

LAND & WATER RESOURCES

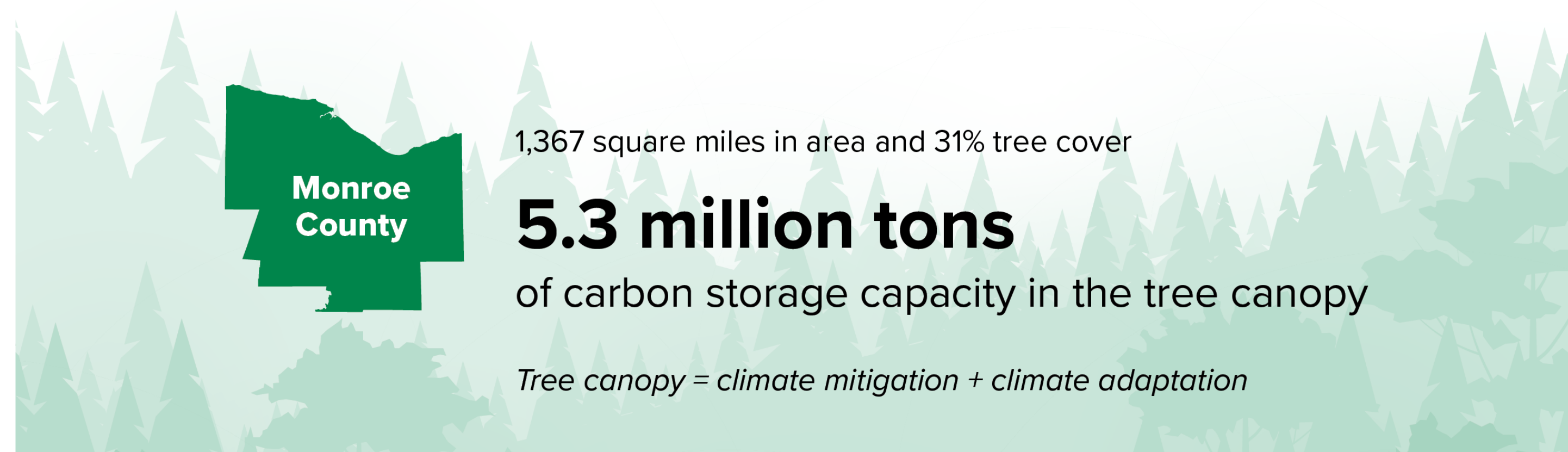


CONTEXT

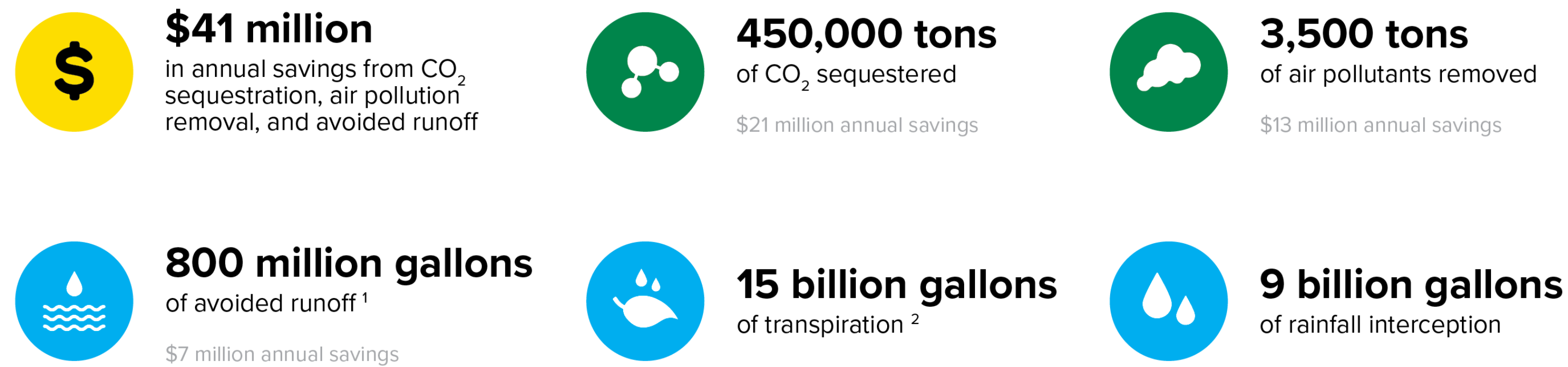
Our County has a wealth of open space and water resources including parks, streams, rivers, canals, and Lake Ontario. There is a direct link between water quality and the great lakes water system.

Water resources, open spaces, and trees help regulate stormwater, wastewater, and GHG emissions, but are vulnerable to impacts from development and human intervention.

i-TREE CANOPY ASSESSMENT TOOL

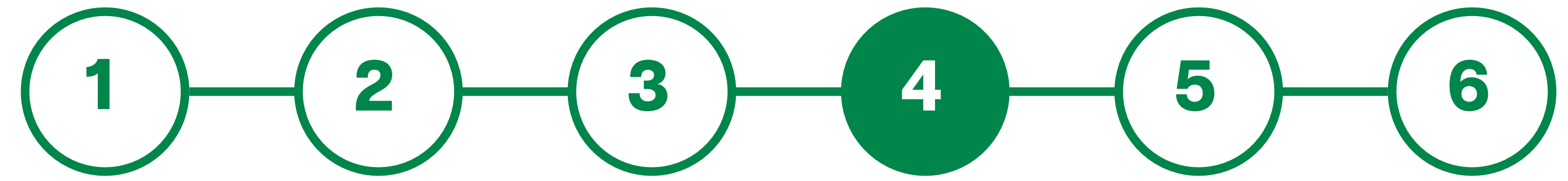


Every year, Monroe County's tree canopy has the following benefits:

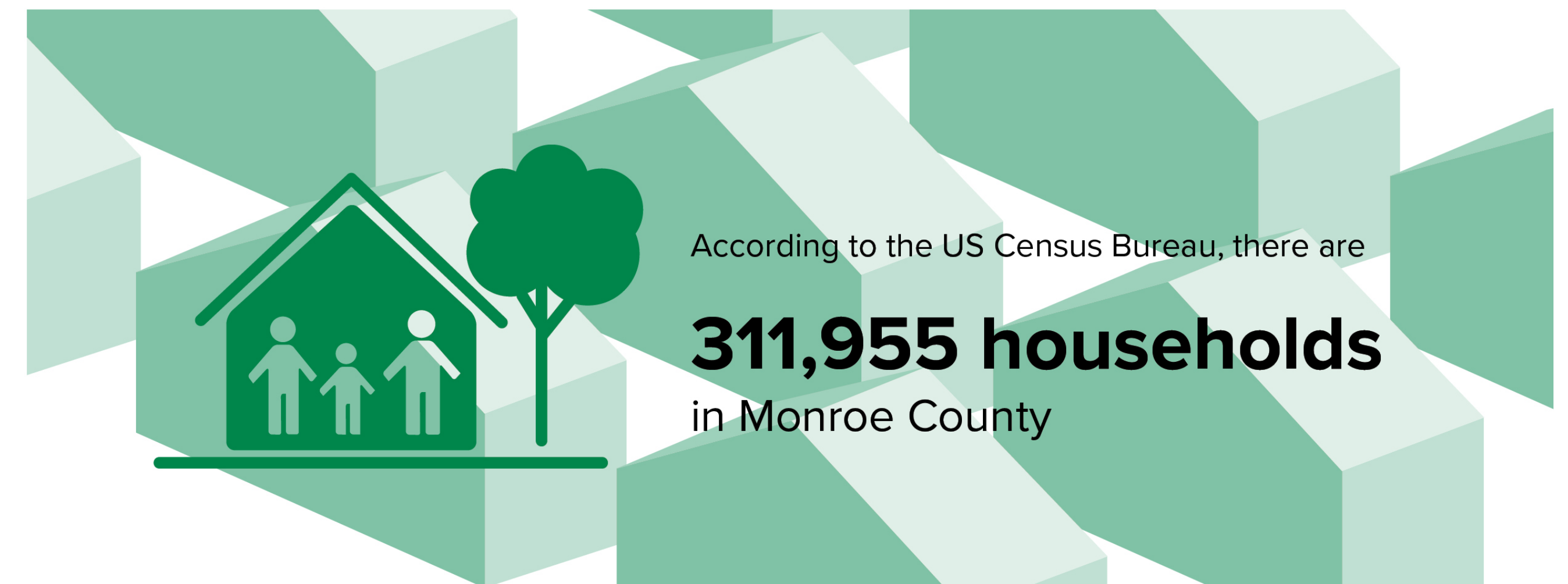


¹ Avoided runoff is calculated in i-Tree Eco as the amount of surface runoff without any trees minus the amount of surface runoff with the current tree cover
² 1 billion gallons = 1,500 Olympic swimming pools
 Data Source: USDA Forest Service iTree

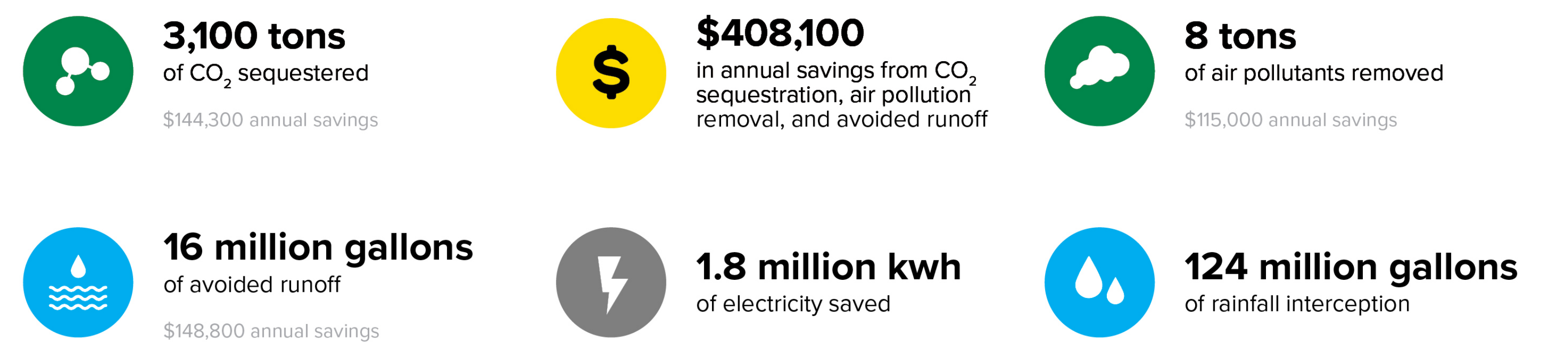
PRIORITY RANKING:



