

# EVANSVILLE CLIMATE ACTION PLAN 2021



INDIANA UNIVERSITY  
ENVIRONMENTAL RESILIENCE  
INSTITUTE



# CONTENTS

**Letter from the Mayor**

**Acknowledgments**

**Executive Summary**

**Summary of Actions**

- Transportation
- Buildings and Energy
- Waste
- Local Food, Agriculture & Green Space

**Conclusion & Next Steps**

**Appendix A: Community Engagement & Survey**

**Results**

**Appendix B: City Climate Successes**

**Appendix C: City Highlights**

**Appendix D: Greenhouse Gas Inventory**



# FROM THE MAYOR'S DESK



I am pleased to share the City of Evansville's first-ever Climate Action Plan (CAP). Climate change is one of the greatest challenges of our time. Evansville is committed to becoming a regional leader in equitably addressing climate change by harnessing our community's spirit of collaboration and innovation.

By taking the specific action steps in this plan, we will significantly reduce Evansville's greenhouse gas emissions and reduce our contribution to climate change. Doing this will strengthen our economy, significantly reduce waste, and improve air quality.

By engaging local agencies and community organizations, the business community, and partnering with Indiana University's Environmental Resilience Institute, we drew upon local and national expertise and best practices to complete the CAP. We also utilized leading racial equity planning tools to ensure that our planning and development were equitable.

Your input – gathered through extensive community engagement – was imperative to ensure the CAP reflects our community's priorities and will have lasting benefits to Evansville and our region.

This is your plan, Evansville.

Sincerely,

**MAYOR LLOYD WINNECKE**  
CITY OF EVANSVILLE



# ACKNOWLEDGMENTS

## CAP Development Team:

**Carolyn Townsend** - Project Manager and Climate Fellow, Indiana University Environmental Resilience Institute

**Timothy Weir, APR** - Administrator, Commission on Homelessness

## City Staff and Elected Officials

Lloyd Winnecke - Mayor of Evansville

Noah Stubbs - Director of Communications Mayor's Office

Brian Holtz - Executive Director of Parks and Recreation

Brent Schmitt - City Engineer

Michael Labitzke - EWSU- Evansville Water and Sewer Utility

Ella Johnson-Watson - EWSU- Evansville Water and Sewer Utility

Todd Robertson - METS: Metropolitan Evansville Transit System

Blaine Oliver - Area Planning Commission

Jennifer Evans - Mesker Park Zoo

Shawn Dickerson - Urban Forestry

## Indiana University Environmental Resilience Institute

This Climate Action Plan was developed with support from the Resilience Cohort, a program offered by the Environmental Resilience Institute (ERI). ERI is an initiative of the Indiana University Prepared for Environmental Change Grand Challenge.

## ICLEI USA - Local Governments for Sustainability

This Climate Action Plan was developed with support from ICLEI USA in partnership with the Resilience Cohort.

## Graphic Design Assistance

Thank you to Ashley Steele from Accuride Corporation, Thomas Nunn, and Emily Lenetta for their graphic design assistance.

# ACKNOWLEDGMENTS

## **Stakeholder Committee**

Mary Allen - Zero Waste Evansville

Reverend Gerald Arnold and Denise Abdul-Rahman - National Association for the Advancement of Colored People (NAACP)

Tara Barney - Southwest Indiana Chamber of Commerce (SWIN)

Todd Chamberlain - Republic Services

Vic Chamness - Evansville School Corporation (EVSC)

Cathy Davidson - United Neighborhoods of Evansville (UNOE)

Abby Elpers - Growth Alliance of Greater Evansville (GAGE)

Rob Flores - Berry Global

Kari Fluegel - Alcoa

Nate Hahn - Evansville Regional Airport

Dr. Ashley Jordan - Evansville African American Museum

Robin Johnston-Deem and Zach Garcia - Wesselman Woods Nature Society

Mitch Luman - Evansville Museum of Arts, History and Science

Brad Morton - Morton Solar & Electric, LLC

James Mosley - NAACP Environmental Justice Team

Robin Mallory - Urban Seeds

David Miller - DSM

Caroline Nellis - Earth Charter Indiana and Citizens Climate Lobby

David Rector - Building Authority

Brad Ellsworth and Elizabeth Beck- CenterPoint Energy

Niles Rosenquist - Southwest Indiana Sierra Club Network

Saiyid M. Shah, Ph.D - Tri-State Creation Care and The Islamic Center of Evansville

Seyed Shokouhzadeh and Pamela Drach - Evansville Metropolitan Planning

Organization (EMPO)

Greg Wathen - Economic Development Coalition of Southwest Indiana

Julie Welch - Keep Evansville Beautiful (KEB)

Lori Van Hooke - Evansville Trails Coalition

Alfonso Vidal - HOLA Evansville

Daniela Vidal - Ivy Tech Community College

The City of Evansville would like to thank the community members who participated in surveys and town halls. Your feedback was instrumental in writing this plan.

# EXECUTIVE SUMMARY

The City of Evansville relied on significant community outreach in developing this Climate Action Plan. Despite the challenges of dealing with the COVID-19 pandemic, leaders hosted 40 stakeholder meetings, six community meetings and eight virtual town halls. The team supplemented this input with data from an online survey, impressively answered by approximately 1,850 respondents. Nearly 47% of survey participants were 25-44 years of age, and nearly 67% were women.

The survey included open-ended questions soliciting ideas on reducing greenhouse gas emissions in the areas of transportation, buildings and energy, waste and local food. Respondents were also asked to make suggestions on how to ensure low-income families would not be adversely affected by items in the action plan.

The Climate Action Plan serves as a roadmap for Evansville to address climate change through 2050. The CAP specifies 58 actions that, when implemented, will lower greenhouse gas emissions, which in turn, will work to mitigate climate change. As a city, we commit to reducing our GHG emissions by 15% by 2030, 35% by 2040 and 50% by 2050.

Many elements of this plan will occur over a number of years with proposed completion dates noted in each section's spreadsheet. The majority of ideas expressed in this plan have potentially large associated costs, but specific budgets, or funding sources, are not identified. In the case where local government is the primary driver of a strategy, it is contemplated that the appropriate city department would seek funding through the normal city budgeting process, seek partners to assist with funding or pursue outside grants.

The plan was crafted with the following vision in mind: By 2050, Evansville will be a regional leader in equitably addressing climate change and a zero-waste community, powered by a significantly higher percentage of renewable energy than today, where all people have access to efficient transportation alternatives, public green spaces, clean air and water, and locally sourced fresh food.

Community partnerships are key to the long-term success of this plan.



# Summary of Actions

EVANSVILLE CLIMATE ACTION PLAN

# TAKING ACTION

## CAP Sections

The plan is organized into four categories that represent the different areas of our community where we can make an impact. We incorporated feedback from our public town halls, community survey, stakeholder meetings and focus groups. We also used best practices from existing CAPs to finalize the climate strategies in this plan.



Transportation



Buildings & Energy



Waste



Local Food, Agriculture,  
and Green Space

Each section of the plan includes a table matrix with the following components: the climate strategy, whether the action is completed in the residential sector either by or for residents (residential), by businesses (commercial), if City officials are responsible (government), or if the strategy applies to all three sectors.

The table also includes identified initial partners, who will help lead the initiative and estimated completion year.

Each category section includes a background description, equity considerations, and what individuals can do to help.



# Transportation

## Background

Every day, Hoosiers commute to and from work, school, and social activities.

Transportation infrastructure is critical to ensure Evansville and neighboring county residents can reach their destinations safely and sustainably. The way we choose to repair and build new streets will have a large influence on how people choose to commute.

We envision an Evansville that is more walkable, with plenty of bike paths, an expansive, user-friendly bus system and many more electric vehicles.

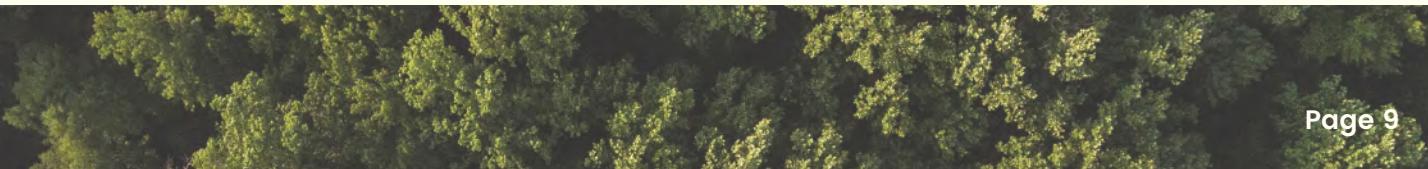
In 2017, transportation contributed to 45% of Evansville's greenhouse gas emissions, which equates to 1,552,387 metric tons of CO<sub>2</sub>e. The transportation related activities are the greatest contributor of GHG emissions citywide.

## Equity Considerations

- When planning new transportation modes (car, bike, pedestrian), target neighborhoods with the least access to transportation and green space first.
- A more affordable and effective public transportation system will improve mobility for individuals in neighborhoods who did not previously have access to those transportation options.
- Converting roads to Complete Streets will increase access to transportation for individuals with disabilities and increase the city's walkability and bike-ability for individuals who do not own a vehicle.
- Low income communities and communities of color are more likely to experience asthma and other respiratory illnesses as a result of poor air quality from cars.

## What Individuals Can Do

- Work from home when possible.
- Start a carpool with colleagues to work or with other parents when driving your kids to school.
- Bike, walk, or take public transportation on your shorter trips (3 miles or less).
- Strategize how you can combine your trips when you drive.
- Research the acquisition of an electric vehicle when shopping for a new car.





# Strategies

Strategy	Sector	Partners	Completion
1.1: Continue implementation of the Metropolitan Transportation Plan 2045 and examine transportation needs to determine future bus route expansion	Government	Evansville Metropolitan Planning Organization (EMPO), METS, Evansville Trails Coalition	2045
1.2: Pass a complete streets policy for major street construction/renovation	Commercial, Residential	Area Plan Commission, City Engineer	2030
1.3: Implement existing Bicycle and Pedestrian Connectivity Master Plan to increase the miles of sidewalks, bikeways and trails and the number of intersections with safety and operational improvements.	All	EMPO, EVV Trails Coalition, Parks & Recreation Department	Ongoing 2050
1.4: Increase the number of EV charging stations downtown and at other major city destinations	All	Building Authority, Downtown Economic Improvement District (DEID), METS, Major EVV employers	Ongoing 2050
1.5: Partner with nonprofits to help finance fleet EV conversion of City, Evansville Vanderburgh School Corporation (EVSC) & other educational institutions, local companies and residents	All	Climate Mayors EV Purchasing Collaborative, CenterPoint	Ongoing 2050
1.6: Partner with utility and nonprofits to create an educational campaign to promote EV adoption and communicate available financing options for residents	All	Same as 1.5 and Southwest Indiana Chamber of Commerce (SWIN Chamber), Local banks	Ongoing 2050
1.7: Encourage local businesses to adopt employee commuter incentives to promote telecommuting and alternative forms of transportation	All	Participating companies and SWIN Chamber	2030
1.8: Complete implementation of METS Comprehensive Operations Analysis five-year plan	Government	METS	2040
1.9: Implement a low-cost EV and hybrid parking incentive program for downtown and City-operated lots	Commercial, Residential	DEID, Participating companies	2030
1.10: Continue to encourage bus ridership by improving bus stop safety measures and amenities such as roof covers, ticket machines, lighting, etc.	All	EMPO, METS	2040
1.11: Implement a Park & Ride bus pilot program for residents who commute to neighboring counties	All	METS, large city employers, Growth Alliance for Greater Evansville (GAGE), DEID, SWIN Chamber, EMPO	2030
1.12: Assess feasibility of an EV ridership pilot program	All	Participating companies	2040
1.13 Replace diesel buses with new EV buses on need outlined in METS five-year plan	Government	METS	2040



# Buildings & Energy

## Background

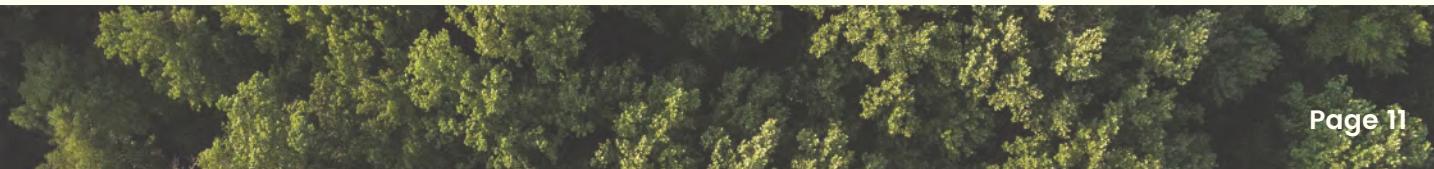
Humans spend approximately 90% of their lives inside buildings. In Evansville, buildings (both commercial and residential) account for 46% of greenhouse gas emissions, which is why it is imperative to create targets with a high emission reduction impact. Emissions from buildings come from direct sources (energy burned on site), such as using a gas stove in your home, and indirect source (energy used off-site), such as burning fossil fuels to supply electricity to charge our phones. Retrofitting buildings, by upgrading them with energy efficient devices such as smart thermostats or Energy Star certified appliances, will help buildings save energy and run more efficiently.

## Equity Considerations

- Individuals and families who are often unable to pay their utility bills typically live in homes that are older and less energy efficient. Energy efficiency programs and retrofitting efforts should target these households before addressing the rest of the community.
- Renters and individuals in multifamily dwellings do not have access to energy efficiency rebates that homeowners do.
- Solar panels and other forms of renewable energy are cost-prohibitive for many individuals and there are not enough mechanisms in place to help finance solar energy in our community.
- It is often too expensive for individuals to replace old appliances with new energy-efficient ones even if they will save people more money in the long-run.

## What Individuals Can Do

- Check out CenterPoint's existing energy efficiency programs and rebates.
- If you own your home, complete a CenterPoint free home energy assessment to help determine new appliance needs and to learn how to save energy (and money).
- Attend a Solarize Evansville information session to learn the benefits of installing solar panels on your home and to get a group purchase discount if you choose to go solar.
- Assess your home's carbon footprint, or better yet, go carbon neutral with Carbon Neutral Indiana.
- Install low-flow toilets, shower heads, and faucets in your home.
- Make a habit of unplugging electronic devices when not in use.
- If you own your home, make sure it is well-sealed, insulated, and weatherized. Take advantage of CenterPoint's rebates for undertaking these initiatives.



