



Community Energy Plan



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List of Abbreviations

BAU	Business-As-Usual
CEEI	Community Emissions and Energy Inventory
CDD	Cooling Degree Days
CSMI	Commercial, Small and Medium Industrial
EV	Electric Vehicle
GHG	Greenhouse Gas
GJ	Gigajoule
HDD	Heating Degree Days
ICE	Internal Combustion Engine
K	Kilo, denoting a factor of 1000. For example 5k = 5000
Kg	Kilogram
KgCO ₂ e	Kilograms of Carbon Dioxide Equivalent
LED	Light Emitting Diode
MNZA	Motivation Net-Zero Actions
PCP	Partners for Climate Protection
RNG	Renewable Natural Gas
TCO ₂ e	Tonne Carbon Dioxide Equivalent

Executive Summary

Greenhouse gases (GHGs), like carbon dioxide, methane, and nitrous oxide, trap heat in the atmosphere. Under normal conditions, nature keeps these gases in balance through plants, soils, and oceans. But when emissions of these gases exceed natural cycles and processes, they accelerate climate change by trapping extra heat. This disrupts Earth's regulatory systems, leading to more extreme weather, environmental damage, and risks to our health and safety. Every person, household, and organization contributes to these emissions through their carbon footprint, which stems from everyday activities such as heating homes, driving, disposing of waste, and using electricity. Reducing our carbon footprint helps protect the environment, strengthen community well-being, and ensure a healthier, sustainable future for generations to come.

Delivering on the 2022 – 2026 priorities, the East Gwillimbury's Community Energy Plan was developed in response to the Climate Emergency that Council declared in April 2023 and builds on the Council-approved East Gwillimbury Thinking Green Environmental Strategy. With the Corporate Energy Plan already in place (Council approved on October 21, 2025), this Community Energy Plan outlines how the whole community can work together to reduce emissions, use energy more efficiently, and support sustainable, low-carbon growth.

To support this work, the Town partnered with Climate Neutral, a Canadian technology company whose CERCA 2050 software helps communities understand their types and levels of emissions, make energy and greenhouse gas emissions plans, and assess progress. Using CERCA 2050, the Town created a 2022 emissions inventory, a clear picture of where emissions come from in EG. This inventory serves as the starting point for setting meaningful climate goals.

Using this baseline, the Town developed per-capita emission targets and identified practical actions to achieve them. These actions confirm that EG can reduce emissions by 34% by 2030, 70% by 2040, and 90% by 2050, reaching net-zero when natural carbon absorption is included. Net-zero means that any remaining emissions produced in the community are offset by natural carbon absorption. Natural carbon absorption is the process by which EG's forests, wetlands, and other natural areas capture and store carbon from the atmosphere.

The actions in this plan offer major community benefits: lower energy bills, cleaner air, improved health, safer streets, and a more resilient and vibrant EG. The Town will continue to support progress by educating residents, promoting programs, investing in low-carbon infrastructure, and leading by example.

This plan is both a guide and a call to action. When we all take steps to reduce emissions, save energy, and protect our environment, we can build a thriving, sustainable community for the people we care about today and for those who will call EG home in the future.

Background

In April 2023, East Gwillimbury (EG) Council unanimously declared a Climate Emergency, recognizing the urgent need to address the growing impacts of climate change and committing the Town to decisive action. Building on this commitment, and delivering on the 2022-2026 Strategic Plan, Council unanimously approved the Thinking Green Environmental Strategy in 2024. This strategy laid out key areas of focus, including creating a climate change adaptation plan, developing corporate and community energy plans (EP), and updating the Town's Thinking Green Development Standards, to guide EG toward its long-term environmental goals.

East Gwillimbury was identified as the fastest-growing municipality in Canada in the 2021 Census, and its population is expected to triple by 2050. With this rapid growth, the Council-approved Corporate EP and this Community EP work together to ensure that EG's expansion is sustainable, resilient, and environmentally responsible. These plans align local action with regional, provincial, and federal climate priorities, while directly addressing the urgent need for action identified in the Climate Emergency declaration.

The Community EP advances local sustainability efforts by outlining actions that residents, businesses, and institutions can voluntarily adopt to support a healthier, more sustainable community. Together with the Corporate EP, these efforts help ensure that as EG grows, it does so in a way that protects the environment and enhances the well-being of everyone who calls EG home.

Project Details

The Community EP was developed with the participation and input from a task force that includes EG staff and external partners such as York Region, the Environmental Advisory Committee, private businesses, and utility companies. The development adopted a practical approach that recognized East Gwillimbury's rapid population growth and builds on existing initiatives such as the Transportation Master Plan. This Community EP is a living document that gives staff and residents the flexibility to pursue programs and opportunities that support energy efficiency and climate action at the community level.

To prepare the Community EP, the Town worked with Climate Neutral, a Canadian technology company that provides tools to help communities measure and plan for emissions reductions. Climate Neutral's CERCA 2050 software is a data-driven platform that allows municipalities to build emissions inventories, model future scenarios, and track progress toward climate goals. Using CERCA, Climate Neutral established EG's baseline emissions inventory, modelled the business-as-usual (BAU) scenario, and evaluated potential mitigation actions.

Consulting Model

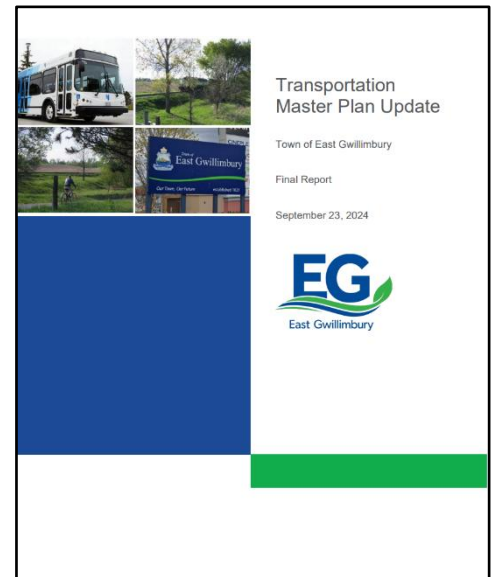
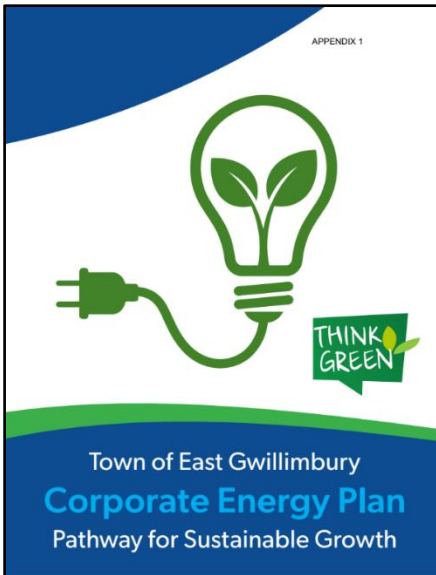
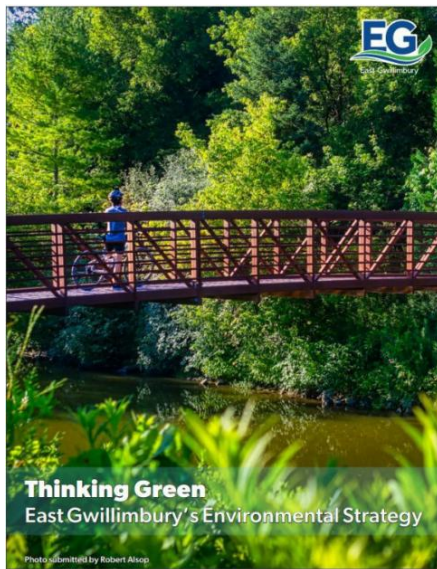
This report is the result of collaboration between EG staff, the project task force and the Climate Neutral team. Several meetings and engagement sessions were conducted throughout the plans development process to define a realistic approach.



Policy Alignment

The Community EP was designed to work alongside and be guided by policies and plans at the municipal, regional, provincial, and federal governments so that local actions contribute meaningfully to wider sustainability goals.

The actions identified in the Community EP are also closely aligned with the EG's Corporate EP and the Transportation Master Plan, ensuring that energy, and mobility planning move forward together. In addition, actions related to the building sector are informed by and support the EG's Thinking Green Development Standards, reinforcing EG's commitment to sustainable growth.



External Factors Affecting Profile

Recognizing Uncertainty

The Community EP acknowledges that several important factors affecting future emissions are beyond the Town's control. To remain practical and adaptable, the Plan focuses on actions that EG can influence, while recognizing that external changes may shape long-term outcomes. Factors outside EG's control include future changes to the Ontario electricity grid and fuel standards, federal net-zero and electric-vehicle policies, and transit development. Uncertainty around these elements grows the further we look into the future, underscoring the need for a flexible and resilient approach.

Energy Planning Phases

EG's Community Energy Plan was developed in seven phases:

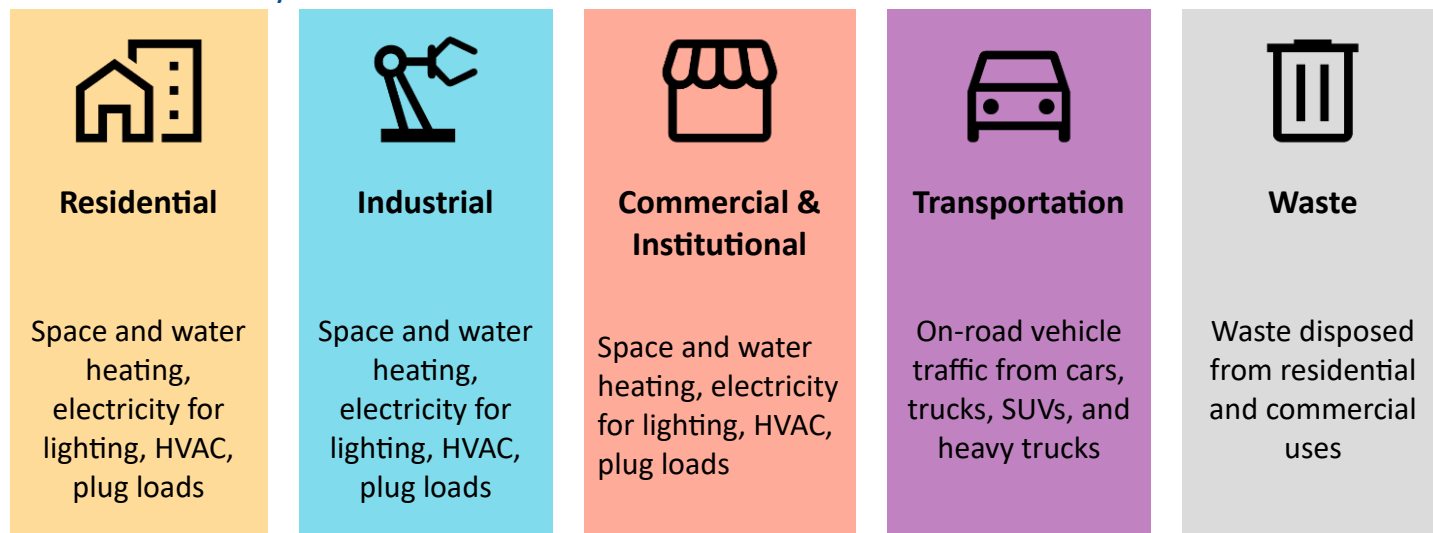
- Phase 1 - Baseline Inventory Assessment
- Phase 2 - Benchmarking Baseline Results
- Phase 3 - Future Projections - 2022 to 2050
- Phase 4 - Mitigation Action Development

- Phase 5 - Modelling Emissions Mitigation Actions
- Phase 6 - Setting Targets for Reduction
- Phase 7 - Implementation Planning

The project task force provided feedback to guide the results, ensuring they reflected operational realities across all community sectors. These phases are labelled P1 through P7.

