



**SUBJECT: Burlington Climate Action Plan update**

**TO: Community Planning, Regulation & Mobility Cttee.**

**FROM: Environment and Energy**

Report Number: EICS-10-23

Wards Affected: N/A

Date to Committee: September 12, 2023

Date to Council: September 26, 2023

---

**Recommendation:**

Receive and file environment and energy report EICS-10-23 providing the Burlington Climate Action Plan update.

**PURPOSE:**

**Vision to Focus Alignment:**

- Increase economic prosperity and community responsive city growth
- Improve integrated city mobility
- Support sustainable infrastructure and a resilient environment
- Building more citizen engagement, community health and culture

The purpose of this report is to provide an update on the progress of the implementation of the [Climate Action Plan](#), providing a pathway to reduce community based greenhouse gas emissions to meet the target for Burlington to be net carbon neutral by 2050.

Recent updates were also presented in June on the City's related climate plans, including [Climate Resilient Burlington: A Plan for Adapting to Our Warmer, Wetter and Wilder Weather \(EICS-07-23\)](#) and the [Corporate Energy and Emissions Management Plan \(EICS-06-23\)](#). The reports highlighted progress to date to improve climate resiliency and reduce greenhouse gas emissions from City operations.

---

## **Executive Summary:**

This is the annual progress report on the implementation of the Burlington community Climate Action Plan and the efforts being taken to work towards the target of Burlington being a net carbon neutral community by 2050. Updates are provided under the seven key program areas identified in the plan, including:

- 1. Low Carbon New Buildings**
- 2. Deep Energy Retrofit Program**
- 3. Renewable Energy**
- 4. Integrated Mobility Plan**
- 5. Electric Mobility and Equipment**
- 6. Waste Reduction**
- 7. Industry Innovation**

In addition, a summary of BurlingtonGreen's current activities supporting community climate action is provided in the report, highlighting partnership and funding support opportunities through the 2024 budget review process.

Burlington Hydro is also working on a compendium report to assess the issues, challenges, and opportunities for collaboration to help Burlington meet its net zero carbon targets (corporate and community) as well as actions needed to improve grid resiliency for warmer, wetter and wilder weather.

---

## **Background and Discussion:**

On April 23<sup>rd</sup>, 2019 council declared a [climate emergency](#) and one year later approved the Burlington [Climate Action Plan](#) (CAP), setting a target for the community of Burlington to be net carbon neutral by 2050. This report provides an update on the progress made to date to implement the CAP. The seven program areas identified in the CAP were based on modelling and actions that are needed for Burlington to meet the 2050 target.

### **1. Low Carbon New Buildings**

Community Planning staff reported to the Community Planning, Regulation and Mobility Committee ([PL-07-21](#)) in December 2021 on the [Sustainable Building and Development Guidelines](#) (SBDGs) for new buildings. Minor modifications were incorporated into the guidelines, including incorporating green roofs and green walls in the voluntary requirements.

Earlier this year in April, the Ministry of Municipal Affairs and Housing conducted a series of stakeholder meetings regarding an OBC (Ontario Building Code) update specifically on green standards. Draft legislation may be presented later this year by the provincial government. Community Planning staff will continue to track this work and the potential impact it will have on the SBDGs.

Updates to the SBDGs will also be needed to reflect information included in the following plans: Climate Resilient Burlington (CRB – approved in 2022), the Integrated Mobility Plan (IMP – implementation plan in progress), and the Urban Forest Master Plan (UFMP – in progress).

## **2. Deep Energy Retrofit Program**

Better Homes Burlington, a pilot program to support homeowners' transition away from the use of fossil fuels, has been launched. Council approved a zero percent loan to support up to twenty homeowners who meet program criteria; the maximum amount of the loan is \$10,000 and will support the installation of air source heat pumps (refer to report [EICS-04-23](#)). Air source heat pumps provide both heating and cooling and are more efficient at cooling than air conditioners and will reduce the carbon footprint of homeowners.