## EVANSVILLE CLIMATE ACTION PLAN



# Strategies

Strategy	Sector	Partners	Completion
2.1 Continue to support CenterPoint's integrated resource plan and adoption of renewable energy	All	CenterPoint, SWIN Chamber	Ongoing 2050
2.2 Efficiently use wastewater treatment plant material, or post consumer organics, to generate useful biogas for Applicable City Operations	Government	Evansville Water & Sewer Utility (EWSU)	2040
2.3 Convert 100% of city streetlights and traffic signals to LED	Government	City of Evansville	Ongoing 2050
2.4 Seek funding to promote greater utilization of CenterPoint free energy audits and energy efficiency & conservation measures	All	CenterPoint	2030
2.5 Seek additional funding to promote and expand use of federal Residential Weatherization Assistance Program	Residential	CenterPoint, United Neighborhoods of Evansville (UNOE), Southwest Indiana Builders Association (SIBA), Community Action Program of Evansville (CAPE), Indiana Housing and Community Development Authority (IHEDA)	2030
2.6 Upgrade to 100% of city-owned buildings with energy efficient appliances	Government	City of Evansville	Ongoing 2050
2.7 Complete SolSmart process to simplify permitting process for solar adoption	Government	SolSmart	2025
2.8 Encourage local higher education institutions to offer renewable energy training programs to support workforce development needs of local workers affected by fossil-fuel-to-renewable energy transition (coal, power plant)	Government, Education	SWIN Chamber, Ivy Tech Community College, Work One, State of Indiana Workforce Development	Ongoing 2050
2.9 Encourage expansion of existing CenterPoint and City energy efficiency and renewables public education campaigns	Government	CenterPoint, EWSU, environmental nonprofits, Wesselman Woods	2030
2.10 Create and implement a business green certification and education program	Commercial	Wesselman Woods, SWIN Chamber	2021
2.11 Encourage property developers to build affordable housing using energy and water efficiency best practices (including installing low-flow showerheads, faucets, toilets, HVAC, refrigeration, LED lighting)	Residential	Affordable Housing Fund Advisory Committee, Developers	Ongoing 2050
2.12 Identify funding for rebate or incentive programs to increase adoption of on-site solar and renewable energy systems	All	Private sector solar industry, CenterPoint	Ongoing 2050
2.13 Provide solar ready guide and training for Southwest Indiana Builders Association and developers	All	Solarize Evansville, SIBA, SWIN Chamber	2022
2.14 Identify funding to retrofit affordable and low-income housing units with energy and water efficient appliances	Residential	CenterPoint, City of Evansville	2030
2.15 Identify funding to help underwrite a portion of energy efficient device installation (ex: motion-sensing light switches and automated thermostats) in addition to current CenterPoint programs	Commercial, Residential	CenterPoint	2040
2.16 Identify funding to implement a solar panel program for low and moderate-income residential projects	Commercial, Residential	Solarize, NAACP, Affordable Housing Fund Advisory Committee	2040



# Waste

## Background

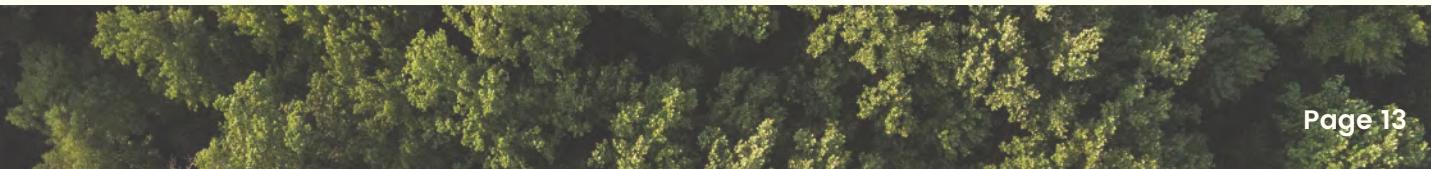
Waste is everywhere, from empty to-go coffee cups, banana peels, to used plastic bags. When we throw away uneaten food, it ends up in a landfill emitting methane, a potent greenhouse gas. Composting helps divert food waste and the associated methane emissions, while also transforming it into a usable product: fertile soil. Reducing waste will also lower the need (and energy used) to extract, process, and transport raw materials for use in everyday products. The waste sector contributes to eight percent of Evansville's GHG emissions.

## Equity Considerations

- Recycling is not mandatory in Indiana and is therefore not available to all community members, particularly people who live in multi-family unit housing.
- There are numerous barriers associated with composting, such as lack of knowledge on how to compost and benefits of reducing food waste. Also a lack of space to compost can be a lower adoption rate.

## What Individuals Can Do

- Learn recycling best practices:
  - Cardboard, paper, metal cans, and plastic bottles and jugs are all acceptable.
  - Make sure your recyclables are empty, clean, and dry.
  - Don't bag it! Keep your recyclables loose and out of bags.
- Check out this list of what items you can recycle and where in Evansville.
- Recycle old appliances with CenterPoint and receive \$50.
- Start a compost pile at home.
- Compost your yard waste with the city's fall leaf pickups (if you already dispose of waste with city services).
- Donate used clothing or home items to a local nonprofit instead of throwing them away.
- Buy products with minimized or zero packaging.
- Shop in bulk at the grocery store. Use reusable produce bags instead of single-use plastic bags.



## EVANSVILLE CLIMATE ACTION PLAN



# Strategies

Strategy	Sector	Partners	Completion
3.1: Launch a recycling and single-use plastics public education program to increase the recycling rate and lower the contamination rate. Provide multi-lingual, multi-format recycling and composting educational materials at the local energy resource centers and resilience hubs.	Commercial, Residential	Wesselman Woods, Keep Evansville Beautiful (KEB), Zero Waste Evansville, Republic Services, Vanderburgh County Solid Waste Management District (SWMD)	2030
3.2: Conduct a waste management feasibility study to assess future of recycling, composting, and other waste management tactics	All	SWMD, UE Changemakers	2030
3.3: Conduct a study regarding capture and use of methane from wastewater operations	Government	EWSU	2030
3.4: Implement a residential and apartment compost bin voucher program	Residential	Wesselman Woods, Zero Waste Evansville, Republic Services	2030
3.5: Create a composting education campaign for residents (homes, apartments, and businesses)	Residential, Commercial	Wesselman Woods, KEB, Zero Waste Evansville	2030
3.6: Encourage Evansville multi-family dwellings and businesses to offer recycling	Residential, Commercial	Republic Services, SWMD, EWSU	2040
3.7: Promote creator/innovator events for businesses to brainstorm (and ultimately implement) innovative solutions in waste reduction	Commercial	GAGE, DEID	2030
3.8: Promote and support school and religious organizations' strategies to reduce waste in operations	Commercial	EVSC, private and charter schools, Tri-State Creation Care	2030
3.9: Install single-stream recycling bins in outdoor public spaces city-wide	Residential, Commercial	Parks & Recreation Department, KEB	2030
3.10: Launch a municipal composting pilot program	Government	Private sector composting company	2030
3.11: Facilitate composting partnerships between a private composting company and property managers	Commercial	Private sector composting company	2040
3.12: Establish partnerships to divert construction waste from landfill	Commercial, Government	SIBA, General Contractors, Skilled trades unions	2030
3.13: Develop waste minimization strategies for all large-scale public events	Commercial, Government	Republic Services, Special Event Organizers	2030
3.14: Create a residential composting pilot program in a low-income housing community	Residential	Evansville Housing Authority, Community development partners	2030
3.15: Establish a residential curbside composting program	Residential	Private sector composting company	2050



# LOCAL FOOD, AGRICULTURE & GREEN SPACE

## Background

At an individual level, eating locally sourced, fresh food and adopting a plant-rich diet can result in substantial GHG reductions.

According to [Project Drawdown](#), business-as-usual emissions could be reduced on a global scale by 70% when adopting a vegan diet and 63% with a vegetarian diet. Eating locally produced food reduces emissions involved in transporting food from where it's grown, to the grocery store, and eventually to your kitchen. Not only will increasing access to local food reduce emissions, it will also improve public health.

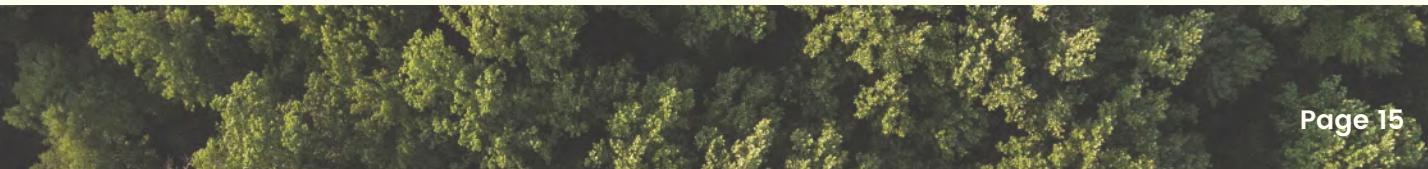
Planting native trees, shrubs, and plants that are also drought resistant will reduce the cost of lawn maintenance and also avoid emissions associated with mowing and leaf-blowing. In addition, there are [numerous psychological benefits](#) to incorporating more green space into our built environment, such as reduced stress and anxiety. Adding more green space will also provide more habitat space for native animals to thrive.

## Equity Considerations

In 2016, the US Department of Housing and Urban Development designated an area called The Promise Zone as a focal point of growth for the city. The Promise Zone is predominately inhabited by low-income community members who also experience high food insecurity. Located mainly within the Jacobsville neighborhood Superfund Site (an area with high levels of soil pollution and designated by the EPA for cleanup), 39% of residents are at or below the federal poverty rates and approximately 13% are unemployed. Strategies in this section (and throughout the plan) target The Promise Zone for development.

## What Individuals Can Do

- Shop at Evansville's local farmers markets, such as the Market on Main, or the Franklin Street Bazaar during summer months.
- Sign up to become a Master Gardener with the [Southwest Indiana Master Gardener's Association](#). (SWIMGA)
- [Adopt a plant-rich diet](#) by reducing the amount of meat and dairy you consume
- Sign up for a community garden plot.
- Volunteer with [Urban Seeds](#), a local nonprofit focused on ensuring equitable food access.



## EVANSVILLE CLIMATE ACTION PLAN



# Strategies

Strategy	Sector	Partners	Completion
4.1: Ensure we continue to map and track food deserts and food insecure populations in Evansville	All	Urban Seeds, Promise Zone, Food Commission	2030
4.2: Promote entrepreneurial work through incubator and code-a-thon events to stimulate innovative food solutions	All	SWIN Chamber, GAGE, Feed Evansville, Food Commission	2040
4.3: Reduce number of acres mowed in city parks and replace with drought-resistant native plant species	Government	City of Evansville	2040
4.4: Maintain Tree City USA status and increase number of trees planted per year	All	KEB, UNOE, Rotary Club, City of Evansville	Ongoing 2050
4.5: Create a gardening and backyard composting education program	Residential, Commercial	Southwest Indiana Master Gardener Association (SWIMGA), UE, University of Southern Indiana (USI)	2030
4.6: Create a healthy eating education program in partnership with local schools, food banks, and gardening clubs/organizations. Encourage plant-rich diets as a main component of the program	Residential	Urban Seeds, EVSC, private and charter schools, Tri-State Food Bank, non-profits administering food programs, Farm Bureau	Ongoing 2050
4.7: Promote greater utilization of local farmer's markets by increasing transportation options; encourage additional local growers to participate	Residential	DEID, UNOE, Feed Evansville, Farm Bureau, Food Commission	Ongoing 2050
4.8: Encourage property owners and residents within city limits to reduce number of mowed acres	Commercial, Residential	KEB	2040
4.9: Increase the number of community gardens and partner with local nonprofits to ensure garden upkeep and management	Residential, Government	City of Evansville, Urban Seeds, SWIMGA, Promise Zone, Food Commission, Feed Evansville, UNOE, UE, USI, EVSC	Ongoing 2050
4.10: Facilitate the creation of a food purchasing program for local restaurants and organizations that purchase food (hospitals, schools, etc.)	Commercial, Residential	Farm Bureau, UE, USI, EVSC, Deaconess Hospital, St Vincent Hospital, Local Growers of Southern IN	2030
4.11: Facilitate the creation of shared commercial kitchen space for community organizations and innovator kitchens	Commercial	Urban Seeds	2030
4.12: Subsidize the cost of EBT equipment, removing a barrier for markets and grocers to accept Supplemental Nutrition Assistance Program (SNAP) vouchers.	Commercial, Government	GAGE, UE, USI, Farm Bureau	Ongoing 2050
4.14: Establish community orchard pilot project with local neighborhood association and City Arborist	Government	City of Evansville, SWIMGA, UNOE	2035

# CONCLUSION & NEXT STEPS

This Climate Action Plan marks the beginning of Evansville's long-term commitment to address climate change. There is much work to be done, and the CAP will serve as a roadmap to achieving our city's emissions reduction goals.

Strategic actions beyond those outlined in this plan will be needed to meet and exceed our climate goals. For example, the City will need to lobby legislators to expand solar tax credits, net metering, and other sustainability incentives. There is also an opportunity to collaborate with other municipalities. Working together to encourage adoption of property-assessed clean energy (PACE) financing can encourage residential and commercial adoption of renewable energy.

Creating an online dashboard for the CAP can help the community track CAP implementation and GHG reduction over the next 30 years, along with periodic progress reports. The dashboard also can include educational resources and other tools that encourage individuals and organizations to take action on climate change.

Cross-sector collaboration between businesses, nonprofits, universities, residents, and city officials is imperative in order to achieve our climate goals. More importantly, we commit to being accountable for ensuring that this plan equitably serves all members of our community throughout its implementation.

Although climate change poses one of the greatest challenges of our time, it is also an opportunity for Evansville to display leadership and innovation across our region for years to come.



The background image shows an aerial view of a city street, likely in Evansville, Indiana. In the foreground, there are several flagpoles with flags flying. From left to right, there is the Indiana state flag, the United States flag, and the Evansville, Indiana, city flag. The city skyline features several buildings, including a prominent skyscraper on the right side. The street below has some traffic and pedestrian areas.

# Appendix A: Community Engagement & Survey Results

# CAP Website

1

The website acted as a hub for all community engagement activities including signing up for virtual town halls, taking the survey, reporting news coverage of the plan, and providing information about the plan's development. The website also acted as an educational resource for residents to learn about climate change and how they can reduce their carbon footprints.

## Community Meetings

We conducted numerous dedicated sessions in partnership with corporations and civic groups to share information about climate change and the CAP. These included the Evansville Chapter of the NAACP, Berry Global, the Southwest Indiana Chamber to the Growth Alliance for Greater Evansville, Leadership Everyone, Wesselman Nature Society, and the Evansville Vanderburgh Public Library.

2

We conducted a survey from June to September in 2020 to collect resident input on climate change, concern, and to gauge support for proposed actions. The survey also provided many opportunities for residents to give input on what they wanted to see in the plan.

3

## Virtual Town Halls

We held eight virtual public town halls in June and July. The final town hall was completed in partnership with the Evansville Vanderburgh Public Library (EVPL). Town halls consisted of a presentation on climate change and how CAPs work. The second half of the town hall was a facilitated discussion where residents could provide suggestions for the plan.



## Stakeholder Meetings

5

We held over 40 one-on-one stakeholder meetings to gather information about Evansville's current context. We spoke with City department heads, business leaders, local environmental groups, and nonprofit organizations. Later in the CAP development process, we held stakeholder focus groups based on subject area to review our initial strategies. We utilized stakeholder feedback to

6

## Equitable Engagement

We prioritized engagement specifically with the Black and Hispanic/Latinx communities in Evansville knowing these communities are too often underrepresented and most adversely affected by climate change.

**8**  
Virtual Public  
Town Halls

**6**  
Community  
Meetings and  
Presentations

**40**  
Stakeholder  
Meetings

**1800+**  
Survey  
Responses

# SURVEY RESULTS

## OVERVIEW

To augment our town hall qualitative feedback, our team launched an online survey to collect quantitative and more extensive qualitative feedback from Evansville residents. The survey gathered input on proposed CAP actions and personal experiences regarding climate change. It was conducted between June and September 2020 and recorded approximately 1850 responses, capturing resident ideas, suggestions, and concerns. Below is a summary of survey results. Full survey results are located in the appendix.

## DEMOGRAPHICS

### Age & Gender

Survey results showed a bell curve distribution in terms of survey respondent age. The majority of respondents were young adults between the ages of 25 and 44 (46.6%), which is 21% greater than the overall Evansville population ([stats.indiana.edu](https://stats.indiana.edu)). More women (66.5%) responded to the survey than men (30%) and nonbinary individuals (0.8%).

