

# **Draft -City of Plattsburgh Government Operations**

## **Climate Action Plan**

**NYS Climate Smart Communities Initiative**

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# Table of Contents

- Introduction..... 1
- Past, Present, and Future Climate Initiatives..... 2
- Stakeholder Outreach..... 3
- Survey and Stakeholder Interview Overview..... 5
- Survey and Stakeholder Results Summary..... 6
- Review of Government Operation Greenhouse Gas Inventory Results..... 10
- Forecasting “Business-As-Usual” Emissions..... 14
- Greenhouse Gas Reduction Goals and Targets..... 15
- Prioritized Action Items and Strategies..... 16
- Implementation Plan and Next Steps..... 16
- Appendix A - Survey & Responses..... A1
- Appendix B - Follow-up Interviews..... B1
- Appendix C - NYS CSCC Action Checklist..... C1
- Appendix D - GHG Inventory Report..... D1

## Introduction

The City of Plattsburgh's Climate Action Plan (CAP) for Government Operations is the culmination of work that began in 2019 when a coalition of local environmental groups urged the city to address climate change. This plan is a sustainability blueprint outlining a set of initiatives to reduce Greenhouse Gas (GHG) emissions in municipal operations and services. Based on data inventoried from 2019 as the baseline year, it lays out reduction targets and sets priorities to guide the city toward energy efficiency to reduce its carbon footprint. As the city goes forward to implement this plan, it is important to consider the process by which it arrived at this point.

On Earth Day, 2019, community groups including the Plattsburgh High School Green Team and representatives of North Country branches of the New York State Climate Smart Community (CSC) joined local environmental groups in urging the Plattsburgh Common Council to adopt the CSC Pledge. At an event held in the City Hall Rotunda, the students presented a slideshow about the effects of rising temperatures. Their message was clear: this is our future, and we need you to take care of it! Community members and City Councilors also learned about how the CSC program had helped NYS municipalities mitigate and adapt to climate change. It was time! A few weeks later, the Common Council unanimously adopted the pledge. The Climate Action Plan (CAP) presented here, is the direct result of citizen action—specifically, that of young people. Symbolically, this fact could not be more powerful since it is their future that will be affected by the changes and challenges climate change presents.

By the end of 2019, The City took another important step by applying for and winning a \$ 30,000 CSC matching grant to fund a Greenhouse Gas Inventory of Government Operations and Climate Action Plan, the fruits of which are presented in this document. Unfortunately just after the grant award, Covid interrupted task force work and as a result, the group disbanded. The City Climate Task Force was re-established by Mayor Rosenquest and the Common Council in 2022, and its efforts were reinvigorated.

Just a year and a half later, through collaboration between city government, city staff, the task force, and through guidance and support from CSC regional coordinators, Erin Griffin and Carlie Leary, the city was awarded CSC Bronze Certification in October of 2023, having documented 19 CSC actions for a total of 144 points. Leading up to this designation, task force work had included:

1. Documenting past CSC and NYSERDA Clean Energy Community (CEC) actions;
2. Forging partnerships SUNY Plattsburgh Department of Earth and Environmental Science and Public Relations, Cornell Cooperative Extension, the Clinton County Health Department and the Lake Champlain Sea Grant to work on CSC actions;
3. Educating the public by tabling city events and organizing public education opportunities;
4. Creating a City Climate Task Force webpage on the city site and Facebook and Instagram accounts;
5. Recommending food scrap collection and composting in municipal buildings; assisting in applications for community composting education;
6. Launching a heat pump educational campaign to promote this alternative energy for city householders;
7. Hosting educational events about the local impacts of climate change and the benefits of planting native species;

8. Documenting CSC and CEC actions:
  - a. Conversion of streetlights to LEDs;
  - b. Installation of heat pumps in City Hall;
  - c. Installation of green infrastructure (EV charging stations);
  - d. Adoption of a Comprehensive Plan with Sustainability Elements;
  - e. Adoption of a plan for biking and walking;
  - f. Completion of a fleet inventory;
  - g. Energy Code Enforcement training.

The City of Plattsburgh is also a designated NYSERDA Clean Energy Community as well. Thanks to guidance from NYS Circuit Rider, Nancy Bertstein, the city achieved this designation in October of 2022 by completing four required actions. The City received a CEC grant of \$5000, which it has been allocated for green initiatives.

While it is an honor to be recognized by the state, there are daily reminders of the enormity of the task at hand. We must humbly go forward keeping in mind the concerns of the young people who first inspired the city to take the Climate Smart Community Pledge. As temperatures have continued to set records and extreme weather events plague our region such as flooding in the spring of 2023, the need for this work has grown clearer and more urgent. It will take deliberate and sustained effort that puts climate change at the center of city planning and budgeting in order to meet the accelerating and growing challenge of Climate Change. The term Climate Emergency is apt. City government operations will be better equipped to meet this challenge having completed Greenhouse Gas Inventory and the Climate Action Plan for Government Operations; these are essential tools that will guide the city to reduce energy consumption and carbon emissions. However, to accomplish the goals that the city sets, and as these goals are broadened to include the community at large, even higher levels of community engagement will be required. As with the grassroots action that led to the city's commitment to address climate change, grassroots engagement and action must continue to urge our government to take the bold steps that addressing our climate future requires.

## **Past, Present, and Future Climate Initiatives**

Although the scale of change necessary to reduce emissions will be immense and swift, the City of Plattsburgh has already proven its appetite and drive to reduce emissions. The City of Plattsburgh took its most significant step to reduce greenhouse gas emissions in 1957 when it entered into the State of New York's Preference Power Program. This program provided Plattsburgh and approximately 50 other NYS communities with low-cost hydropower from a hydroelectric generator on the Niagara River. While construction of the Lewiston Dam along the river generated large quantities of carbon emissions (cement manufacturing is a carbon intensive process), the subsequent generation of hydropower is carbon free.