The community engagement strategy was launched in the summer to raise awareness of the program and applications for the program in September. Information about the program is being hosted on the City of Burlington website at [burlington.ca/betterhomes](http://burlington.ca/betterhomes) as well as a dedicated email [betterhomes@burlington.ca](mailto:betterhomes@burlington.ca).

In addition, the program coordinator for the program is providing a concierge service to homeowners to help them navigate the process for a home energy efficiency assessment, financing options, incentive programs and energy efficient measures. The Better Homes Burlington pilot loan program is just one option available to homeowners.

In a related matter, Community Planning staff presented an Action Plan to Council on July 11<sup>th</sup> 2023 ([CS-13-23](#)) to support a funding application to the Housing Accelerator Fund administered by the Canadian Mortgage and Housing Corporation. One action included in the plan is the creation of a Housing Connections Centre to build community and partner capacity. Staff see the opportunity to link the Better Homes Burlington program with the Housing Connections Centre to ensure that we're not just building more housing, but the housing is built better and is more energy efficient with a low to zero carbon footprint.

## **3. Renewable Energy**

It is recognized that more effort is required to support and stimulate local renewable energy projects in the community. In 2022, the City partnered with the Engineering and

Public Policy, W Booth School of Engineering Practice and Technology program at McMaster University where students researched best practices and opportunities to support the adoption of renewable energy in Burlington. Recommended actions related to improving information on renewable energy measure installations; how to hire a qualified contractor and installer; and financial supports and incentives. Staff continue to work on next steps to support renewable energy installations in the community with the support of Burlington Hydro.

### **Burlington Hydro Update on Renewable Energy Installations**

Burlington Hydro shares the data for distributed generation installations in Burlington on an annual basis. The majority of the renewable energy projects were installed under the previous provincial FIT (Feed-in Tariff) program with over 1,500 kW installed under the MicroFIT program and over 6,000 kW under the FIT program (for projects greater than 10 kW):

<b>Project Type</b>	<b>Source</b>	<b>Total Capacity (kW)</b>	<b>Total Connected</b>
<b>CHP</b>	Natural Gas	290	4
<b>MicroFIT</b>	Solar Rooftop	1542.275	197
<b>FIT</b>	Solar Rooftop	6018	27
<b>Total Connected without Net Metering</b>		<b>7850</b>	<b>228</b>
<b>Net Metering</b>	Wind	3.6	1
<b>Net Metering</b>	Solar	697.22	55
<b>Total Connected Net Metering</b>		<b>700.82</b>	<b>56</b>
<b>Total Connected Distributed Generation Projects</b>		<b>8550.82</b>	<b>284</b>

The following table is a summary of distributed generation projects installed from 2020 to 2023 (year to date). Between 2021 and 2022, there was an 81 per cent increase in the number of small scale (equal or less than 10kW) solar installations. It is difficult to determine the exact reason for the increase but part of the increase could be attributed to the funding programs available and an interest in managing future electricity price escalations particularly due to increased reliance on electricity for transportation and thermal energy.

Project Type	Number	Energy kW (installed capacity)	Source
<b>2020</b>			
Net Meter ≤ 10kW	3	17.5	Solar
Load Displacement	1	10	Solar
<b>2021</b>			
Net Meter ≤ 10kW	4	40	Solar
Net Meter ≥ 10 kW	1	30	Solar
<b>2022</b>			
Net Meter ≤ 10kW	21	183.47	Solar
>10 kW Connected	1	130	CHP-NG
<b>2023 (Year to Date)</b>			
Net Meter ≤ 10kW	9	62.52	Solar

As reported in staff's Corporate Energy and Emissions Management Plan update report in June (EICS-06-23), a solar prioritization study has been completed for City facilities. A net metered solar photovoltaic (PV) array at Fire Station 5 in Kilbride will be operational by Q4 2023. In addition, a geothermal energy system is being installed at the Skyway Arena and Community Centre project to reduce the use of fossil fuels in the building. And the future phases of work at the Robert Bateman High School Renovation will also include a geothermal energy system and a solar PV array.