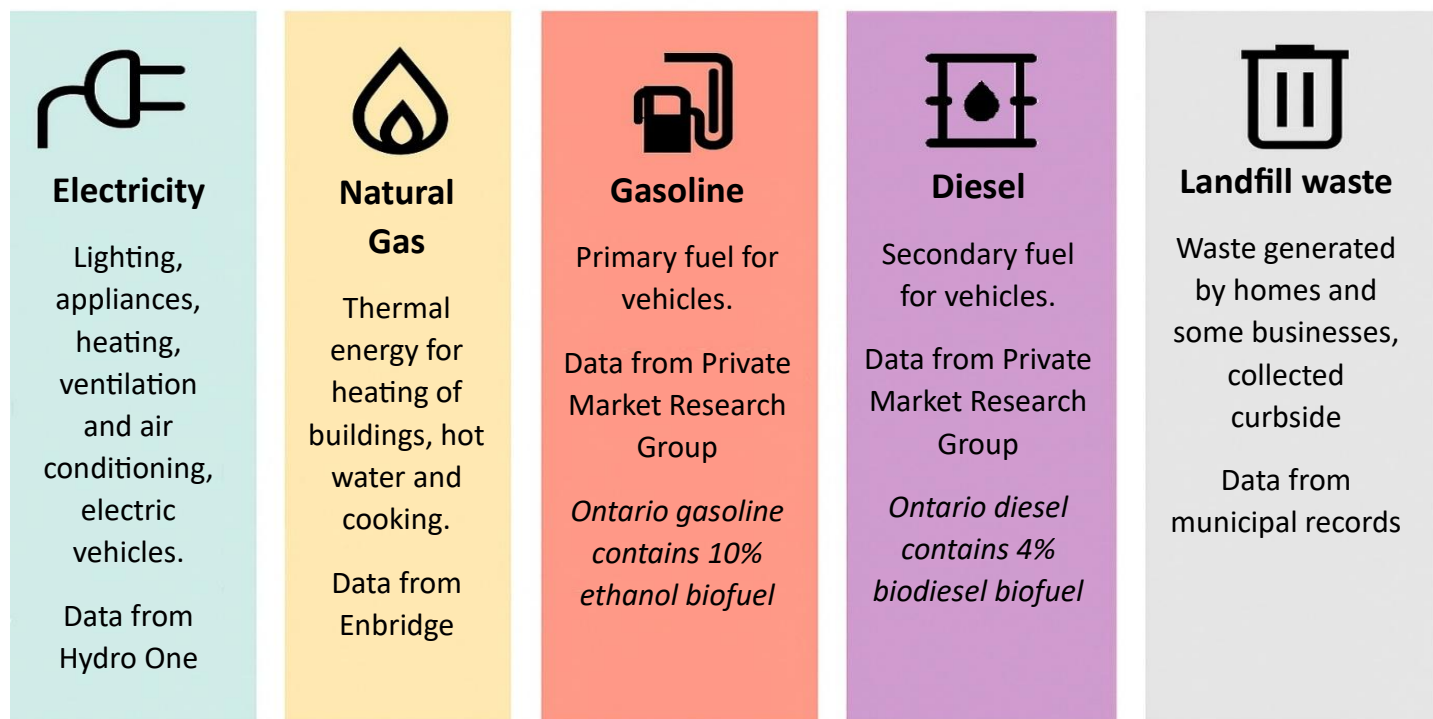
Baseline Inventory

Baseline Inventory Sectors



Baseline Inventory Energy and Emissions Sources

The community inventory is based on the annual consumption of the four main energy sources that power the community's homes, buildings, and vehicles. The solid waste generated by households is included for its emissions impacts when processed.



Baseline Inventory Assessment

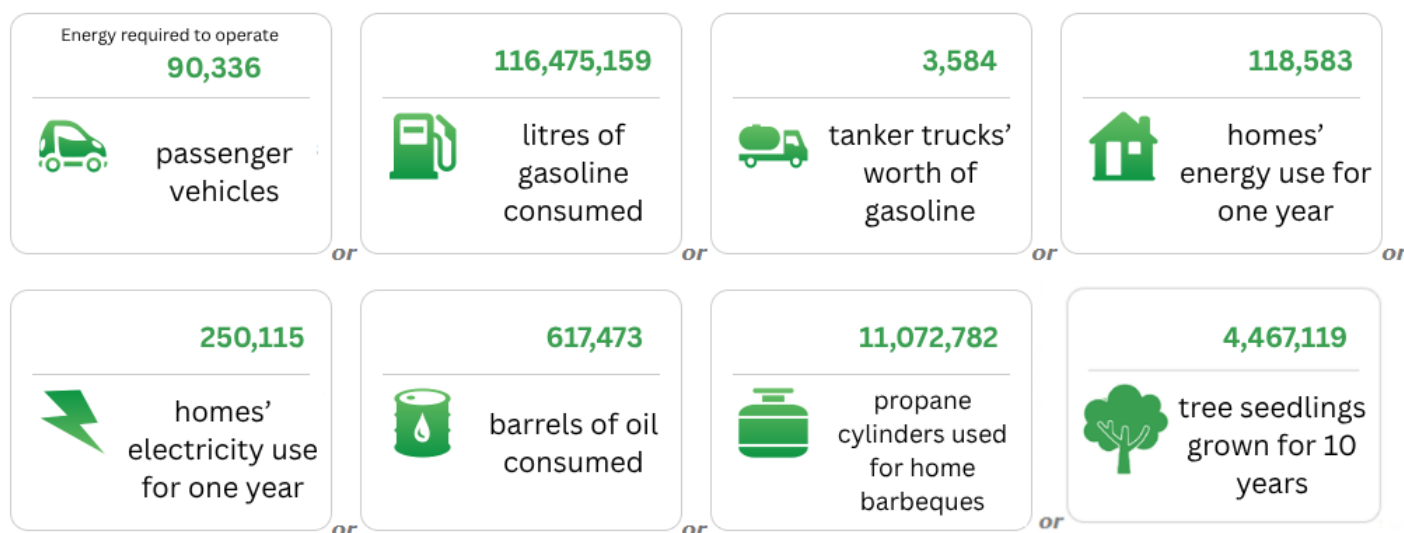
Emissions Inventory Results

In 2022, the EG community emitted 270,160 tonnes of Carbon Dioxide equivalent (TCO₂e). This is equivalent to 7.17 TCO₂e per capita and 1,107 tonnes per square kilometre (spatial intensity¹).

Greenhouse Gas Emissions Overview

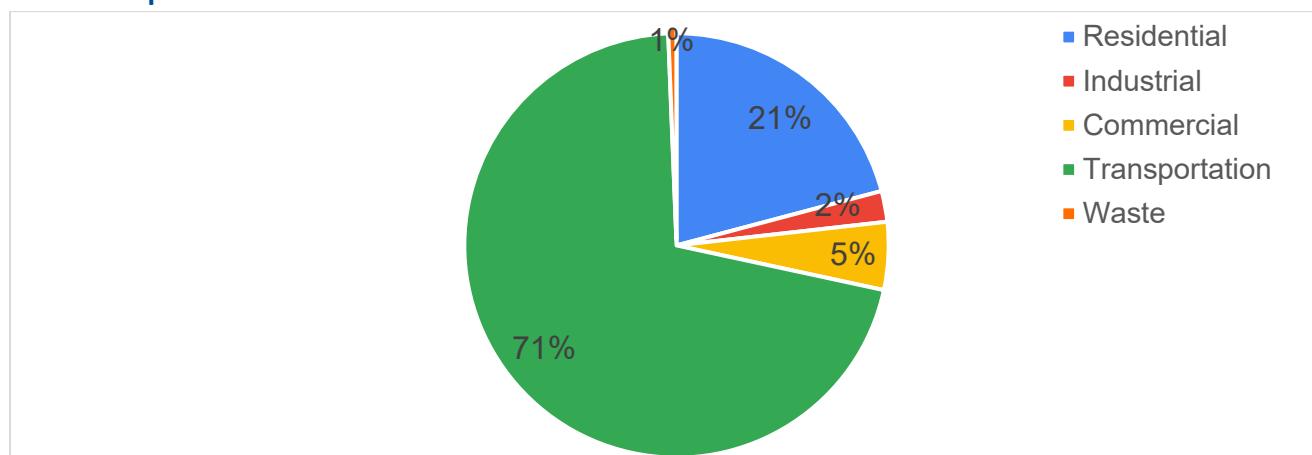
Baseline total emissions	Emissions Per Capita	Emissions Intensity	Spatial Intensity
270,160	7.17	51.49	1,107
TCO ₂ e	TOC2e/person	kgCO2e/GJ	TCO ₂ e/km2

These emissions are equivalent to CO2 emissions from:



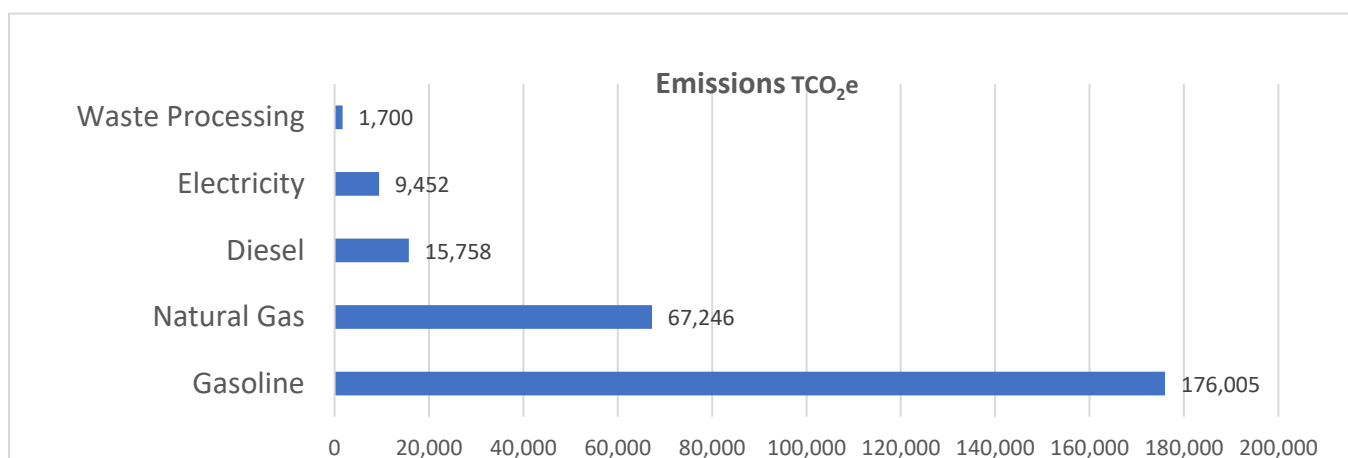
¹ The amount of emissions generated in a given geographical area

Emissions per Sector



Transportation is the largest emitting sector, followed by residential buildings.

