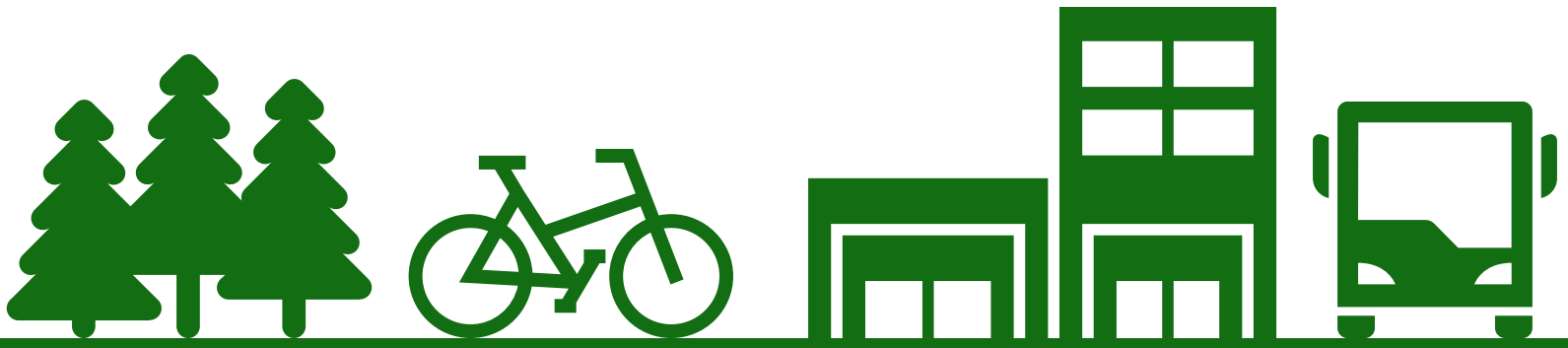
TOWN OF BLOOMFIELD

CLIMATE EMERGENCY ENERGY PLAN

December 16, 2022



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Report prepared by:

Barton & Loguidice

INTRODUCTION

PROJECT BACKGROUND

A comprehensive baseline review of greenhouse gas emissions (GHG) was completed for the Town of Bloomfield in the Fall of 2022 for Town facilities and operations. This includes a review and catalog of existing energy-related efforts, strategies, and goals in the Town through review of existing reports, plans, targeted interviews, and other resources. This research provides a focused snapshot of key issues and trends that can inform and drive a future implementation plan.

PROJECT GOALS

EFFORTS WITHIN THE TOWN OF BLOOMFIELD TO REDUCE GHG EMISSIONS

The Town of Bloomfield acknowledges that greenhouse gas (GHG) emissions from human activity are resulting in profound shifts in climate and weather, the consequences of which will impact the future health, well-being, and prosperity of the community. The main goal of this effort is to reduce GHG emissions at a local level. In addition, it is increasingly important for the Town of Bloomfield to take a leadership role in supporting energy saving actions and sustainability initiatives that will lead to a reduction in energy related expenditures for Town government, local businesses, and Town residents.

Reducing GHG emissions in the Town of Bloomfield requires a commitment from the local government to play a large role in advancing the community's goals for a cleaner future. The Town can achieve significant reductions in GHG emissions through proactive measures around energy efficiency, transportation, land use planning, waste reduction and more. Securing reductions in GHG emissions across these different sectors will have benefits for public health and safety, creating a cleaner and more sustainable Bloomfield. To set reduction goals and measure the reductions in energy use and emissions of GHG within the Town, a baseline was established by collecting information about the Town's current energy use and emissions. Bloomfield Public Schools has completed comprehensive energy assessment and GHG inventories for government operations.

