood lead levels in children	8.8% with EBLL	5% with EBLL	3.8% with EBLL	---
CCN	Transform vacant lots and structures into safe, productive, sustainable spaces	Total acres of productive agricultural land	165 acres	300 acres	500 acres	---
CCN	Transform vacant lots and structures into safe, productive, sustainable spaces	Number of lots in Side Lot Adoption programs	12,179 lots	24,500 lots	36,500 lots	---

Indicator Table (continued)

OUTCOME	GOAL	INDICATOR	BASELINE	TARGETS		
				2024	2029	Other
CCN	Reduce waste sent to landfills	Recycling and composting diversion rate	4%	15%	30%	---
CCN	Make it easier and safer to get around Detroit without a personal vehicle	Number of citywide auto, pedestrian, and crashes	12,900 crashes	10,191 crashes	---	---
CCN	Make it easier and safer to get around Detroit without a personal vehicle	Share of pedestrian crashes resulting in fatality or serious injury	16.80%	13.40%	---	---
CCN	Make it easier and safer to get around Detroit without a personal vehicle	Share of bicyclist crashes resulting in fatality or serious injury	4.80%	3.40%	---	---
CCN	Make it easier and safer to get around Detroit without a personal vehicle	AllTransit Performance Score	6.8	7.6	8.3	---
CCN	Make it easier and safer to get around Detroit without a personal vehicle	WalkScore	55	60	75	---
EGC	Enhance infrastructure and operations to improve resilience to climate impacts	Average annual gallons of untreated combined sewer overflow	722 million gallons	---	---	Reduce
EGC	Enhance infrastructure and operations to improve resilience to climate impacts	Acres managed by green stormwater infrastructure	900 Acres	---	1,800 Acres	---
EGC	Enhance infrastructure and operations to improve resilience to climate impacts	Responsiveness to resident requests within SLA	15%	25%	50%	---
EGC	Reduce municipal and citywide greenhouse gas emissions	Municipal greenhouse gas emissions	1.18 m tons CO2e	0.77 m tons CO2e	---	0.29 m tons CO2e by 2034
EGC	Reduce municipal and citywide greenhouse gas emissions	Community greenhouse gas emissions	10.6 m tons CO2e	---	---	7.95 tons CO2e by 2025
EGC	Reduce municipal and citywide greenhouse gas emissions	Local solar generation capacity	3.3 MW	6.6 MW	10 MW	---
EGC	Reduce municipal and citywide greenhouse gas emissions	Average industrial and commercial energy consumption per square foot	42 MMBtu/sf	37.8 MMBtu/sf	29.4 MMBtu/sf	---