The City of Plattsburgh, at any given instant, has access to 104MW of carbon free power at \$0.4/Kwh. If the City's electric consumption exceeds 104MW it must purchase additional energy on the open market, at market rates. Typically, the City of Plattsburgh consumes 70-90MW of power. The City only exceeds the 104MW allotment at the coldest times of the year, often for a few days or weeks in January and February. The City pools its purchasing power for excess electricity with several other communities, and buys power far in advance, which helps to keep costs low. Furthermore, when this partnership purchases power from market sources, it

prioritizes renewable energy generated by nuclear, solar and wind. Consequently, the City's greenhouse gas emissions from the generation of electricity are at, or near, zero.

To take advantage of low cost power, over time the City has transitioned to electric power for nearly all building operations. Many of the City's major energy draws, such as machines at the Water Resource Recovery and Water Supply Facilities, are electric. The City is also in the process of converting all buildings to LED lighting. It is estimated this process is at 30-50% complete. The City has taken other steps to reduce power consumption, such as reducing the numbers of office refrigerators and other appliances, investing in Energy Star appliances, and reducing the number of computer workstations.

Beyond energy generation, a common secondary source of greenhouse gas emissions is from heating and cooling. In Plattsburgh, as a result of the preference power program, nearly all residential and commercial buildings have transitioned to electric heating and cooling sources. Today, approximately 97% of residential units and 85% of commercial units use electric heat.

To some extent, the City has taken part in the transition to electric heat. Historically, several buildings heat with baseboard electricity and/or electric water radiators. The City's larger warehouse/garage spaces, such as at fire departments, are heated by electric Modine heat exchangers. Especially notable is the City of Plattsburgh Police Department, which installed geothermal temperature regulation (heating and cooling) about 25 years ago. Currently, the City is investing heavily in electric heat pumps for office spaces. Office spaces at several buildings including City Hall, Public Works, Plattsburgh Municipal Lighting and others are now fully or partially heated/cooled with heat pumps.

The transition to electric heat pumps is projected to continue over the next few years. Progress has slowed in some cases (City Hall) because major building improvements, such as roof and window replacements, must occur before heat pumps are installed. In other cases, such as Plattsburgh Public Library and some areas of Public Works, heat is provided by natural gas.

While this Climate Action Plan focuses on the City's government operations, it is worth noting that Plattsburgh Municipal Lighting provides financial support to residential and commercial consumers for energy efficiency and fuel switching improvements. Programming includes support for insulation upgrades, installation of electric heat pumps, and purchasing Energy Star appliances, among other items.

In creating this action plan it was identified that there are four key areas where the City of Plattsburgh may make significant improvements in energy efficiency, greenhouse gas reductions, and fuel switching. These are: 1) building improvements (insulation, roof and window replacements); 2) completing the transition to heat pumps; 3) transitioning gasoline/diesel vehicles to electric vehicles; and 4) local generation of power from renewable sources. The remainder of this Climate Action Plan outlines priorities and approaches for implementing these improvements.

## Stakeholder Outreach

Fundamentally, this Government Operations Climate Action Plan is a strategic document that outlines the city's greenhouse gas emissions, its goals to minimize emissions, and objectives to meet these goals. Stakeholder support is critical for the successful implementation of this plan.

Since this plan focuses on internal municipal functions, it's been identified that the municipal employees, leadership, and Climate Task Force are the main stakeholders to inform this plan, though the city still deems it important to keep residents informed.

The city government employs a variety of methods to inform and engage the public. It has employed the city website, newspaper articles, and various social media outlets to inform on this and other city initiatives. In July of 2022, the City Climate Task Force also added a webpage to the City website to provide the public access to its agendas, minutes, news topics such as information about climate change and opportunities for citizen participation. Feedback specific to this plan was gathered through a series of more direct efforts and methods with the help of the Climate Task Force as discussed below.

### **Engagement with City Department Heads**

The city's departments have been proactive for years, making recommendations and implementing practices for energy savings. These forward thinking professions have contributed greatly to achieving the city's sustainability goals so far. In the development of the Climate Action plan, their time, effort, and ideas were invaluable to the process of:

- Assessing baseline GHG levels and current energy consumption;
  - First, there was a direct outreach to the finance department and municipal lighting district to obtain consumption records for compiling inventory data and determine all municipal contributors of greenhouse gas consumption.
  - Next, draft inventory data for items like fleet vehicle records was shared with department heads with a request for their review, revision to correct any inaccuracies, and then provide final confirmations.
- Evaluating operations and exploring areas of energy and carbon emission reductions in their responses to an initial questionnaire follow-up stakeholder interviews.
  - Following the compilation of inventories, a recorded presentation outlining the results of the greenhouse gas inventory was provided back out to all managers and supervisors within the City of Plattsburgh, through an email that was circulated through the Mayor's office.
  - This presentation was accompanied by a survey (more fully described in the following section) to understand the unique energy use needs for each department.
  - Survey results were immediately compiled, then reviewed, and ultimately followed-up with a set of stakeholder interviews (more fully described in the following section) that helped provide the Climate Action Planning project team a deeper understanding of the survey responses.
- A draft plan was formulated and share out
  - the draft being shared back to the municipal stakeholder body, and the Climate Task Force, to encourage its review and the opportunity to provide feedback.
  - The received feedback will be taken into consideration to shape the final draft ahead of a presentation to the Common Council, incorporate any feedback from

- the Common Council, and then a request provided to the Council for its adoption of this plan so it may begin to be implemented. .