Adaptation & Mitigation Strategies

The Town of Bloomfield has completed a variety of adaptation and mitigation strategies, including the 20% by 2010 Pledge, the Solarize Campaign, the installation of Public Schools' first community solar installation, and a commitment to the Clean Energy Communities Municipal Pledge. The Bloomfield Town Council has been at the forefront of adopting programs for Clean Energy Communities in Connecticut, following its adoption of the 20% by 2010 pledge. In 2013 the Town again committed itself to an electricity usage pledge by adopting the goal of reducing its electricity usage by 20% by FY 2017-18. Aided by an Energy Performance Contract with Ameresco and multiple energy efficiency upgrades at school facilities, the Town achieved its goal, though it now faces a continuing struggle to continue conservation and efficiency efforts. Conversion of Bloomfield's street lights, the highest draw on the Town's electricity, to LED's was promoted by the CEEC and initiated in 2016 through an agreement with Eversource (the owner of the majority of street lights in the Town).

Solar

The Town has made a robust effort to utilize solar whenever possible. The Town-wide Solarize Campaign, which promoted solar residential energy through community presentations, was supported by a grant that the Town received as part of the Clean Energy Communities program. In addition to the Solarize Campaign, Town staff have met on numerous occasions with the Connecticut Green Bank and the CEEC to explore the installation of solar panels on municipal buildings. The Community Solar Installation that is located behind Bloomfield's Board of Education Central Offices is shared by multiple community subscribers who receive credit on their electric bills for their share of the solar power produced. The 1.62 megawatt array is owned by Ameresco and is marketed by the Clean Energy Collective, and it is estimated to save users $150 per year for the average household. Completed in 2019, the array provides 60% of its generation to the Board of Education*, 20% to low- income residents, and 20% to general subscribers.

**Please note that greenhouse gas emissions data related to the Board of Education is included in this CEEP.*

Fleet Transition

The Board of Education has been collaborating with the school district's general bus contractor to replace its fleet of 31 vehicles, which are aging and polluting diesel-powered buses, with all-electric buses. To offset this cost, the Board of Education and general bus contractor are exploring the option of applying for Volkswagen grant funds.

Sustainable CT

Sustainable CT is a voluntary certification program that recognize thriving and resilient Connecticut municipalities. An independently funded, grassroots, municipal effort, Sustainable CT provides a wide-ranging menu of best practices. Municipalities choose Sustainable CT actions, implement them, and earn points toward certification. Bloomfield underwent evaluation in 2019 and participation in the certification guidance program, resulting in a Bronze Certification in which Sustainable CT recognized the Town's community wide efforts to promote local sustainability through policy adoptions.

The Town of Bloomfield is a Sustainable Connecticut bronze certified applicant. The Town was awarded this certification on October 28, 2019 with 240 points. When filtered by action benefit, there are thirty-five actions that municipalities in Connecticut can achieve that are aimed at reducing greenhouse gases. The Town of Bloomfield is currently receiving 165 points for twelve of these actions, such as the implementation of Complete Streets and the development of an open space plan. The Town will be well-positioned to receive additional points under numerous Sustainable CT actions as it continues to pursue reductions in greenhouse gases.

Note: For a summary of State-wide GHG emissions reduction efforts, see Appendix A.

GHG INVENTORY ANALYSIS

PURPOSE

Barton & Loguidice D.P.C., (B&L) is working with the Town of Bloomfield to develop a Climate Emergency Energy Plan (CEEP) for its local government operations, which utilizes baseline greenhouse gas (GHG) emissions calculated using a GHG inventory to develop goals and plans to reduce the Town's carbon footprint.

The Town's CEEP identifies strategies and recommendations to accomplish the following:

- Identify previous, ongoing, and planned Town initiatives
- Assess existing Town operations and facilities' baseline GHG emissions
- Establish emission reduction targets, goals, and strategies to achieve net-zero carbon emissions by 2030
- Establish an Implementation Plan that incorporates short-, medium-, and long-term projects; funding opportunities and goals; and prioritization
- Track progress in reducing GHG emissions through implementing identified strategies
- Achieve an overall decrease in GHG emissions and increase the Town's sustainability.