TOP COMMENTS FROM THE IDEAS WALL:



If 1 out of 2 households plant a tree, Monroe County could see the following benefits over the next 5 years:



ADAM J. BELLO
COUNTY EXECUTIVE

GOAL STATEMENT

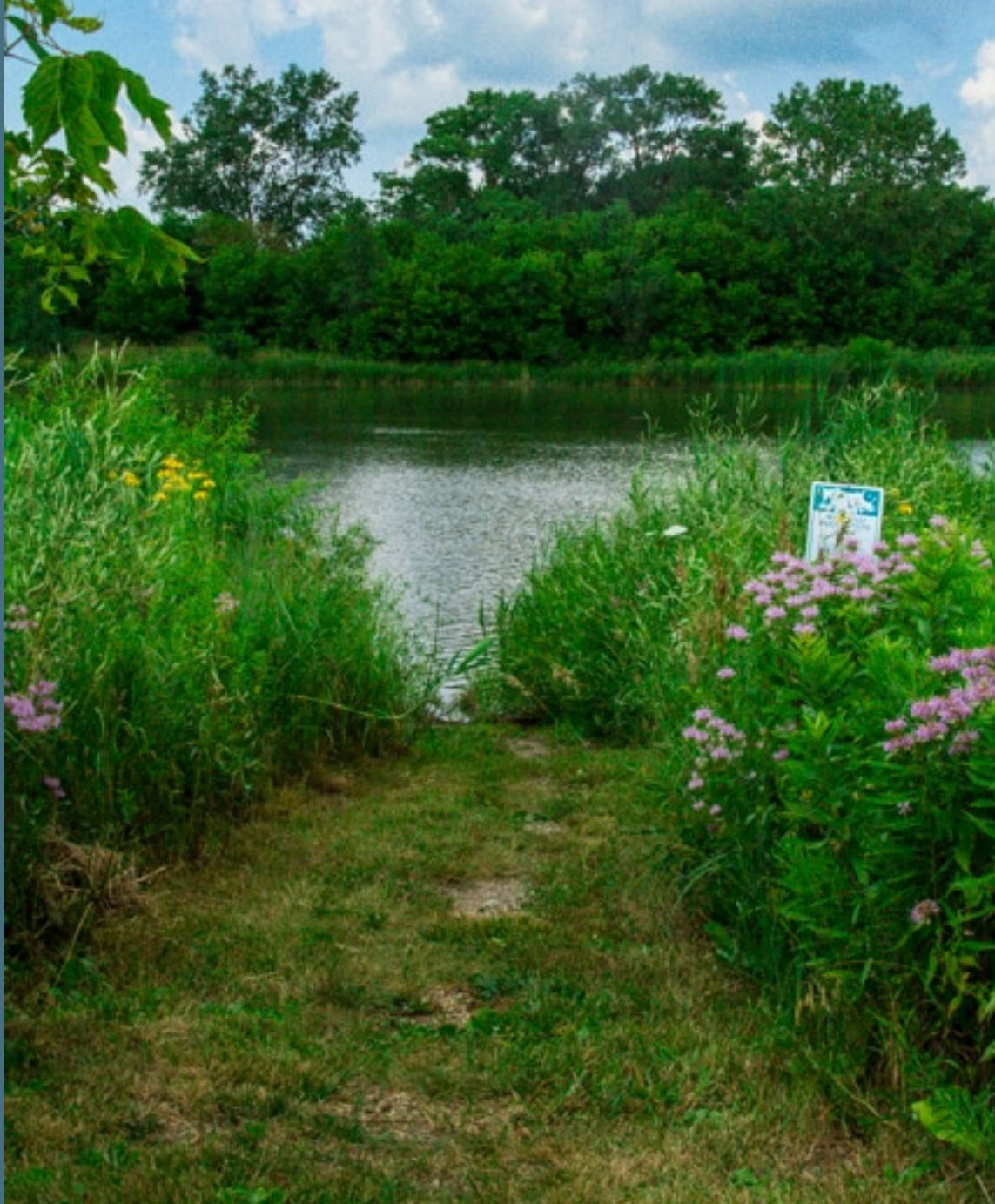
Protect and conserve existing open spaces, agricultural lands, and natural areas. Improve access to and awareness of local natural resources at both a micro and macro scale to build environmental stewardship community-wide. Mitigate and reduce heat island impacts from the built environment.

PHASE 1 CAP ACTIONS

- Encourage a life-cycle approach to water supply through waste treatment-to-energy generation, water reuse (including potable reuse of purified municipal reclaimed water, the use of graywater in buildings and for irrigation), and post-treatment groundwater recharge
- Continue to look for changes to process operations to improve energy efficiency in wastewater conveyance and treatment.

CASE STUDY

For the past 25 years, the Village of South Elgin, Illinois officials have worked with developers to ensure that while their development needs are met, the Special Flood Hazard Area (SFHA) is primarily used for natural beneficial functions, open space and recreational uses to protect their natural resources and their residents from flood damage. They have participated in the Community Rating System (CRS), and implemented higher regulatory standards, buyout programs, and banned development in the floodplain. Through South Elgin's efforts, the village has reached a Class 5 rating in the CRS, reduced the cost of flood insurance by 25% for policyholders, and conserved 237 acres of open space in the SFHA.



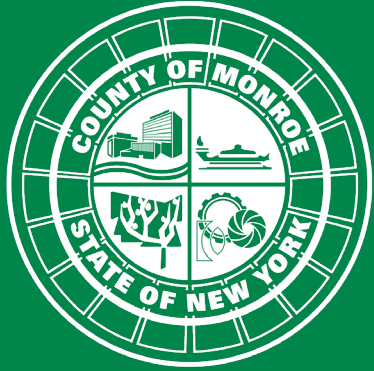
South Elgin Leverages Relationship with Larger County to Preserve Open Space. <https://floodsciencecenter.org/products/crs-community-resilience/success-stories/south-elgin-illinois/>

ACTIONS & STRATEGIES Based on your feedback from the Ideas Wall!

- Encourage higher density development and preservation of open space throughout County
- Preserve and improve natural ecosystems throughout Monroe County
- Improve water quality and protect Lake Ontario, Genesee River and Erie Canal
- Restore local food chain to reduce food miles
- Incentivize and promote easy-to-implement habits such as no-mow/low-mow lawns and grey water collection
- Reduce stormwater runoff by reducing impervious surfaces, encouraging rain gardens and native plantings

****Place a dot by any recommendation you agree with or believe should be a priority for the Plan!****

YOUR THOUGHTS?



ADAM J. BELLO
COUNTY EXECUTIVE

WASTE & RECYCLING

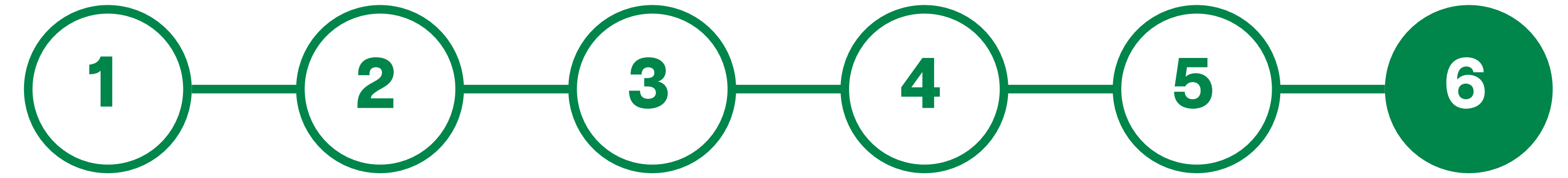


CONTEXT

Products have a life cycle consisting of production, transportation, use, and ultimately disposal. The impact of each phase of this cycle may vary from the amount of resources used to produce it, emissions created during production, transportation and use, and the amount of waste created upon disposal.

Activities that lessen impacts include **reducing, reusing, recycling, and composting** materials.

PRIORITY RANKING:



TOP COMMENTS FROM THE IDEAS WALL:

Offer composting opportunities along with trash pick up for citizens.

👍 8 🗨️ 0

Create a County Plan with opportunities to divert all residential and business food waste from landfills, including a food composting facility in the County and access for all residents to redistributed or donated food.

👍 6 🗨️ 0

Composting is a way to deal with a large portion of waste from businesses and households. The Village of Fairport kept 20 tons of household organic waste out of the landfill in a one year period with a completely voluntary program. This program was in conjunction with a local commercial composting operation. Monroe County should consider setting up county-wide composting programs with sites in the county to reduce landfill usage. We must create the infrastructure to encourage or the behavior.