### **Climate Action Plan (CAP) Public Outreach**

A draft of an initial Greenhouse Gas Report, and then the City of Plattsburgh Climate Action Plan were made available to the general public for comments in the following ways:

- A copy of each were available for viewing at City Clerk's Office and Plattsburgh Public Library;
- The documents were posted on the city's website;
- Following approval of the City's Climate Action Plan by the Common Council, the general public will be kept informed of progress toward meeting greenhouse gas emissions reduction targets as determined by subsequent analyses and reports.
- Updates will be posted on the city website, and in local newspapers.

## **Survey and Stakeholder Interview Overview**

The following content summarizes data collected and conclusions drawn from a survey distributed to City managers of and department heads in August, 2023 (see Appendix A), and a series of follow-up interviews with the same city department heads and managers (See Appendix B) to learn more about municipal department's greenhouse gas production. Nine interviews were conducted in total between September and October, 2023.

The managers consulted are:

- Michael Bessette- Public Works
- Matthew Miller- Community Development
- Lieutenant Joshua Pond- Police Department
- Chris DeAngelo- Fire Department
- Anne DeLaChapelle- Library
- Joseph McMahon- Building Inspector
- Bill Treacy- Lighting Department
- Mike Stoutenger- Water Filtration Plant
- Jonathan Ruff- Water Resource Recovery Facility

Interviews covered the following topics:

- Heating and cooling
- Appliances and lighting
- Windows, roofs and insulation
- Fleet vehicles
- Future planning, purchasing and budgeting related to GHG reduction and energy efficiency
- The influence of changing climate and weather on City operations



Top takeaways from the stakeholder meetings include:

- City of Plattsburgh has steadily transitioned to fully electric and GHG free operations, though more work remains to be done.
- Climate change and new weather patterns are already impacting many areas of City work from policing and fire/safety protection to parks and recreation, road maintenance and water supply and treatment.
- City departments are interested in electric vehicles, but availability, cost and tech are slowing the process.

## Survey and Stakeholder Results Summary

This section provides a summary of the results and conclusions compiled from the survey and stakeholder interviews described in the previous section.

### Heating and cooling

- Most city buildings have already installed, or are in the process of installing, electric heat pumps for heating and cooling. Several buildings are partially heated/cooled by heat pumps. We recommend continuing and accelerating the pace of conversions to heat pumps in the following buildings:
  - City Hall
  - Public Library
  - PMLD.
- Buildings such as Public Works, Fire Departments and PMLD have large garage bays for fire trucks, plows and other large vehicles. In most cases these garage areas are heated by natural gas, responsible for GHG emissions. Efficiency is further reduced by the opening and closing of large garage doors.
  - We recommend converting garage heating systems to electric when possible.
  - We recommend enhancing insulation of building interiors to prevent heat/cooling loss in interior office spaces by frequent opening of large garage doors.
- Many departments report the use of window AC units. These units can be expensive and inefficient, and require GHG emitting refrigerants.
  - Recommend reducing use of window units as conversion to heat pumps allows. Consider adoption of a policy to eliminate use of window AC units in buildings with heat pumps or geothermal temperature regulation.

### Appliances and Lighting

- Many buildings have converted, or are in process of converting, to 100% LED lighting. Some buildings have motion activated light sensors. We recommend continuing and accelerating this process. Buildings in need of conversion are: Public Works, Water Filtration Plant.
- Several buildings have large special-need appliances such as dehumidifiers or generators. The Police, Fire Departments and Water Filtration Plant have diesel generators to provide power in the event of a power outage. PMLD holds a natural gas

generator. The Police Department operates several large refrigerators for storing evidence. Public Works has a diesel generator. The Fire Department runs several large dehumidifiers (electric). The Water Resource Recovery Facility has several large machines (electric) but could reduce energy consumption considerably with upgrades to aeration equipment. Others have taken care to reduce appliances over time. Sharing appliances such as microwaves, refrigerators and copy/printers is common.

- We recommend reducing large appliances and replacing them with Energy Smart appliances when possible.

### **Insulation, Roofs and Windows**

- Several buildings have received recent roof, window and insulation improvements. City Hall recently replaced all windows. Roof replacement is planned for City Hall. Public Works recently underwent moderate renovations when it moved to a new facility. Several years ago the Police Department installed geothermal temperature control. The Library recently replaced its roof.
- On the other hand, several managers described needed building upgrades that would improve efficiency. Many managers reported feeling like they were constantly fighting against dated, inefficient buildings and equipment that hindered their ability to provide adequate services and contributed to GHG emissions.
  - Identified the following as high priority maintenance/building needs related to energy efficiency:
    - City/YMCA Gym at the Oval- poor windows, roof, insulation.
    - Fire Departments- wall, ceiling, insulation.
    - City Hall- Roof, insulation, flooding
    - WRRF- insulation, doors

### **Fleet Vehicles**

- Due to the City's low-cost preference power arrangement for electricity, much of the City's operations have converted to electric over the past several decades. This has led vehicular emissions to remain a main source of GHG emissions.
- There are many opportunities for reducing emissions by converting portions of the fleet to electric vehicles.
- Generally, EVs are not yet feasible (cost prohibitive or unable to meet work requirements) for large vehicles such as fire trucks, ambulances and public works vehicles. However, the City operates several small trucks and sedans that are ripe for conversion to EV as they are replaced. Charging infrastructure is needed at many city buildings.
  - Identified the following as high priority items:
    - Installation of EV chargers at all City buildings. The conversion to EVs cannot occur without appropriate infrastructure.
    - Water Filtration Plant- currently uses a large truck for short trips in the City to collect water samples. This function does not require a truck and managers prefer a small, electric vehicle for this purpose.