Implementation Table

HEALTHY, THRIVING PEOPLE

Increase access to healthy food, green spaces, and recreational opportunities

Improve air quality and reduce exposure to pollution

	ACTION TITLE	LEAD	IMPLEMENTATION PARTNERS	TIMEFRAME	COBENEFITS	FUNDING	SOURCE
1	Provide nutrition and environmental education at recreation centers and parks	General Services	Health, Keep Growing Detroit, Eastern Market	Near-term 0-2 years	Improved Public Health, Improved Food System and Access	Partially Funded	City, Philanthropy
2	Create local food purchasing guidelines for City-funded programs	Procurement	Health, General Services, Parks and Recreation, United Way of South East Michigan, Detroit Food Policy Council, City Council	Mid-term 3-5 years	Improved Public Health, Improved Food System and Access	Unfunded	City
3	Improve access to high quality, healthy food at grocery stores	Planning	Detroit Economic Growth Corporation, Sustainability, Health, Planning, Detroit Food Policy Council	Mid-term 3-5 years	Improved Public Health, Improved Food System and Access	Partially Funded	City, Philanthropy
4	Renovate existing and create new parks throughout the city	General Services	Parks and Recreation, Water and Sewerage	Mid-term 3-5 years	Improved Public Health, Improved Water/Wastewater Quality and Management	Partially Funded	City (Capital Bond), State, Philanthropy, Business (SNF Funders)
5	Expand sports recreation opportunities for youth	Parks and Recreation	Detroit PAL, Healthy Kidz, MACC Sports, Rosedale Park Soccer, Eagles Sports, Detroit City Football Club	Mid-term 3-5 years	Improved Public Health	Partially Funded	City, Philanthropy, Business
6	Expand local air quality monitoring system	Health	Technology, Michigan Department of Energy, Great Lakes, and Environment, University of Michigan	Mid-term 3-5 years	Improved Public Health, Improved Air Quality	Partially Funded	State, Philanthropy (Erb Foundation)
7	Create citywide truck routing network	Public Works	Health, Technology, Planning, Police, Michigan Department of Transportation, Wayne County, City Council	Mid-term 3-5 years	Improved Public Safety, Improved Public Health, Improved Air Quality	Partially Funded	City, Philanthropy (Erb Foundation)
8	Increase tree plantings in vulnerable areas	General Services	Health, Planning, Reforestation Workgroup, Greening of Detroit	Mid-term 3-5 years	Improved Public Health, Improved Water/Wastewater Quality and Management, Improved Air Quality	Partially Funded	State (Street Fund), Philanthropy
9	Reduce emissions from City vehicles	General Services	Transportation, Chief Financial Officer, Sustainability, Technology, City Council, DTE Energy	Mid-term 3-5 years	Improved Public Health, Increased Government Efficiency and Transparency, Improved Air Quality, Reduced Greenhouse Gases	Partially Funded	City, State
10	Expand green jobs training and workforce development programs	Workforce	Detroit Employment Solutions Corporation, Training Organizations	Mid-term 3-5 years	Increased Access to Economic Mobility	Partially Funded	State, City, Philanthropy

Implementation Table (continued)

HEALTHY, THRIVING PEOPLE

Improve air quality and reduce exposure to pollution

AFFORDABLE, QUALITY HOMES

Reduce the total costs of housing, including utilities

Improve the health and safety of existing and new housing

	ACTION TITLE	LEAD	IMPLEMENTATION PARTNERS	TIMEFRAME	COBENEFITS	FUNDING	SOURCE
11	Prepare Detroit residents for City employment opportunities	Civil Rights/Workforce	Housing, City Council, Detroit Economic Solutions Corporation	Near-term 0-2 years	Increased Access to Economic Mobility, Increased Government Efficiency and Transparency	Funded	State, City, Philanthropy, Business
12	Launch a digital inclusion program	Technology	Neighborhoods, Workforce	Mid-term 3-5 years	Increased Utility Efficiency & Affordability, Increased Access to Economic Mobility, Increased Government Efficiency and Transparency	Partially Funded	City, Philanthropy
13	Expand wireless internet access on City buses	Transportation	Technology, Workforce	Near-term 0-2 years	Increased Access to Economic Mobility	Funded	Federal, City
14	Launch a diversity, equity and inclusion initiative	Civil Rights	Neighborhoods, Law, Human Resources, Chief Financial Officer, City Council, Government Alliance on Racial Equity	Long-term 6-8 years	Increased Access to Economic Mobility, Increased Government Efficiency and Transparency	Unfunded	City, Philanthropy
15	Improve access to utility efficiency programs	Sustainability	Housing, Health, Water and Sewerage, Neighborhoods, DTE Energy, Michigan Dept of Health and Human Services, Wayne Metro Community Action Agency	Mid-term 3-5 years	Improved Public Health, Increased Utility Efficiency & Affordability, Increased Government Efficiency and Transparency, Reduced Greenhouse Gases	Partially Funded	City, Business
16	Expand home plumbing repair programs	Water and Sewerage	Workforce, Neighborhoods, Wayne Metro Community Action Agency	Near-term 0-2 years	Improved Public Health, Increased Utility Efficiency & Affordability, Improved Water/Wastewater Quality and Management	Partially Funded	City, Philanthropy (Cedar Tree Foundation)
17	Implement and expand upon the Blue Ribbon Panel's water affordability recommendations	Water and Sewerage	Sustainability, Health, Great Lake Water Authority, US Water Alliance	Near-term 0-2 years	Increased Utility Efficiency & Affordability, Increased Government Efficiency and Transparency	Partially Funded	City, Philanthropy
18	Establish affordable housing preservation goals for building owners receiving City incentives	Housing	Community Development Organizations, Detroit Economic Growth Corporation, City Council	Near-Term 0-2 years	Increased Access to Economic Mobility	Funded	State, City
19	Increase access to information on existing affordable housing	Housing	Technology, Mayor's Communications Team, Community Development Organizations, City Council	Near-term 0-2 years	Increased Access to Economic Mobility, Increased Government Efficiency and Transparency	Funded	City
20	Expand lead poisoning prevention initiatives across the city	Health	Housing, Water and Sewerage, Public Schools, Buildings and Safety, Sustainability, Wayne State University Center for Urban Studies, Michigan Department of Health and Human Services, Wayne Children's Health Access Program	Near-term 0-2 years	Improved Public Health	Partially Funded	State, City, Philanthropy