👍 10 🗨️ 0

GHG HIGHLIGHTS

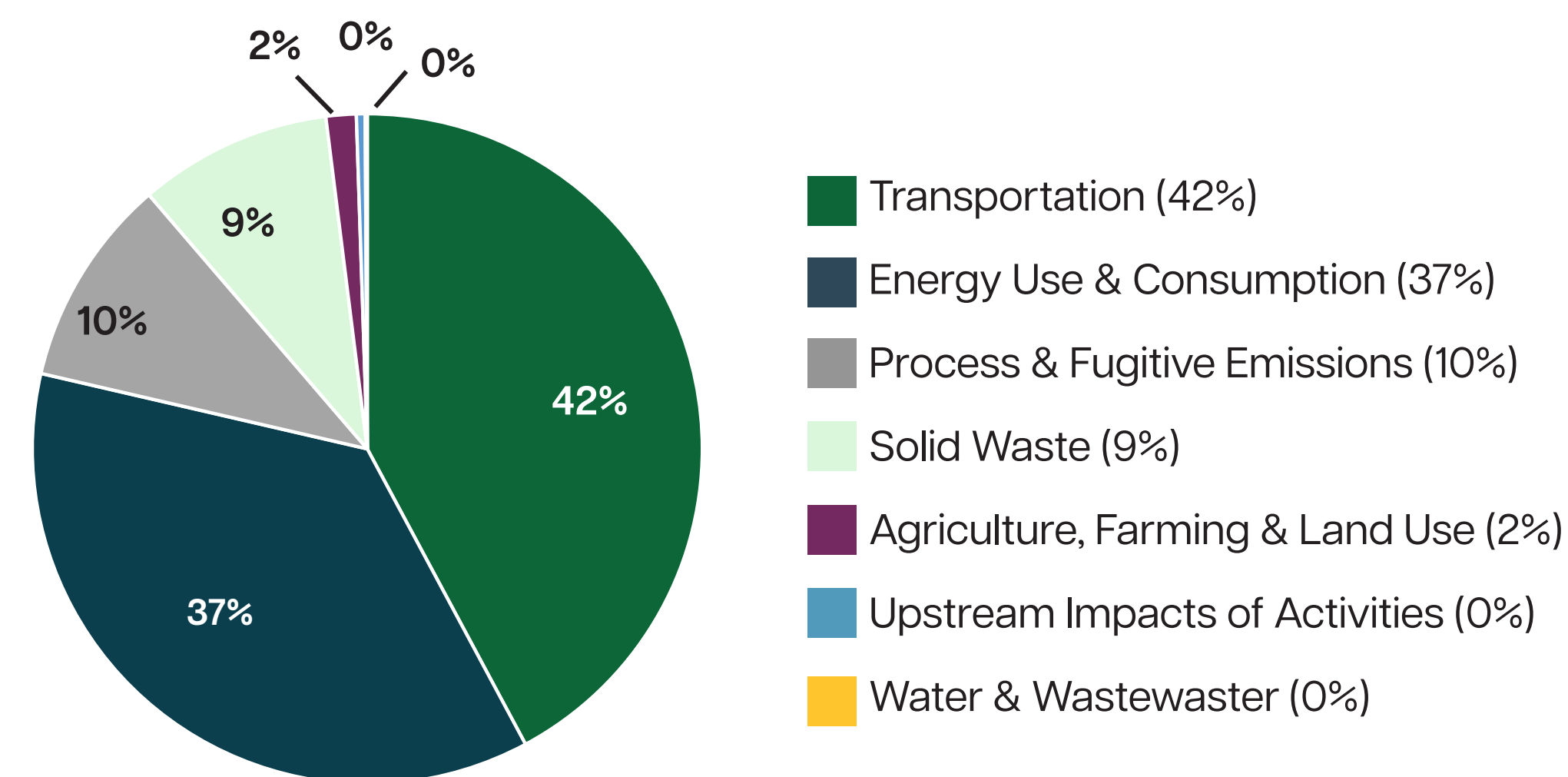
The Scope 3 emissions associated with waste and recycling include landfill, recycling, and composting facilities that are not currently owned and operated by the County.

NOTE: These numbers are undergoing verification with data sources.

SOURCE	EMISSIONS (MTCO ₂)	%
Transportation	2,974,073	42.2%
Energy Use & Consumption	2,570,359	36.4%
Process & Fugitive Emissions	710,921	10.1%
Solid Waste	657,416	9.3%
Agriculture, Farming & Land Use	102,917	1.5%
Upstream Impacts of Activities	29,748	0.4%
Water & Wastewater	7,111	0.1%
Total	7,052,545	100%

NOTE: Preliminary GHG Inventory Results

EMISSIONS BY SECTOR

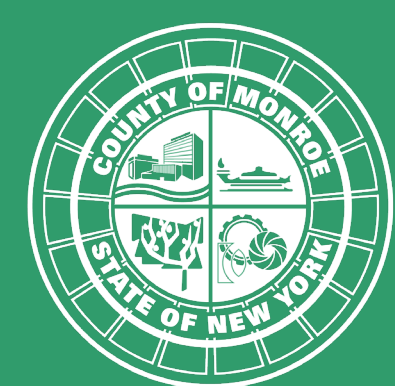


PHASE I COMPARISON

The emissions from the inactive Gloria Drive Landfill were captured in Phase I, as the facility is owned and operated by the County. Gloria Drive accounts for 13% of the County's emissions; however, a 2050 reduction goal of 90% was set with the primary action being the potential capping of the landfill by 2044.

PHASE I. SECTOR	MTCO ₂ E
Buildings & Facilities	26,073
Pure Waters Infrastructure	9,225
Solid Waste & Materials Management	6,035
Transportation Fleets	3,295
Expressway Lights & Signals	1,004
Total	46,632

Monroe County Baseline Phase I GHG Emissions Inventory Summary



ADAM J. BELLO
COUNTY EXECUTIVE

GOAL STATEMENT

Support, connect, and enhance access and awareness of diverting waste from landfills by reuse, recycling, or composting and organics recycling programs. Increase innovative re-purposing of waste byproducts and consider opportunities to harvest waste products for energy.

PHASE 1 CAP ACTIONS

- Reduce waste generation and increase recycling at County facilities
- Expand current recycling/trash policy and procedures. Investigate feasibility of an organic waste/composting program for County buildings/facilities
- Develop and implement a paper use reduction policy and procedures
- Establish a Green Office Challenge that includes a reduction in office waste

CASE STUDY

Each year, Hennepin County, Minnesota waste reduction and recycling specialists work with households to craft a customized eight month Zero Waste Challenge. Participating households have had success reducing their waste by increasing composting and recycling, eliminating disposables, preventing waste upfront, and sharing their success with other community members. On average, households reduce waste by about one-quarter to one-third. By the end of the challenge, they recycle or compost 60% to 70% of their waste, which is above the county average of about 45%.



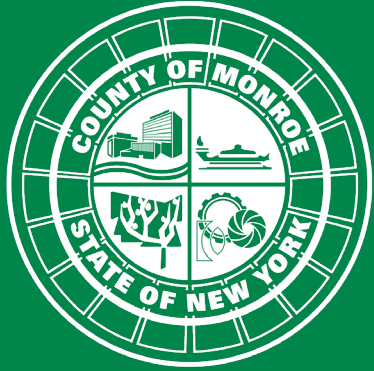
How to live a lower waste lifestyle: insights from Zero Waste Challenge participants. <https://www.hennepin.us/climate-action/what-we-can-do/low-waste-lifestyle>

ACTIONS & STRATEGIES Based on your feedback from the Ideas Wall!

- Develop composting programs with a robust public education campaign
- Educational campaign on recycling and County’s recycling process, and the benefits of waste reduction and diverting food waste from landfills
- Make recycling and composting easier for households

****Place a dot by any recommendation you agree with or believe should be a priority for the Plan!****

YOUR THOUGHTS?



ADAM J. BELLO
COUNTY EXECUTIVE

ENERGY USE & CONSUMPTION

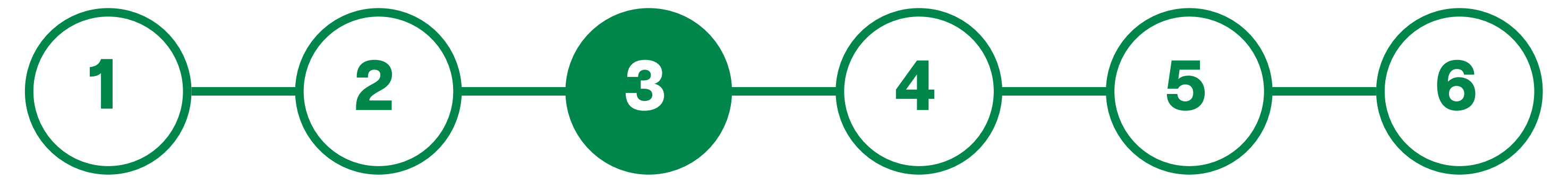


CONTEXT

The type and amount of energy we use has a direct impact on climate change because of the greenhouse gas emissions they each produce.

The conversion of our energy sources and consumption from gas, oil, and coal, to more sustainable alternatives including solar, wind, geothermal, and electric will reduce our climate impacts.

PRIORITY RANKING:



TOP COMMENTS FROM THE IDEAS WALL:

Municipalize our energy provider! Rates are too high and are only expected to go up without any improvement in service. The City and County do an excellent job with water, solid waste, and sewer services and they should also provide our energy.
 👍 5 🗨️ 0