### Ethnicity

A majority (88%) of respondents were white, while all other ethnicities were under-represented (2.1% African American, 1.4% Hispanic or Latinx, and 1.3% Asian, with the remainder as multiple ethnicities or non-identified). The COVID-19 pandemic presented a unique challenge with survey distribution. Because few or no in-person community events were being held, we were unable to distribute physical copies as originally anticipated. This prevented us from reaching the full diversity of Evansville's population. To address this issue, we conducted outreach with organizations that enabled us to engage with Black and Hispanic or Latinx community leaders. Despite this challenge, the survey demographic data was relatively reflective of current demographics in Evansville (85.4% of Vanderburgh County residents are White, 9.9% are Black, and 2.8% percent are Hispanic or Latinx from [stats.indiana.edu](https://stats.indiana.edu)).

### Income

The average annual income of an individual in the Evansville metro area is \$48,571 ([stats.indiana.edu](https://stats.indiana.edu)). 17.5% of respondents indicated their income was between \$25,000-\$49,000, compared to 34.0% of respondents with an income ranging between \$50,000-\$99,000. Survey results indicate a need to more directly engage with low-income community members moving forward. Given that the survey was online, respondents needed access to a smart phone or WiFi to complete the survey.

# SURVEY RESULTS

## Resident Suggestions

The survey included numerous open-ended questions where respondents could write in ideas for actions to reduce greenhouse gas emissions associated with transportation, buildings and energy and waste. Additionally, we asked survey takers about actions that would ensure low-income communities are not adversely impacted by climate change. Below are some of common suggestions and themes from survey-takers:

### Transportation

- Make the city more walkable
- Build more bike lanes and sidewalks
- Add rail to our public transportation system (rapid transportation)
- Expand existing bus system and incentivizing ridership
- Incentivize carpooling and working from home



### Buildings & Energy

- Increase individual and business access to solar energy through incentives and rebates
- Build solar arrays above parking lots to power local buildings and shade cars
- Partner with businesses to create more sustainable building practices
- Add more greenery around buildings for added psychological benefits and sequester carbon



### Waste and local food

- Launch recycling education campaign
- Add recycling bins in public areas downtown
- Add glass to list of accepted recyclables
- Create composting infrastructure
- Educate the public on importance of plant-rich diets and food waste reduction



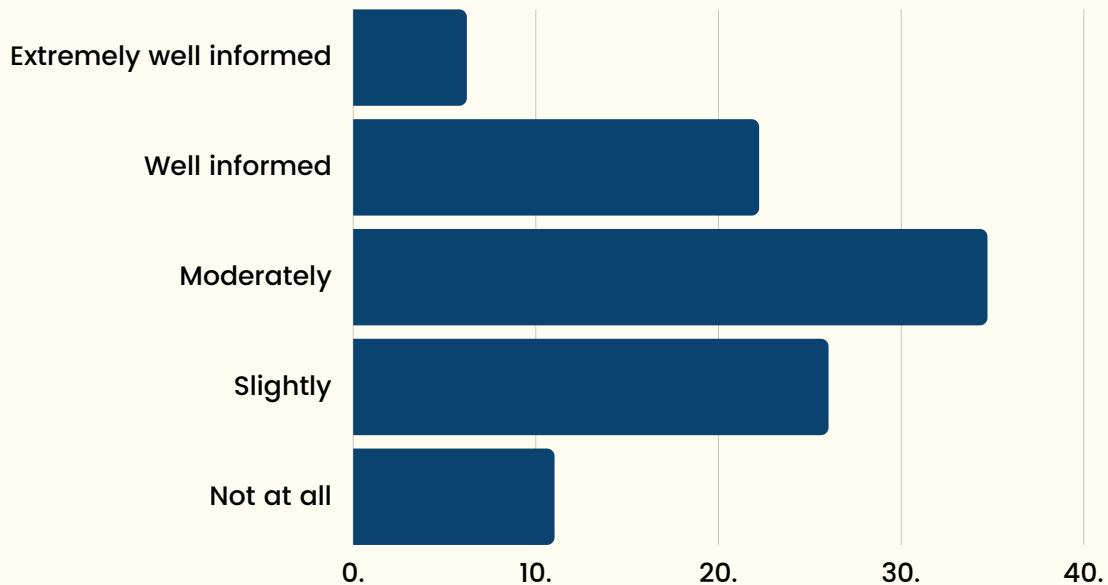
### Climate Disparities

- Expand access to parks and green space
- Rent, utilities, and bus fares should not increase as climate change worsens
- Continued programming to improve food security
- Ensure affordable access to local and fresh food

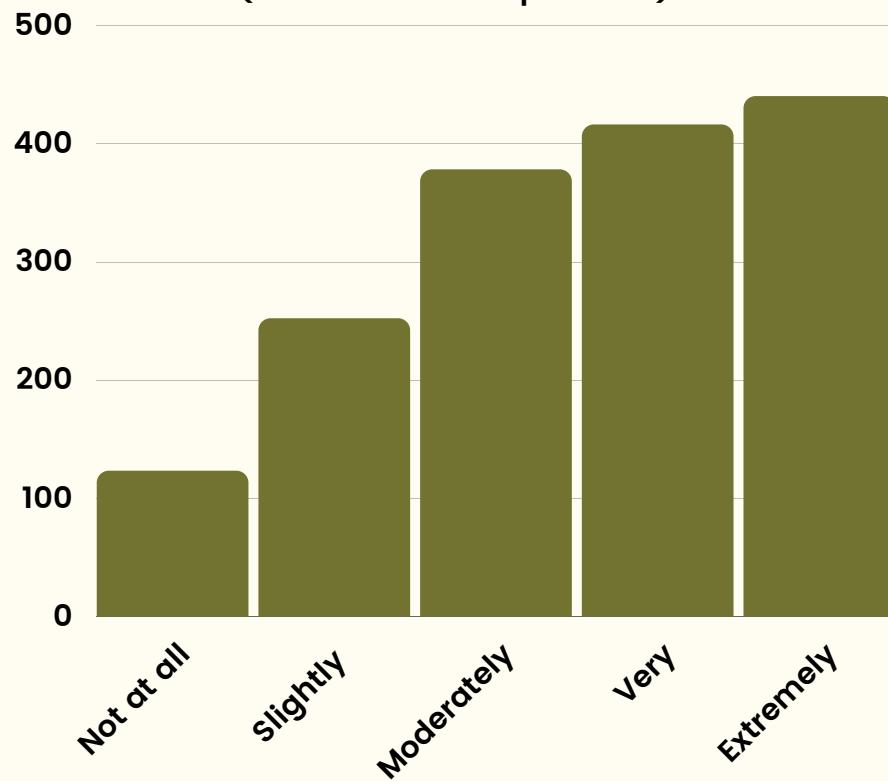


# SURVEY RESULTS

Question 7: How well informed do you believe you are on the local (greater Evansville) effects of climate change? (percentage %)



Question 12: How concerned are you about climate change?  
(number of responses)

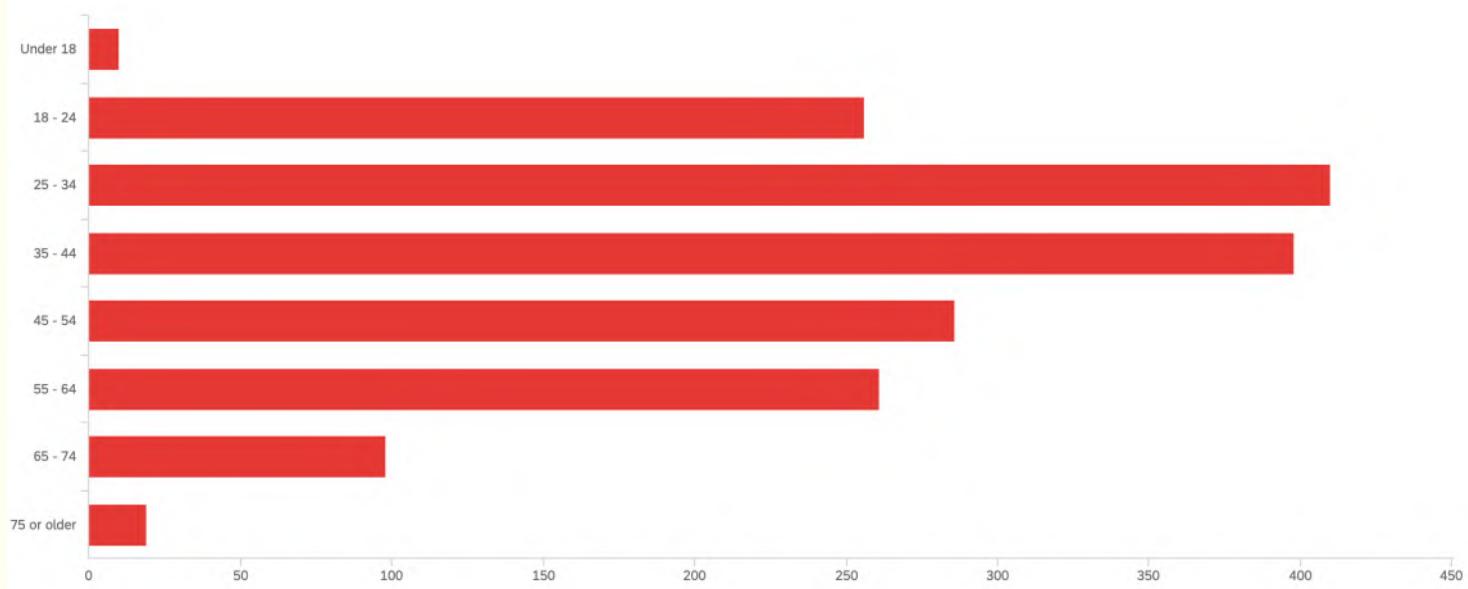


# SURVEY RESULTS

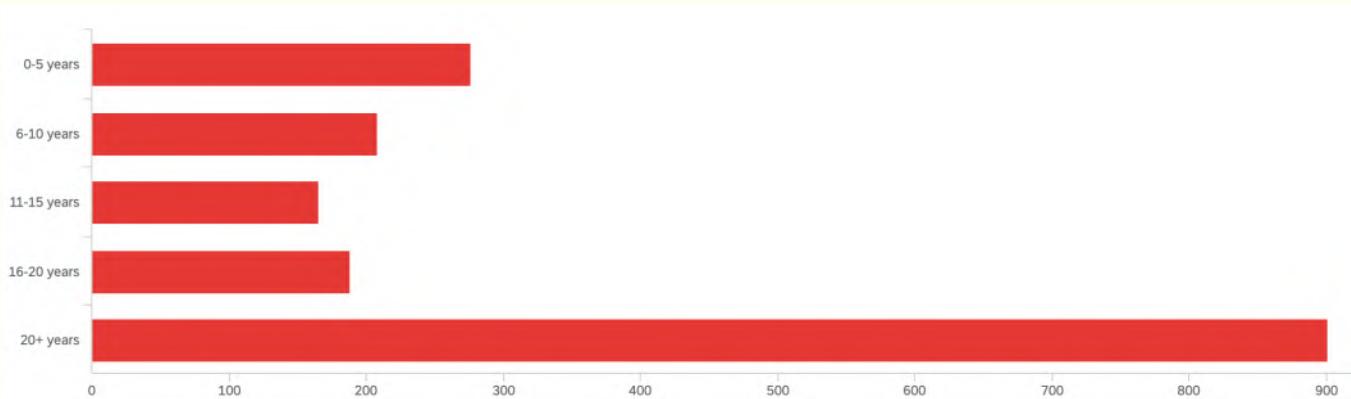
## Q1: What is your affiliation with Evansville? (Select all that apply)

#	Field	Choice Count
1	Live and own a home in the Evansville area	34.41% 1076
2	Live and rent in the Evansville area	10.62% 332
3	Work in Evansville	36.62% 1145
4	University Student (University of Evansville, University of Southern Indiana, Indiana University School of Medicine, or Ivy Tech)	5.98% 187
5	High school student	0.93% 29
6	Own a business in the Evansville area	3.17% 99
7	City of Evansville employee	2.78% 87
8	Other (please specify)	5.50% 172

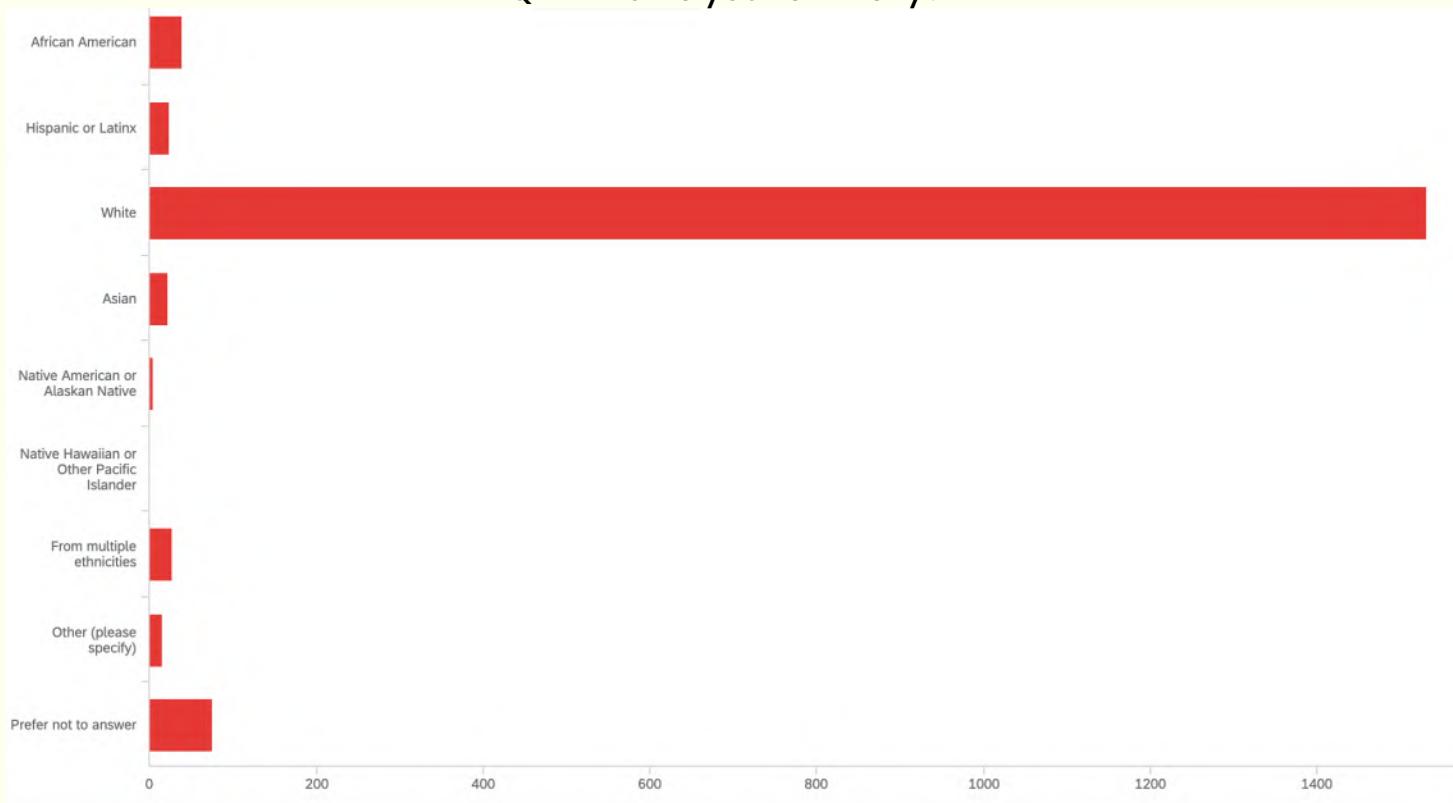
## Q2: What age category describes you?