Emissions per Source (TCO₂e)



Gasoline is the largest source of emissions, followed by natural gas.

Community vs. Corporate Municipal Emissions

EG's corporate emissions of 1503 TCO₂e, as outlined in the Corporate Energy Plan, represent approximately 0.6% of total community emissions for 2022.

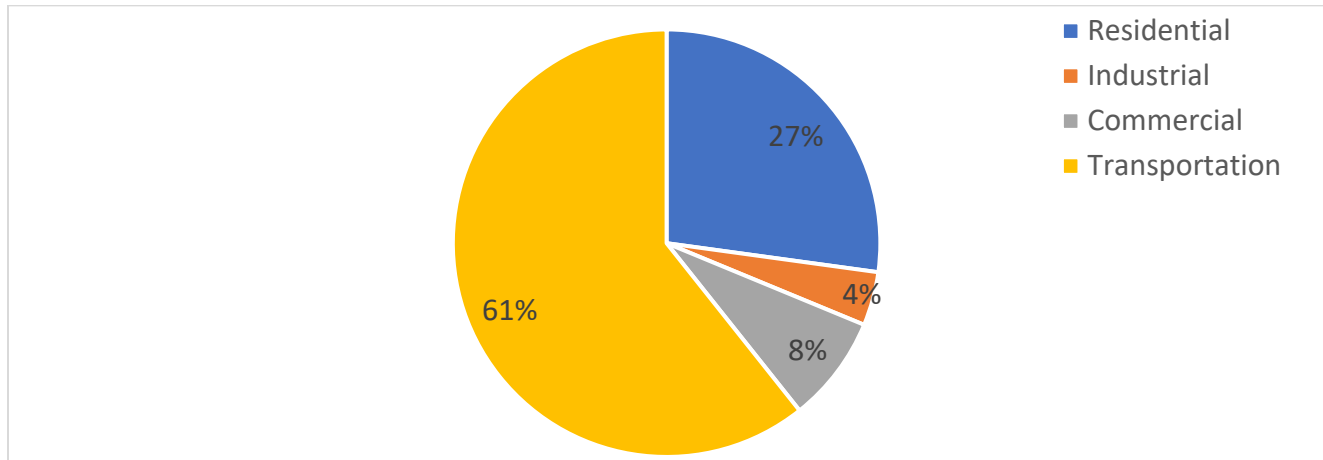
Energy Consumption Inventory Results

In 2022, the EG community consumed 5,214,298 GJ of energy. This represents 138.48 GJ per capita and 21,370 GJ per square kilometre. The transportation sector consumed the most energy. Gasoline was the largest energy source, followed by natural gas, electricity and diesel.

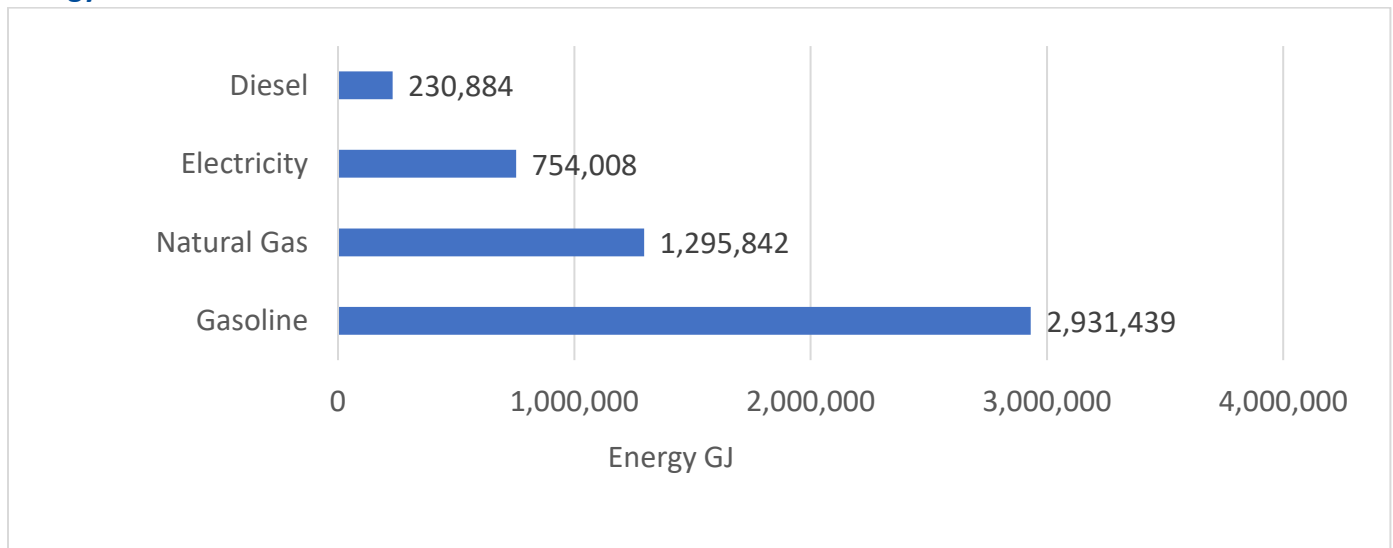
Energy Consumption Overview

Total Energy 5,214,298 GJ	Energy Per Capita 138.48 GJ/person	Energy Intensity 19.30 GJ/TCO ₂ e	Spatial Intensity 21,370 GJ/km ²
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Energy Per Sector



Energy Per Source



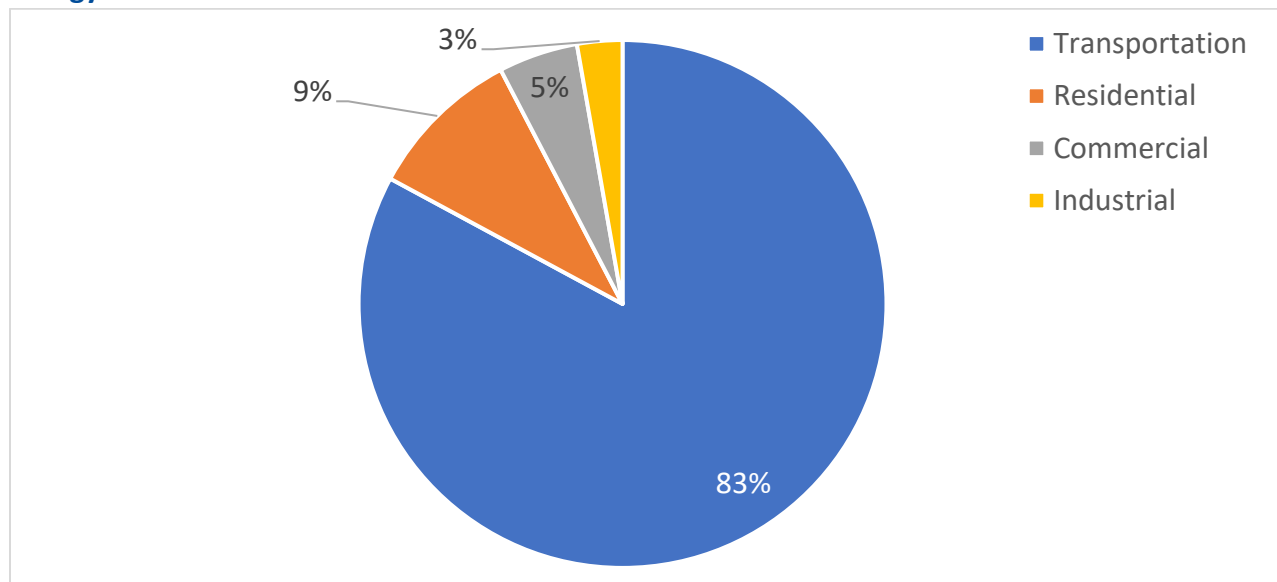
Energy Cost Inventory Results

The estimated energy costs can be determined based on average annual prices for electricity, natural gas, gasoline and diesel. An estimated \$185.5 million was spent on energy in 2022, representing approximately \$4,928 per capita.

Energy Cost Overview

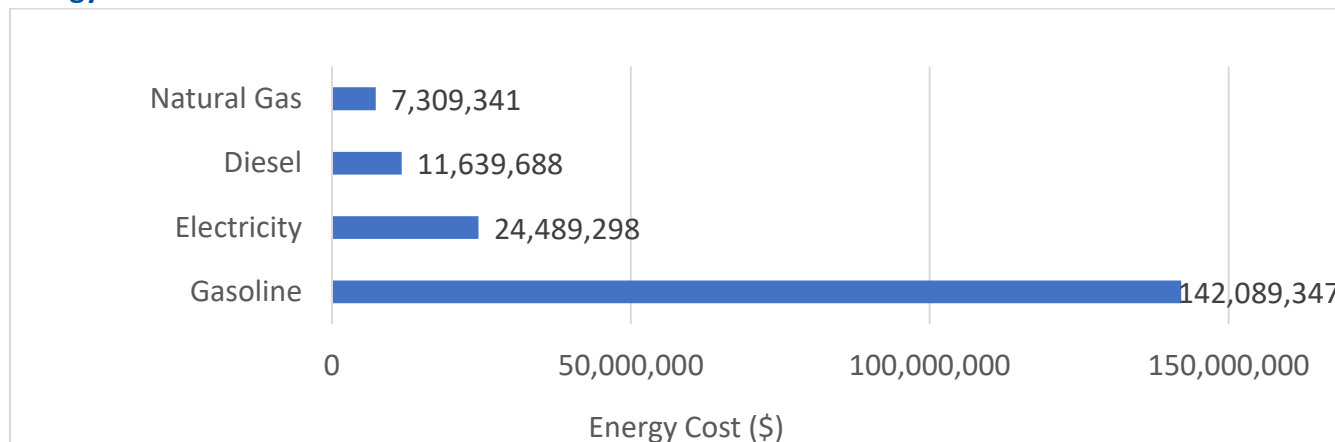
Total Cost	Energy Per Capita	Average cost per GJ
\$185,586,723	\$4,928	\$35
CAD	CAD/person	CAD

Energy Cost Per Sector



The transportation sector had the highest associated costs, followed by residential buildings.

Energy Cost Per Source



These energy cost metrics highlight the opportunity for significant savings when energy conservation actions are undertaken.

Baseline Results Discussion

Building Sector

The building sector includes residential, commercial/institutional, and industrial buildings. Natural gas and electricity provide energy for these buildings.