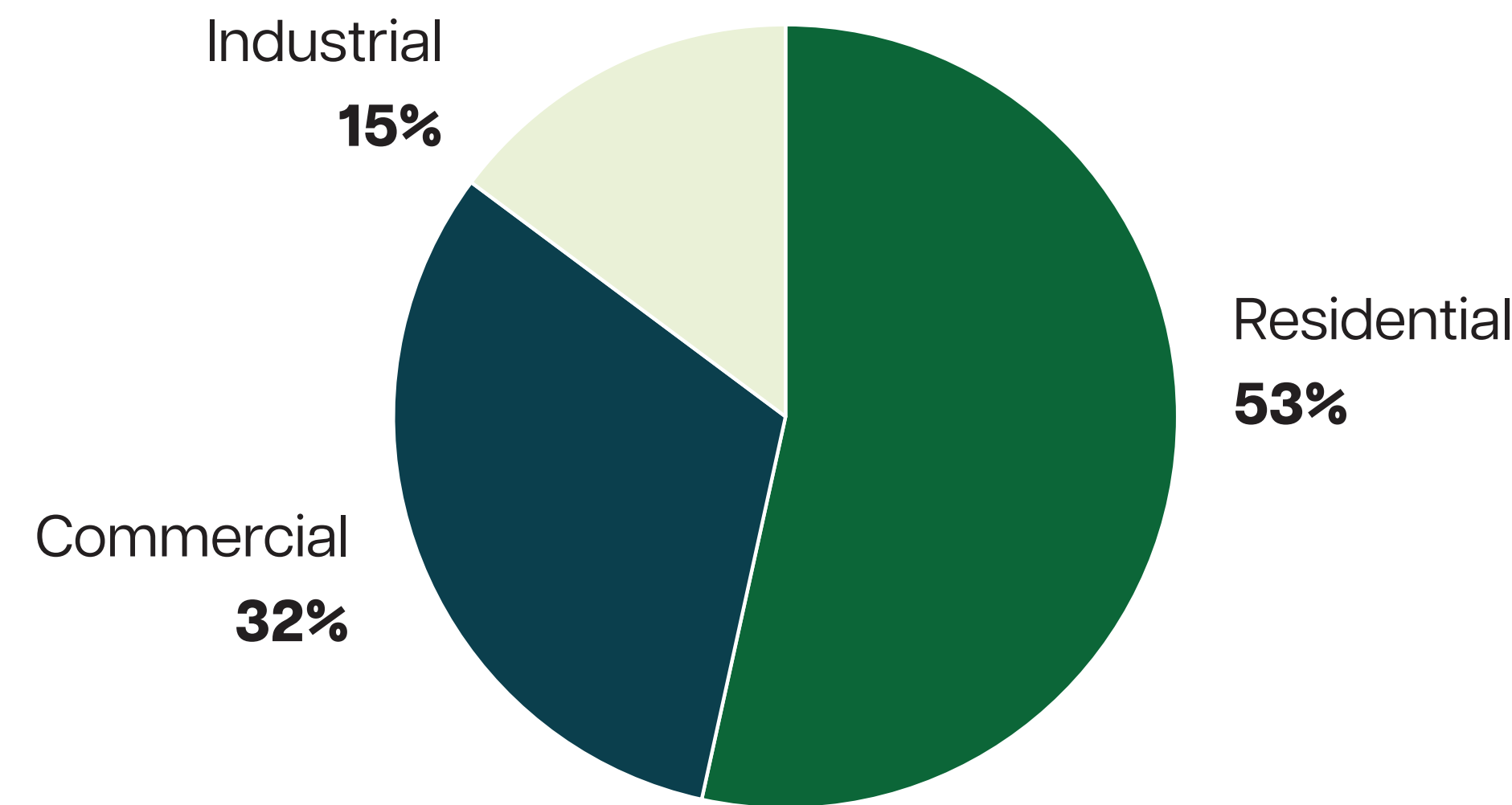
Geothermal HVAC can go a long way to halt and reverse our momentum towards worsening climate catastrophe-- but much more and better incentives, subsidies, and workforce development are needed to get a positive tipping point mass of geothermal systems deployed out there.
 👍 5 🗨️ 0

URMC is largest employer and they have yet to pass their sustainability plan. We 100% need all residents and employers - but especially large employers - to formulate and pass REAL sustainability goals, alongside accountability tools for making sure they reach goals.
 👍 6 🗨️ 0

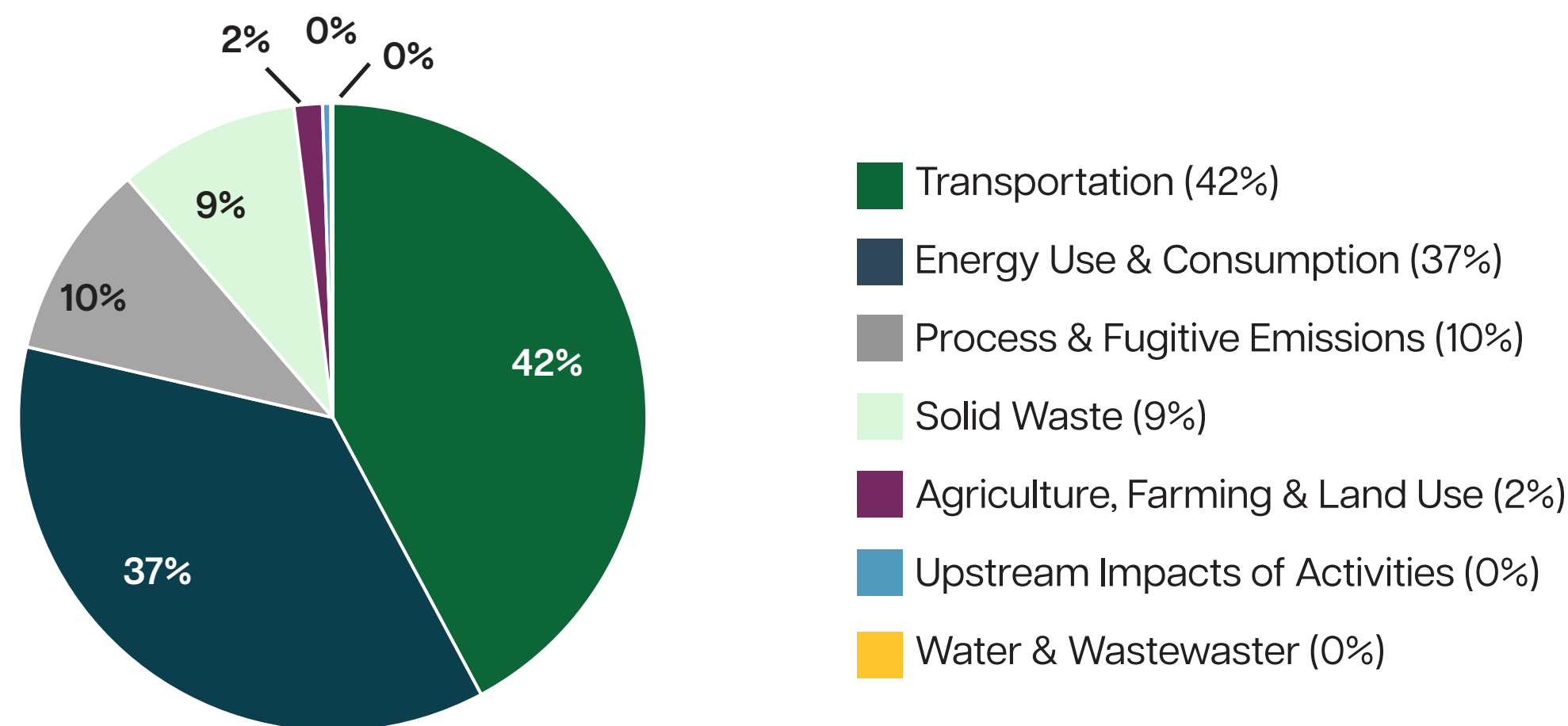
GHG HIGHLIGHTS

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BREAKDOWN OF ENERGY USE / CONSUMPTION BY INDUSTRY



EMISSIONS BY SECTOR



ENERGY SOURCE	% OF TOTAL EMISSIONS
Natural Gas	59%
Electricity	23%
Fuel Oil	10%
Propane / LPG	7%



ADAM J. BELLO
COUNTY EXECUTIVE

GOAL STATEMENT

Identify opportunities to reduce energy use in both major and minor contributors, and convert to renewable energy sources. Support municipalities and connect individuals to potential resources and programs for transitioning from fossil fuels to renewable energy.

PHASE 1 CAP ACTIONS

- 62% to 80% reduction by 2050 undertaken by the County to increase electric energy efficiency of facilities, reduce energy consumption, and transition to renewable energy sources
- Evaluate feasibility of emergency power generation alternatives that rely upon renewable energy sources, such as hydrogen for emergency generators
- Develop transition plan for lighting and signal facilities based on inventory of existing energy use, maintenance schedule, and planned infrastructure improvements

ACTIONS & STRATEGIES Based on your feedback from the Ideas Wall!

- Encourage large employers to create sustainability plans
- Municipalize utility providers across the County
- Energy conservation education
- Upgrade energy grid to keep up with heat pump installations and electric vehicle charging
- Provide additional incentives for solar panel installation (commercial and residential) and other green energy conversions
- Shift public buildings and schools to renewable energy

****Place a dot by any recommendation you agree with or believe should be a priority for the Plan!****

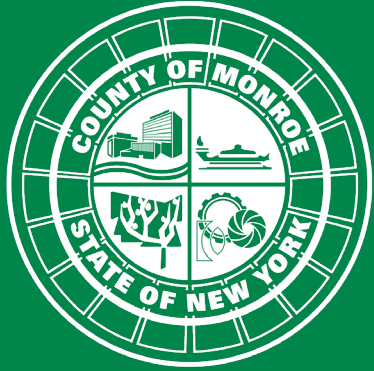
CASE STUDY

The City of Lava Hot Springs, Idaho undertook two energy efficiency projects. First, in 2016 at the City's Fire Station, where insulation and weatherization were added to the building and one of the garage doors. This retrofit saved the city money on its utility bills, reduced energy demands, and increased comfort for employees. Second, in 2017, to replace 28 light fixtures with LED lights at City Hall. This upgrade resulted in 11,163 kWh of estimated savings, which will save the city approximately \$1,068 per year.



EERE Success Story—Idaho Leads by Example by Reducing Energy in Rural Communities. Office of Energy Efficiency & Renewable Energy, June 5 2018.

YOUR THOUGHTS?



ADAM J. BELLO
COUNTY EXECUTIVE

PARTNERSHIPS, EDUCATION & ECONOMY



CONTEXT

Our quality of life has always been linked to nurturing existing partnerships and fostering new ones.

Our success in reducing individual and collective climate impacts will be directly related to understanding what initiatives have or are taking place and **opportunities for social, educational, and economic sector partnerships** for implementation.

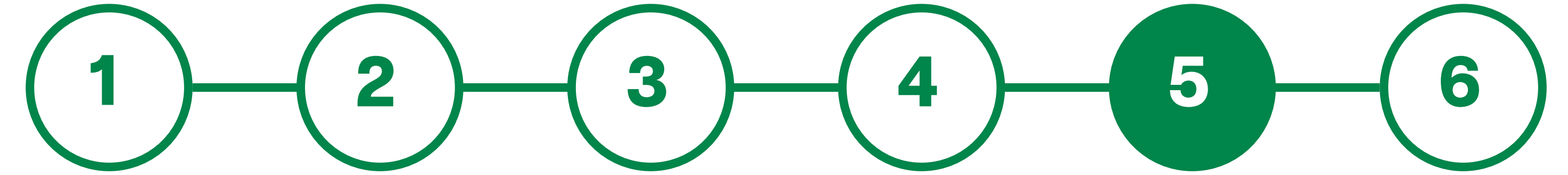
GOAL STATEMENT

Identify and foster connections between private and public organizations, local and county governments, and regional initiatives. Increase awareness and access to online platforms, tools, and networks to leverage partnerships between these groups.