#### 4. Integrated Mobility Plan

An [Integrated Mobility Plan](#) (IMP) is under development by the Transportation Services Department with an innovative approach to focus on moving people instead of just vehicles, as traditional transportation plans would do. Shifting the modal split is prioritized by supporting active and sustainable transportation options, such as walking, cycling and transit. These transportation modes will aid in reducing GHG emissions from transportation in addition to addressing congestion issues, especially for shorter, less than five kilometer trips which make up over 50% of trips.

The vision of the IMP has been identified as: 'Mobility in Burlington will be safe, accessible, sustainable, balanced and livable.' Value statements have been created based on the vision, such as: 'Sustainable: Encourage transit, cycling and walking, and

other non-car modes; and Leverage electrification potential'. Long term goals have also been developed including 'Burlington will eliminate transportation related emissions.'

A preferred network has been endorsed by Council and supporting policies and programs to support implementation are being developed. The final plan is scheduled to be presented in the fall of 2023.

## **5. Electric Mobility and Equipment**

Prioritizing transit, walking and cycling through the IMP is important to reduce emissions with the co-benefit of reducing car dependence and congestion. However, in order for the City to meet its 2050 net carbon neutral community target, electric mobility must also be supported.

The Electric Mobility Strategy was completed last year and an update report was presented recently in June ([EICS-08-23](#)) on the four themes in the strategy, including:

- Charging Infrastructure and Grid Capacity
- City Leadership
- Education and Awareness
- Equity and Accessibility

Utilization of the City's charging infrastructure continues to grow, increasing by approximately 73% between 2021 and 2022. Ownership of full battery electric vehicles in Burlington has increased by over 300% since 2019.

For city operations, a Green Fleet Strategy will be presented by the Road, Parks and Forestry Department later this year.

## **6. Waste Reduction**

Waste represents a small component of the emissions profile for Burlington. [Waste management](#) is a service primarily delivered by the Region of Halton. The Region completed a [Solid Waste Management Strategy](#) in 2022 ([PW-10-22](#)).

Halton Region's 2022 Year End Waste Management Report ([PW-22-23](#)) noted that:

- The amount of solid waste material managed by Halton Region decreased by 18,040 tonnes (approximately 7.6per cent) in 2022 likely due to many individuals returning to the workplace;
- The amount of garbage landfilled decreased by 5,108 tonnes (5.1 per cent) which resulted in the average amount of residential garbage landfilled to be 151 kilograms per capita in 2022, a decrease of 9 kilograms per person from 2021.

- The waste diversion rate was 57 per cent, which is a slight decrease from the previous year due in large part to a decrease in the amount of yard waste material collected curbside and household renovation waste disposed at the Halton Waste Management Site.

## 7. Industry Innovation

The business sector is supported through energy conservation programs delivered by senior levels of government (ie. IESO, NRCan and Enbridge Gas).

[TechPlace](#), led by Burlington Economic Development, is Burlington's one stop destination for new and growing technology companies. TechPlace's mission is to nurture entrepreneurial activity by connecting and supporting the development of talent, technology and resources that will ultimately lead to a stronger and more robust regional economy. Further information regarding TechPlace and two innovative local businesses supporting climate action is provided in Appendix A.

The City is also a participating member in [Sustainability Leadership](#) (formerly known as Sustainable Hamilton Burlington), a social enterprise organization that supports local businesses and organizations to improve operations in a sustainable manner including the reduction of GHG emissions.

Representatives from Burlington Economic Development and Sustainability Leadership participate on the City's Community Stakeholder Advisory Committee to support the implementation of the three climate plans.

### **Burlington Hydro - Electrification to Support Net Carbon Neutral Target**

In order to meet the targets for City operations to be net carbon neutral by 2040 and community by 2050, switching away from the use of fossil fuels to electrification becomes increasingly important. Planning for and investing in the local distribution grid to ensure adequate capacity is necessary to support mitigation actions including:

- Electric mobility including charging infrastructure for homes, business, fleets and transit systems;
- Planning for bi-directional charging for homes as a back-up energy source;
- Electrification of thermal energy such as the installation of air source heat pumps and electric water heaters;
- Increased adoption of renewable energy such as solar photovoltaic panels; and,
- Battery storage (back-up energy).