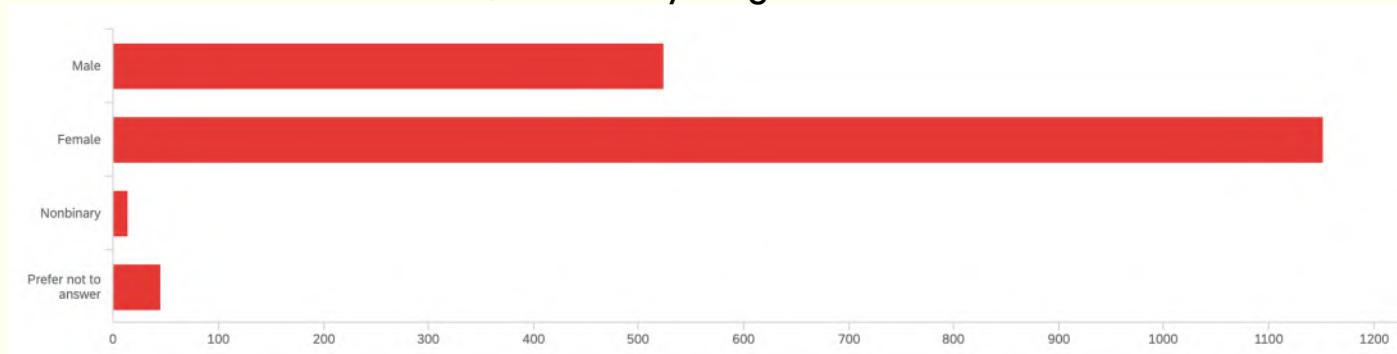
### Q3: How long have you lived or worked in Evansville?



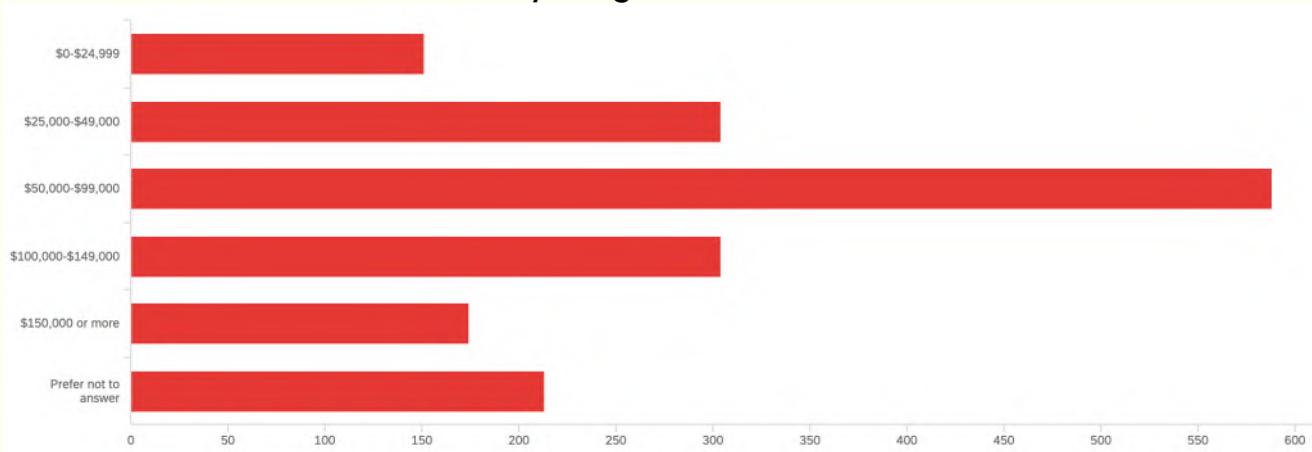
### Q4: What is your ethnicity?



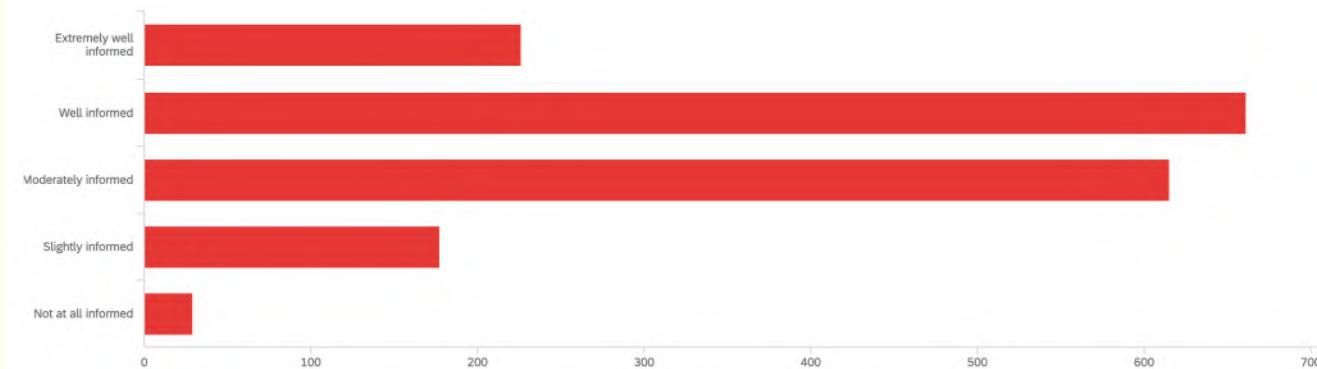
### Q5: What is your gender?



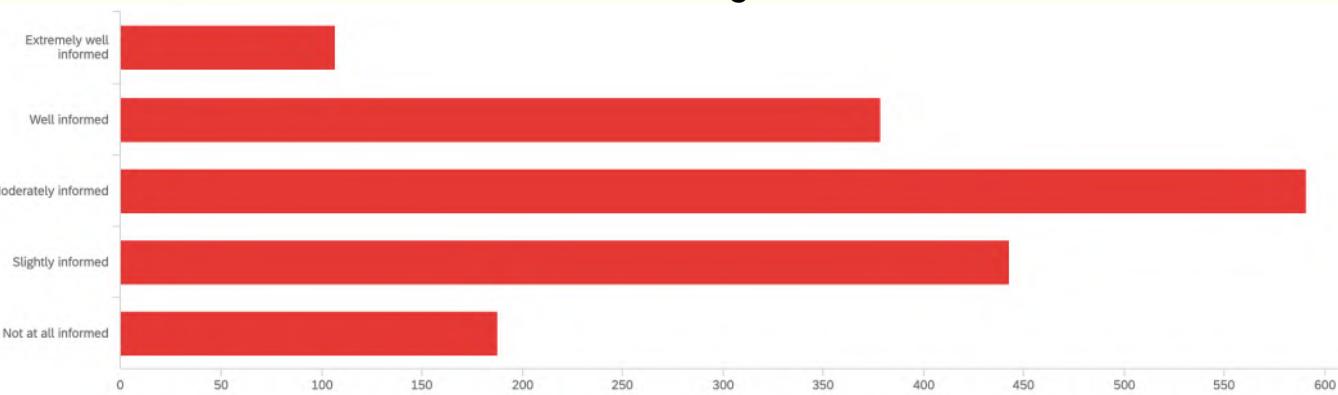
### **Q6: What is your gross annual income?**



### **Q7: How well informed do you believe you are on the global effects of climate change?**



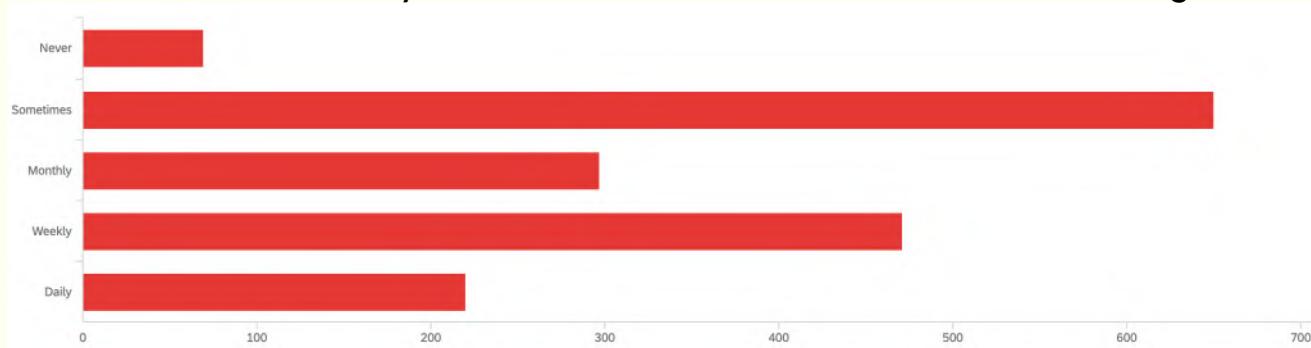
### **Q8: How well informed do you believe you are on the local (greater Evansville) effects of climate change?**



## Q9: Where do you access information about climate change? (select all that apply)

#	Field	Choice Count
1	TV News	14.49% 937
2	National Newspaper (online or print)	11.86% 767
3	Local Newspaper (Courier and Press, online or print)	8.92% 577
4	Podcasts	7.33% 474
5	School	3.56% 230
6	Internet search	16.82% 1088
7	Instagram	3.00% 194
8	Twitter	3.65% 236
9	Facebook	8.10% 524
10	Local government	4.70% 304
11	Family and/or friends	9.43% 610
12	Books/public library	4.76% 308
13	Other (please specify)	3.37% 218

## Q10: How often do you think, talk, and/or hear about climate change?



## Q11: Have you noticed any of the following in Evansville (select all that apply)

#	Field	Choice Count
1	Heavier rainfalls	10.71% 648
2	Longer periods without rain (drought)	9.86% 597
3	Higher temperatures	16.08% 973
4	Season shift (shorter winters, longer summers)	18.39% 1113
5	Lower air quality	13.65% 826
6	More frequent flooding	10.26% 621
7	Severe thunderstorms	8.34% 505
8	Change in general weather patterns	12.71% 769

**Q12: How concerned are you about the following temperature and rainfall projections in Vanderburgh County? (Source: Purdue University Indiana Climate Change Impacts Assessment)**

## VANDERBURGH COUNTY: State of the Climate

Weather records show that Indiana has become warmer and wetter, with more heavy downpours. Indiana scientists have concluded these climate trends will continue and intensify, affecting the health and wellbeing of all Hoosiers.