Implementation Table

		ACTION TITLE	LEAD	IMPLEMENTATION PARTNERS	TIMEFRAME	COBENEFITS	FUNDING	SOURCE
AFFORDABLE, QUALITY HOMES	21	Create a residential lead abatement training pilot program	Sustainability	Land Bank, Workforce, Housing, Health	Mid-term 3-5 years	Improved Public Health, Increased Access to Economic Mobility	Partially Funded	City, Philanthropy
		22	Develop green building guidelines for new developments receiving City incentives	Sustainability	Housing, Buildings and Safety, Civil Rights, City Council, Planning, Jobs and Economy Team, Detroit Economic Growth Corporation, City Planning Commission, Michigan Energy Efficiency for All	Mid-term 3-5 years	Improved Public Health, Increased Utility Efficiency & Affordability, Improved Water/Wastewater Quality and Management, Reduced Greenhouse Gases	Unfunded
CLEAN, CONNECTED NEIGHBORHOODS	23		Improve processes to purchase City owned vacant lots	Planning	Land Bank, Building Authority, Health, Assessors, Buildings and Safety, City Council, Housing, Neighborhoods, Technology, Water and Sewerage, Keep Growing Detroit, Detroit Food Policy Council	Near-term 0-2 years	Improved Public Safety, Increased Access to Economic Mobility, Increased Government Efficiency and Transparency, Improved Food System and Access	Funded
		24	Support neighborhood-based efforts to care for vacant lots and structures	Land Bank	Neighborhoods, Public Works, General Services, Housing, Planning, Block clubs, Detroit Future City	Mid-term 3-5 years	Improved Public Safety, Improved Public Health, Increased Government Efficiency and Transparency, Improved Food System and Access	Partially Funded
25	Develop a fee structure and associated rules for irrigation only water accounts		Water and Sewerage	Sustainability, Public Works, Planning, City Council, Detroit Food Policy Council, Keep Growing Detroit	Near-term 0-2 years	Increased Utility Efficiency & Affordability, Increased Access to Economic Mobility, Improved Water/Wastewater Quality and Management	Funded	City
	26	Launch a citywide recycling campaign	Public Works	Neighborhoods, Water and Sewerage, Green Living Science, Zero Waste Detroit, Green Task Force, Michigan Department of Environment, Great Lakes, and Energy, Recycling Partnership	Near-term 0-2 years	Improved Public Health, Increased Government Efficiency and Transparency	Partially Funded	State, City, Philanthropy
27		Expand curbside recycling to multi-family buildings	Buildings and Safety, Public Works	Sustainability, Planning, City Council, Zero Waste Detroit, Green Living Science, Detroit Housing Commission	Near-term 0-2 years	Improved Public Health, Increased Government Efficiency and Transparency	Partially Funded	State, City, Philanthropy
	28	Expand recycling to public spaces and all City facilities	Sustainability	General Services, Fire, Police, Green Living Science, Zero Waste Detroit, Public Works, City Council	Mid-term 3-5 years	Improved Public Health, Increased Government Efficiency and Transparency	Partially Funded	State, City, Philanthropy
29		Develop a best practices framework for commercial scale compost operations	Buildings and Safety	Public Works, Green Task Force, City Council, Planning Commission, Eastern Market, Foodlab Detroit, Food Plus Detroit	Mid-term 3-5 years	Improved Public Health, Improved Food System and Access	Unfunded	City
	30	Launch residential composting pilot program	Sustainability	Neighborhoods, Buildings and Safety, Resource Recovery Authority, Food Plus Detroit, Keep Growing Detroit	Mid-term 3-5 years	Improved Public Health, Increased Government Efficiency and Transparency, Improved Food System and Access	Unfunded	City, Philanthropy,