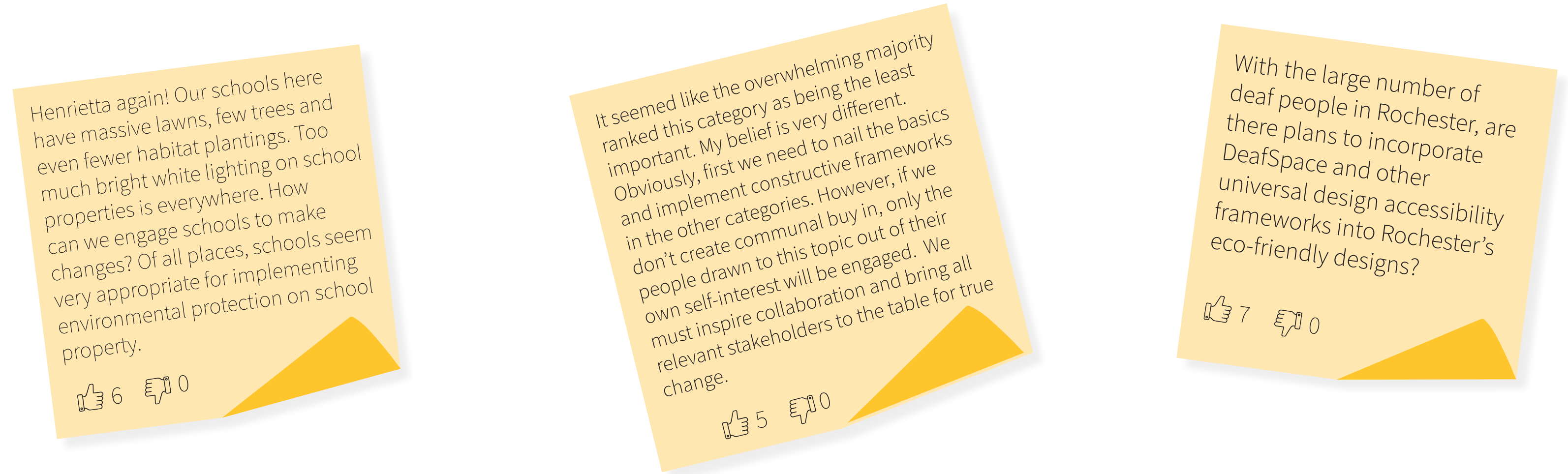
PHASE 1 CAP ACTIONS

- Leverage federal, state, philanthropic, and academic resources to achieve regional goals through intermunicipal and regional planning leadership and to advance acceptance of a regional-local approach to planning and decision making
- Establish a Climate Action Coordinator Position within County government
- Re-establish a cross-department Sustainability Committee
- Establish energy efficiency or climate protection information clearinghouse
- Implement public education programs, e.g. special events, PSAs, curricula

PRIORITY RANKING:



TOP COMMENTS FROM THE IDEAS WALL:



ACTIONS & STRATEGIES

Based on your feedback from the Ideas Wall!

- Education on regenerative economies versus extractive economies
- Encourage a localized economy to meet community needs
- Incorporate climate change and sustainability education into local school curriculum
- Partner with local educational institutions and industries to come up with creative technologies and siting for renewable energy generation projects that resist sprawling into agricultural, rural, tourist and open space areas
- Incorporate public health initiatives across all focus areas

****Place a dot by any recommendation you agree with or believe should be a priority for the Plan!****



ADAM J. BELLO
COUNTY EXECUTIVE

GOAL STATEMENT

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CASE STUDY

One example of successful community partnerships is between the City of Middleton, Wisconsin Sustainability Committee, the Middleton High School Green Team, and the St. Bernard Catholic Church Creation Care Team. Together, in 2021 they earned Climate Champion status in the Catalyst category of Dane County's Climate Champions Program.

The groups held an LED lightbulb exchange over the course of a week at three locations in the City where the public could receive free LED light bulbs, and return older, less efficient bulbs. Altogether, over 2,500 old bulbs were turned in, with 1,928 new LEDs given out. The energy and cost-savings for this event was significant, projected to be approximately 39.4 U.S. tons of CO2 emissions and \$9,240 every year. The event also started a larger conversation about energy conservation throughout the community.



Heather Phelps. LED Lightbulb Exchange. Dane County Office of Energy & Climate Change

ACTIONS & STRATEGIES Based on your feedback from the Ideas Wall!

- Education on regenerative economies versus extractive economies
- Encourage a localized economy to meet community needs
- Incorporate climate change and sustainability education into local school curriculum
- Partner with local educational institutions and industries to come up with creative technologies and siting for renewable energy generation projects that resist sprawling into agricultural, rural, tourist and open space areas
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YOUR THOUGHTS?



ADAM J. BELLO
COUNTY EXECUTIVE

BUILDINGS & HOUSING

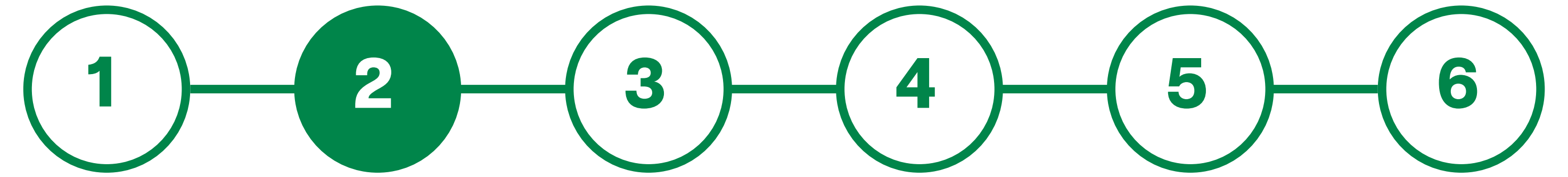


CONTEXT

This includes the commercial, industrial, and residential structures we live and work in. Our building stock varies between rural, suburban, and urbanized areas, in terms of appearance, footprint, and density.

Building types, construction methods, and daily usage impact our environment, energy consumption, and micro-climates.

PRIORITY RANKING:



TOP COMMENTS FROM THE IDEAS WALL:

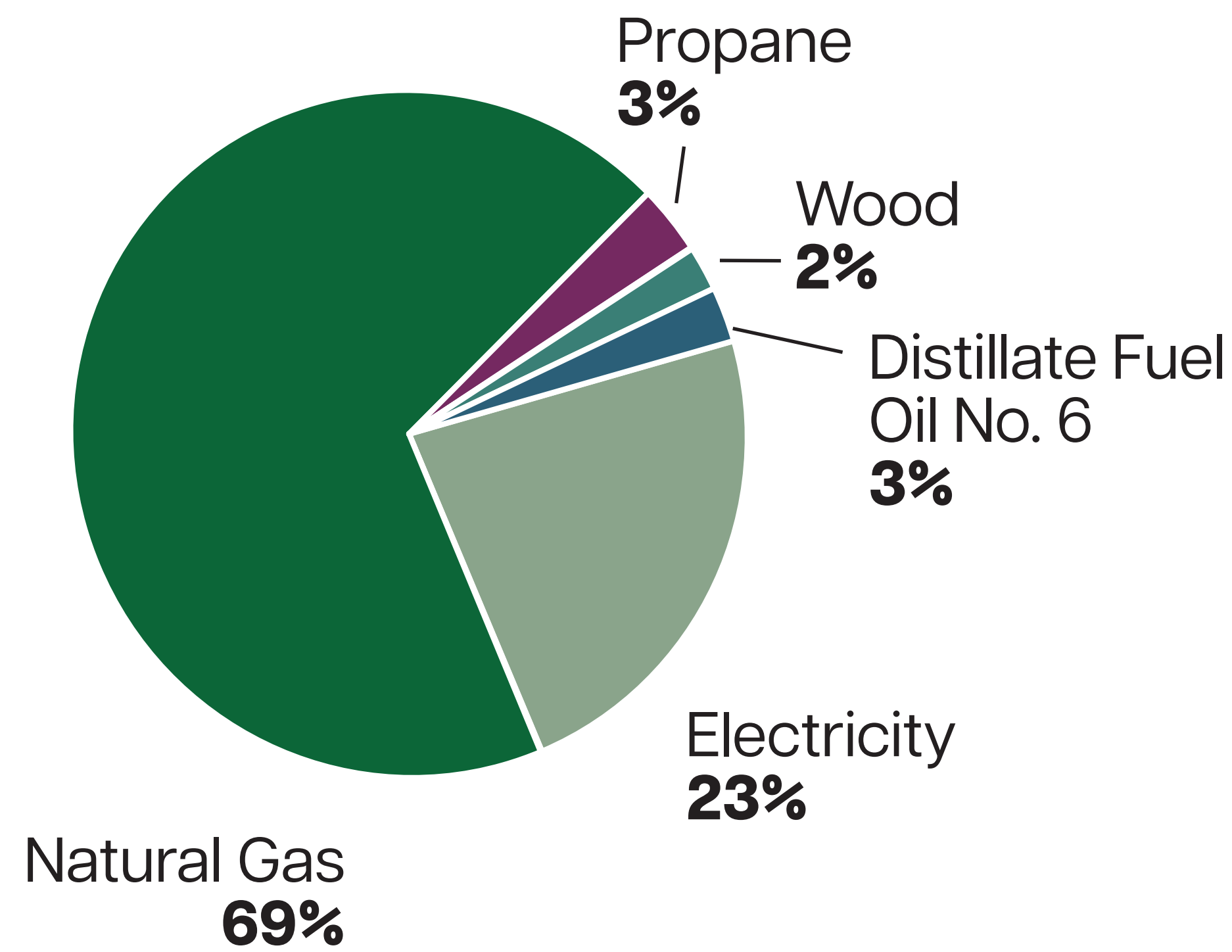
Single family zoning laws need to be changed. Allow for multi family units to be built on single family lots. These do not necessarily all have to be income limited, market rate units will be equally important as people move to Rochester as a climate refuge city in the next 10-20 years.

Stop using development incentives to subsidize far flung suburban greenfield development. Should only be allowed to be used for infill in the city and existing suburban areas that already have development and public transit. And make sure it is walkable in character and density to reduce car usage.