Burlington Hydro has an important role to play in ensuring that the local distribution grid has the capacity to meet growing demand for these measures.

In 2022, Council requested Burlington Hydro to provide:



- A compendium plan to the City's Climate Action Plan to assess the issues, challenges, and opportunities for collaboration to help Burlington meet its net zero carbon targets (corporate and community); and,
- Plans to improve resiliency given our changing climate and increasing frequency and intensity of severe weather events, as noted in Climate Resilient Burlington – A Plan for Adapting to Our Warmer, Wetter and Wilder Weather.

Burlington Hydro has advised that work is in progress and will present the report to Council by second quarter of 2024.

### **Community Stakeholders**

Engaging with community stakeholders is an important part of the implementation of the Climate Action Plan providing a forum for discussions, presentations, and progress updates. A list of stakeholders is provided in Appendix A along with updates shared by Burlington Economic Development, BurlingtonGreen and Halton Region.

### **BurlingtonGreen – Partnership Support**

BurlingtonGreen is a local organization and is celebrating their 15th year anniversary. City staff and many Council members (current and past) have a history of working with BurlingtonGreen on important local environmental issues, such as the recent Electric Mobility Strategy. Their programs support many of the City's environmental strategic goals to restore, enhance and protect biodiversity and achieve targets to reduce greenhouse gas emissions.

Funding support by the City, until recently, has been primarily limited to a small sponsorship of \$7,000 for the annual Community Clean-up Green-up program (which expanded from a one-week activity to a full season during the pandemic).

In 2022, discussions began between BurlingtonGreen and City staff for consideration of financial support for their work, recognizing that many of their programs support the goals and targets of the City's environmental strategic directions and climate action targets. In response to a detailed proposal submitted by BurlingtonGreen, it was agreed that one time funding support could be provided in 2023 through the City's Community Development program administered by Recreation, Community and Culture. This funding allowed BurlingtonGreen to secure the necessary resources to continue with their environmental programs to engage the local community to adopt climate friendly actions in 2023. The \$70,000 funding through this program is one time only. A CIP (Council Information Package) [memo](#) was circulated on April 14<sup>th</sup> to share details of the funding arrangement.

BurlingtonGreen's Eco Hub location on the Beachway has been a gamechanger, allowing them to actively engage the community on environmental initiatives where people gather and pass-by. Staff are working with BurlingtonGreen to retrofit and add



amenities to the Eco Hub so that it transitions to an environmental showcase to use for demonstrations, including an air source heat pump, EV charging stations, and bike racks to support active transportation. This has created opportunities for the City to partner with BurlingtonGreen on community engagement activities which support the implementation of the City's climate plans, including promoting active and sustainable transportation options, air source heat pumps and home energy efficiency retrofits, biodiversity, and invasive species removals.

In response to a request submitted by BurlingtonGreen, staff have submitted a change form to be considered in the 2024 budget review process. Ongoing funding would provide them consistency so they may continue their environmental outreach and engagement activities and help to leverage external sources of funding.

Further information on BurlingtonGreen's current activities is found in Appendix A.

### **Strategy/process/risk**

Energy (electricity and natural gas) consumption data is collected from Burlington Hydro and Enbridge Gas Inc. to calculate greenhouse gas emissions across the community. Transportation emissions are more challenging to calculate – historically the City has relied on fuel sales data in Burlington for gasoline and diesel consumption. However, this method is imperfect as it does not capture fuel purchases in other municipalities by Burlington residents and, therefore, is considered as an indicator of emissions from the transportation sector.

Provincial policy decisions can impact our ability to reduce greenhouse gas emissions at the local level. For example, decisions to shift the production of electricity to natural gas fired generating stations to replace the loss of generating from decommissioned nuclear power plants will impact our rate of reducing emissions.