Implementation Table (continued)

		ACTION TITLE	LEAD	IMPLEMENTATION PARTNERS	TIMEFRAME	COBENEFITS	FUNDING	SOURCE
CLEAN, CONNECTED NEIGHBORHOODS	31	Improve mobility connections between neighborhoods and job centers	Mobility	Transportation, Public Works, Michigan Department of Transportation, Southeast Michigan Council of Governments, Detroit Employment Solutions Corporation	Near-term 0-2 years	Increased Access to Economic Mobility, Increased Government Efficiency and Transparency	Partially Funded	Federal, City, Business
		32	Implement safety measures to reduce crash severity	Public Works	Police, Planning, Michigan Department of Transportation, Wayne County	Mid-term 3-5 years	Improved Public Safety, Improved Public Health, Increased Government Efficiency and Transparency	Partially Funded
33	Expand Detroit's protected bike lane network		Public Works	Planning, Police, Parking, Michigan Department of Transportation, Wayne County, Detroit Greenways Coalition	Mid-term 3-5 years	Improved Public Safety, Improved Public Health, Increased Access to Economic Mobility	Partially Funded	State, City (Bond Funded and Act 51)
	34	Create neighborhood scale, distributed green infrastructure projects	Water and Sewerage	Sustainability, Public Works, Planning, General Services, Land Bank, The Nature Conservancy, UDMercy Detroit Collaborative Design Center	Mid-term 3-5 years	Improved Public Health, Improved Water/Wastewater Quality and Management, Improved Air Quality	Partially funded	City (DWSD), Philanthropy (Erb Foundation, Wilson Foundation)
35		Incorporate green stormwater infrastructure into street redesign and greenway projects	Public Works	Planning, Water and Sewerage, General Services, Sustainability, City Council, Michigan Department of Transportation, Wayne County, Detroit Greenways Alliance, Alliance for the Great Lakes	Mid-term 3-5 years	Improved Public Health, Increased Government Efficiency and Transparency, Improved Water/Wastewater Quality and Management	Partially Funded	City (Bond Funding), Philanthropy
	36	Integrate climate change impacts into hazard mitigation planning	Emergency Management	Sustainability, Fire, Police, General Services, Health, Neighborhoods, Water and Sewerage	Near-term 0-2 years	Improved Public Safety, Improved Public Health, Increased Government Efficiency and Transparency	Partially Funded	Philanthropy
37		Improve resident access to sustainability-related City services	Sustainability	Technology, Neighborhoods, Community Service Providers	Near-term 0-2 years	Increased Government Efficiency and Transparency	Funded	City
	38	Expand emergency preparedness and communication tools	Emergency Management	Sustainability, Public Safety, Health, Technology, Neighborhoods, Block Clubs, Media Services	Mid-term 3-5 years	Improved Public Safety, Improved Public Health, Increased Government Efficiency and Transparency	Partially Funded	City, State
39		Develop a greenhouse gas assessment and climate action strategy	Sustainability	Water and Sewerage, Building Authority, General Services, City Council, DTE Energy, Detroit Department of Transportation, Detroit Climate Action Collaborative	Near-term 0-2 years	Improved Public Health, Increased Government Efficiency and Transparency, Improved Air Quality, Reduced Greenhouse Gases	Partially Funded	Philanthropy
	40	Increase the adoption of solar PV	Sustainability	Buildings and Safety, Housing, General Services, Planning, Elevate Energy, DTE Energy	Near-term 0-2 years	Increased Utility Efficiency & Affordability, Reduce Greenhouse Gases	Partially Funded	Federal, Business