Building Emissions by Building Type

Residential buildings account for the majority of building emissions in EG (73.5%), followed by commercial (18.2%) and industrial buildings (8.26%). According to the 2021 Census, EG has 11,869 private dwellings, with most residents living in single-detached homes (81%). The community has a low population density, reflecting its rural character, and homes tend to be larger than the Ontario average. Larger homes typically use more energy, which contributes to higher emissions.

Transportation Sector

Transportation is the largest source of emissions in EG, accounting for 71% of emissions, 60.7% of energy use, and 82.9% of energy costs. These levels reflect reliance on fuel-powered vehicles.

Most residents drive internal combustion engine (ICE) vehicles. According to the Ontario Ministry of Transportation, light-duty trucks, SUVs, and vans are especially common, creating an opportunity for vehicle right-sizing (choosing smaller, more efficient cars). The sector also includes electricity use from a growing number of electric vehicles (EVs). EV adoption will most probably rise as charging infrastructure expands and vehicle costs decrease.

Impacts of Commuting

Commuting has a major impact on transportation emissions in EG. Because EG is close to major employment centres, commuting plays a significant role in overall transportation emissions.

More than 80% of EG residents commute outside the community for work, most spending 30 minutes or more travelling each day. Public transportation in EG lacks routes and frequencies, resulting in more residents choosing to drive. Increasing public transit use and expanding local job opportunities can help reduce these emissions over time.

Waste Sector

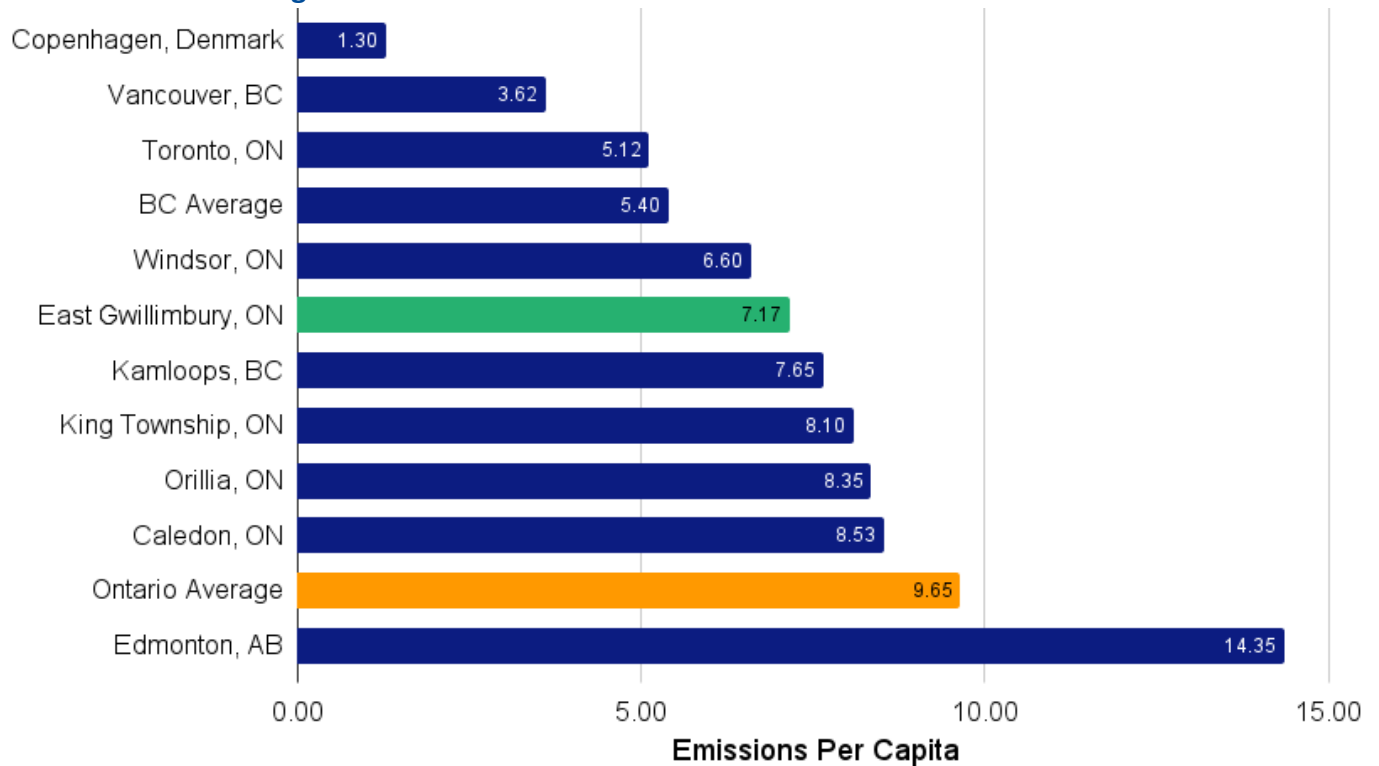
EG's waste sector covers emissions from curbside-collected garbage. In 2022, the Town processed about 3,223 tonnes of residential waste, around 85 kg per person, below the Ontario average of 275 kg residential waste. Strong participation in recycling, green bin, yard waste, and textile programs contributes to EG's 69.3% diversion rate, more than double the national average.

EG's residential garbage is sent to the Durham York Energy Centre, a waste-to-energy facility that turns garbage into electricity. The facility generates power for about 10,000 homes each year and produces roughly 750 kWh per tonne of waste. This energy enters the provincial grid. Based on EG's 2022 totals, this amounts to about 2.4 million kWh, around 1.15% of the community's electricity use.

Benchmarking Baseline Results

The baseline emissions inventory helps show how EG compares to other communities in Ontario and across Canada. Because larger communities naturally have more buildings, vehicles, and waste, emissions are evaluated on a per-capita basis to allow fair comparisons. The population-weighted benchmarking results below show how EG's emissions performance compares to other communities.

Emissions Benchmarking



EG performs better than many comparable communities, with emissions about 25% lower than the provincial average. However, even these relatively low levels are still higher than leading global examples, such as Copenhagen, which has achieved emissions of 1.3 TCO₂e per person and is on track for net-zero by 2030.

Emissions Projections 2030 – 2050

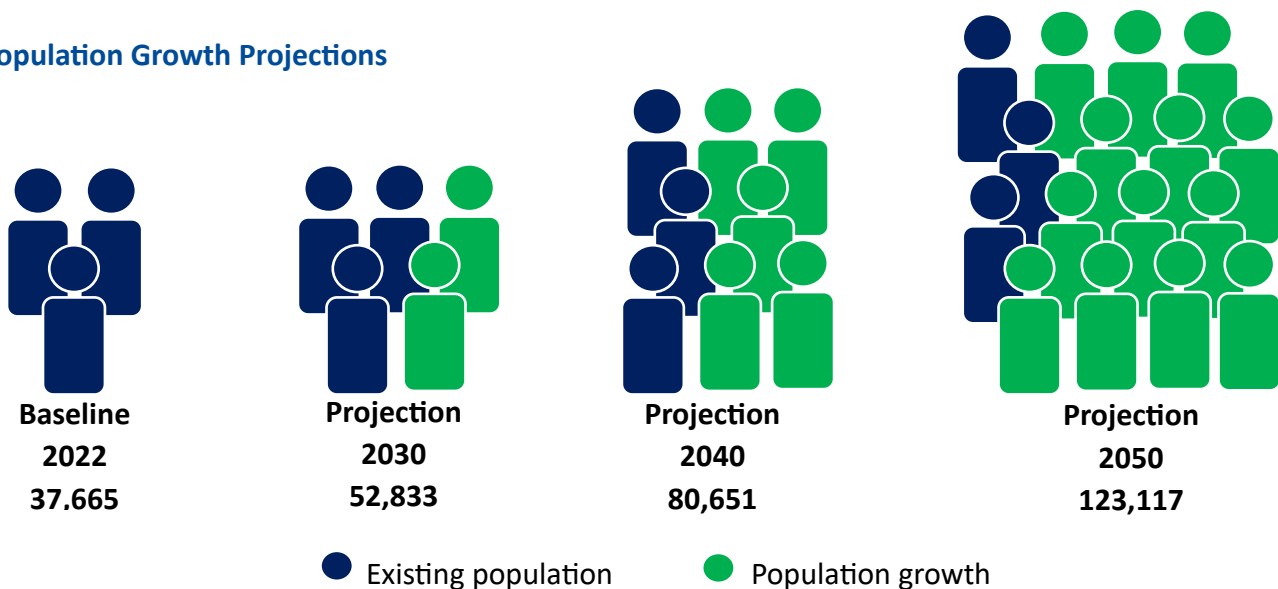
Business-As-Usual Forecast

A business-as-usual (BAU) scenario for the community means that no actions are taken but population growth continues as projected, representing an increase in energy demand.

Population Growth and growth proportions

EG estimates a very large increase in community emissions, proportionate to population growth. EG's annual average growth rate is 4.43% based on the last census period (2016-2020). By 2040, over half of total emissions will come from new energy demand driven by new buildings and vehicle traffic, as well as from additional waste management.

Population Growth Projections



Ontario Electricity Supply Mixture

Ontario cut a lot of emissions by phasing out coal, but electricity emissions have started to rise again because more natural gas is being used to meet growing energy needs. The province controls the electricity grid, and the province's grid operator (Independent Electricity System Operator - IESO) expects natural gas use to increase in the coming years, which could raise electricity-sector emissions. Future emissions are outside East Gwillimbury's control.