- Community Development- CD operates one vehicle, mostly in summer, to/from parks/recreation sites. EV could easily serve this purpose.
  - Police Department- PD was highly interested in EVs. Detectives do not require patrol vehicles and generally drive within the city. EV could serve this purpose. Parking officers could use EVs.
  - Fire Department- operates one sedan for transporting staff to trainings and meetings. EV could serve this purchase.
  - Building Inspector- operates five vehicles. EV can be used for all BI functions.
  - PMLD- has ordered two EV trucks (Ford F-150s). All are on backorder. Recently ordered two hybrid line vehicles w/ diesel drivetrain and electric auxiliary equipment. Both on backorder.
  - WRRF- operates five vehicles that will be in need of replacement in the next five years. Would like to replace all five with EV.
- Obstacles to the use/purchase of EVs include availability, battery life and charging time. For large public works vehicles, fire trucks and ambulances managers are concerned that EVs may not have the battery life necessary to fulfill their functions. For vehicles such as police patrol vehicles and ambulances, managers are concerned that charging times may make EVs inoperable when needed (emergency calls will come in, but vehicles will need charging and unable to deploy as needed). In other cases, cost is an issue as well as availability in the market. Specifics obstacles include:
  - Many buildings within the City do not have charging infrastructure.
  - Public Works- EVs exist for large Public Works vehicles. Limiting factors are price, availability and operability in winter weather.
  - Police Department- highly interested in EVs for patrol/pursuit vehicles. EVs have better acceleration and offer stealth operability. Several obstacles stand in the way including price (EV police vehicles are 20-30% more expensive than gasoline vehicles) driving range and battery charge time.
  - Fire Department- EVs are available, though cost prohibitive. Uncertain about operability, charge time, etc.
  - Building Inspector- recently replaced two vehicles. Tried to purchase EVs but they were unavailable. Described the contracting process as an obstacle- by the time necessary paperwork filed and multiple bids collected the vehicles they wanted had been sold.
  - PMLD- EV lighting department line trucks are available.
- All departments stated that they planned to maintain current fleet size (no increases mentioned).
- Notable interest in EVs from Police Department, Water Filtration, Water Recovery, Building Inspector, PMLD.

## Impacts of Climate Change and Weather on Operations

1. Labor force and work hours- Fire department, community development and others described the need to reduce work hours and take more frequent breaks as a result of high heat.
  - a. Fire Department- working fires in high heat is much more dangerous and taxing for firefighters and they need more frequent breaks and must be rotated out of fires more frequently.
  - b. Community Development- described needing to give workers, lifeguards more frequent breaks in high heat.
2. Building maintenance/access/comfort
  - a. Community Development- Visitor access is impacted by extreme wet weather such as summer 2023. Standing water around the entry. Limited ADA access.
  - b. Water Filtration- very old and leaky building. Extreme wet weather exacerbates leaks.
  - c. WRRF- high heat stresses the facility, more maintenance needs.
3. Service provision
  - a. Public Works- described an increased need for road maintenance as a result of increased extreme rain events. PW sees more potholes and sinkholes, especially around catch basins.
  - b. Community Development- unable to operate ice rinks for prolonged periods. Reduced skating season to 2-3 weeks. Predicts ice rinks will not be viable in 10 years at current trends. Perhaps higher temps result in more algae blooms and E.Coli at the beach, though not confident of a trend.
  - c. Library- serves as a heating and cooling center for unhoused and others with inadequate heat/cooling. Sees an increase in visitorship on extreme heat and cold days.
  - d. Building Inspector- FEMA has revised flood maps. This impacts development, though most of the city is above 103 ft in elevation which is out of the mapped flood zone, and less likely to be impacted. DEC audits implementation of flood maps. Non participation in the Nation Flood Insurance program can result in loss of affordable flood insurance.
4. Crime, fire and safety
  - a. Police Department- sees an increase in weather related calls. Crime also increases in summer as temperature increases. The City Police have observed an increase in crime in summer, and on hotter days in summer.
  - b. Fire Department- sees an increase in all calls for ambulances, including weather related emergency calls. Also sees an increase in mutual aid calls with the Town of Plattsburgh. Some of these are weather related. Fire Department now operates a water rescue service and these calls are increasing. In 2022 saw more water rescue calls than fires. Some of these are weather related calls.
  - c. Water Filtration- high temps increase algae and bacteria load in water. Result in use of more chemical treatment and pumping. Energy load increases.
5. Some positive impacts of Climate Change

- a. Public Works- described using less salt on roadways as a result of less ice and retooling of equipment.

## Review of Government Operation Greenhouse Gas Inventory Results

As part of the pledge element Item number 2 of the New York State Climate Smart Communities' Certification Action Items (see appendix C), the City of Plattsburgh inventoried Greenhouse Gas (GHG) emissions resulting from local government operations for which the City has operational control over. In accordance with the Local Government Operations Protocol and CSC guidelines, all relevant Scope 1 and Scope 2 emissions by EPA definition were evaluated.

- Scope 1 emissions are direct greenhouse (GHG) emissions that occur from sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles).
- Scope 2 emissions are indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling. Although scope 2 emissions physically occur at the facility where they are generated, they are accounted for in an organization's GHG inventory because they are a result of the organization's energy use."
- Scope 3 emissions include emissions from all sources not included in Scope 1 or 2 which are outside of the scope of governmental operations, and this review.