A baseline GHG inventory was developed based on actual Town operations data from 2021, which is the most recent complete year to when the CEEP is being developed. A GHG Inventory is used to provide an understanding of carbon dioxide-equivalent (CO2e) emissions, also called the carbon footprint, of an entity, such as a municipality. A baseline GHG inventory provides insight into conditions prior to implementing strategies outlined in the CEEP, whereas subsequent GHG inventories provide insight into the progress of the aforementioned strategies.

The GHG inventory was prepared in accordance with the Local Government Operation Protocol (LGOP), version 1.1, using the U.S. EPA's Local Greenhouse Gas Inventory Tool. The Tool incorporates carbon dioxide-equivalent (CO2e) emissions from stationary sources (e.g. generators, boilers, etc.), mobile sources (e.g. vehicles, construction equipment, etc.), electricity use, solid waste operations, wastewater treatment, water use, and other sources dependent upon the scope and goals of the inventory. The Tool contains two modules for calculating GHG emissions: a community-based tool and a local government tool. The local government tool was used for Bloomfield's CEEP since all of the operations incorporated into the CEEP are based on the Town's operations and not community-wide contributions from the private sector.

BASELINE INPUT DATA

B&L worked with the Town to determine the boundaries of the GHG inventory, including sources and facilities owned and/or operated by the Town. The scope of the inventory included all emissions sources under the Town's operational control. This consisted of the Town's Scope 1 "direct" emissions from stationary combustion and mobile combustion, as well as Scope 2 "indirect" emissions from the purchase of electricity. As requested by the Town, Scope 3 emissions from Bloomfield Public Schools' buses, which are not owned by the Town, were included in the inventory. As the Town does not own or operate a landfill, a public water system, water or wastewater treatment plants, or general solid waste operations, these were not incorporated into the inventory.

The Town Facilities Manager and the Bloomfield Public Schools Director of Facilities provided an emission source inventory and data for the following departments and facilities:

- Board of Education
- Human Services
- Police Department
- Prosser Library
- Department of Public Works
- Town Hall
- Volunteer Ambulance
- Wintonbury Library

Records of natural gas and electricity consumption per month provided by the Town were from the Town's Dude Solutions Energy Manager software, with the exception of the Prosser Library data, which was provided by the Town CEEC's Portfolio Manager software. Mobile fuel records were provided using the Town's fleet fuel management data reporting system. Table 1 provides a summary of GHG emission sources by Department.

Images from the Bloomfield Public Library website: pblct.org

Table 1

Data by Department

Department	Building / Area	Scope 1: Stationary Sources[1]	Scope 1: Mobile Sources	Scope 2: Electricity Sources
Board of Education	On-Road / School Property	Natural gas heating, cooling, kitchen equipment fueling	School buses[2], construction equipment (x3), heavy-duty trucks (x4), vans (x1), pick-up trucks (x6), passenger cars (x2)	Building, parking lot, athletic field lights[3]
Human Services[4]	Human Services Center	Natural gas heating and cooling	N/A	Building
	La Salette Park	N/A	N/A	Park (general)
	Municipal Pool	N/A	N/A	Pool
	Road / Senior Services	N/A	Heavy-duty trucks (x6), van (x1)	Not Reported
	Miscellaneous	N/A	N/A	Tennis Courts, Pedestal Signage[5]
Police	Police Station	Natural gas heating, natural gas standby generator[6]	N/A	Building
	On-Road	N/A	Heavy-duty trucks (x1), pickup trucks (x27), motorcycle (x1), passenger cars (x5)	N/A
Prosser Library	Prosser Library	Natural gas heating	N/A	Building
Public Works	Public Works Building	Natural gas heating and cooling, diesel fuel standby generator	N/A	Building
	On-Road/Off-Road	N/A	Agricultural equipment (x1), construction equipment (x7), heavy-duty trucks (x5), vans (x1), dump trucks (x18), pickup trucks (x16), passenger cars (x2), maintenance and utility equipment (x44)	Street lights, traffic signals
Town Hall	Town Hall Building	Natural gas heating	N/A	Building
	Road	N/A	Pickup trucks (x6), mini-vans (x2), vans (x1), passenger cars (x3)	N/A
Volunteer Ambulance	Volunteer Ambulance Building	Natural gas heating and cooling, diesel fuel standby generator	N/A	Building
	Road	N/A	Vans (x4)	N/A
Wintonbury Library	Wintonbury Library	Natural gas heating and cooling	N/A	Building