### Number of >95°F days per year

7      60

PAST

2050s

### Average hottest day of the year

97°F    108°F

PAST

2050s

### Average coldest day of the year

-2°F    5°F

PAST

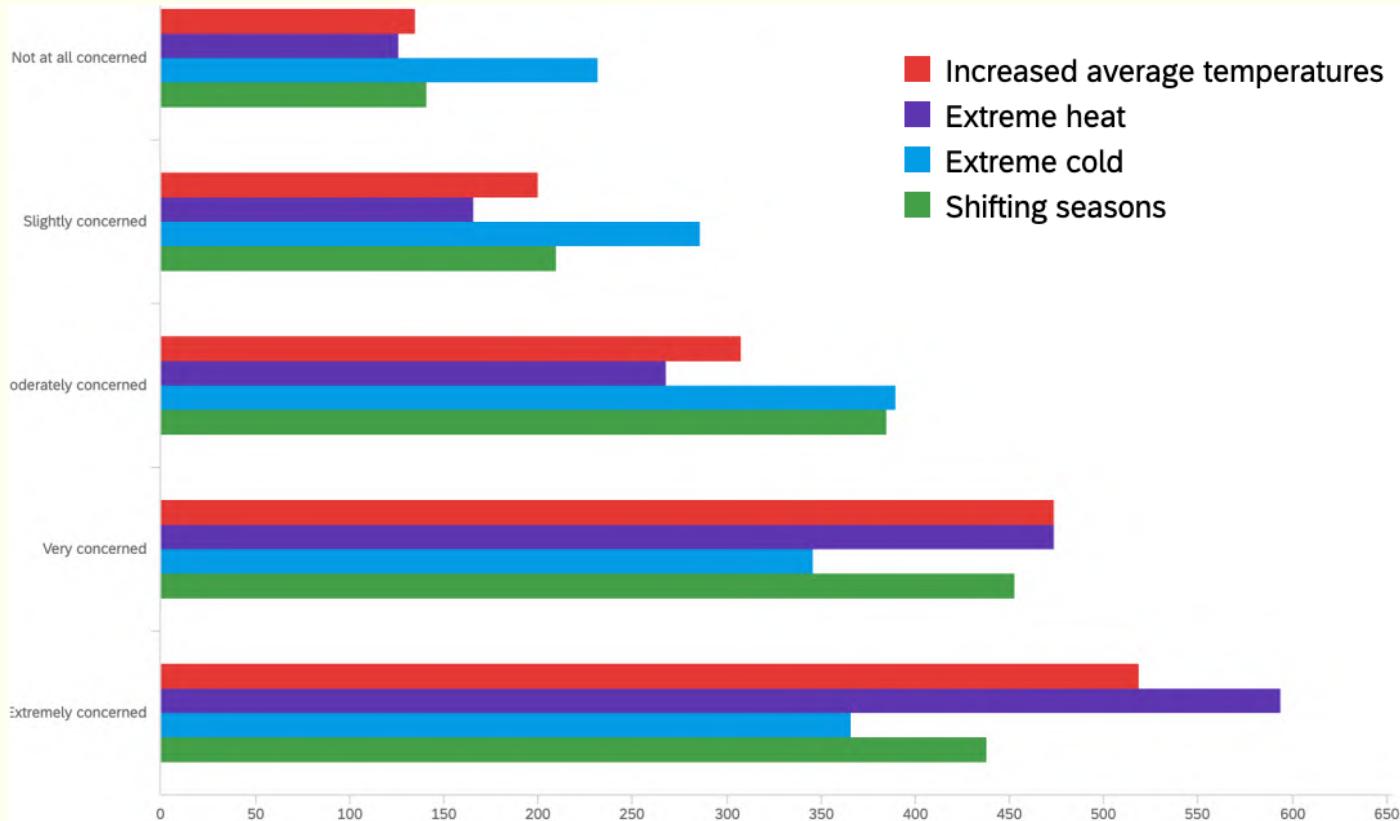
2050s

### Projected change in SPRING rainfall

+16%

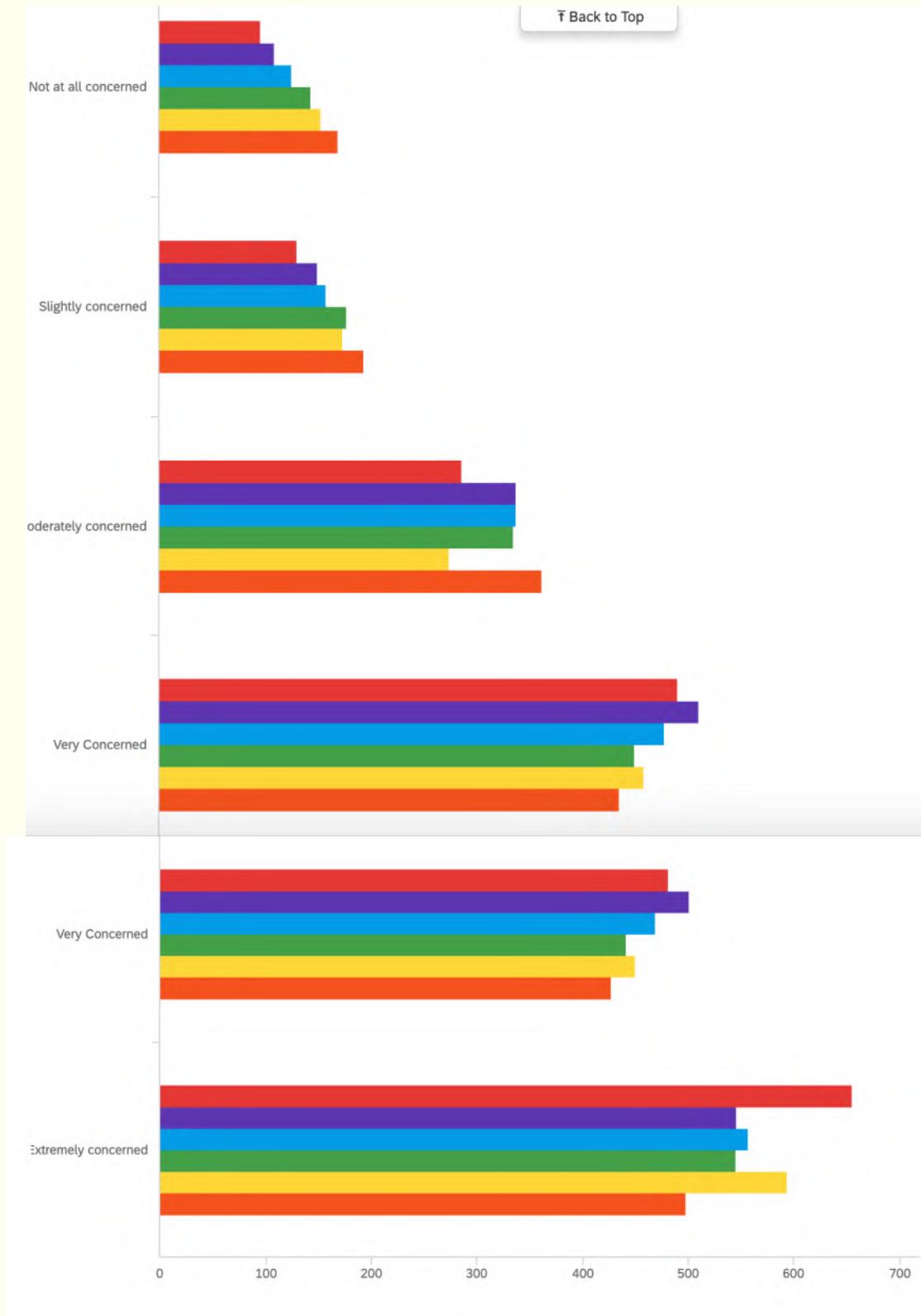
2050s compared to PAST

Above data show a comparison of past and future conditions for **Vanderburgh County, Indiana**, except SPRING rainfall which shows statewide average data. Past data are average values from **1971 to 2000**. Future data (2050s) are average values from **2041 to 2070** based on a high emissions scenario (assumes no reduction in the addition of heat-trapping gases to the atmosphere).



### Q13: How concerned are you about the possible human health impacts of climate change?

[Back to Top](#)



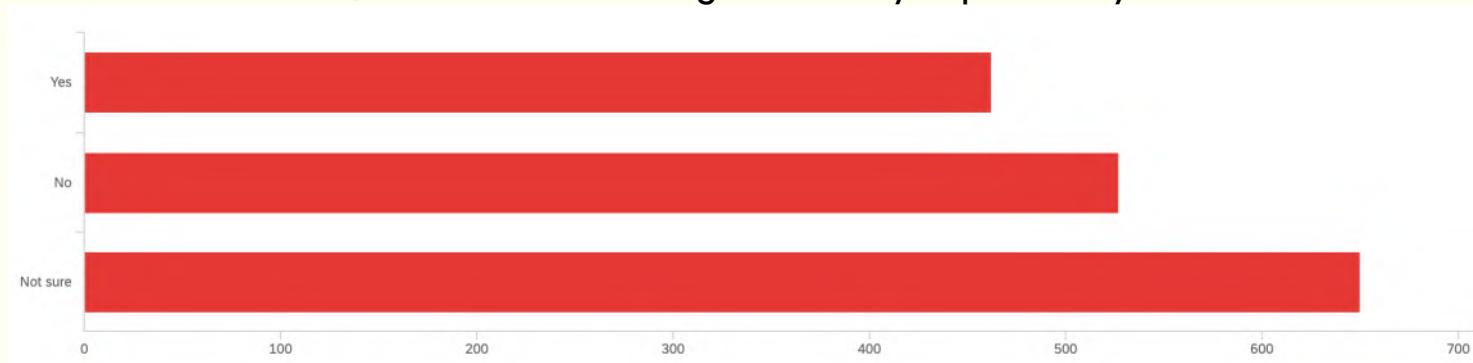
- Worsened air quality, resulting in increased asthma, respiratory, and heart...
- Disease outbreak caused by disease-carrying pests (e.g. mosquitos)
- Extreme heat health impacts
- Food insecurity
- Lack of clean drinking water
- Mental health impacts (anxiety, depression etc.)

**Q14: How concerned are you about the possible infrastructure and economic impacts of climate change?**

#	Field	Not at all concerned	Slightly concerned	Moderately concerned	Very concerned	Extremely concerned	Total
1	Inability to pay for house repairs after extreme weather events	12.20% 200	15.49% 254	23.60% 387	26.40% 433	22.32% 366	1640
2	Higher utility rates	5.74% 94	8.80% 144	21.50% 352	29.81% 488	34.15% 559	1637
3	Increased food prices	5.82% 95	9.81% 160	20.72% 338	31.39% 512	32.25% 526	1631
4	More frequent power outages (resulting from higher electricity use and/or severe storms)	8.44% 138	12.91% 211	24.10% 394	30.15% 493	24.40% 399	1635
5	Crop and vegetation loss (including home garden)	7.95% 130	9.54% 156	20.60% 337	28.12% 460	33.80% 553	1636

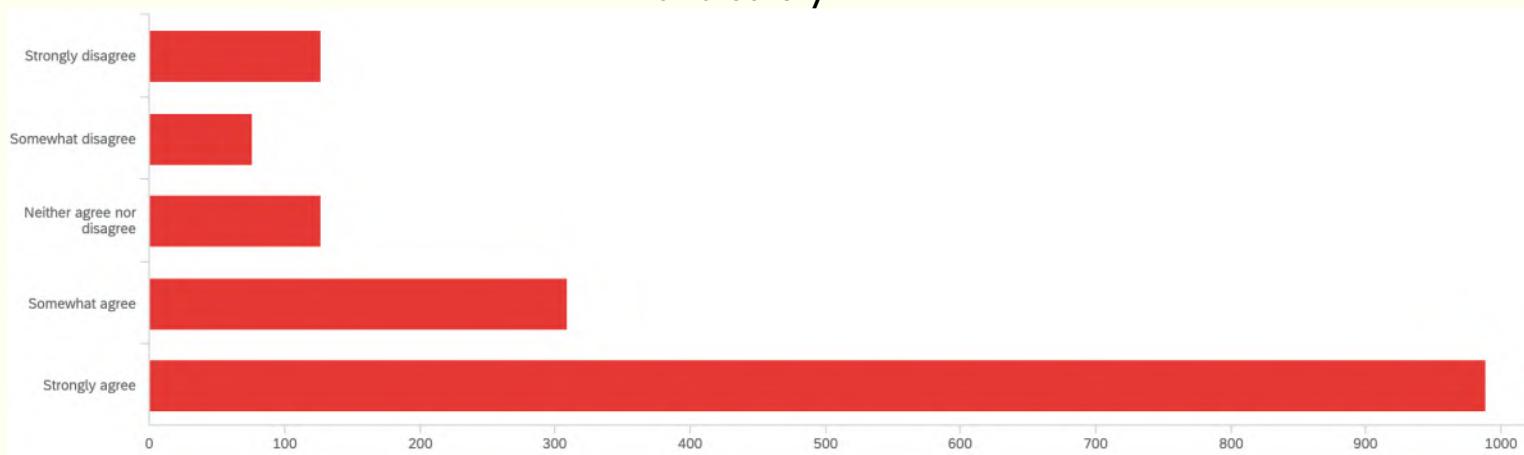
**Q15: What other concerns do you have about the impacts of climate change? - participants typed in their answers**

**Q16: Has climate change affected you personally?**

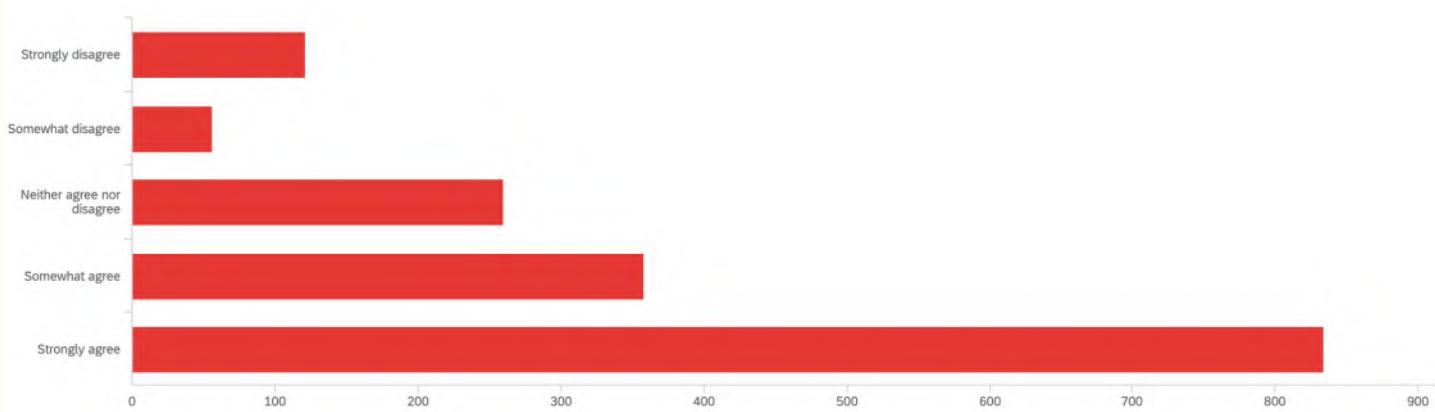


**Q17: If you marked "yes" on Question 16, please explain - participants typed in their answers**

**Q18: To what extent do you agree with the following statement: "It is important for Evansville to mitigate climate change (reduce greenhouse gas emissions) to ensure our community's health and safety."**



**Q19: To what extent do you agree with the following statement: “Evansville is a more attractive city to live in when I know it is effectively addressing climate change.”**



**Q20: Transportation: Which of the following actions would you like to see occur in Evansville to reduce greenhouse gas emissions? (Select as many as you wish)**

#	Field	Choice Count
1	Expanding the METS bus route to reach more of the city	8.80% 706
2	Converting diesel buses with electric buses	13.37% 1072
3	Increasing the METS bus fleet, so buses arrive at stops more frequently	4.40% 353
4	Creating rapid-transit bus system (similar to Indianapolis Red Line)	7.79% 625
5	Constructing additional Complete Streets (roads with fewer car lanes, a protected bike lane, parking, and trees)	9.55% 766
6	Expanding bike paths within the city	12.26% 983
7	Expanding carpool and van services	5.74% 460
9	Installing more EV charging stations in the city	8.80% 706
10	Converting the City vehicle fleet to electric vehicles (ambulances, firetrucks, maintenance trucks, police cruisers etc.)	10.16% 815
11	Investing in high density development downtown to make the city more walkable/bikeable	11.53% 925
12	Expanding the City's bike-share program	7.59% 609

**Q21: What other ideas do you have on how the City can reduce greenhouse gas emissions associated with transportation? Participants typed in answers.**

**Q22: Buildings: Which of the following actions would you like to see occur in Evansville to reduce greenhouse gas emissions? (Select as many as you wish)**

#	Field	Choice Count
1	An ordinance (law) that requires large buildings to report their energy usage (energy benchmarking)	9.17% 755
2	Community-driven residential solar panel incentive or rebate program	15.30% 1259
3	Install new energy-saving technologies in older buildings (incentive retrofit program for residents and/or businesses)	13.53% 1113
4	An ordinance (law) requiring new buildings to be certified as sustainable (e.g. LEED Silver or above)	9.72% 800
5	Local renewable power generation subscription (pay \$5-\$10 more per month on current utility bill)	6.65% 547
6	Community-driven solar panel program available at a reduced cost for low- and moderate-income community members	13.25% 1090
7	Vectren establishing a goal for 100% renewable electricity for all customers	11.93% 982
8	I would support the City incentivizing or promoting the creation of new clean energy jobs	12.86% 1058
9	Community-driven program to install low-flow faucets and shower-heads in Evansville households	7.60% 625

**Q23: What other ideas do you have on how the City can reduce greenhouse gas emissions associated with buildings? Participants typed in answers.**

**Q24: Waste: Which of the following actions would you like to see occur in Evansville to reduce greenhouse gas emissions? (Select as many as you wish)**

#	Field	Choice Count
1	Residential (backyard or apartment) compost bin program (free compost bins for residents)	17.92% 1041
2	Compost and gardening education programs	18.97% 1102
3	Additional community gardens at schools, parks, and neighborhoods	20.33% 1181
4	Residential curbside composting program (in addition yard waste pickup)	15.44% 897
5	Make recycling required at multi-family and apartment complexes	17.47% 1015
6	Paying for trash as I throw it away (and save money when I throw away less)	9.88% 574

**Q25: What other ideas do you have on how the City can reduce greenhouse gas emissions associated with waste? Participants typed in answers.**

**Q26: What other actions would you like to see done to ensure low-income communities are not adversely affected by climate change? Participants typed in answers.**

# APPENDIX B: CITY CLIMATE SUCCESSES

Evansville has taken numerous steps in the past decade to mitigate climate change, earning the City AIM Indiana "Green Community of the Year" award five times, including in 2020. This progress can be seen in the nonprofit, municipal, and private sector accomplishments included below. While much work lies ahead, these initiatives set the standard for future leadership in our community.

## Transportation

- Evansville's plan for a 42-mile network of Greenway Passage and trails, led by the Evansville Trails Coalition, promotes healthy walking and biking alternatives and reduces GHG emissions.
- The Evansville Trails Coalition's Upgrade Bike Share Program launched in October 2016 has more than 4,700 members who have taken over 11,009 bike rides.
- The City of Evansville's Complete Streets Improvements Project along North Main St. included reconstruction of over 24 city blocks, 1.5 miles of new roadway, brick paved bicycle track, sidewalks, planters, signals and underground storm drainage. Additional improvement projects include Oak Hill Road, Walnut Street, and Haynie's Corner.
- CenterPoint Energy plans to convert 100% of the light-duty vehicles and 10% of its heavy-duty vehicles used in Evansville to electric vehicles by 2030.
- Free electric vehicle charging is available at charging stations at each of the three public parking garages in downtown Evansville.