Table 1, indicates (in blue) the sources considered for the City of Plattsburgh's inventory:

Source Category	Scope
Stationary Combustion of Fossil Fuels	1
Building/Facility Electricity Consumption (including streetlighting)	2
Mobile Combustion of Fossil Fuels (Fleet)	1
Solid Waste Disposal	1
Wastewater Treatment	1
Employee Commutes	3
Water Consumption in City Facilities	3
Agriculture & Land Management	3
Urban Forestry	3
Waste Generation	3
Additional Emission Sources (e.g., refrigerant leakage)	1

## Methodology

The Government Operations Module of EPA's Local Greenhouse Gas Inventory Tool was used to produce the City's GHG inventory. The tool is specifically designed to develop a greenhouse gas inventory of municipal operations in accordance with the Local Government Operations Protocol (LGOP). As guided by the tool, direct consumption data and other reported municipal data was used as input for calculation-based GHG estimates. Bill analysis and delivery records were used to deduce fuel and electricity consumption, a vehicle fleet inventory enabled input of vehicle activity and characteristic data, and stakeholder outreach informed data related to refrigerant leakage and wastewater treatment.

After consideration of historical data quality, and data availability, 2019 was chosen as the city's baseline year for the following reasons:

- It was a normal weather year, i.e., weather patterns overall did not deviate substantially from historical trends.
- It precedes influences of Covid19 (2020, for example, showed a marked decrease in electricity consumption for City facilities).
- There was high quality data available, with good granularity.
- It reasonably represents a recent/current state of emissions for local government operations.

## Key Results

Key results are presented below for two accounting methods, as noted and described within figures. For additional detailed results and discussion, please refer to the City of Plattsburgh Government Operations GHG Inventory Report completed on June, 26, 2023 (see Appendix D).

**Figure 1, Total 2019 Emissions by Scope, Location-Based Accounting Method**

*Note: Location-based method reflects regional grid-average emission factors for electricity.*

City of Plattsburgh, Total Emissions, 2019 (MT CO2e)								
	CO2	CH4	N2O	HFCs	PFCs	SF6	Total MT CO2e	Percent of Total
<b>Scope 1</b>	<b>1,200.23</b>	<b>3.35</b>	<b>86.61</b>	-	-	-	<b>1,290.19</b>	<b>48%</b>
<b>Scope 2 - Location Based</b>	<b>1,377.46</b>	<b>2.52</b>	<b>3.53</b>	-	-	-	<b>1,383.52</b>	<b>52%</b>
<b>Total Gross Emissions</b>	<b>2,577.69</b>	<b>5.87</b>	<b>90.15</b>	-	-	-	<b>2,673.71</b>	<b>100%</b>

**Figure 2, Total 2019 Emissions by Scope, Market-Based Accounting Method**

*By way of a contractual instrument, the City of Plattsburgh has an allotment of power from the New York State Power Authority sourced from the hydroelectric Niagara Power Project. The Market-based method recognizes this purchasing decision and uses the emission factor associated with the electricity provided by way of that contract, which is hydroelectric power.*

City of Plattsburgh, Total Emissions, 2019 (MT CO2e)								
	CO2	CH4	N2O	HFCs	PFCs	SF6	Total MT CO2e	Percent of Total
<b>Scope 1</b>	1,200.23	3.35	86.61	-	-	-	1,290.19	100%
<b>Scope 2 - Market Based</b>	-	-	-	-	-	-	-	-
<b>Total Gross Emissions</b>	1,200.23	3.35	86.61	-	-	-	1,290.19	100%

**Figure 3, Total 2019 Emissions by Source, Location-Based Accounting Method**

Total Emissions by Source, 2019 (MT CO2e)								
Source	CO2	CH4	N2O	HFCs	PFCs	SF6	Total	Percent of Total
<b>Stationary Combustion</b>	345.34	0.75	0.23	-	-	-	346.31	13%
<b>Mobile Combustion</b>	854.89	2.60	34.47	-	-	-	891.96	33%
<b>Wastewater Treatment</b>	-	-	51.92	-	-	-	51.92	2%
<b>Electricity - Location Based</b>	1,377.46	2.52	3.53	-	-	-	1,383.52	52%
<b>Total (Gross Emissions)</b>	2,577.69	5.87	90.15	-	-	-	2,673.71	100%

**Figure 4, Total 2019 Emissions by Source, Market-Based Accounting Method**

Total Emissions by Source, 2019 (MT CO2e)								
Source	CO2	CH4	N2O	HFCs	PFCs	SF6	Total	Percent of Total
Stationary Combustion	345.34	0.75	0.23	-	-	-	346.31	27%
Mobile Combustion	854.89	2.60	34.47	-	-	-	891.96	69%
Wastewater Treatment	-	-	51.92	-	-	-	51.92	4%
Electricity - Market Based	-	-	-	-	-	-	-	0%
<b>Total (Gross Emissions)</b>	<b>1,200.23</b>	<b>3.35</b>	<b>86.61</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1,290.19</b>	<b>100%</b>

**Figure 5, Total 2019 Emissions from Stationary Combustion by Fuel Type**

2019 Stationary Combustion, Total Emissions by Fuel Type (MT CO2e)				
Fuel Type	CO2	CH4	N2O	TOTAL
Natural Gas	328.51	0.73	0.19	329.42
Distillate Fuel Oil	15.01	0.02	0.04	15.07
Kerosene	1.38	0.00	0.00	1.39
<b>Total Emissions from Stationary Fuel Combustion</b>	<b>345.34</b>	<b>0.75</b>	<b>0.23</b>	<b>346.31</b>