Secondly, the provincial government regulates local distribution companies through the Ontario Energy Board and decisions do not always support local climate action initiatives.

Third, this is not a plan that can just be implemented by 'City Hall' to reach our goals. We need everyone - residents, businesses, institutions and government – to change their behavior and to adopt a new way of doing things or different technology, whether it's air source heat pumps, infrastructure to support sustainable transportation options, electric vehicles, solar panels and/or battery storage.

### **Options Considered**

The Climate Action Plan provides a pathway to meet the Burlington target to become a net carbon zero community by 2050. The measures identified in the plan must be implemented in order to meet this target.

### **City of Burlington Audit – Climate Plans**

In 2023, Environment and Energy staff have been participating in an audit by the City's auditor, assessing the implementation of the City's climate plans and the resources to implement them. The objectives of the audit were to:

- Evaluate the effectiveness of the City's investment in its environmental strategies;
- To provide recommendations to the City's Environment, Infrastructure & Community Services (EICS) Team if opportunities for improvement emerge through the audit process.

Staff look forward to reviewing the recommendations to identify where improvements can be made to ensure effectiveness of the implementation of the three climate plans. Updates will be provided in future progress reports on the climate plans.

---

### **Financial Matters:**

Council has approved funding for the Better Homes Burlington pilot loan program.

### **Total Financial Impact**

Based on a cap of 20 loans for each homeowner at \$10,000/resident, a total of \$200,000 has been approved to support this pilot program. In addition, Council approved \$120,000 one-time funding for a one-year contract for a program coordinator position.

### **Source of Funding**

The energy reserve fund is the source of funding for the pilot loan program.

### **Other Resource Impacts**

As noted in the Better Homes Burlington report EICS-04-23, some support from Finance, Legal and Communications/Community Engagement will be required to deliver this program.

---

### **Climate Implications:**

The City has set a target for the community to be net carbon neutral by 2050. Figure 1 shows total community greenhouse gas emissions by year. In 2022, emissions increased slightly as the economy started to return back to normal towards the end of

the pandemic. Approximately half a million tonnes needs to be reduced between now and 2030 to work towards the overall target for 2050.