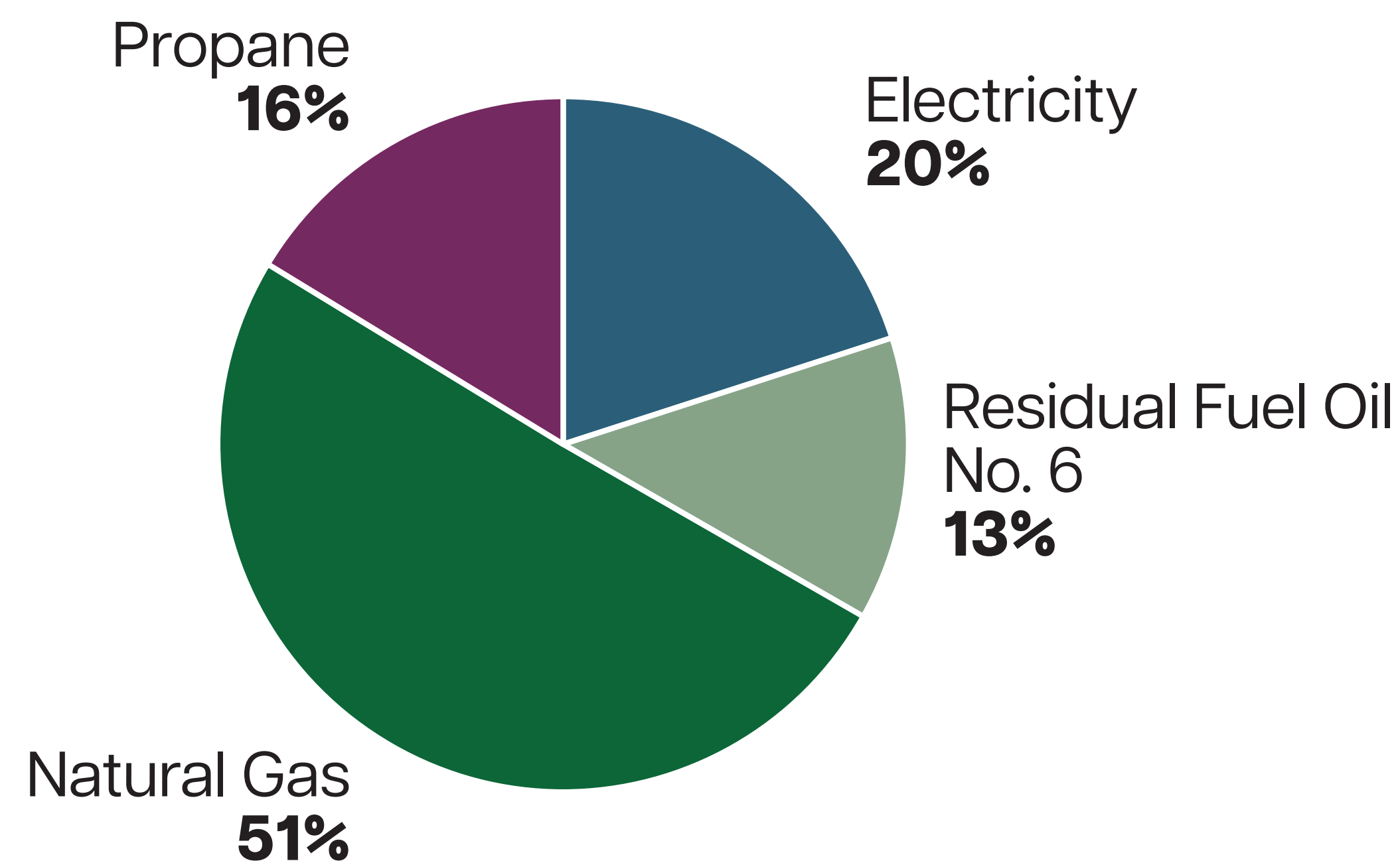
Increase mixed use development zoning areas to create more walkable areas.

GHG HIGHLIGHTS

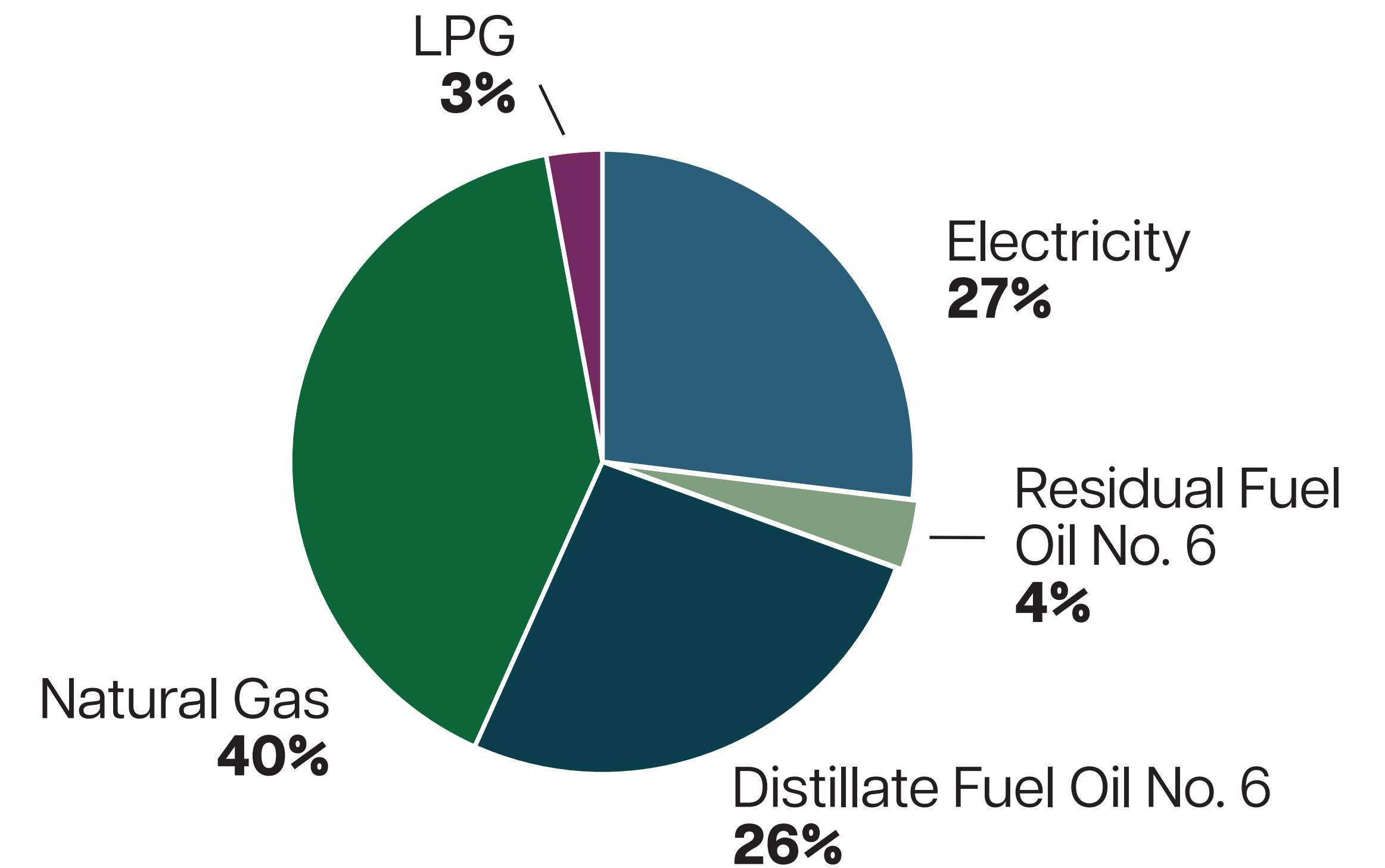
RESIDENTIAL ENERGY



COMMERCIAL ENERGY



INDUSTRIAL ENERGY



ADAM J. BELLO
COUNTY EXECUTIVE

GOAL STATEMENT

Consider existing development, redevelopment, and new development scenarios to eliminate GHG emissions. Reduce energy use of buildings powered by fossil fuels, and transition to renewable energy sources where possible. Implement green building infrastructure and renewable energy generation policies on new development and encourage retrofit on existing and redevelopment.

PHASE 1 CAP ACTIONS

- 50-80% reduction relative to fuel switching strategies that result in less carbon intensive energy sources and shift away from reliance on natural gas
- Institute procedures and/or training to encourage facility managers and municipal employees to improve heating, cooling and lighting use efficiency
- Lower building temperature settings to adjust for localized floor heating systems
- Install additional solar PV systems

CASE STUDY

Loudoun County Public Schools (LCPS) is the third largest school division in Virginia. LCPS serves more than 78,000 students in 89 separate facilities. In 1993, LCPS implemented an energy management program, changing how the district viewed, consumed and used energy. Since its implementation, LCPS has saved over \$70 Million on energy costs, reduced CO2 emissions by over 352,000 metric tons.



John Lord and Michael Barancewicz. Success Story: Loudoun County Public Schools. September 7 2016. <https://vaeecc.org/success-story-loudoun-county-public-schools/>

ACTIONS & STRATEGIES Based on your feedback from the Ideas Wall!