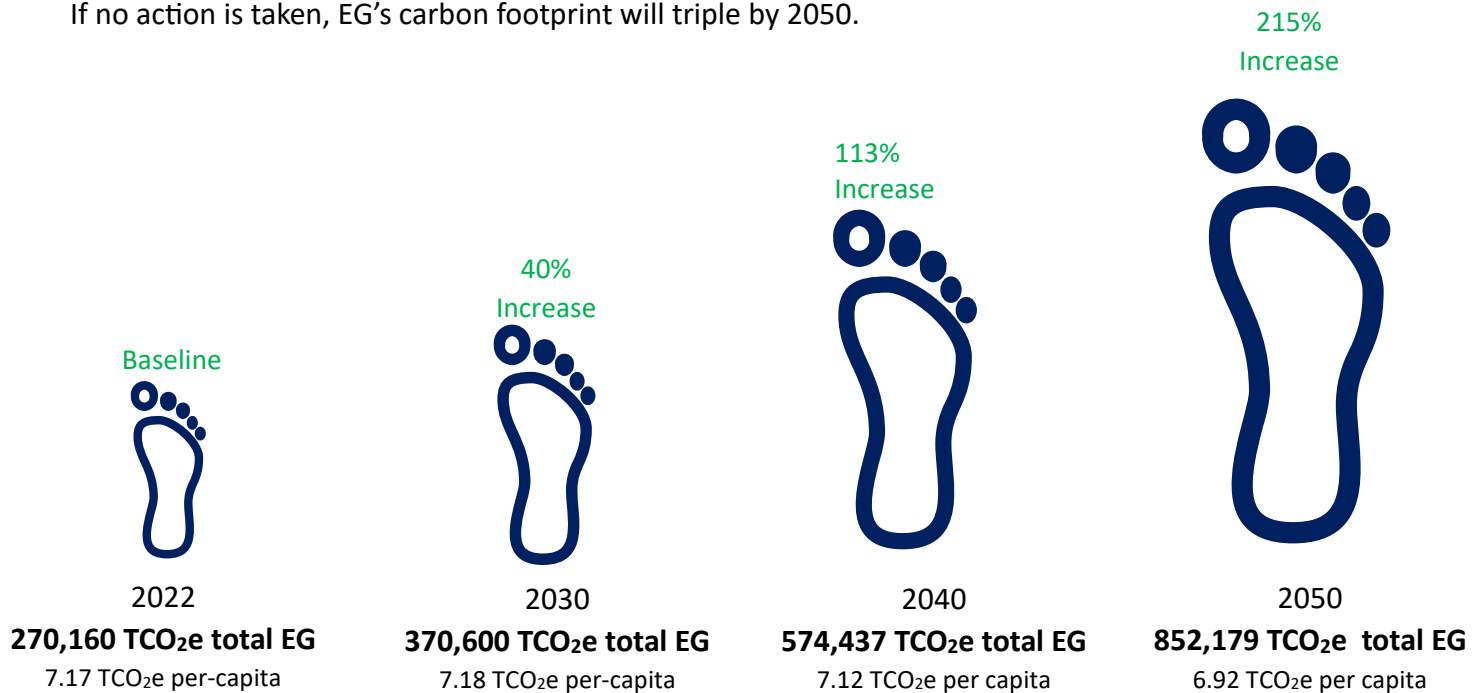
However, Canada's long-term plan is to clean the grid and reach net-zero electricity by 2050 by adding more renewable energy. Based on current information, Ontario's electricity emissions may rise slightly by 2030, drop by 2040, and reach net zero by 2050. These projections show just one possible pathway toward a cleaner grid, using today's energy data and EG's population trends.

Emissions Projections Results

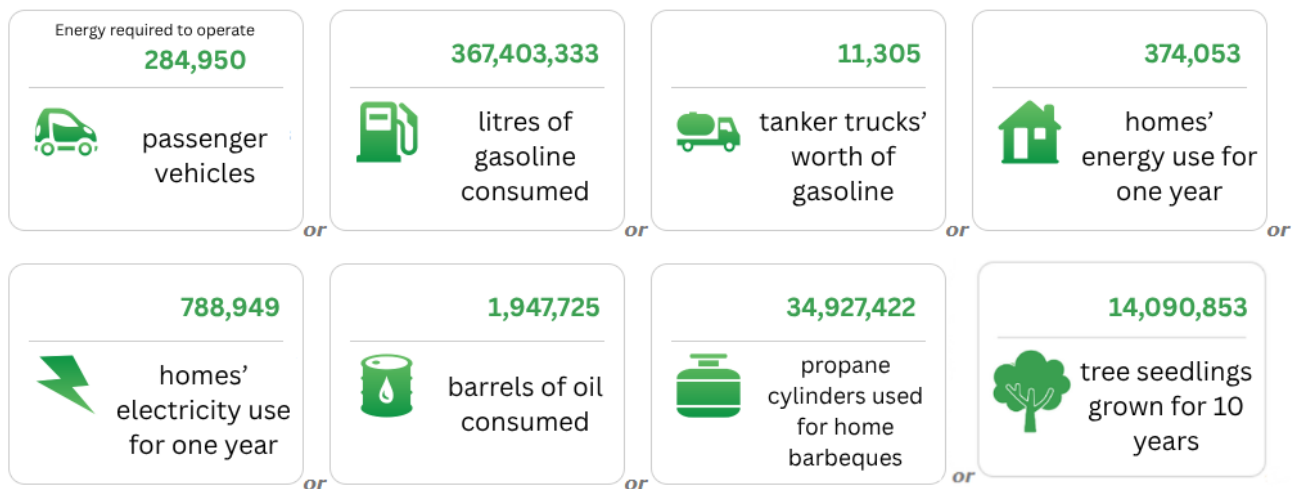
Using expected population growth and changes to the electricity grid, we can estimate how total and per-person emissions might change from 2022 to 2050.

Business-As-Usual Emissions Projection

If no action is taken, EG's carbon footprint will triple by 2050.



With these projections, by 2050, CO₂ emissions in EG will be equivalent to:



Mitigation Action Development

Based on the baseline analysis, input from the project task force, and considering current programs and EG's unique characteristics, the team selected 16 actions. These actions show how the community can significantly cut emissions by 2050. Many of these changes rely on the daily choices of residents and businesses. These actions work together to guide EG's sustainable development, comparing the baseline to the future horizons of 2030, 2040, and 2050.

Buildings

- Energy Conservation
- Building Retrofits
- Green Development Standards
- Fuel Switching
 - Heat Pumps
 - Solar Energy
 - Biomass
 - Renewable Natural Gas

Transportation

- Active Transportation
- Local Economic Growth
- Vehicle Right-Sizing
- Electric Vehicles
- Biofuel Utilization

Waste

- Waste Reduction
- Enhanced Recycling
- Organics Management
- Waste Processing Improvements

Types of Mitigation Actions

The actions within this Community EP can be classified by three main types of emissions mitigation.



Energy Conservation

Using assets more efficiently can lower energy use. Conservation is the most affordable way to cut emissions.



Energy Efficiency

Equipment that uses energy more efficiently, like LED bulbs, which turn electricity into light more effectively than incandescent bulbs



Fuel Switching

Cleaner energy sources, like choosing an EV instead of a gas vehicle.

The goal of the modelling exercise is to quantitatively evaluate the emissions-savings potential of each action based on what is practical, actionable, and realistic for the community.

Building Sector Actions

Action #1. Energy Conservation

Mitigation Type	Conservation
Emissions Reduction Potential	100% for energy that is conserved
Key Performance Indicators	Residential energy consumption, Commercial energy consumption, Industrial energy consumption
Participation	Average reductions achieved relative to baseline levels 15% by 2030, 20% by 2040, 25% by 2050 for residential dwellings. 20% by 2030, 25% by 2040, 35% by 2050 for commercial and industrial buildings.
Activities	Residents • Lower the thermostat during winter • Reduce air conditioning during summer • Shut off lights and electronics when not in use. Install automated light sensors • Install and use Smart thermostats to better control heating and cooling • Ensure doors and windows seal shut properly to avoid air leaks • Properly seal framing around windows and doors to avoid air leaks • Change furnace filter at regular intervals to ensure it is operating properly • Use blinds and curtains to reduce heat gain for south-facing windows in the summer Town • Outreach and education

Action #2: Building Retrofits

Mitigation Type	Conservation and Efficiency
Emissions Reduction Potential	Reductions relative to baseline levels: 30% for 2030, 50% for 2040, 60% for 2050 for residential dwellings. 35% for 2030, 55% for 2040, 65% for 2050 for commercial buildings 35% for 2030, 55% for 2040, 65% for 2050 for industrial buildings
Key Performance Indicators	Number of homes retrofitted, emissions per household, residential building emissions
Participation	30% of buildings by 2030, 55% by 2040, and 95% by 2050
Actions	Residents • Increase insulation for walls, basements, and attics • Switch to high-efficiency windows and doors • Upgrade to high-efficiency heating systems • Improve air sealing of the building envelope Town • Outreach and education

Action #3: Green Development Standards

Mitigation Type	Efficiency
Emissions Reduction Potential	45% for 2030, 55% for 2040, 65% for 2050 for residential dwellings 50% for 2030, 60% for 2040, 70% for 2050 for commercial buildings 50% for 2030, 60% for 2040, 70% for 2050 for industrial buildings
Key Performance Indicators	Number of new buildings constructed to higher efficiency standards
Participation	Applies to all new builds
Actions	Town • Implement the EG's Thinking Green Development Standards

Action # 4: Heat Pumps

Mitigation Type	Fuel Switching
Emissions Reduction Potential	Reductions will depend on the heat pump system's coefficient of Performance (COP) and the emissions intensity of the electricity grid. For low emissions grids, 90% to 100%. When operating on a net-zero grid, the emissions savings are 100%. 90% for 2030, 95% for 2040, 100% for 2050
Key Performance Indicators	Building emissions
Participation	30% for 2030, 60% for 2040, 70% for 2050 for residential dwellings 30% for 2030, 60% for 2040, 70% for 2050 for commercial and industrial buildings
Actions	Residents • Upgrade existing natural gas systems with heat pumps when they need replacing. Town • Explore existing programs • Outreach and education

Action # 5: Solar Energy

Mitigation Type	Fuel Switching
Emissions Reduction Potential	Contributes 100% reduction when offsetting energy previously supplied by fossil fuels. Works to lower grid emissions intensity for grid tied systems.
Key Performance Indicators	kW of local solar capacity
Actions	Residents • Install solar panels on rooftops Town • Outreach and education • Connect with external partners

	External partners Solar energy programs
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Action # 6: Sustainable Biomass (Wood) for Heating

Mitigation Type	Fuel Switching
Emissions Reduction Potential	100% when displacing a fossil fuel
Key Performance Indicators	Building emissions
Actions	Town • Explore opportunities to promote the use of high-efficiency wood stoves, including proper maintenance, to supplement extra-heat needs from heat pumps. Wood can be a carbon-neutral heating option when it's harvested and used responsibly. • Outreach and education Residents • Explore options to install high-efficiency wood stoves