Complete Streets Project

# CITY CLIMATE SUCCESSES

## Buildings & Energy

- In June 2020, CenterPoint announced plans to generate 65% of its electricity with renewable energy sources by 2025, including solar and wind, and reduce greenhouse gas emissions 75% below 2005 levels by 2035.
- The Evansville Water and Sewer Utility's (EWSU) wastewater treatment plant uses methane captured from its treatment facilities to fuel the generators that power the facility.
- EWSU's new 200,000-kilowatt solar array at Campground Road adds to its growing solar-power capacity for powering, pumping and other operations.
- The City of Evansville is in the process of implementing an LED lighting conversion program for its traffic and streetlights.
- Evansville municipal facilities that have earned Leadership in Energy and Environmental Design (LEED) certification include the Wesselman Nature Center (Gold) and Ford Center (Silver).
- Solar installations generate power for Evansville municipal operations including Swonder Ice Arena, the C.K. Newsome Community Center, and the Howell Wetlands Conservation Station. Opened in 2020, Evansville's transformative \$42 million Post House mixed-use development features rooftop solar panels, smart appliances, and home automation. Electric vehicle charging stations are planned for the future.



The Ford Center is a LEED Silver Certified Building

# CITY CLIMATE SUCCESSES

## Waste

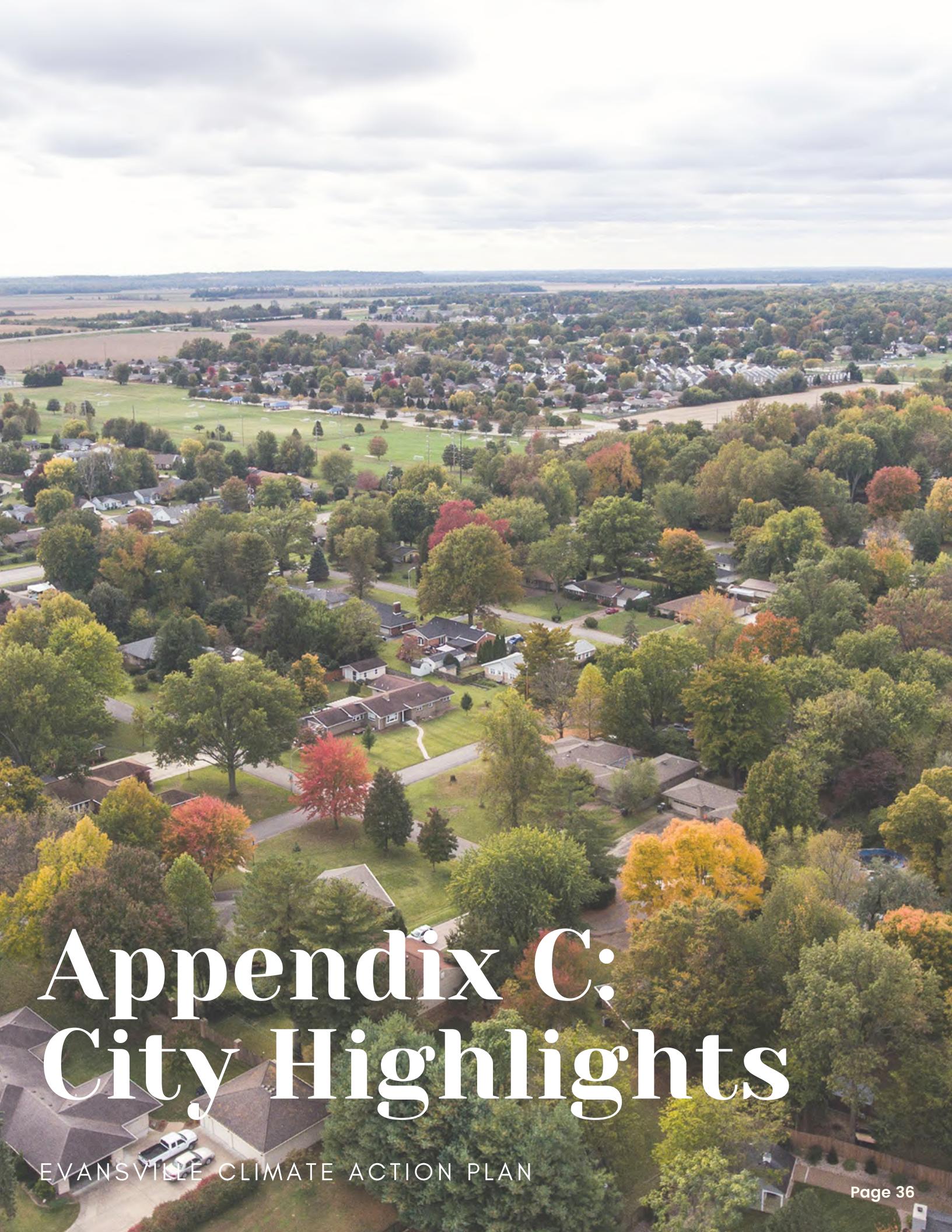
- The Evansville Water and Sewer Utility operates two vital long-term infrastructure programs.
- Renew Evansville is making dramatic upgrades to the City sewer system through upgrades, new infrastructure and sustainable “green” infrastructure solutions. Refresh Evansville is replacing our aging water mains and their supporting infrastructure.
- Evansville’s award-winning Clean Evansville program began in 2012 and has engaged thousands of citizens in collecting litter to beautify their neighborhoods.



Evansville's tree canopy overlooking the Ohio River.

## Local Food, Agriculture & Green Space

- The City of Evansville has maintained its designation as a “Tree City USA” from the Arbor Day Foundation for 20 consecutive years starting in 2000, earning the Growth Award annually since 2003.
- Supported by a City Urban Forestry Department, Tree Nursery, Tree Advisory Board and City Arborist, Evansville plants hundreds of trees annually to remove carbon dioxide from the air.
- Managed by the Wesselman Nature Society, Wesselman Woods Nature Preserve is a National Natural Landmark that features 200 acres of virgin bottomland hardwood forest and is home to more than 300 species of wildflowers, 150 species of birds and numerous mammals.
- Evansville expanded its active farmer’s markets on Franklin and Main streets to enable local growers to offer fresh, nourishing food options for everyone in the community.
- INDOT planted 8,500 native grasses and wildflowers on the U.S. 41 median in 2013 as part of the Evansville Gateway Project/Hoosier Heritage Roadside Program.
- Founded in 2005 as an urban community garden project, Evansville’s Urban Seeds serves as the lead organization of a new Community Food Buying Club, provides gleaning and community food education.
- During the COVID-19 pandemic in 2020, the Feed Evansville initiative identified areas of food insecurity and provided thousands of dairy and meal boxes to Evansville citizens in need.



# Appendix C: City Highlights

EVANSVILLE CLIMATE ACTION PLAN

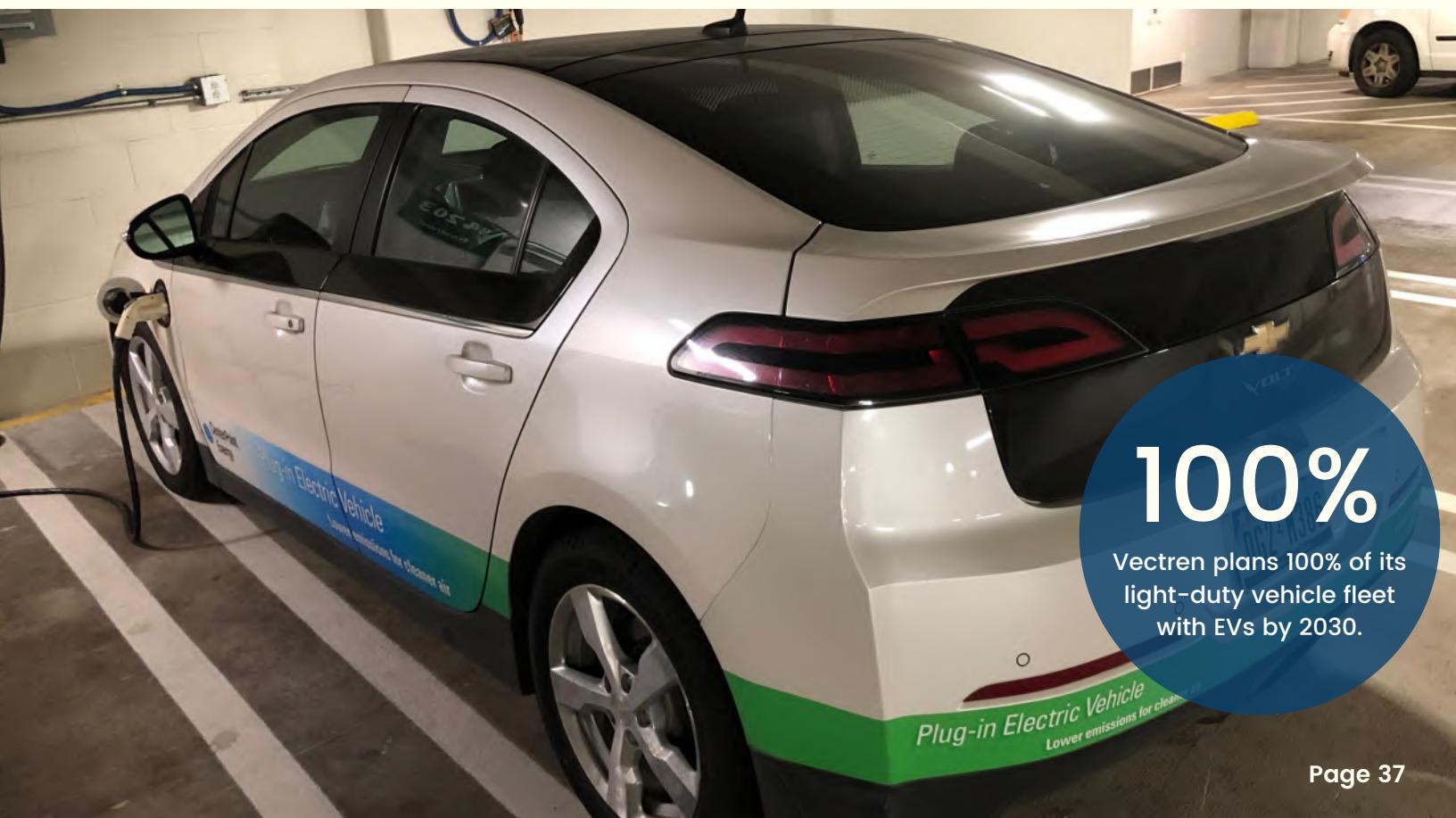


# City Highlight

## Electric Vehicles Making Inroads

Electric vehicles are an effective way to reduce carbon emissions generated in the transportation sector, which accounts for 45% of Evansville's greenhouse gas emissions. Aiding this effort, CenterPoint Energy plans to replace 100% of its current electric operations light-duty fleet vehicles – cars, vans and SUVs – with electric vehicles in Evansville and Houston by 2030. The utility's EV plan:

- Includes goals to replace 50% of its electric operations light-duty fleet vehicles with EVs by 2025, and completely convert them by 2030.
- Also replaces 5% of its electric operations heavy-duty vehicles with EVs by 2025, and 10% of them by 2030.
- As the market evolves, the company will continue to re-evaluate emission reduction goals for all classes of vehicles.
- Supports CenterPoint Energy's Integrated Resource Plan preferred portfolio announced in June 2020, that includes greater reliance on alternative energy sources.
- To reduce emissions, CenterPoint Energy continues to invest in infrastructure modernization, as well as research and development projects.



**100%**

Vectren plans 100% of its  
light-duty vehicle fleet  
with EVs by 2030.



# City Highlight

## Evansville Airport Goes Solar

The 2020 Indiana Airport of the Year, Evansville Regional Airport recently completed construction of a \$6.5 million solar canopy that will provide 50 percent of the airport's power.

### The project:

- Is the Midwest's largest solar-covered airport parking canopy and the second-largest of its kind in the U.S.
- Generates 1.3 megawatts of power
- Covers 400 convenient on-site customer parking spaces
- Reduces the airport's carbon footprint with energy savings of nearly \$9 million over the next 20 years
- Enhances the airport's competitiveness and ability to invest in sustainable passenger amenities
- Exemplifies the airport's commitment to passengers, the planet, and its long-term viability

**50%**

of the airport terminal's power is supplied by the solar array





# City Highlight

## Single-Stream Recycling

Evansville residents have been recycling through a City-provided residential program since 1994. The curbside program began with small bins and expanded in 2012 to a single-stream recycling process with a single large bin that co-mingles a variety of materials, from cardboard and paper fiber to metal, plastics, and more. The consumer-friendly process:

- Engages residents in a convenient way to reduce our carbon footprint.
- Led to a 50 percent increase in residential and commercial recycling.
- Has seen household participation in curbside recycling rise from 25 percent to 65 percent, nearly twice the recent national average.

**65%**

Of Evansville households participate in curbside recycling, nearly twice the national average.





# City Highlight

## Capturing Carbon Has Deep Roots Here

Capturing carbon has become second nature to the City of Evansville. The City has maintained its “Tree City USA” designation from the Arbor Day Foundation for 20 consecutive years starting in 2000 and earned its Growth Award annually since 2003. Supported by an Urban Forestry Department, Tree Nursery, Tree Advisory Board and City Arborist, our community’s tree-planting effort:

- Taps \$75,000 annually from the Vanderburgh County Solid Waste Board to plant trees in public right-of-ways using landfill fees.
- Plants hundreds of additional trees donated by the Parks Foundation and the Rotary Foundation of Evansville in area parks and public spaces.
- Presents one of the most eco-friendly ways to keep carbon out of the atmosphere, while limiting flooding and lowering energy use.
- Removes carbon dioxide from the air, stores carbon inside trees and soil, and releases more oxygen into the atmosphere.



6

Evansville’s tree canopy will contribute to a 6 gigaton reduction in annual global carbon emissions between 2025–2055.

# APPENDIX D:

## CLIMATE CHANGE

The Earth is surrounded by a "blanket" called the atmosphere. The blanket is composed of naturally occurring gases called greenhouse gases (GHGs), including carbon dioxide ( $\text{CO}_2$ ), methane ( $\text{CH}_4$ ), nitrous oxide ( $\text{N}_2\text{O}$ ), water vapor ( $\text{H}_2\text{O}$ ), and ozone ( $\text{O}_3$ ). There are also several manmade GHGs such as Chlorofluorocarbons (CFCs). GHGs absorb the sun's energy and like a blanket, keep the Earth at a livable temperature.

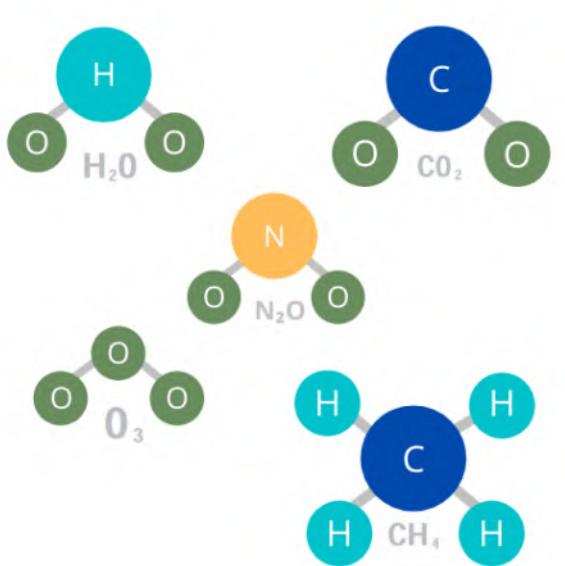


Figure 1: molecular structures of naturally occurring greenhouse gases.