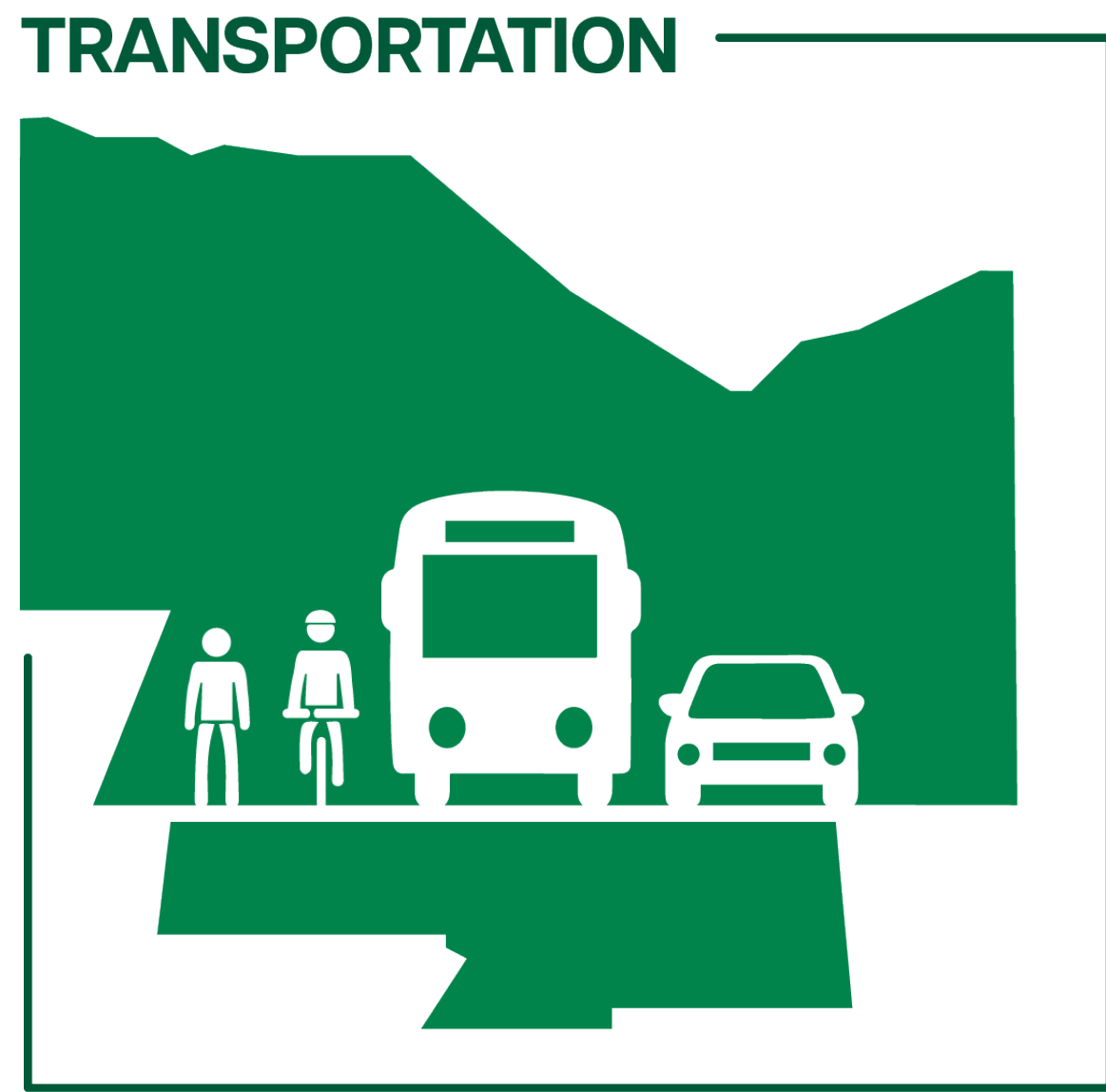
- Increase mixed-use zoning and encourage higher density development and walkability
- Reduce minimum lot sizes and parking requirements
- Provide development incentives for infill development
- Install solar panels on every municipally-owned building
- Create a tool to make navigating energy efficiency and electrification programs and incentives easier and more approachable
- Develop programs to assist low-income homeowners to weatherize their homes, increase energy efficiency and save on energy costs

****Place a dot by any recommendation you agree with or believe should be a priority for the Plan!****

YOUR THOUGHTS?



ADAM J. BELLO
COUNTY EXECUTIVE



CONTEXT

Driving, public transit, bicycling, and walking networks connect us to our homes, our jobs, local businesses, and our environment.

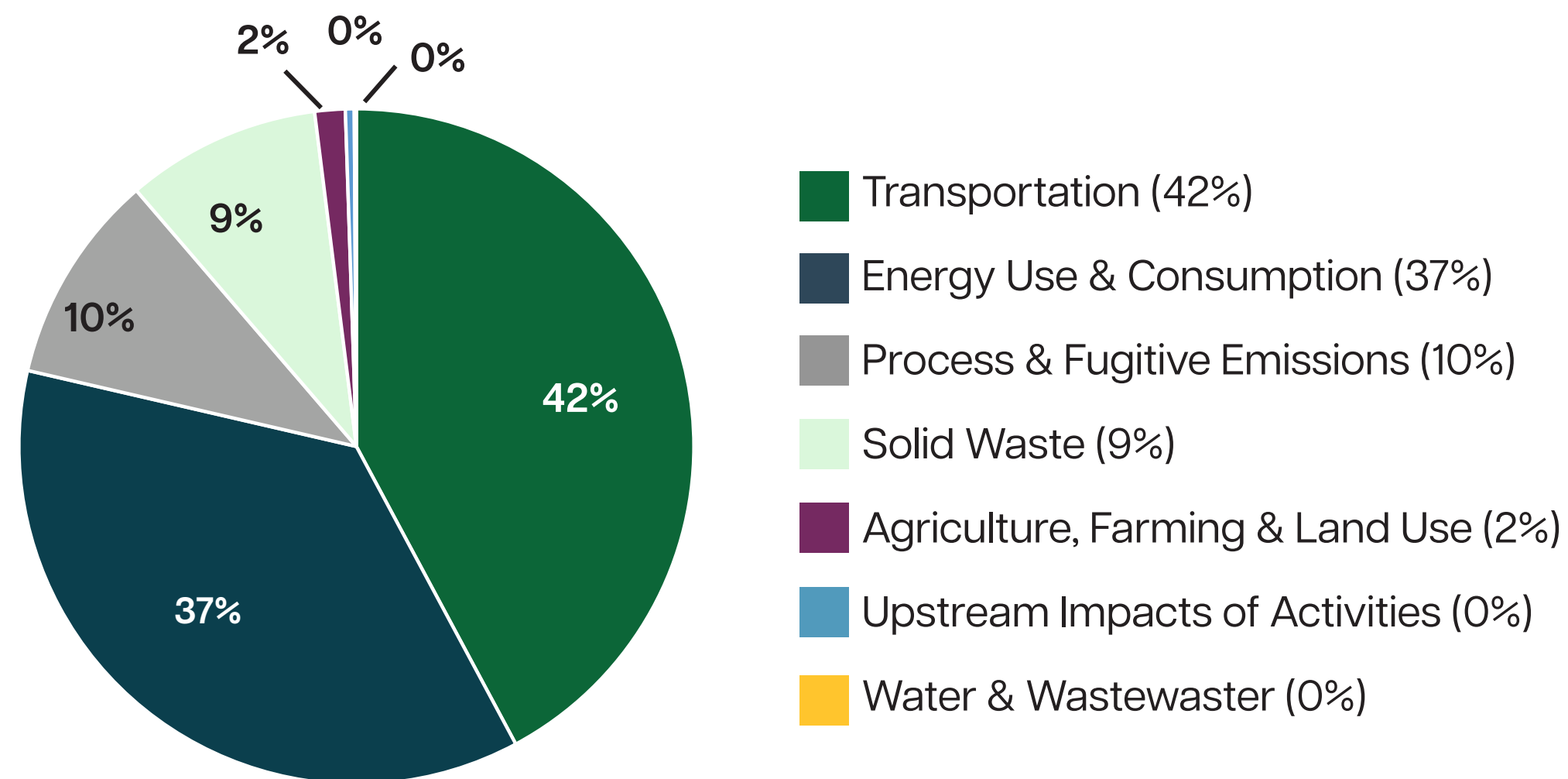
These **varying modes of transportation, the infrastructure needed to support them, and the travel distance between destinations** are directly related to the scale of our carbon footprint and GHG emissions we produce.

GHG HIGHLIGHTS

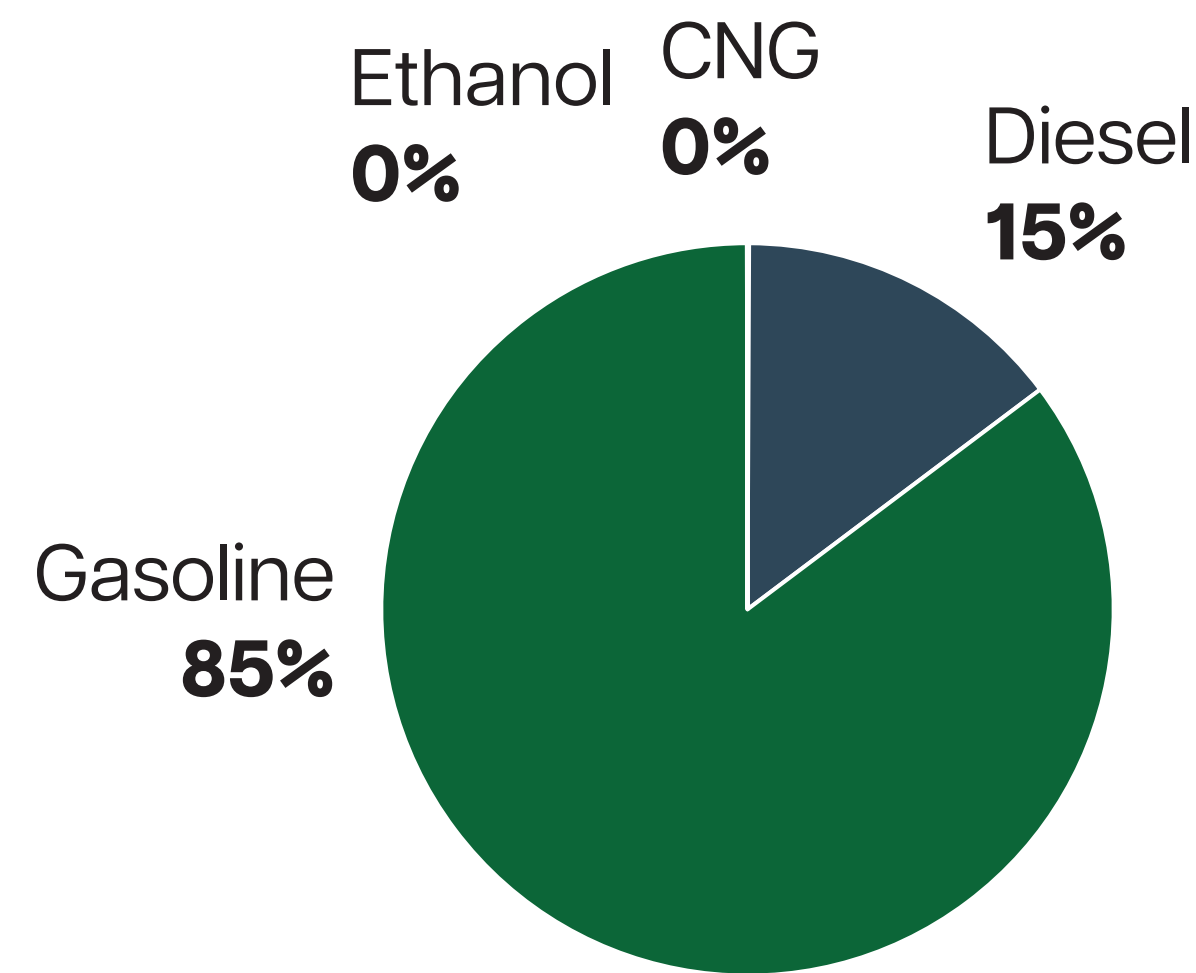
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Total	7,052,545	100%