Action # 7: Renewable Natural Gas Utilization

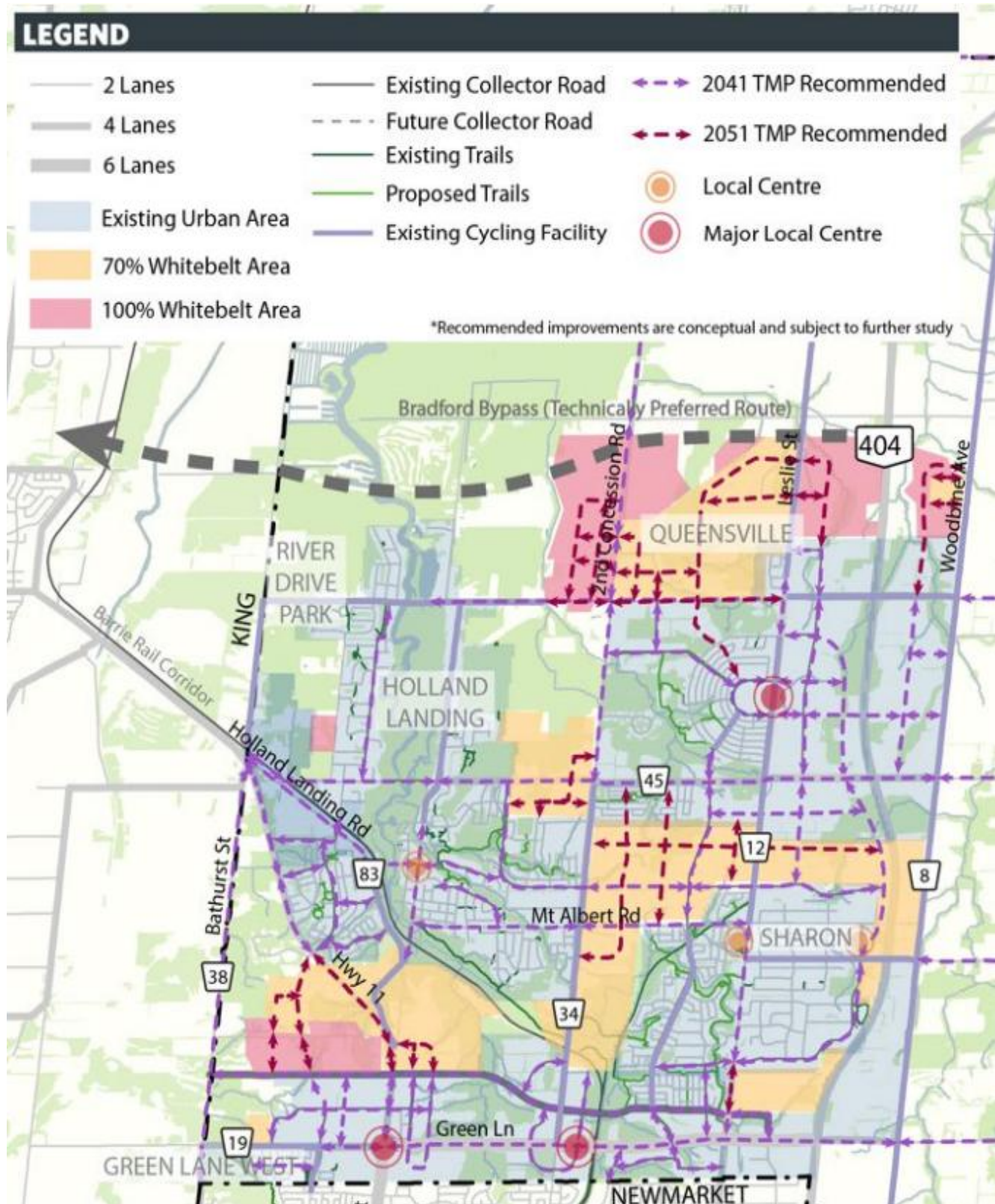
Mitigation Type	Fuel Switching
Emissions Reduction Potential	100% from baseline levels for the renewable component of natural gas supply
Key Performance Indicators	Renewable natural gas (RNG) supply percentages, natural gas emissions
Actions	Utility companies • Increase RNG concentration Town • EG: Advocate for RNG generation Convertus • Start operations (planned for 2027)

Transportation Sector Actions

Action # 8: Active Transportation

Mitigation Type	Conservation
Emissions Reduction Potential	100% from baseline levels for the renewable component of natural gas supply
Key Performance Indicators	Modal split, transit ridership
Actions	York Region • Increase public transit services Town • Promote the increased use of active transportation modes (bike, scooter, walking) in the community • Implement the Active Transportation and Trails Plan and further develop active transportation infrastructure • Advocate to YR for expanded bus routes and frequency

Proposed 2051 Cycling Network - as proposed in the EG Transportation Master Plan



Action # 9: Local Economic Growth

Mitigation Type	Conservation
Emissions Reduction Potential	100% reduction for trips made through active means vs. ICE vehicles (gas-powered)
Key Performance Indicators	Modal split
Participation	Increase in proportion of trips completed via active transportation methods relative to baseline levels: 10% for 2030, 20% for 2040, 30% for 2050
Actions	Town and residents • Support local business • Buy local • Support local job creation • Support the development of tourism According to York Region's Official Plan (2016, 2051), EG is expected to see local jobs grow from about 10,300 in 2016 to 63,100 by 2051, making active transportation much more practical.

Action # 10: Vehicle Right-Sizing

Mitigation Type	Conservation
Emissions Reduction Potential	Dependent on vehicle-specific parameters. Replacing a pickup truck or SUV with a car can result in 20% to 30% savings in fuel consumption and emissions. 25% savings were used in the model
Key Performance Indicators	Number of cars vs. light-duty trucks per household
Participation	15% for 2030, 25% for 2040, 30% for 2050
Action	Residents - Assess needs and choose vehicle size accordingly Town - Educate the community regarding benefits of vehicle right sizing Right-sizing also brings other benefits: less traffic congestion, less road damage, cleaner air, lower fuel bills, and improved safety, as smaller vehicles are involved in fewer serious collisions according to the Ministry of Transportation 2024 data.

Action # 11: Electric Vehicles

East Gwillimbury currently (2026) has 36 EV charging stations, including 15 at municipal facilities. In February 2026, Canada launched the Electric Vehicle Affordability Program, offering up to \$5,000 for fully electric vehicles and up to \$2,500 for plug-in hybrids, making cleaner transportation more affordable for households.

Mitigation Type	Fuel Switching
Emissions Reduction Potential	95% for 2030, 97% for 2040, 100% for 2050 Reduction potential per ICE vehicle switched to EV
Key Performance Indicators	Transportation emissions, number of local EV charging stations
Participation	20% for 2030, 50% for 2040, 75% for 2050 Increase in electric vehicles
Actions	Switch from gas-powered cars to electric vehicles (EVs) Plug-in hybrids can also reduce emissions and provide a good transition option for people who still need longer driving ranges as charging networks expand.

Action # 12: Biofuel Utilization

Mitigation Type	Fuel Switching
Emissions Reduction Potential	Average savings for biofuel blends 20% for 2030, 40% for 2040, 80% for 2050
Key Performance Indicators	Biofuel composition requirements, biofuel sales, and transportation emissions, renewable diesel sales
Participation	50% for 2030, 60% for 2040, 95% for 2050
Actions	Residents • Use biofuels in ICE vehicles (<i>gas-powered</i>) Province • Increase renewable components in commercially available fuels Town • Educate about the benefits of biofuels

Waste Sector Actions

Action # 13: Waste Reduction & Prevention

Mitigation Type	Conservation
Emissions Reduction Potential	100% reduction in waste mass from baseline levels
Key Performance Indicators	Waste generated per capita
Participation	5% for 2030, 10% for 2040, 20% for 2050
Actions	Residents: • Reduce the amount of garbage that ends up in landfills: ○ Repair, reuse, reduce, upcycle ○ Select products with less packaging ○ Reduce single-use plastic use Town • Educate the community about packaging reduction and consumer prioritization of product packaging Product Producers • Reduce packaging

Action # 14: Increased Recycling Rates

Mitigation Type	Conservation
Emissions Reduction Potential	100% emissions reduction for waste mass reduced
Key Performance Indicators	Waste per capita
Participation	Increased recycling diversion over baseline levels 15% for 2030, 25% for 2040, 30% for 2050
Actions	Circular Materials • Improve, support, and strengthen recycling practices Town • Redirect residents to educational materials from Circular Material

Action # 15: Organics Management

Mitigation Type	Conservation
Emissions Reduction Potential	100% reduction in waste mass from baseline levels
Key Performance Indicators	Green bin waste per capita Waste per capita
Participation	Increased organic waste diversion over baseline levels 5% for 2030, 10% for 2040, 15% for 2050
Actions	- Residents: Reduce food waste by: - Planning shopping, improving storage habits, learn about food rescue - Implement composting: Biodigester, composting bin, food cyclers - York Region and Town: Outreach and education to reduce food waste and promote composting and food cycling.

Action # 16: Waste Processing Efficiency Improvements

Mitigation Type	Efficiency
Emissions Reduction Potential	Up to 20% reduction from waste processing efficiencies.
Key Performance Indicators	Emissions intensity of waste-to-energy processing
Participation	Increased waste processing efficiency 10% for 2030, 15% for 2040, 20% for 2050
Actions	Durham-York Energy Centre • Improve processes Town • Advocate for improvements to regional waste processing
	Durham-York Energy Centre • Improve processes Town • Advocate for improvements to regional waste processing

Mitigation Actions Summary Table

Action	Sector	Type	KPIs
1. Energy Conservation	Buildings	Conservation	Energy consumption
2. Building Retrofits	Buildings	Efficiency	Number of buildings retrofitted, emissions per household, building emissions
3. Green Development Standards	Buildings	Efficiency	Number of new buildings constructed to higher efficiency standards, and building energy consumption
4. Solar Energy	Buildings	Fuel Switching	kW of local solar capacity
5. Sustainable Biomass	Buildings (Residential)	Fuel Switching	Building emissions levels
6. Heat Pump Application	Buildings	Fuel Switching	Building emissions levels
7. Renewable Natural Gas Utilization	Buildings	Fuel Switching	RNG content in natural gas supply, natural gas emissions
8. Active Transportation	Transportation	Conservation	Modal split, transit ridership
9. Local Economic Development	Transportation	Conservation	Commuting within EG, Local employment
10. Vehicle Right-Sizing	Transportation	Efficiency	Number of cars vs. light-duty trucks per household
11. Electric Vehicles	Transportation	Fuel Switching	EV proportion of total vehicles, transportation emissions
12. Biofuels	Transportation	Fuel Switching	Biofuel composition requirements, biofuel sales, transportation emissions

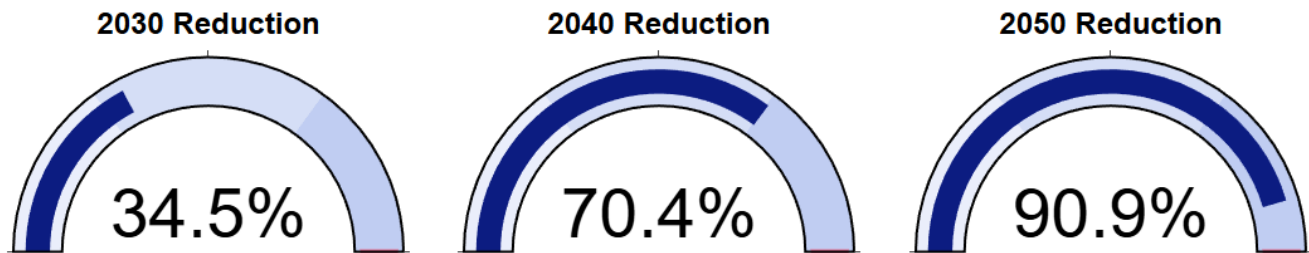
13. Waste Reduction	Waste	Conservation	Waste generated per capita
14. Enhanced Recycling	Waste	Conservation	Diversion rate
15. Organics Management	Waste	Conservation	Waste emissions
16. Waste Processing Improvements	Waste	Efficiency	Waste emissions, percentage landfill gas capture