**Figure 1 – Community Greenhouse Gas Emissions by Year Showing 2050 Target**

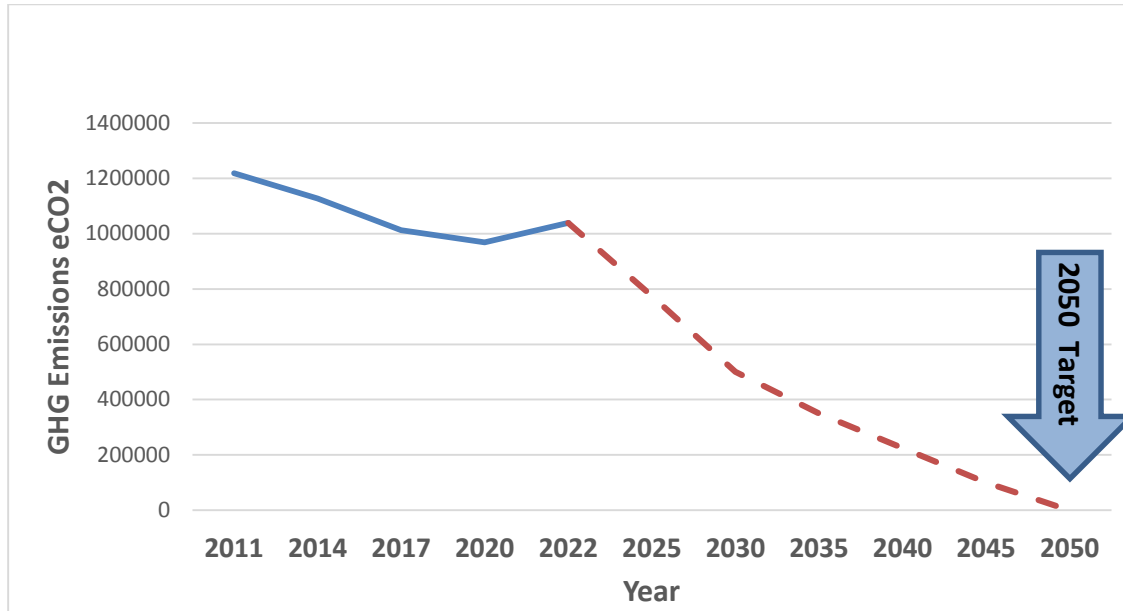


Figure 2 shows annual community emissions broken down by year and by source (natural gas, electricity and transportation).

**Figure 2 – Community Annual Emissions by Source**

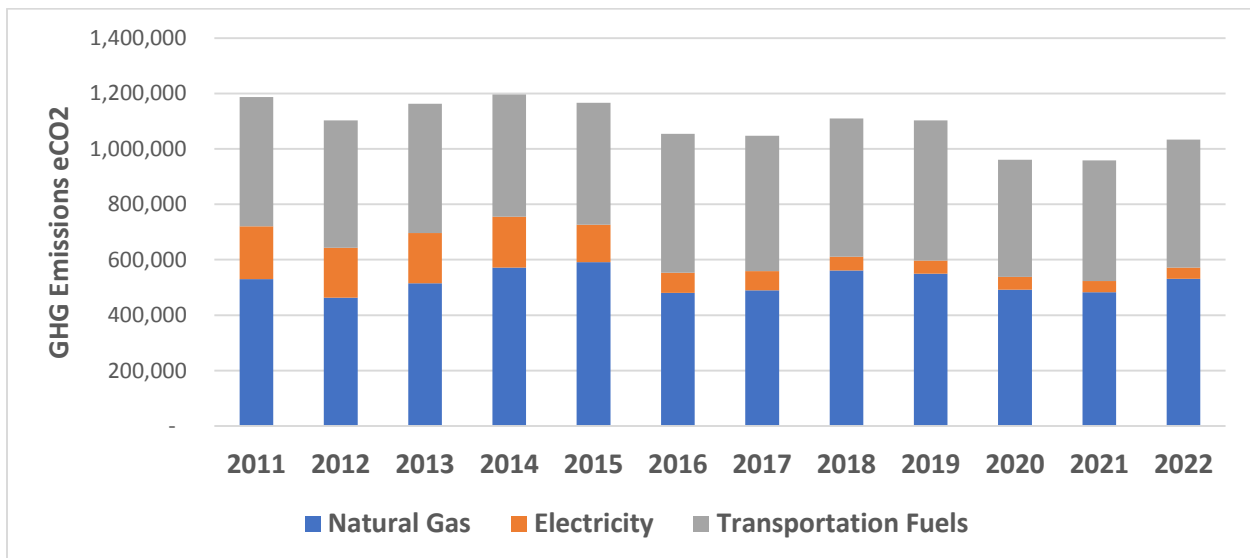


Figure 3 shows a breakdown of 2021 community emissions by source (transportation, electricity and natural gas) as a percentage. As illustrated, the consumption of natural gas and transportation fuels are the main source of emissions in the community.