**Figure 6, Total 2019 Emissions from Mobile Combustion by Fuel Type and Department**

2019 Mobile Combustion, Total Emissions by Fuel Type (MT CO2e)					
	Gasoline CO2	Diesel CO2	CH4	N2O	TOTAL
<b>Building Inspector</b>	12.44	0.00	0.07	0.96	13.47
<b>Community Development</b>	8.77	0.17	0.06	0.53	9.52
<b>Fire Department</b>	5.55	58.61	0.05	0.60	64.80
<b>Police Department</b>	237.79	0.26	1.22	16.44	255.71
<b>Public Works</b>	212.05	315.77	1.19	15.81	544.83
<b>Unallocated</b>	1.75	1.73	0.01	0.13	3.62
<b>Total</b>	<b>478.35</b>	<b>376.54</b>	<b>2.60</b>	<b>34.47</b>	<b>891.96</b>

## Forecasting “Business-As-Usual” Emissions

An important part of goal setting is understanding the likely outcome if no deliberate intervention is made to reduce emissions, i.e. maintaining “business-as-usual”. In the following business-as-usual case, extrapolated to year 2050, the following assumptions are made in estimating the City’s future emissions:

- No significant changes to population occurs, as has been true for at least the last decade.
- Electricity supply for the NY Upstate region becomes zero-emission by 2040, as required by New York’s Climate Leadership and Community Protection Act (CLCPA). Note the NY Upstate region already complies with the 2030 requirement of being 70% renewable. No change in consumption is assumed.
- Gasoline and Diesel vehicle miles stay the same, with market driven improvements in efficiency being realized as fleets turn over (modeled as a 1% efficiency gain annually).
- No changes in Natural Gas use for space heating.
- Propane/Fuel Oil use - which is already minimal - is eliminated.

As shown in table below, with no intervention it is expected emissions will likely remain unchanged by 2030. By 2050, a 56 percent reduction is expected when using the location-based accounting method. A 9 percent reduction is expected when using the market-based accounting method. It’s important to note that in this “business-as-usual” case, the City does not meet State targets. New York State’s climate act requires a reduction in GHG emissions of 40 percent by 2030 and 85 percent by 2050 (below 1990 levels).

Total Emissions Projections by Year (MT CO2e)			
Accounting Method	2019 (Baseline)	2030	2050
Location-Based	2673.71	<i>No significant change from baseline</i>	1168.78
Market-Based	1290.19	<i>No significant change from baseline</i>	1168.78

## Greenhouse Gas Reduction Goals and Targets

### Goal

The City of Plattsburgh has shown remarkable initiative in pursuing energy efficiency opportunities and reducing reliance on natural gas for space heating by switching to electric heat pump alternatives. With a regional electric grid that is already extremely clean and State commitment to zero-emission electricity supply by 2040, the most impactful progress the City can make towards reducing emissions is continued effort on lowering direct consumption of fossil fuels. Adopting a market-based accounting methodology to measure progress will help keep that priority in focus.

*In alignment with the State’s Climate Act, using a Market-based accounting methodology and a baseline year of 2019, the City aims to reduce greenhouse gas emissions attributed to government operations by 40 percent by 2030 and 85 percent by 2050.*

### Emissions Targets

The GHG reduction goals translate to the following targets, which represent annual emissions in Metric Tonnes CO2 equivalent for the target year.

2019 Baseline	2030 Emissions Target	2050 Emissions Target
1290.2	774.2	193.6

As indicated by the above targets, the City will need to achieve a 516 Metric Tonne (CO2 equivalent) reduction in annual emissions by year 2030 (compared to 2019 baseline) and a further 580.6 Metric Tonne (CO2 equivalent) reduction in annual emissions by year 2050 (compared to 2030 target).

## Prioritized Action Items and Strategies

Electrification of energy-consuming end uses will take top priority among the City's action items to reduce greenhouse gas emissions.

### By 2030, the City will achieve the following milestones:

- Replace remaining natural gas heating systems with heat pumps, or other electric heat
- Reduce gasoline consumption by 40%, compared to 2019 baseline consumption

### By 2050, the City will:

- Replace all gasoline and diesel powered fleet vehicles relying on internal combustion engines with electric alternatives.

### Electrification of Building Heating Systems

By 2030, all facilities under operational control of the City will need to be 100% electrically heated. Installation of heat pump systems is the preferred approach. The two most prominent and impactful projects will be converting the Main Public Works building to electric heat as well as the remaining section of the Library.

### Fleet Electrification

By 2050, all gasoline and diesel fleet vehicles will need to be replaced by electric alternatives. In keeping with that end goal, the City should strive to achieve the 2030 goal of 40% reduction in gasoline consumption via electrification of the necessary portion of its light duty vehicle fleet. Virtually all of the miles traveled in gasoline fueled vehicles are in those classified as light-duty. As of 2023, there are 52 light duty vehicles within the City's fleet, with all but two hybrid vehicles relying solely on gasoline engines. Even today, there are electric vehicle offerings that could meet the duty requirements for many of the use cases. By 2030, it's highly likely that EV offerings will be able to meet the most stringent demands of light-duty vehicles, for example, the performance required by the police department.

## Implementation Plan and Next Steps

This section describes the implementation and assessment plan for carrying out the strategic imperatives described previously. The implementation plan employs the SMART Goal framework. This framework constructs all actions and goals into specific, measurable, achievable, relevant and timebound statements. Furthermore, we present a three-stage plan for implementation that is based around short, medium and long term actions. These timeframes represent Stage 1: 0-5 years; Stage 2: 6-10 years; and Stage 3: 10+ year timeframes, respectively.