As the sun's energy hits the Earth, some heat is absorbed by the Earth's surface, some is reflected back into space, and some is absorbed by GHGs. This phenomenon is called the Greenhouse Effect. Life could not exist on Earth without it. See Figure 2 for a diagram of the greenhouse effect.

The Industrial Revolution sparked immense human progress with automated systems in factories, railroads, cars, and eventually airplanes. This new technology was fueled by burning fossil fuels such as coal, oil, and natural gas, which emit GHGs as a by-product. Today, our daily activities like driving, flying, and powering our homes all result in GHG emissions. Products we consume (and throw away) also indirectly result in GHG emissions such as high meat and dairy consumption and wasted food.

While Earth's average temperature naturally fluctuates over millions of years, humans have greatly altered the climate, causing an "enhanced" greenhouse effect. As a result, the Earth's average temperature is steadily increasing and is projected to continue unless we significantly reduce GHG emissions at a global scale. This change will result in numerous effects and the following pages describe the specific effects in the City of Evansville.

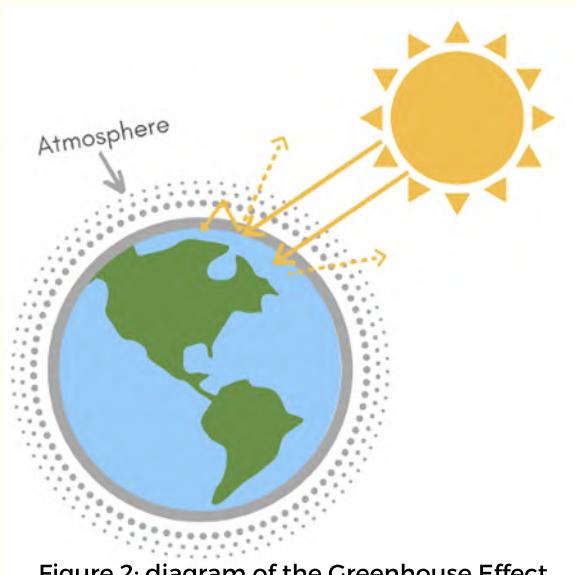


Figure 2: diagram of the Greenhouse Effect

# LOCAL IMPACTS

Climate change is a global problem that is impacting us locally. According to the [Indiana Climate Change Impacts Assessment](#), average annual temperatures in Indiana have already increased 1.2°F since 1895. Indiana's average temperature is projected to increase 5-6°F by 2050 compared to the state's average temperature from 1971-2000.

## Extreme Heat

Evansville will also experience more extremely hot days (days above 95°F). Currently, there are 10 days per year above 95°F, but that is projected to increase to 60 days by 2050. (see Figure 3). According to the [Hoosier Resilience Index from ERI](#), by 2050, there will be 114 days per year above 90°F, if we do not lower emissions at a global scale.

## Number of days per year above 95°F

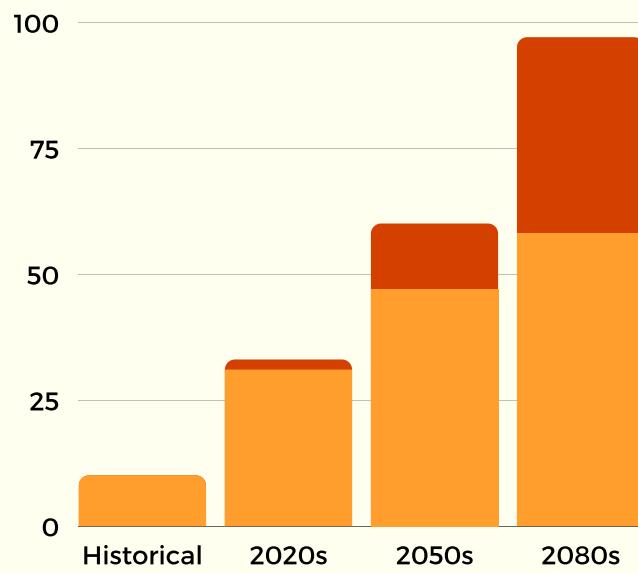


Figure 3: Orange represents a low emissions scenario. Red represents a high emissions scenario.

## Increased Precipitation

Our region has already seen heavier and more frequent precipitation as a result of climate change. Since 1895, average annual precipitation has increased by 6.2 inches in Southwest Indiana. Currently, Evansville has an average of 20 extreme precipitation events per year and will experience approximately 2 annually by 2050 depending on efforts to reduce GHG emissions.

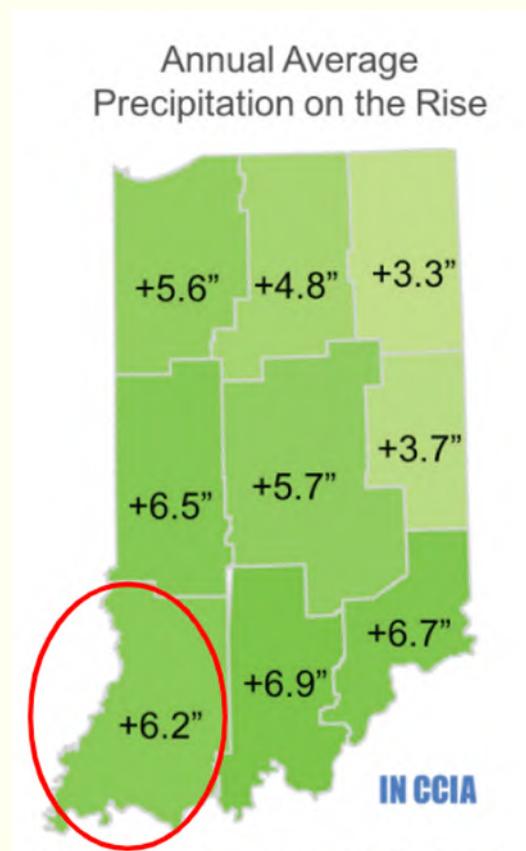


Figure 4: Change in annual average precipitation based on linear trend between 1895 to 2016.

# LOCAL IMPACTS

## Shorter, Milder Winters

Instead of a historic average of 10 snow days per year, by 2050, Vanderburgh County is likely to see seven days a year with snow on average, while the other three days are replaced with rain. The number of frost days, or days below 32°F, is projected to decrease from a historical 87 days to 56 days per year on average by 2050.

## Increased Flood Risk

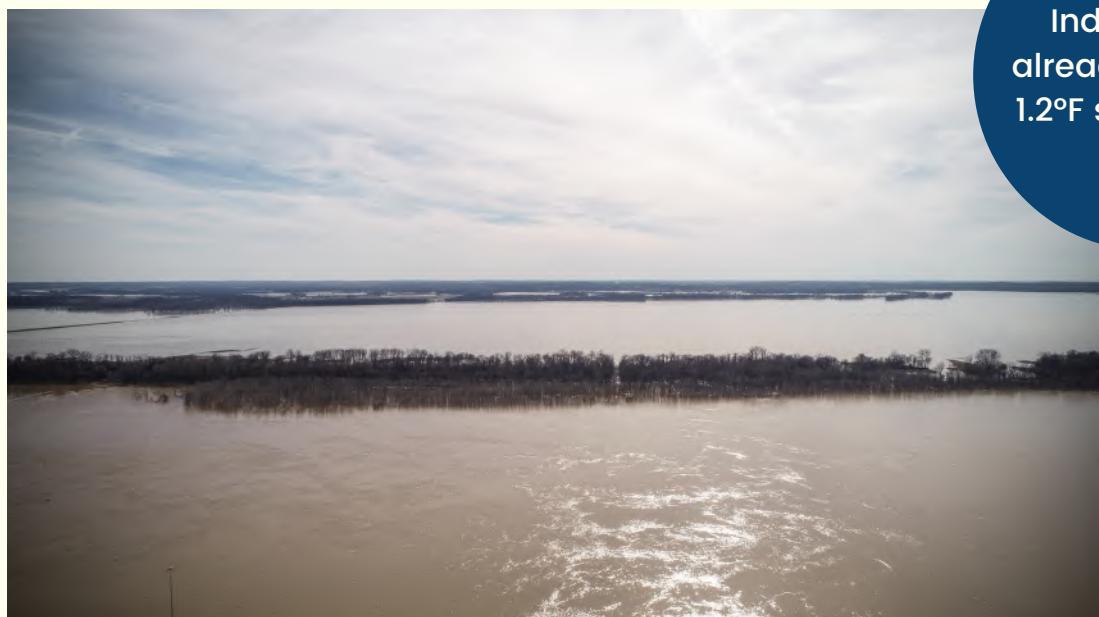
The combination of warmer winters, replacing snow with rain, and an overall increase in precipitation will increase chances of flooding. Already, Southwest Indiana is experiencing an increased trend in flood events. More flooding will lead to more agricultural runoff of pesticides and herbicides, and combined sewer overflows, leading to sewage dumped into the Ohio River.

## Increased Pests and Disease

The combination of warmer winters and increased precipitation is creating a more suitable environment for pests, such as mosquitoes, ticks, and forest pests. Warmer average temperatures will allow pests to remain active for longer periods or expand their existing ranges. These pests carry disease, and with a longer active period, there is a greater chance of disease spread.

## Longer Allergy and Growing Seasons

Higher average temperatures will result in a longer allergy seasons, as well as longer growing seasons for crops. The frost-free season has already lengthened by nine days since 1895.



Indiana has already warmed 1.2°F since 1895.

Flooded farmland in Southwest Indiana, Spring 2019



**1.2°F**

Increase in Indiana's average temperature since 1895. This is projected to increase to 5-6°F if the U.S. and other countries are able to reduce GHG emissions.



**60**

Days per year above 95°F by 2050 if local and global action isn't taken to address climate change..



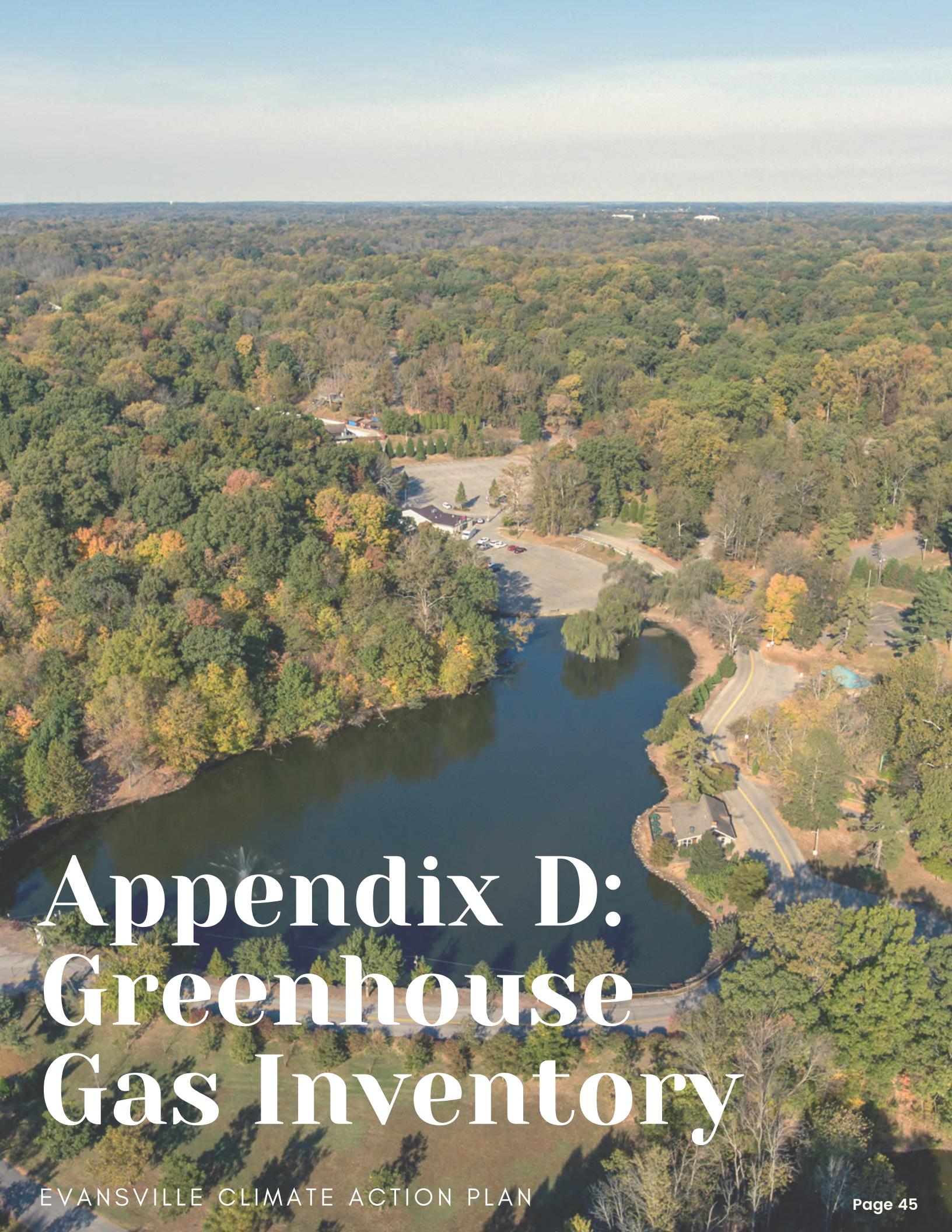
**42%**

More precipitation now falls during heavy downpours in Indiana.



**7**

Days it will snow each year by mid-century if we do not reduce emissions globally.



# Appendix D: Greenhouse Gas Inventory

# GREENHOUSE GAS INVENTORY RESULTS

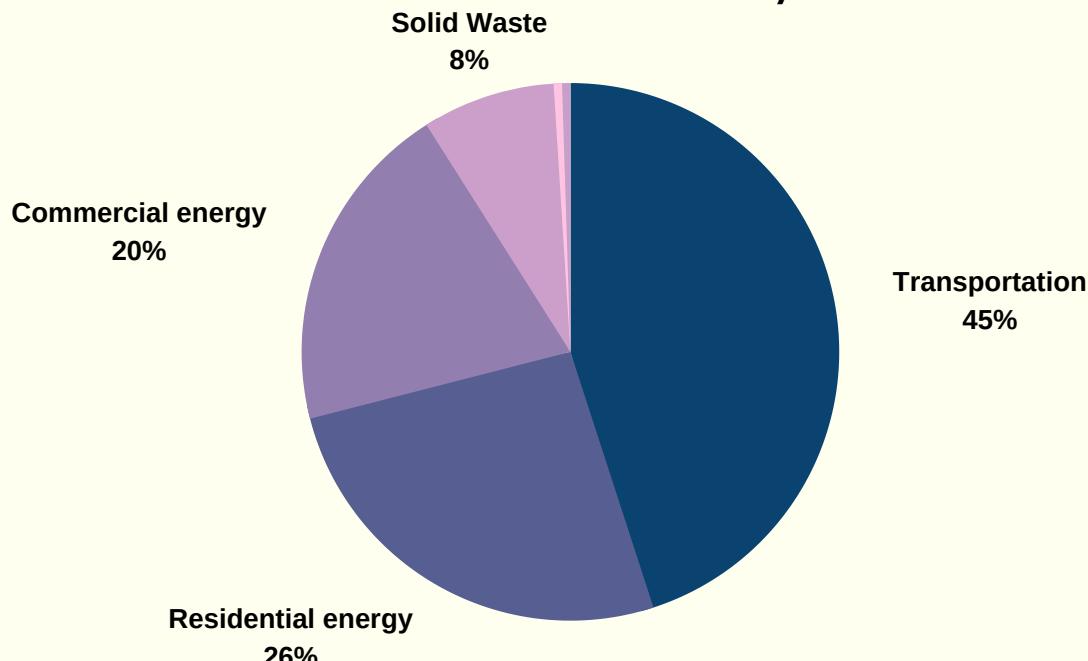
## WHAT IS A GREENHOUSE GAS (GHG) INVENTORY?