**Figure 3 – Community Emissions by Source (Percentage)**

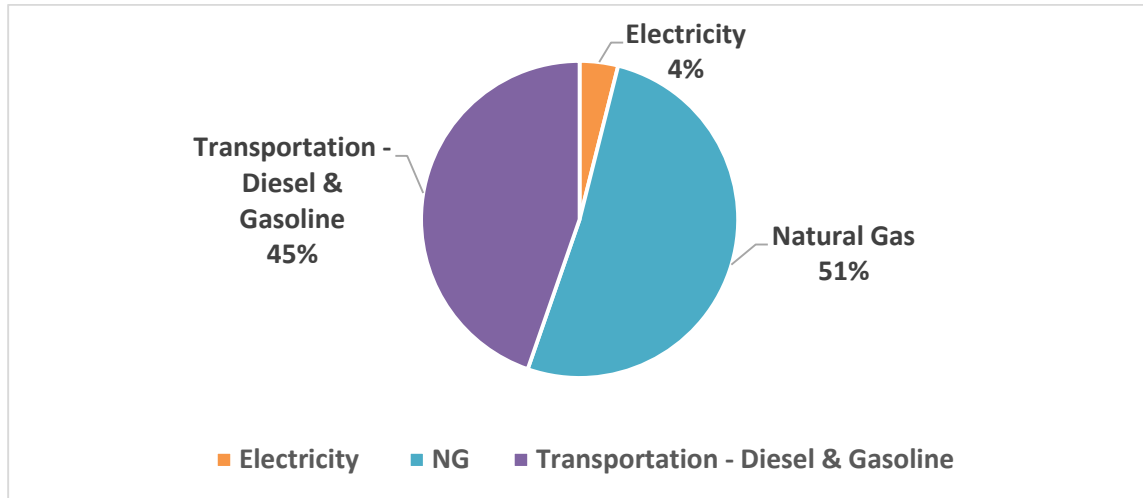


Figure 4 shows annual community emissions by sector (residential; commercial and institutional, industrial and transportation) since 2011.

**Figure 4 – Annual Community Emissions by Sector (eCO2)**

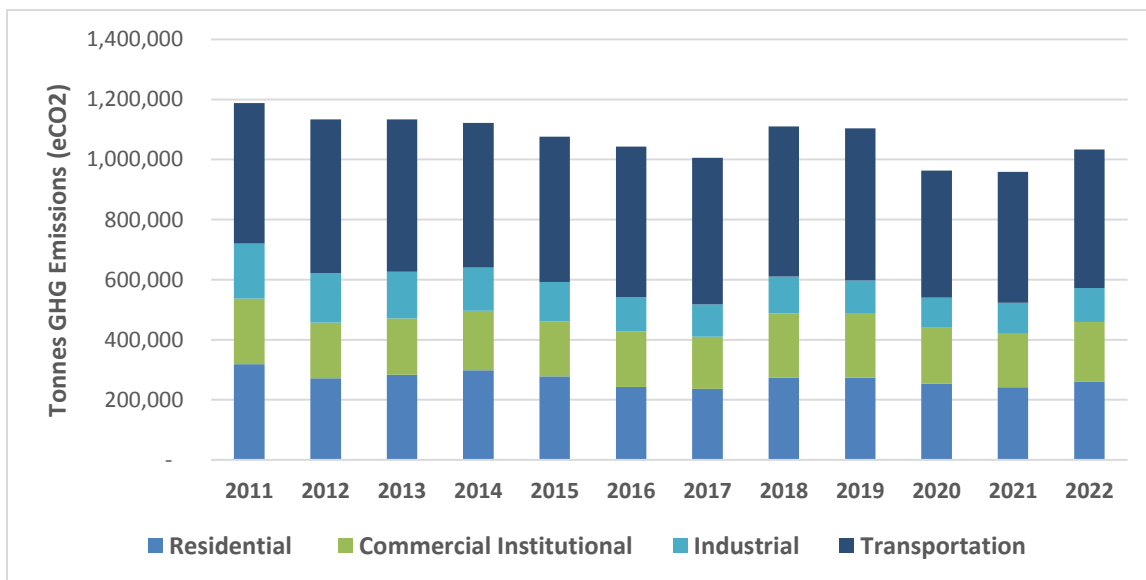
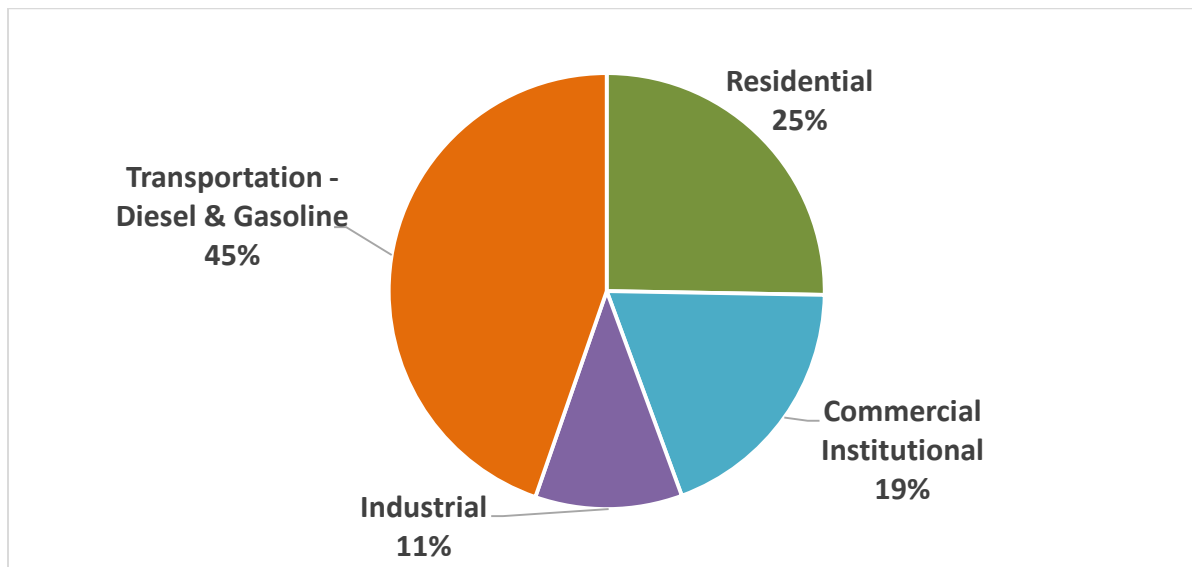