Mitigation Model and Emissions Forecast

Emissions Savings Potential

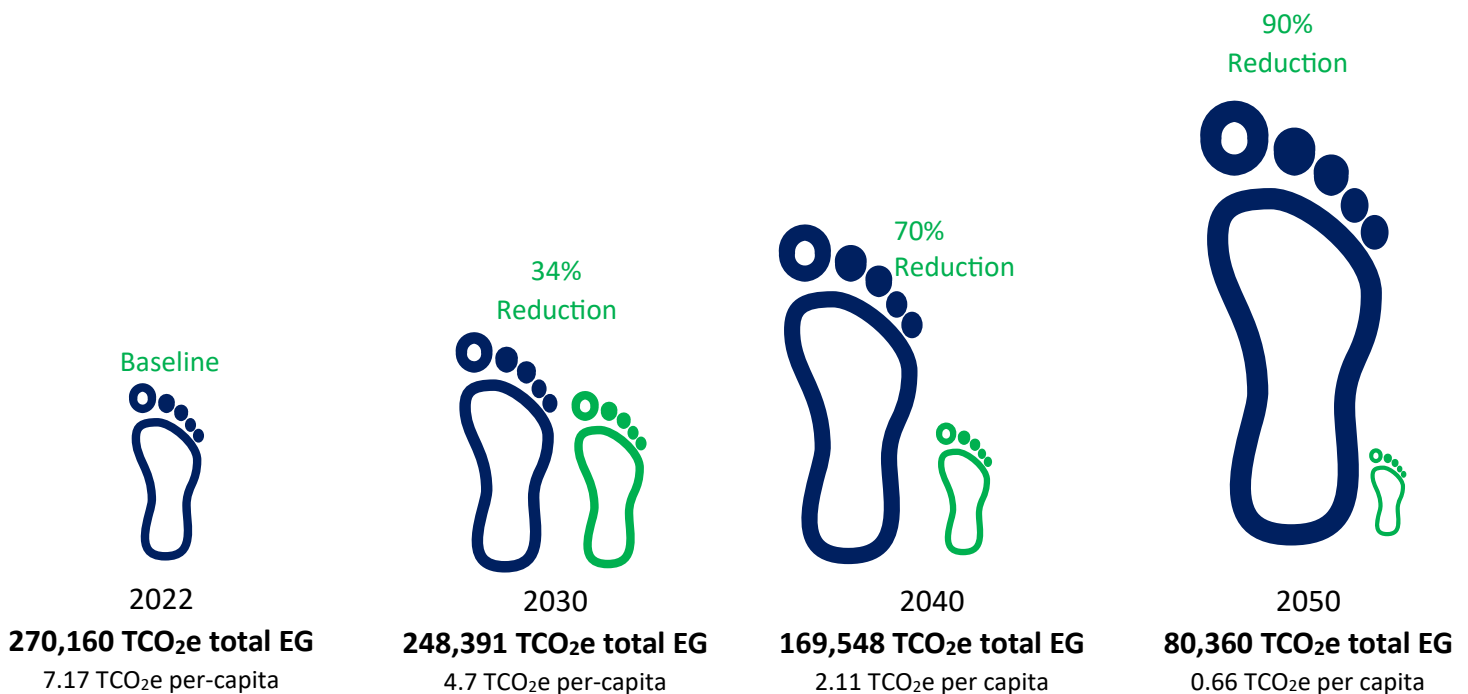
All 16 climate actions were analyzed using the CERCA2050 model, which estimates how much each action can reduce emissions individually and in combination. The model projects potential per-person and collective emission reductions for 2030, 2040, and 2050.

Per-capita Emissions Reductions



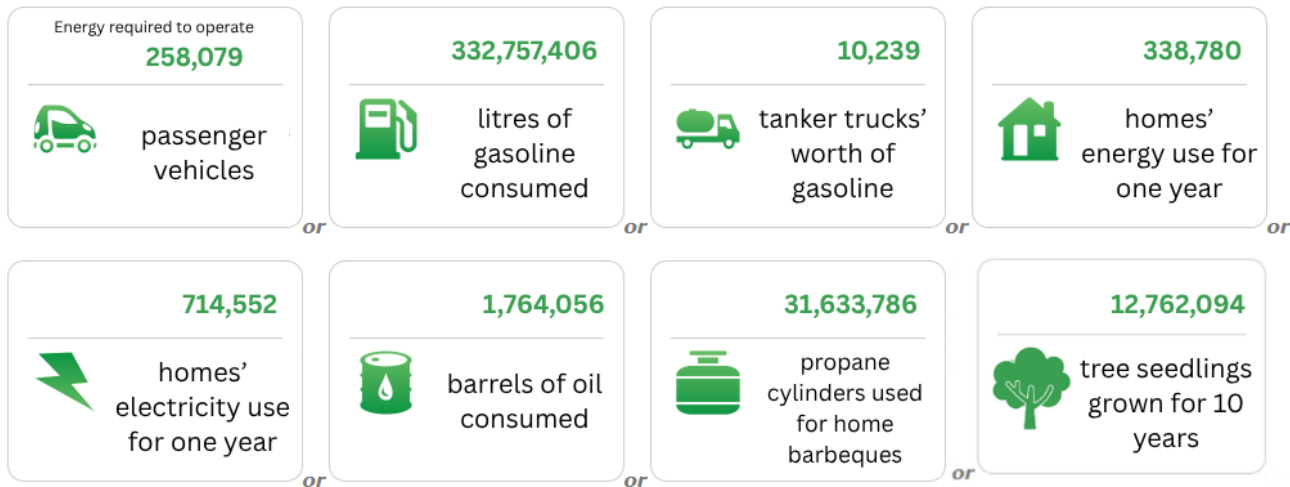
Mitigation Actions Emissions Projection

By 2050, EG's carbon footprint will be a third of the 2022 baseline when the actions in this plan are implemented. This shows how much the community could cut overall emissions compared to doing nothing (BAU). It would mean around 771,819 tonnes of CO₂ **not** emitted.



P5: Modelling Emission Mitigation Actions

By 2050, when EG achieves these savings, the **saved** emissions are equivalent to:



These results indicate that a low-carbon emissions trajectory is possible for EG.

This forecast, using current energy prices, broadly represents estimated cost savings of \$529 million per year.

Carbon Sequestration by Natural Features and Tree Canopy

East Gwillimbury's remaining emissions can be balanced out by nature. Local natural areas, such as forests, grasslands, wetlands, and even urban trees, absorb carbon from the atmosphere. A Lake Simcoe Region Conservation Authority study done in 2025 found that EG's natural heritage currently removes 100,670 tonnes of CO₂ each year. By protecting and expanding the natural heritage system, the community could increase its carbon-absorbing capacity, enabling EG to achieve net-zero by 2050, meaning it removes as much carbon as it produces.

Setting Targets for Reduction

Per Capita Emissions Reduction Targets

The mitigation model was used to identify the potential emissions savings from the listed actions. By implementing these actions, targets can be established for the 2030, 2040, and 2050 milestones. This plan recommends the following per capita emissions reduction targets:

Emissions Reduction Targets Per Capita

Per-Capita Reduction 2030

34%

From Baseline

Per-Capita Reduction 2040

70%

From Baseline

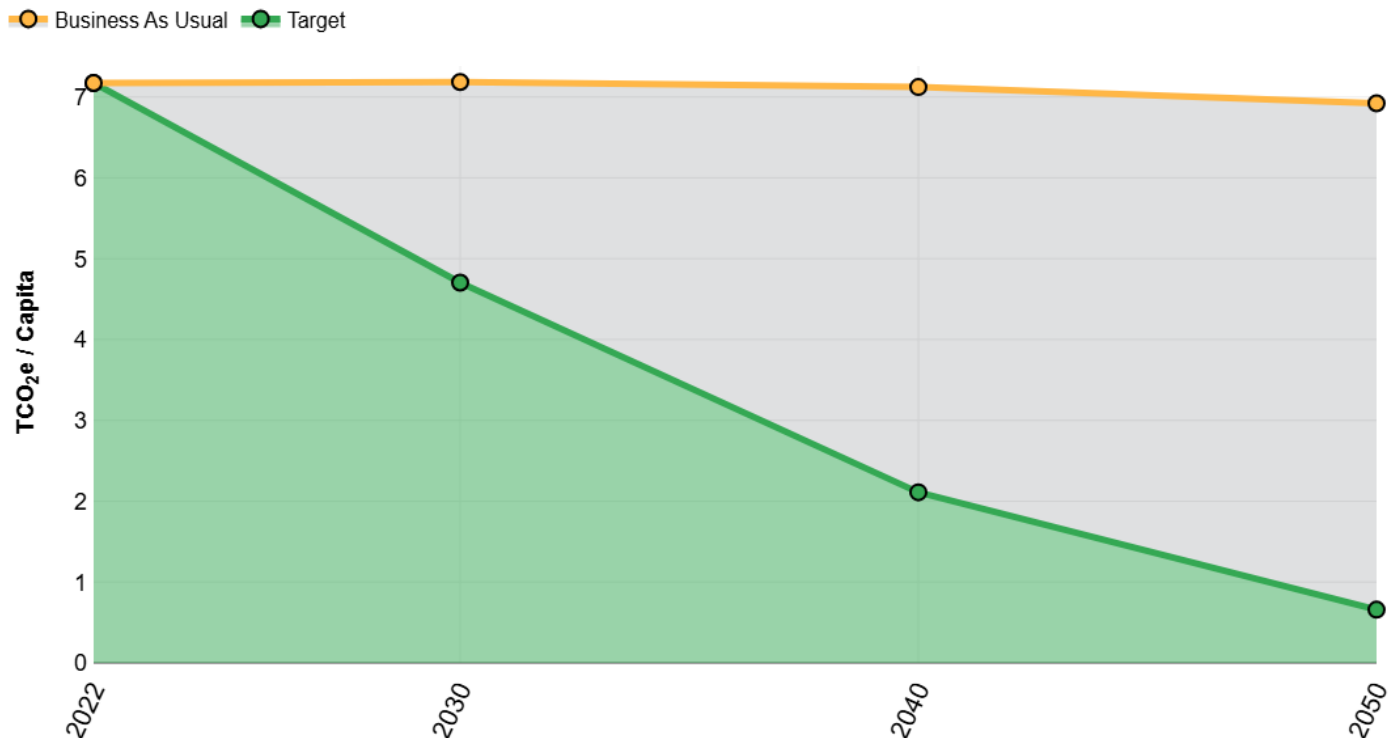
Per-Capita Reduction 2050

90%

From Baseline

These targets are then applied to the pathway model to outline the target per capita emissions pathway as displayed below.