A greenhouse gas inventory estimates, using best practices, the total amount of greenhouse gas emissions from a city or community over a given period of time. In 2019, the City completed its first community-wide and government operations GHG inventory for the year 2017. By using the online tool, ClearPath (from ICLEI: Local Governments for Sustainability) and collecting data on activities that generate emissions, the City calculated carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O) emissions. Results were reported in terms of metric tons of carbon dioxide equivalent (MT CO<sub>2</sub>e), which is a metric used to establish a consistent unit of the global warming potential (GWP) of GHGs relative to CO<sub>2</sub>. GWP is the amount of solar energy (heat) a greenhouse gas can absorb as a multiple of the heat that would be absorbed by the same mass of carbon dioxide.

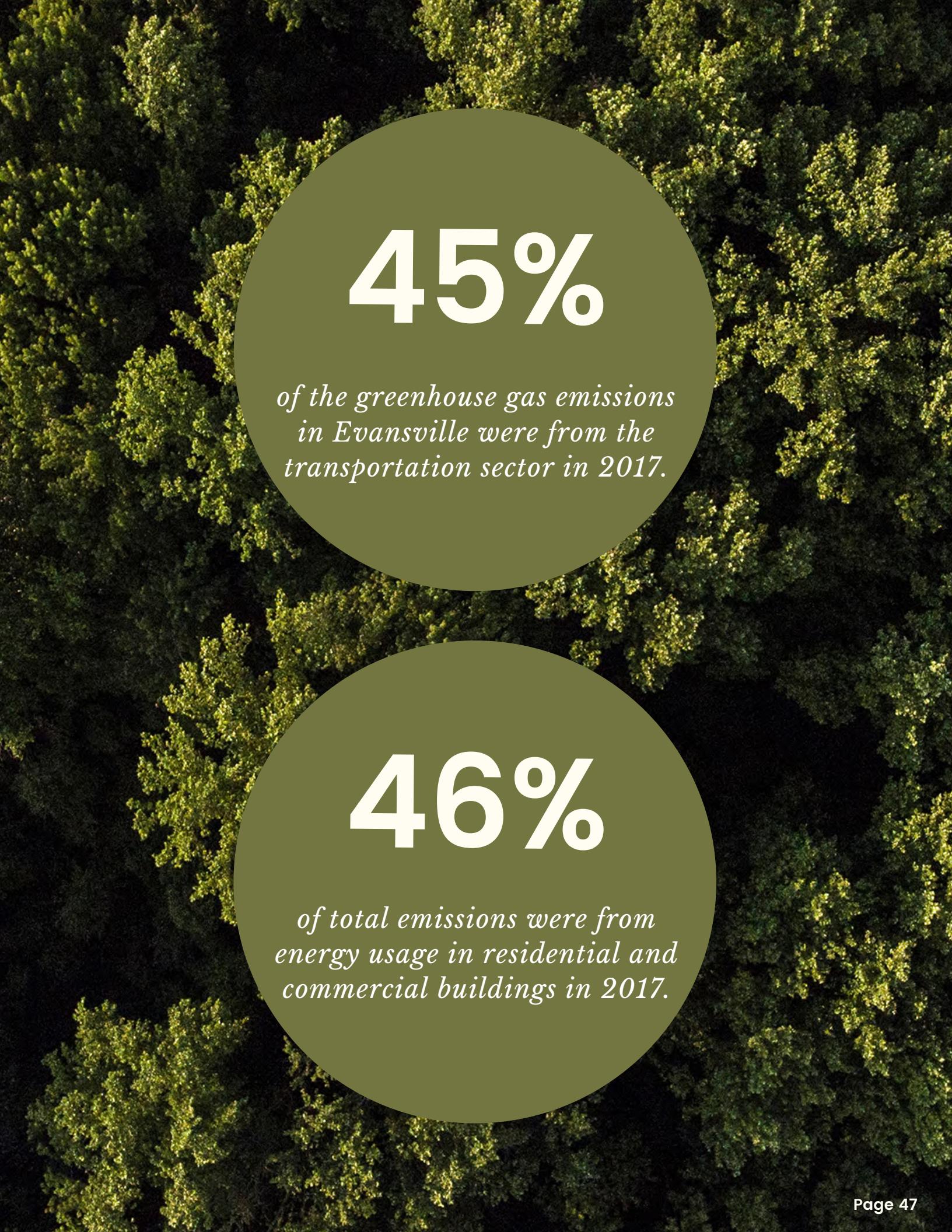
## INVENTORY RESULTS

For the year 2017, our city generated 1,552,387 MT CO<sub>2</sub>e. With an estimated population of 118,930, emissions per person is approximately 13.05 metric tons CO<sub>2</sub>e. The transportation sector accounted for the largest portion of emissions at 45%, followed by energy usage in buildings: residential at 25% and commercial at 20%, and solid waste at 8%. Emissions from process and fugitive operations (leakage from natural gas usage) and water and wastewater each accounted for approximately 0.5%.

**2017 Greenhouse Gas Inventory Results**

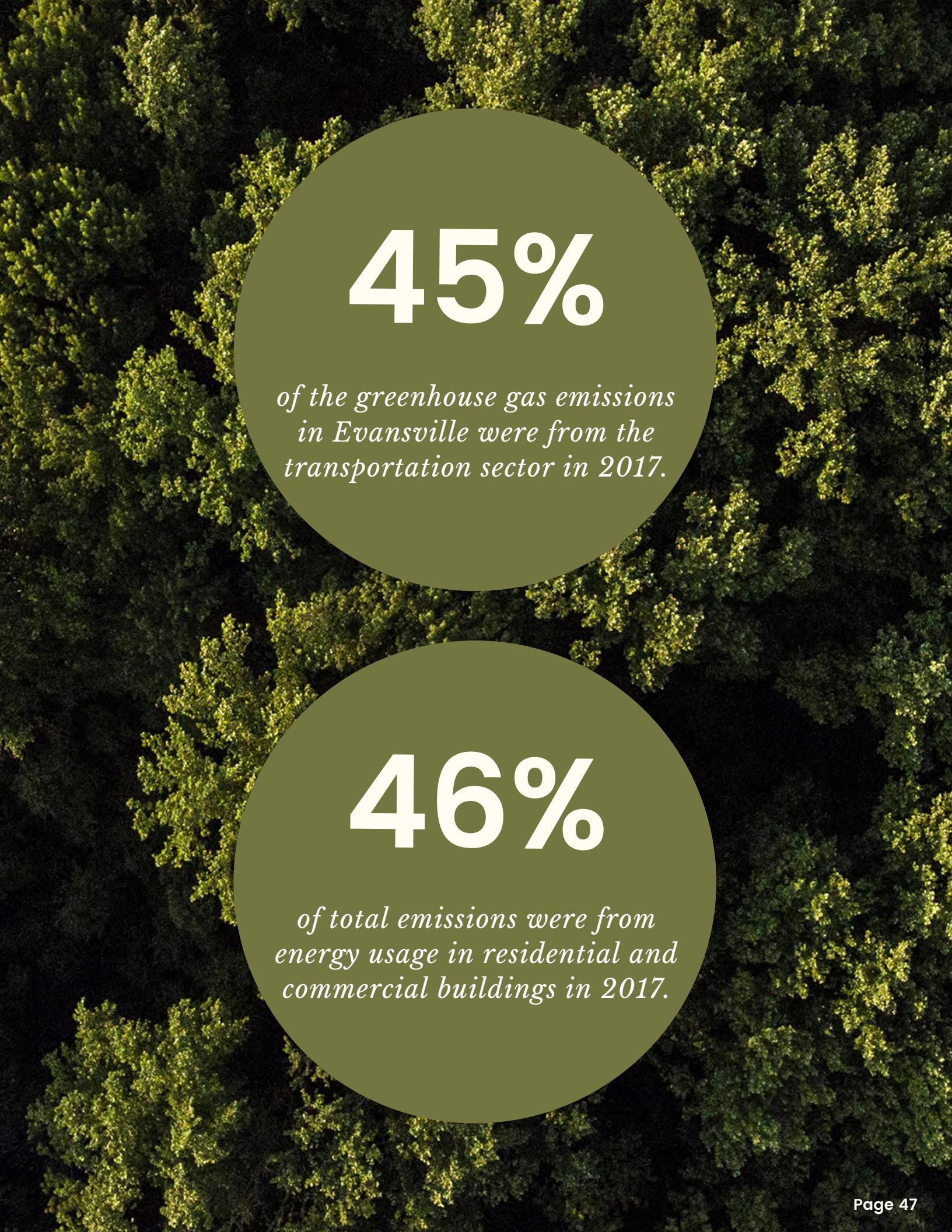


**Figure 6:** Each sector's emissions contribution by percentage

The background of the slide is a photograph of a dense forest from an aerial perspective. The trees are dark green, and sunlight creates bright highlights on the leaves, particularly on the right side of the frame.

# 45%

*of the greenhouse gas emissions  
in Evansville were from the  
transportation sector in 2017.*

The background of the slide is a photograph of a dense forest from an aerial perspective. The trees are dark green, and sunlight creates bright highlights on the leaves, particularly on the right side of the frame.

# 46%

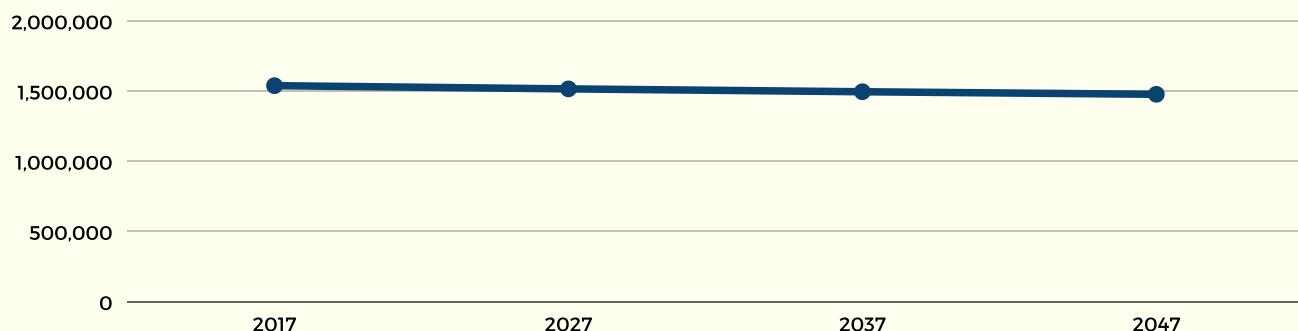
*of total emissions were from  
energy usage in residential and  
commercial buildings in 2017.*

## EVANSVILLE CLIMATE ACTION PLAN

### 2050 FORECAST AND PLANNED REDUCTIONS

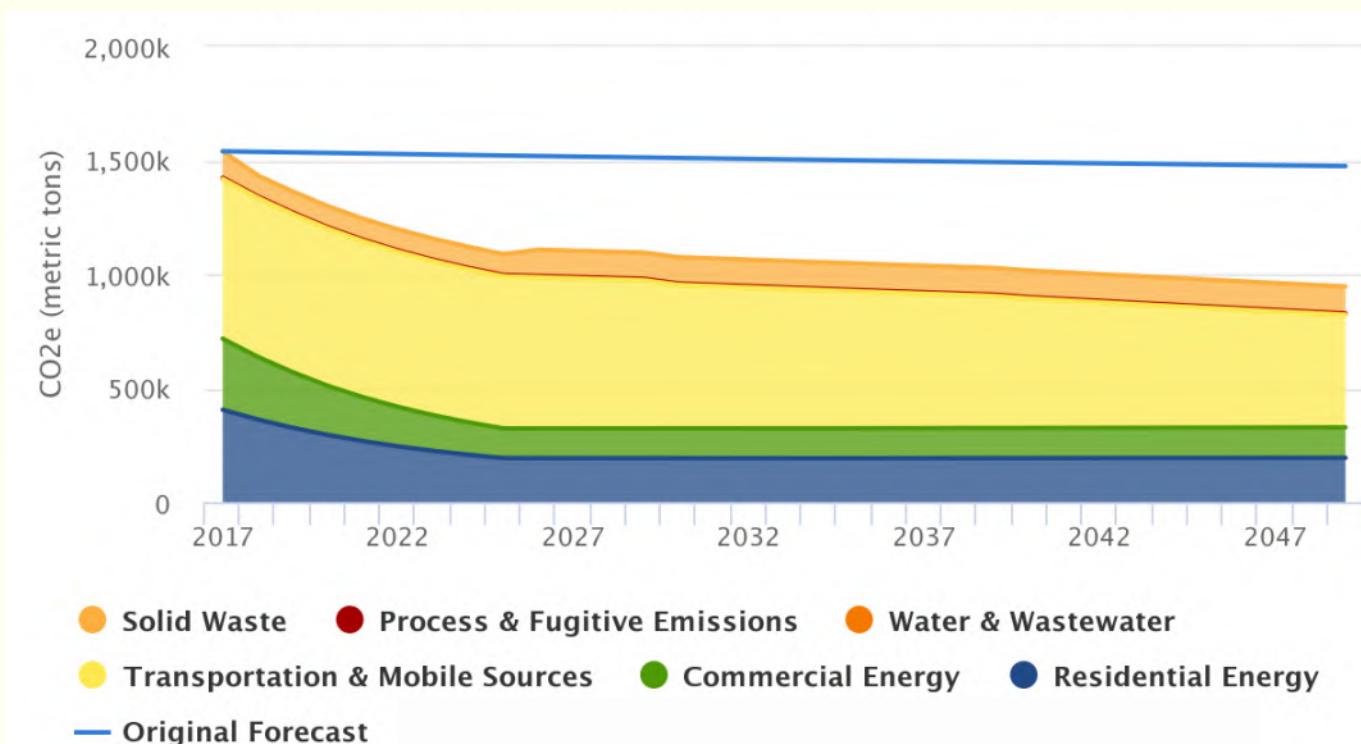
In a business-as-usual scenario, meaning if climate action strategies are not implemented, Evansville emissions will decrease slightly from 1,516,096 MT CO<sub>2</sub>e to 1,477,492 MT CO<sub>2</sub>e. Emissions will decrease as a result of CenterPoint's current proposed integrated resource plan, which has a goal of generating 65% renewable energy by 2025. Figure 8 illustrates the estimated emissions reductions achieved when implementing ClearPath strategies. CO<sub>2</sub>e emission projections and reductions were calculated using the forecasting tool in ClearPath. While ClearPath is an excellent industry-leading software, it has its limitations and that many of Evansville's strategies could not currently be incorporated into ClearPath's existing framework. Therefore, more emissions reductions should be expected beyond what is shown in Figure 8.

### Business as Usual Emissions Forecast



**Figure 7:** Evansville emissions if no action is taken locally to reduce GHG emissions. Please note this scenario includes Vectren's current proposed integrated resource plan.

### Our Planned Reductions



**Figure 8:** This graph illustrates emission reductions achieved when applying CAP strategies from ClearPath. The blue line at the top of the graph illustrates the business as usual scenario.

# Evansville will reduce GHG emissions

15% by 2030

35% by 2040

50% by 2050

\*From a 2017 baseline.