Figure 5 shows a breakdown of 2021 community emissions by sector (transportation, residential, commercial and institutional, and industrial) as a percentage.

**Figure 5 - 2021 Emissions by Sector (Percentage)**



### **Engagement Matters:**

The Stakeholder Advisory Committee was created in 2012 to provide guidance and feedback on the development and implementation of the Community Energy Plan (first adopted in 2014) which transitioned into the Climate Action Plan (CAP) in 2020. Information sharing, guest presentations and discussions have been beneficial for participating members to learn of climate mitigation actions happening in the community as well as build on synergies between organizations.

Staff are also engaged in a number of collaboratives which provide support to the City in its efforts to take action on climate change, including the Bay Area Climate Change Council, Halton Climate Collective, Clean Air Partnership and Climate Change Council, QUEST, Global Covenant of Mayors (Canada), Partners for Climate Protection, ICLEI – Local Governments for Sustainability (Canada) and the Carbon Disclosure Project.

The City continues to engage the community on climate change through its online portals and in collaboration with local organizations and through our networks. Active pages on [getinvolvedburlington.ca](http://getinvolvedburlington.ca) include the Climate Action Plan (home energy retrofit project and renewable energy research); the Electric Mobility Strategy; and Climate Resilient Burlington. Several blog entries on [takeactionburlington.ca](http://takeactionburlington.ca) have supported the Climate Action Plan, such as transitioning to e-equipment for lawn care, electric

mobility, renewable energy, home energy retrofits, idling, youth and climate change, and many others.

---

### **Conclusion:**

Meeting the community target for Burlington to be net carbon neutral by 2050 requires commitment and action from all levels of government, non-government organizations, businesses, community groups and individuals. Implementation of the Climate Action Plan and associated initiatives will take continued investment by the City, its partners and community at large to be successful at our transition to be a low carbon community.

---

Respectfully submitted,

Lynn Robichaud  
Manager of Environmental Sustainability  
905-335-57600 x7931

### **Appendices:**

- A. Climate Action Plan Stakeholders and Updates

### **Report Approval:**

All reports are reviewed and/or approved by Department Director, the Chief Financial Officer and the Executive Director of Legal Services & Corporation Counsel.