Implementation Table

EQUITABLE,
GREEN CITY

Reduce
municipal
and citywide
greenhouse
gas
emissions

	ACTION TITLE	LEAD	IMPLEMENTATION PARTNERS	TIMEFRAME	COBENEFITS	FUNDING	SOURCE
41	Enhance energy and water efficiency at City-owned facilities	General Services	Water and Sewerage, Building Authority, General Services, City Council, DTE Energy	Near-term 0-2 years	Increased Utility Efficiency & Affordability, Increased Government Efficiency and Transparency, Improved Water/Wastewater Quality and Management, Reduce Greenhouse Gases	Partially Funded	City
42	Launch Mayors' Challenge Program for Commercial Buildings	Sustainability	Detroit Economic Growth Corporation, Buildings and Safety, 2030 District, USGBC	Near-term 0-2 years	Increased Utility Efficiency & Affordability, Improved Water/Wastewater Quality and Management, Reduce Greenhouse Gases	Unfunded	Philanthropy, Business
43	Develop an electric vehicle infrastructure strategy	Sustainability	Mobility, Transportation, Parking, Public Works, Technology, Planning, DTE Energy, State of Michigan	Near-term 0-2 years	Improved Public Health, Increased Access to Economic Mobility, Reduced Greenhouse Gases	Partially Funded	State, Philanthropy, Business

ENGAGEMENT BY PHASE

Phase 1: Challenges & Opportunities

GOAL:

Understand Detroit's key sustainability challenges and opportunities, refine Detroit's definition of Sustainability, and focus the Agenda development process.

METHODS:

- Sustainability Ambassadors:** Hired and trained 14 Sustainability Ambassadors (2 from each district). Ambassadors attended neighborhood meetings, interviewed people they met throughout the city, and identified residents and organizations interested in being a part of the development of the Agenda. The Ambassadors made regular reports on their activities and added specific observations above and beyond questions found on the surveys.
- Online and Paper Surveys:** Over 1,600 surveys that posed 15 multiple choice, 5 open-ended, and 6 demographic questions were collected. Surveys were available in English, Arabic, Bengali, French, and Spanish. Surveys were distributed at community events, through email and social media, and by Sustainability Ambassadors.⁵¹
- Community Meetings:** Attended over 100 existing community meetings from block clubs to large civic organization gatherings, reaching nearly 2,000 Detroiters.
- CoUrbanize:** Launched the CoUrbanize site, gaining 155 followers and approximately 230 comments about sustainability challenges and opportunities in neighborhoods.

KEY LEARNINGS:

- Housing quality and affordability, specifically utility affordability, are key concerns for residents;
- Residents strongly support green services like recycling and access to renewable energy;
- There is a clear and intense interest in the need for responsiveness and transparency from, and ease of communication with, the City government;
- Safety is a daily consideration of 2/3 of the people surveyed;
- People are concerned about improving air quality; and
- 1 in 3 Detroiters are impacted by urban flooding in their neighborhoods

Phase 2: Refining Ideas

GOAL:

Share what we learned from Phase 1 and gather feedback on preliminary goals, priorities, and potential solutions.