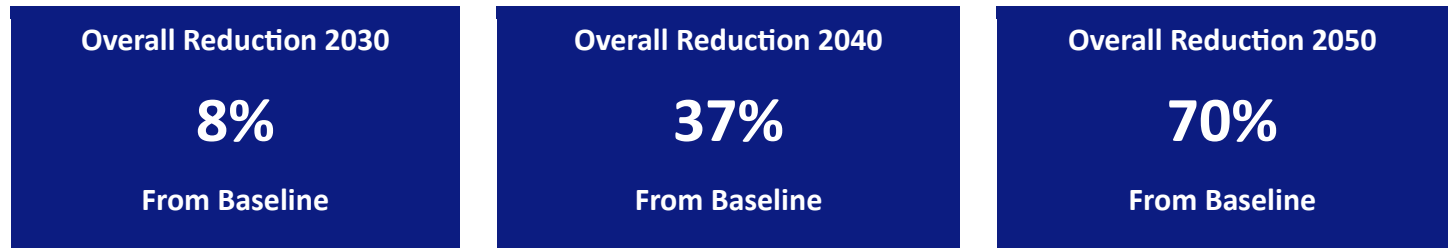
Target Emissions Per Pathway Chart



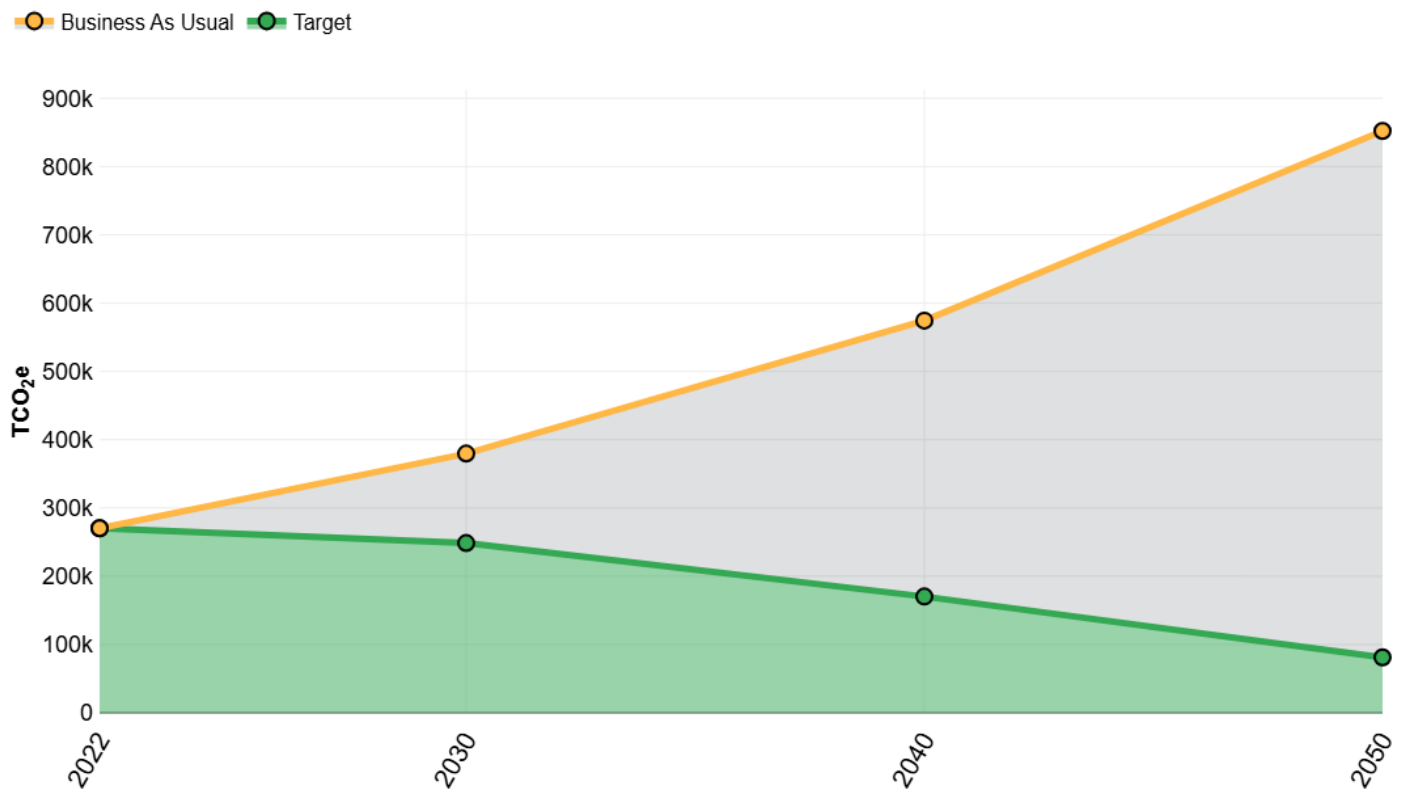
Overall Emissions Reductions from Baseline

Using the established per capita targets multiplied by the projected population for the respective milestone year helps estimate overall emissions reductions. The exact target level will depend upon the actual population for the milestone year.

Overall Emissions Reductions



Total Emissions Pathway Chart



Implementation Planning

Implementation Item	Mitigation Action	Sector	Timeframe
Formation of a Community Energy Task Force to guide implementation of the plan	All	All	Q4 2026
Continued collaboration with the other municipalities within York Region to identify opportunities for a combined effect	All	All	Ongoing
Annual monitoring of the primary emissions and energy indicators through inventory updates	All	All	Q2 of each year
Complete a multi-year analysis for 2023, 2024, and 2025 emissions levels to identify status and trends using CERCA software	All	All	Q3 2026
Annual monitoring of mitigation action indicators	All	All	Q2 of each year
Communicate vital metrics and monitoring results through an online data portal on the EG website to enhance transparency and provide a vehicle for gaining community feedback	All	All	Q3 2026
Lead the community by example through implementation of corporate actions identified in the Corporate Energy Plan	All	All	Ongoing
Implement cycling and pedestrian network expansion recommendations presented in the Transportation Master Plan	Active Transportation	Transportation	Ongoing
Encourage and incentivize local business development to increase employment opportunities with EG	Active Transportation	Transportation	Ongoing

Continue to collaborate with York Region Transit (YRT) on expansion of transit and Mobility On-Request services	Active Transportation	Transportation	Ongoing
Further develop EV Charging Infrastructure at Town buildings	EV Vehicles	Transportation	Ongoing
Implement requirements for EV readiness charging at new developments via the Thinking Green Development Standards	EV Vehicles	Transportation	In Progress
Promote participation in energy efficiency incentive programs offered by utility companies** and Greener Homes Canada	Energy Conservation and Building Retrofits	Buildings	Q4 2026
Develop incentives for the implementation of tiers 2 and 3 of the Thinking Green Development Standards in new developments to achieve high efficiency levels for new construction	Green Development Standards	Buildings	Paused until new legislation provides guidance
Investigate the development of a Local Improvement Charge- based retrofit program leveraging available funding opportunities	Building Retrofits	Buildings	Q4 2026
Investigate opportunities to reduce barriers to climate actions (heat pumps, retrofits, EV chargers) in the zoning by-law	Building Retrofits	Buildings	Q1 2027

Conclusion

This report outlines a data-driven plan to help East Gwillimbury grow in a sustainable, low-carbon way that aligns with the EG's Thinking Green Environmental Strategy and addresses the Climate Emergency Council declared in 2023.

Using 2022 as the baseline year, EG completed its first community-wide greenhouse gas (GHG) inventory, measuring emissions, energy use, and energy costs. With these numbers it will be possible to track progress.

Compared with other communities in Ontario and across Canada, EG's total emissions are below the provincial average. However, transportation emissions are higher than similar sized towns because many residents commute long distances.

The Town used this baseline to project emissions for 2030, 2040, and 2050. Under the BAU scenario with no actions, emissions would rise sharply as the population grows.

To prevent this, a workforce made up of local and regional interested parties helped develop a low-carbon action plan with strategies covering transportation, buildings, waste, and energy. When put into action, per-person emissions in EG could be reduced by 34.5% by 2030, 70.4% by 2040, and 90.3% by 2050.

Furthermore, by 2050, EG could reach net-zero by considering the conservation and enhancement of its natural heritage. Net-zero means the community reduces emissions as much as possible, and natural systems offset any remaining emissions. Natural systems, such as forests, wetlands, soils, and the urban tree canopy, play a key role in absorbing and storing atmospheric carbon.

This plan is a living document and will be updated as new technologies, data, and policies develop. Each community sector has clear next steps to help guide East Gwillimbury toward its long-term climate goals.

However, achieving these goals will only be possible through community empowerment and a strong commitment to reducing individual carbon emissions. These changes, gradually and collectively adopted, support a healthier environment, economy and overall community wellbeing.

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Glossary

Business-As-Usual - BAU

The normal operations and practices within a community, reflecting its standard procedures, routines, and energy consumption patterns, without additional emissions-mitigating actions.

Carbon emissions

Gases are released into the atmosphere, primarily carbon dioxide, during the burning of fossil fuels or during industrial processes. These emissions are a significant factor in global warming and the enhanced greenhouse effect.

Climate change

Long-term shifts in temperatures and weather patterns.

Emissions intensity

The measure of greenhouse gas emissions produced relative to a specific activity or output. In the context of this report, it is a ratio of emissions per unit of energy produced. It provides insight into how sustainably the energy demand is being met by the energy supply system.

Emissions reduction

A decrease in the release of greenhouse gases (GHGs) into the atmosphere.

Food cycling

In the context of the circular economy, this describes turning surplus or wasted food ingredients into new, high-quality, nutritious consumer products. The goal is to reduce food waste and sustainably repurpose nutrients in the food system for example composting.

Greenhouse gas - GHG

Gases in the Earth's atmosphere that trap heat. During the day, high-frequency radiation from the sun shines through the atmosphere, warming the Earth's surface. The Earth's surface warms and radiates low-frequency thermal radiation (heat). A portion of the low-frequency radiation is trapped by greenhouse gases in the atmosphere, leading to an increase in air temperature.

Heat pumps

Heat pumps are energy-efficient, electrically driven devices that extract heat from a low temperature place (a source) and deliver it to a higher temperature place (a sink).

Internal Combustion Engine - ICE

Engines in which fuel and air are burned inside the engine, creating high-pressure gases that drive engine components to produce power. This process can be used to move vehicles, boats, ships, or other machinery.

Kilograms/Tonne Carbon Dioxide Equivalent - KgCO₂e/TCO₂e

Unit of measurement that quantifies the impact of different greenhouse gases on the environment, expressed as the equivalent mass of carbon dioxide.

Low carbon

Causing or resulting in a relatively small net release of carbon dioxide into the atmosphere.

Mitigation actions

A recommended change to reduce and address an existing or potential vulnerability.

Modal Split

Distribution of transportation activities between active transportation, such as walking, biking, transit and vehicles. For example, when 10% of trips are completed with active transportation, the modal split is 10%.

Net-Zero

A target of cutting carbon emissions to a small amount of residual emissions that can be absorbed and durably stored by nature and other carbon dioxide removal measures, leaving zero in the atmosphere. Global net-zero emissions will be reached when greenhouse gas emissions and removals due to human activities are in balance.

Renewable

Capable of being replaced by natural ecological cycles or sound management practices.

Smart thermostat

A Wi-Fi-enabled device that automatically manages heating and cooling in buildings. It connects to the HVAC system and allows remote temperature control via a smartphone app or voice assistant. It lowers energy bills by learning users' daily routine and adjusting temperatures when away.

Solar Energy

Energy from the sun in the form of radiated heat and light. The sun's radiant energy can be used to provide lighting and heat for buildings, and to produce electricity.

Spatial Intensity

The amount of emissions generated in a given geographical area.

White Goods

Appliances such as refrigerators, stoves, and washing machines that can be recycled.