NOTE: Preliminary GHG Inventory Results

EMISSIONS BY SECTOR



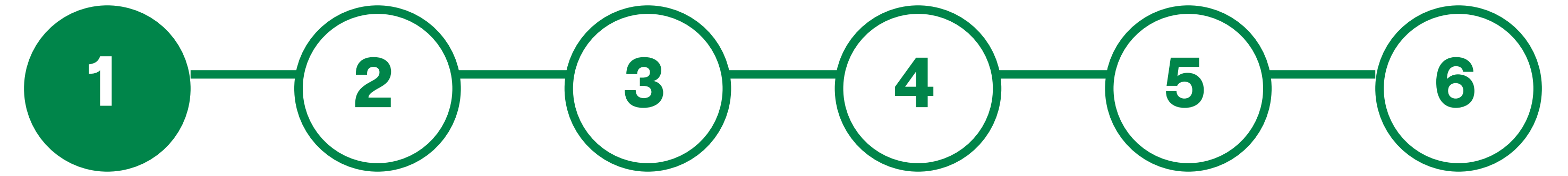
EMISSIONS BY FUEL TYPE



FUEL TYPE	VEHICLE MILES TRAVELED (VMT)	%
Gasoline	5,273,526,573	90%
Diesel	537,982,104	9%
CNG	3,067,578	<1%
Ethanol	8,987,271	<1%

Source data for the transportation sector is based on the estimated vehicle miles traveled within the County and fuel type used.

PRIORITY RANKING:



TOP COMMENTS FROM THE IDEAS WALL:

If we want people to use public transit, walking, biking and rolling as an alternative method of getting around, then we need to build the infrastructure to support the switch to more sustainable transportation (ex: more street trees, increased bus frequency, bike lanes and bike racks). Inspiring people to SWAP car trips with walking, biking or taking the bus is how we will move the needle to meet our climate goals.

Bike transit in the county is a joke. The adage "paint is not infrastructure" absolutely applies here. Anyone who has engaged in vehicular cycling (i.e. riding a bike as a vehicle instead of a car, as opposed to simply for leisure) knows this. Protected bike lanes are an absolute must, and they have to be plowed in winter! They give more people the confidence to make the switch to bike commuting.

It is critical that the County invests and builds a low-stress, high comfort bike network that enables all different kinds of cyclists to get around. Without a major modeshift away from cars - both EVs and ICEs - we will not be able to adapt to changes in our environment and reduce our emissions. There are many people who would love to switch from using their cars for trips to ebikes or bikes but do not feel safe or comfortable without protected infrastructure!

PHASE I COMPARISON

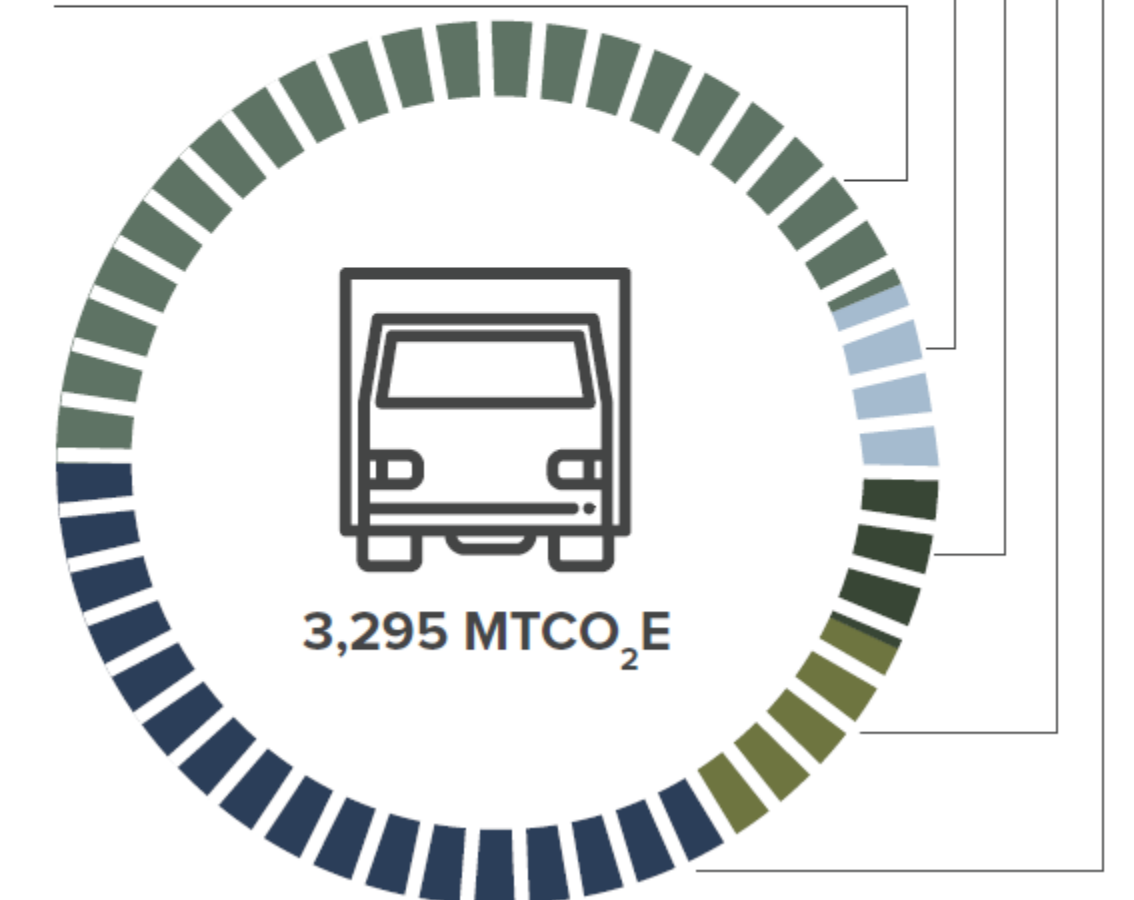
Emissions for County operations in Phase I include the County's transportation fleet, which accounts for 7% of Scope 1 and 2 Emissions.

County vehicles included in the Phase I emissions inventory report are summarized at right.

(Employee commutes were not included in Phase I).

Figure 16. Transportation Fleets Emissions

- 42 Vehicles with emissions under 100 CO₂e: 28%
- 52 Pickup Trucks & SUVs: 10%
- 47 Sedans: 7%
- 9 Oshkosh Jets: 7%
- Sheriff's Fleet: 48%



GOAL STATEMENT

Increase connectivity surrounding high trip potential and population centers. Reduce vehicle miles traveled. Increase zero emission personal and fleet vehicles, equipment, and facilities. Mitigate and reduce stormwater runoff associated with transportation infrastructure.

PHASE 1 CAP ACTIONS

- 50-90% reduction reflecting a change of roughly 106-222 gas vehicles to EV by 2050 (an average of 3.5-7.4 per year), and changing 22-47 diesel vehicles to EV by 2050.
- Eliminate unnecessary vehicle idling through policy action, reduction technologies, and zero emission vehicle use
- Deploy solar Electric Vehicle Supply Equipment (EVSE)
- Offset emissions from vehicle fleet and transit operations

CASE STUDY

Within Hamilton County, Ohio, it is predicted that there will be an influx of people migrating into the Greater Cincinnati area. To prepare for a heightened need for mobility and climate impacts, like an increase in traffic, overcrowding, emissions, and reduction in green space, the area is exploring opportunities to reduce the need for personal-owned vehicles.

One way they are doing this is through mobility-oriented district overlays. These overlays guide public transportation and walkability networks that are easily accessible and integrated, incentivize electric-powered vehicles and walking or biking, programming for denser, green parking solutions, and provide a methodology for retrofitting old infrastructure with the latest technological advances.



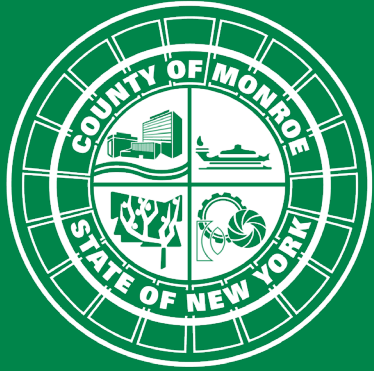
Anna Mueller. Climate Resilient Mobility in Greater Cincinnati, An Action Playbook for a Greener, More Sustainable Future. March 23 2023. <https://storymaps.arcgis.com/stories/c54578cc1d984360b0f3ed24c707d12f>

ACTIONS & STRATEGIES Based on your feedback from the Ideas Wall!

- Install protected bike infrastructure across the County, and improve connectivity of existing bike network
- Encourage private partners and employers to reduce car dependence
- Implement road diets and reduce speeds across the County
- Improve public transit accessibility and frequency to encourage transit use
- Encourage higher density development that promotes walkability
- Provide incentives to make electric vehicle ownership feasible for more households

****Place a dot by any recommendation you agree with or believe should be a priority for the Plan!****

YOUR THOUGHTS?



ADAM J. BELLO
COUNTY EXECUTIVE