METHODS:

- Town Halls:** Held 4 town halls throughout the city reaching over 370 Detroiters. Town halls included an overview of survey results from Phase 1, a discussion of the preliminary goals identified, live SMS surveys, and breakout sessions on topics such as equity and how to prioritize specific initiatives to further guide Agenda development.
- Practitioner Workshops:** Held practitioner workshops with a total of 51 attendees on 4 topics: Environment and Health, Housing and Neighborhoods, Infrastructure and Open Space, Transportation and Economic Opportunity. These workshops allowed us to learn from Detroit organizations already advancing sustainability in the city.
- CoUrbanize:** 4 specific discussion questions and polls were added to the coUrbanize site. These questions included a question on equity, land use, action prioritization, and personal sustainability commitment. 434 people followed and contributed nearly 1,000 comments.
- Sustainability Ambassadors:** Helped publicize and run the town halls, directed residents to continue the conversation on the coUrbanize site, and interviewed residents at events throughout the city on a series of follow up survey questions.

KEY LEARNINGS:

- We learned that residents wanted us to more clearly demonstrate how equity is central to our process and the Agenda.
- Transparency was identified as important and we learned that we need to continue to work at keeping our process transparent.
- We realized that we must reach more youth, non-English speaking communities, faith organizations, and Black community groups.
- The Agenda must not leave behind long-time residents of Detroit.
- The Agenda's vision, goals, and actions should be people-centric and specific.

Phase 3: Reviewing and Prioritizing

GOAL:

Present and gather feedback on refined framework, and reach additional populations underrepresented in our previous engagement.

METHODS:

- Focus Groups:** Held focus groups of approximately 17 people each to reach underrepresented groups: Arabic speaking, Spanish speaking, Black-led organizations and Faith-Based organizations. Sessions were designed as intimate discussions of the draft Agenda material for targeted feedback. Additionally, we met with four existing youth groups to discuss sustainability topics more generally.
- Practitioner Workshops:** Reconvened practitioner workshops with a total of 53 attendees on 4 topics: Environment and Health, Housing and Neighborhoods, Infrastructure and Open Space, Transportation and Economic Opportunity. Refined potential initiatives to provide guidance on prioritization, design, and implementation.
- CoUrbanize:** 7 specific discussion questions and polls were added to the coUrbanize site. These questions included a question on desired free resources, staying connected with the Office of Sustainability, engagement process to date, reactions to survey results, how to build trust, personal sustainability commitment, and general comments. The site reached 508 followers with 1,214 comments.
- Text Your Feedback Initiative:** 16 yard signs were deployed throughout the city to allow residents to interact with the process through SMS messaging. Signs included the following topics: Vacant land challenges, flooding challenges, housing expenses, signing up for project updates, making Detroit more sustainable.
- Sustainability Ambassadors:** Each Ambassador attended at least 3 community meetings, block clubs or other events throughout their districts and collected responses to short surveys in a 1-on-1 setting. They attended 39 events, reached 869 individuals, and collected over 80 surveys. Ambassadors also held energy workshops as a thank you to community members for participating in the Action Agenda process.

KEY LEARNINGS:

- We continued to hear that we were on the right track and there was appreciation for the level of engagement.
- A common concern across all demographics was around accountability. There is a clear need to make sure accountability is clear and trackable in the Agenda.
- We learned that we needed to make the vision easier to interpret and understand.
- Equity and its integration into the Agenda, continued to be an important consideration for residents
- It was identified that we needed to articulate our guiding principles clearly.



Glossary

Throughout the Action descriptions, the following short names are used for various City departments and agencies.