<b>Stage One Actions. 2024-2029.</b>				
<b>Specific Actions</b> <i>The City of Plattsburgh will...</i>	<b>Measurable Outcomes</b> <i>The product of this action will be...</i>	<b>Achievable Goals</b> <i>This action achieves the City and State GHG/Energy goals by...</i>	<b>Relevance to City Operations</b> <i>Departments involved in this initiative are...</i>	<b>Timebound Deadline</b> <i>This action will be completed by...</i>
<b>Action 1.</b> Adopt this Municipal Climate Action Plan including statement of GHG reduction targets: <i>Using a Market-based accounting methodology and a baseline year of 2019, the City aims to reduce greenhouse gas emissions attributed to government operations by 40 percent by 2030 and 85 percent by 2050</i>	Adoption of resolution	Aligning City and NYS goals, publicly committing to specific actions, unifying departments around common goals, documenting strategies and timelines	All City departments and operations	2023
<b>Action 2.</b> Resolution to establish monitoring and reporting systems for all climate adaptation and GHG reduction efforts.	Adoption of resolution and establishment of committee of City personnel to collect data and create an annual report documenting progress, challenges and strategies	Providing benchmarking data for measuring progress and enabling adaptive management strategy	All departments	2024
<b>Action 3.</b> Resolution to commend and reauthorize its	Adoption of resolution	Continues City participation in CSC program and advances	All departments	2024

Climate Task Force		progress towards higher levels of achievement		
<b>Action 4.</b> Plattsburgh Public Library will conduct a feasibility study and renovation plan to convert building to 100% electric heat/cooling	Feasibility study Renovation plan	Assists to advance electrification of heating/cooling at library (currently heated by natural gas)	Public works (feasibility study/renovation plan) Library (project site)	2024
<b>Action 5.</b> Plattsburgh Public Library will convert building to 100% electric heat/cooling	Installation of electric heat pumps and associated renovations	Eliminates natural gas heating at library	Public works (construction/installation) Library (project site)	2026
<b>Action 6.</b> Public Works will conduct a feasibility study and renovation plan to convert building to 100% electric heat/cooling	Feasibility study Renovation plan	Assists to advance electrification of heating/cooling at Public Works (currently heated by natural gas)	Public works (feasibility study/renovation plan and project site)	2024
<b>Action 7.</b> Public Works will convert building to 100% electric heat/cooling	Installation of electric heat pumps and associated renovations	Eliminates natural gas heating at Public Works	Public works (construction/installation and project site)	2026
<b>Action 8.</b> Conduct energy efficiency building assessments in high priority buildings	Assessment findings for high priority buildings	Enabling prioritization of energy efficiency improvements	Priority buildings include: Fire Stations Public Works Water Supply Library	2025
<b>Action 9.</b> Implement improvements documented in building assessments	Building improvements	Assists City to reduce energy consumption and allows electrification to move forward.	Priority buildings include: Fire Stations Public Works Water Supply Library	2026

<p><b>Action 10.</b> Convene a Fleet Vehicle Planning Committee to plan the conversion of light duty fleet to electric vehicles (including charging capacity)</p>	<p>Plan, timeline and budget details for transitioning to electric fleet</p>	<p>Reduces GHG emissions from vehicle from 892MT to 536MT by 2030 and 134MT by 2050</p>	<p>All departments with light duty vehicles</p>	<p>2024</p>
<p><b>Action 11.</b> Adopt resolution that all new vehicles purchased will be electric vehicles (exceptions for police and fire with proper justification)</p>	<p>Accelerate conversion of fleet to electric vehicles</p>	<p>No gasoline vehicles purchased</p>	<p>Applies to light duty vehicles in any/all departments</p>	<p>2024</p>
<p><b>Action 12.</b> Purchase at least one Electric Police Vehicle</p>	<p>Vehicle purchased</p>	<p>Enables testing of electric vehicle capabilities and alignment with needs. Identifies challenges to electric vehicles in public safety.</p>	<p>Police Department</p>	<p>2026</p>
<p><b>Action 13.</b> Install electric vehicle charging stations for city vehicles at all buildings</p>	<p>Install at least one station for every electric vehicle replaced</p>	<p>Match charging capabilities to numbers of vehicles</p>	<p>Applies to any/all departments with electric vehicles</p>	<p>2024-2050</p>
<p><b>Action 14.</b> Initiate community wide GHG inventory and climate action planning process</p>	<p>GHG inventory Climate Action Plan</p>	<p>Enables GHG reductions and climate adaptation</p>	<p>CSC Task Force All departments</p>	<p>2025</p>

<b>Stage Two Actions. 2029-2034.</b>				
<b>Specific Actions</b> <i>The City of Plattsburgh will...</i>	<b>Measurable Outcomes</b> <i>The product of this action will be...</i>	<b>Achievable Goals</b> <i>This action achieves the City and State GHG/Energy goals by...</i>	<b>Relevance to City Operations</b> <i>Departments involved in this initiative are...</i>	<b>Timebound Deadline</b> <i>This action will be completed by...</i>
<b>Action 15.</b> Renew GHG Inventory and Climate Action Planning process	GHG Inventory Climate Action Plan	New energy efficiency and GHG reduction goals	Planning process coordinated by Community Development. All departments involved.	2029
<b>Action 16.</b> Resolution to adopt and implement new CAP	Adoption of resolution	Enables continued action and adaptive management of climate action process	All departments	2030
<b>Action 17.</b> Continue building improvements as documented in energy efficiency assessment	Building improvements	Assists City to reduce energy consumption and allows electrification to move forward.	Priority buildings include: Fire Stations Public Works Water Supply Library	2034
<b>Action 18.</b> Conduct energy efficiency building assessments in high priority buildings	Assessment findings for high priority buildings	Enabling prioritization of energy efficiency improvements	Assessment will reveal priority buildings	2032
<b>Action 19.</b> Police Department conducts feasibility study to convert to 100% electric vehicles	Feasibility study	Enables transition to fully electric fleet	Police Department	2030
<b>Action 20.</b> Resolution to implement findings of Police	Adopt resolution	Enables transition to fully electric fleet	Police Department	2031