FULL NAME	SHORTENED NAME
Buildings, Safety Engineering and Environmental Department	Buildings and Safety
City Planning Commission	Planning Commission
Civil Rights, Inclusion, and Opportunity Department	Civil Rights
Construction and Real Estate Team	Construction
Department of Human Resources	Human Resources
Department of Innovation and Technology	Technology
Department of Neighborhoods	Neighborhoods
Department of Public Safety	Public Safety
Department of Public Works	Public Works
Department of Transportation	Transportation
Detroit Building Authority	Building Authority
Detroit Land Bank Authority	Land Bank
Detroit Public Schools Community District	Public Schools
Fire Department	Fire
General Services Department	General Services
Health Department	Health
Homeland Security and Emergency Management	Emergency Management
Housing and Revitalization Department	Housing
Law Department	Law
LEAN Office	LEAN
Mayor's Workforce Team	Workforce
Office of Contract Procurement	Procurement
Office of Mobility Innovation	Mobility
Office of Sustainability	Sustainability
Office of the Chief Financial Officer	Chief Financial Officer
Parks and Recreation Department	Parks and Recreation
Planning and Development Department	Planning
Police Department	Police
Water and Sewerage Department	Water and Sewerage

End Notes

1. Procedural, distributional, structural, and transgenerational equity as defined by the Urban Sustainability Directors Network Equity Foundations Training: <https://www.usdn.org/public/page/55/Equity-Foundations-Training>
2. Center for Disease Control: <https://www.mdch.state.mi.us/pha/osr/InDxMain/Tab5.asp>
3. Michigan Department of Health and Human Services, Bureau of Disease Control, Prevention and Epidemiology: https://www.michigan.gov/documents/mdhhs/Detroit-AsthmaBurden_516668_7.pdf
4. State of Michigan: <https://www.michigan.gov/lead/0,5417,7-310-84214---,00.html>
5. Annual Air Quality Reports, Michigan Department of Environment, Great Lakes, and Energy: https://www.michigan.gov/egle/0,9429,7-135-3310_70316---,00.html
6. The Detroit News; Bureau of Labor Statistics: <https://www.detroitnews.com/story/business/2018/11/08/labor-statistics-unemployment-rate-detroit-lower/1932604002/>
7. American Community Survey, U.S. Census Bureau
8. American Community Survey, Table DP04 1-year Estimate, U.S. Census Bureau
9. Housing Affordability Burden for U.S. Cities, Governing: <https://www.governing.com/gov-data/economy-finance/housing-affordability-by-city-income-rental-costs.html>
10. The Detroit Housing Market, Urban Institute: https://www.urban.org/sites/default/files/publication/88656/detroit_path_forward_finalized.pdf
11. DTE Energy; City of Detroit
12. Sustainability Survey, Detroit Office of Sustainability, June 2018: <https://courbanize.com/projects/sustainable-detroit/information>
13. SEMCOG: <https://maps.semco.org/PavementCondition/>
14. Detroit Open Data Portal, SEMCOG: <https://data.detroitmi.gov/Transportation/Traffic-Crashes/9fph-m2jv>
15. AllTransit: <https://alltransit.cnt.org/metrics/?addr=Detroit%2C+MI#map>
16. Michigan Department of Environment, Great Lakes, and Energy: https://www.michigan.gov/documents/deq/wrd-cso-ssr-rtb-2017-annual-report_641875_7.pdf
17. Great Lakes Integrated Sciences + Assessments Center: http://glisa.umich.edu/media/files/projects/DCAC/DCAC_Climate_Impacts.pdf

End Notes

18. Michigan Department of Health and Human Services, Bureau of Disease Control, Prevention and Epidemiology: https://www.michigan.gov/documents/mdhhs/Detroit-AsthmaBurden_516668_7.pdf
19. American Community Survey, U.S. Census Bureau; ParkScore, The Trust for Public Land: <http://www.parkscore.tpl.org/rankings.php>
20. ParkScore, The Trust for Public Land: <http://www.parkscore.tpl.org/>
21. Detroit Food Map Initiative: <https://detroitfoodmap.com/>
22. Michigan Department of Health and Human Services, Bureau of Disease Control, Prevention and Epidemiology: https://www.michigan.gov/documents/mdhhs/Detroit-AsthmaBurden_516668_7.pdf
23. Annual Air Quality Reports, Michigan Department of Environment, Great Lakes, and Energy: https://www.michigan.gov/egle/0,9429,7-135-3310_70316---,00.html
24. US Forest Service, 2016
25. Air Pollutant Sources, Exposures & Health Impacts (2016), CA-PHE: <http://caphedetroit.sph.umich.edu/wp-content/uploads/2016/10/Resource-Manual-5.0-Pollutant-sources-Website-Version-10-4-16.pdf>
26. Public Health Action Plan (2017), CA-PHE: <http://caphedetroit.sph.umich.edu/public-health-action-plan/>
27. American Community Survey, U.S. Census Bureau
28. The City of Detroit defines living wage as 125% of the federal poverty level for a family of four; or one hundred percent (100%) of the federal poverty level for a family of four if health benefits are provided to the employee.
29. American Community Survey, Table S0201, U.S. Census Bureau
30. American Community Survey, Table DP04 5-year Estimate, U.S. Census Bureau
31. State of Michigan: <https://www.michigan.gov/lead/0,5417,7-310-84214---,00.html>
32. American Community Survey 2016 5-year Estimates, Table DP04
33. American Community Survey, U.S. Census Bureau, and City of Detroit Estimates
34. DTE Energy
35. Circle of Blue: <https://www.circleofblue.org/waterpricing/>

End Notes

36. Blue Ribbon Panel on Affordability, City of Detroit: <https://detroitmi.gov/departments/water-and-sewerage-department/bill-assistance-and-credits/blue-ribbon-panel-affordability>
37. Detroit Open Data Portal, Detroit Land Bank Authority: <https://data.detroitmi.gov/Property-Parcels/Land-Bank-Inventory/vsin-ur7i>
38. Keep Growing Detroit: <http://detroitagriculture.net/garden-resource-program-2/policy-support-for-urban-growers/>
39. Detroit Open Data Portal, SEMCOG: <https://data.detroitmi.gov/Transportation/Traffic-Crashes/9fph-m2jv>
40. AllTransit: <https://alltransit.cnt.org/fact-sheet/>
41. WalkScore: <https://www.walkscore.com/methodology.shtml>
42. Paris Climate Agreement: <https://www.wearestillin.com/>
43. Detroit Climate Action Plan, Detroiters Working for Environmental Justice: <https://detroitenvironmentaljustice.org/climate-action-plan/>
44. Confronting Climate Change in the Midwest (2009), Union of Concerned Scientists: https://www.ucsusa.org/sites/default/files/legacy/assets/documents/global_warming/climate-change-michigan.pdf
45. Annual Air Quality Reports, Michigan Department of Environment, Great Lakes, and Energy: https://www.michigan.gov/egle/0,9429,7-135-3310_70316---,00.html
46. City of Detroit Greenhouse Gas Inventory, University of Michigan: https://deepblue.lib.umich.edu/bitstream/handle/2027.42/106573/Detroit_GHG_Inventory_FINAL_20140422.pdf?sequence=1
47. Detroit Green Map: <https://www.detroitgreenmap.com/detsolartour/>
48. City of Detroit Greenhouse Gas Inventory, University of Michigan: https://deepblue.lib.umich.edu/bitstream/handle/2027.42/106573/Detroit_GHG_Inventory_FINAL_20140422.pdf?sequence=1
49. DTE Energy
50. City of Detroit Greenhouse Gas Inventory, University of Michigan: https://deepblue.lib.umich.edu/bitstream/handle/2027.42/106573/Detroit_GHG_Inventory_FINAL_20140422.pdf?sequence=1
51. Data available at data.detroitmi.gov and summary results available here: <https://courbanize.com/projects/sustainable-detroit/information>



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2019