Department feasibility study for electric vehicles				
<b>Action 21.</b> Implement Police Department transition to electric vehicles	Purchase electric vehicles as documented in feasibility study	Transition to fully electric fleet	Police Department	2031
<b>Action 22.</b> Fire Department conducts feasibility study to convert to 100% electric vehicles	Feasibility study	Enables transition to fully electric fleet	Fire Department	2033
<b>Action 23.</b> Resolution to implement findings of Fire Department feasibility study for electric vehicles	Adopt resolution	Enables transition to fully electric fleet	Fire Department	2034
<b>Action 24.</b> Implement Fire Department transition to electric vehicles	Purchase electric vehicles as documented in feasibility study	Transition to fully electric fleet	Fire Department	2034
<b>Action 25.</b> PMLD conducts feasibility study to convert to 100% electric vehicles	Feasibility study	Enables transition to fully electric fleet	PMLD	2033
<b>Action 26.</b> Resolution to implement findings of PMLD feasibility study for electric vehicles	Adopt resolution	Enables transition to fully electric fleet	PMLD	2034
<b>Action 27.</b> Implement PMLD transition to electric vehicles	Purchase electric vehicles as documented in feasibility study	Transition to fully electric fleet	PMLD	2034



<b>Action 29.</b> Public Works conducts feasibility study to convert to 100% electric vehicles	Feasibility study	Enables transition to fully electric fleet	Public Works	2033
<b>Action 30.</b> Resolution to implement findings of Public Works feasibility study for electric vehicles	Adopt resolution	Enables transition to fully electric fleet	Public Works	2034
<b>Action 31.</b> Implement Public Works transition to electric vehicles	Purchase electric vehicles as documented in feasibility study	Transition to fully electric fleet	Public Works	2034
<b>Action 32.</b> PMLD conducts feasibility study to initiate local energy generation and microgrid	Feasibility study	Enables progress towards local generation and energy security	PMLD	2030
<b>Action 33.</b> Water Resource Recovery Facility conducts feasibility study to reduce GHG emissions including transport of sludge	Feasibility study	Enables progress to reduce GHG emissions	Water Resource Recovery Facility	2030
<b>Action 34.</b> Drinking Water Supply Facility conducted feasibility study for new building	Feasibility study	Enables progress to reduce GHG emissions	Drinking Water Supply Facility	2030

<b>Stage Three Actions. 2034-Beyond</b>				
<b>Specific Actions</b> <i>The City of Plattsburgh will...</i>	<b>Measurable Outcomes</b> <i>The product of this action will be...</i>	<b>Achievable Goals</b> <i>This action achieves the City and State GHG/Energy goals by...</i>	<b>Relevance to City Operations</b> <i>Departments involved in this initiative are...</i>	<b>Timebound Deadline</b> <i>This action will be completed by...</i>
<b>Action 35.</b> Renew GHG Inventory and Climate Action Planning process	GHG Inventory Climate Action Plan	New energy efficiency and GHG reduction goals	Planning process coordinated by Community Development. All departments involved.	2034
<b>Action 36.</b> Resolution to adopt and implement new CAP	Adoption of resolution	Enables continued action and adaptive management of climate action process	All departments	2035
<b>Action 37.</b> Continue building improvements as documented in energy efficiency assessment	Building improvements	Assists City to reduce energy consumption and allows electrification to move forward.	Priority buildings include: Fire Stations Public Works Water Supply Library	2034
<b>Action 38.</b> Conduct energy efficiency building assessments in high priority buildings	Assessment findings for high priority buildings	Enabling prioritization of energy efficiency improvements	Assessment will reveal priority buildings	2038
<b>Action 39.</b> Continue building improvements as documented in energy efficiency assessment	Building improvements	Assists City to reduce energy consumption and allows electrification to move forward.	Priority buildings include: Fire Stations Public Works Water Supply Library	2050
<b>Action 40.</b> Adopt resolution to achieve 100% electric fleet by 2050	Adopt resolution	Assists progress in climate and GHG goals	All departments	2035

<p><b>Action 41.</b> PMLD implements findings of feasibility study to initiate local energy generation and microgrid</p>	<p>Energy generation and microgrid construction</p>	<p>Enables progress towards local generation and energy security</p>	<p>PMLD</p>	<p>2035</p>
<p><b>Action 42.</b> Water Resource Recovery Facility implements findings of feasibility study to reduce GHG emissions including transport of sludge</p>	<p>Reduce GHG emissions</p>	<p>Enables progress to reduce GHG emissions</p>	<p>Water Resource Recovery Facility</p>	<p>2035</p>
<p><b>Action 43.</b> Drinking Water Supply Facility implements findings of feasibility study for new building</p>	<p>Reduce GHG emissions</p>	<p>Enables progress to reduce GHG emissions</p>	<p>Drinking Water Supply Facility</p>	<p>2040</p>
<p><b>Action 44.</b> Adopt resolution to achieve zero emissions in city operations by 2050</p>	<p>Adopt resolution</p>	<p>Assists progress in climate and GHG goals</p>	<p>All departments</p>	<p>2038</p>

**Appendix A - Survey & Responses**

**Appendix B - Follow-up Interviews**

**Appendix C - NYS CSCC Action Checklist**

**Appendix D - GHG Inventory Report**