[1] Standby generator emissions at the Police Station are incorporated into the total natural gas usage of the Police Station. All other standby generator emissions are based on estimated total annual hours running at no load and 100% load and fuel consumption rates from manufacturer technical specifications. All other stationary sources are not individually tracked and are instead metered by building.

[2] School buses currently contracted out to third-party bus contractor (DATTCO for this inventory). Total diesel fuel usage was reported for School Year 2020 – 2021.

[3] Electricity emissions at the various schools have contractual instrument with Eversource. Due to Eversource neither being the generator of the electricity nor publishing emission factors of the ultimate generator of the electricity, grid electricity rates were used instead of supplier-specific emission rates. No discount was assumed for any solar energy generation. Building and outdoor lighting groupings were metered separately.

[4] Human Services includes Leisure Services, Senior Services, and Social and Youth Services.

[5] Tennis courts and pedestal signage electricity are tracked as one unit.

[6] Police station natural gas is not metered separately between the standby generator and building heating.

CALCULATIONS

Greenhouse gas emissions are based on data inputs described above, including:

- Fuel and electricity usage
- Generator loads, annual usage, and fuel consumption rates
- Emission factors, and
- A global warming potential (GWP).

Emission factors were based on:

- The Emissions & Generation Resource Integrated Database (eGRID),
- The Climate Registry 2021 Default Emission Factors and Emissions Factors for Greenhouse Gas Inventories by the U.S. EPA (April 2021),
- Inventory of U.S. Greenhouse Gas Sources and Sinks: 1990-2008 by the U.S. EPA (2010),
- Local Government Operations Protocol (LGOP), Version 1.1 California Air Resources Board, California Climate Action Registry, ICLEI, and The Climate Registry, and
- Mobile Combustion Guidance (2008) based on U.S. EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005 (2007), Annex 3.2, Table A-101, by the U.S. EPA Climate Leaders.

The GHG emissions calculated within the Tool were carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Each of these has a GWP indicating the compound's relative effect on global warming through absorbing, rather than reflecting, energy from the sun and how long they stay in the atmosphere. The GWPs are used to represent the total emissions, comprising of CO2, CH4, and N_2O emissions, on an equivalent basis – a carbon dioxide equivalent (CO_2e) basis. The 100-year GWPs for carbon dioxide (1), methane (25), and nitrous oxide (298) were used in the GHG Inventory and were published in the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4).

For more details, see Appendix B for the Town of Bloomfield GHG Inventory inputs, calculations, and summaries.

RESULTS

The total calculated GHG emissions for the Town of Bloomfield for 2021 was 4,021.38 metric tons of carbon dioxide equivalents (tCO_2e). 40% of the emissions were from stationary sources, 31% from mobile sources, and 29% from electricity sources. The Board of Education contributed the most of the emissions at 2,445.86 tCO_2e (60.8% of total), followed by the Department of Public Works at 619.30 tCO_2e (15.4%) and the Police Department at 427.20 tCO_2e (10.6%). The following tables and graphs provide a summary of the baseline GHG emissions by source type and department. For more details, see Appendix B for the Town of Bloomfield GHG Inventory inputs, calculations, and summaries.

Table 2

Baseline Greenhouse Gas Emissions Summary – By Source Type

Source Type	GHG Emissions (tCO2e)	Percent of Total*
Stationary Combustion	1,616.15	40.2%
Mobile Combustion	1,245.17	31.0%
Electricity Use	1,160.06	28.8%
Total	4,021.38	100%

*Percent of totals are rounded to the nearest tenth. Sum of totals may not equal 100% due to rounding.

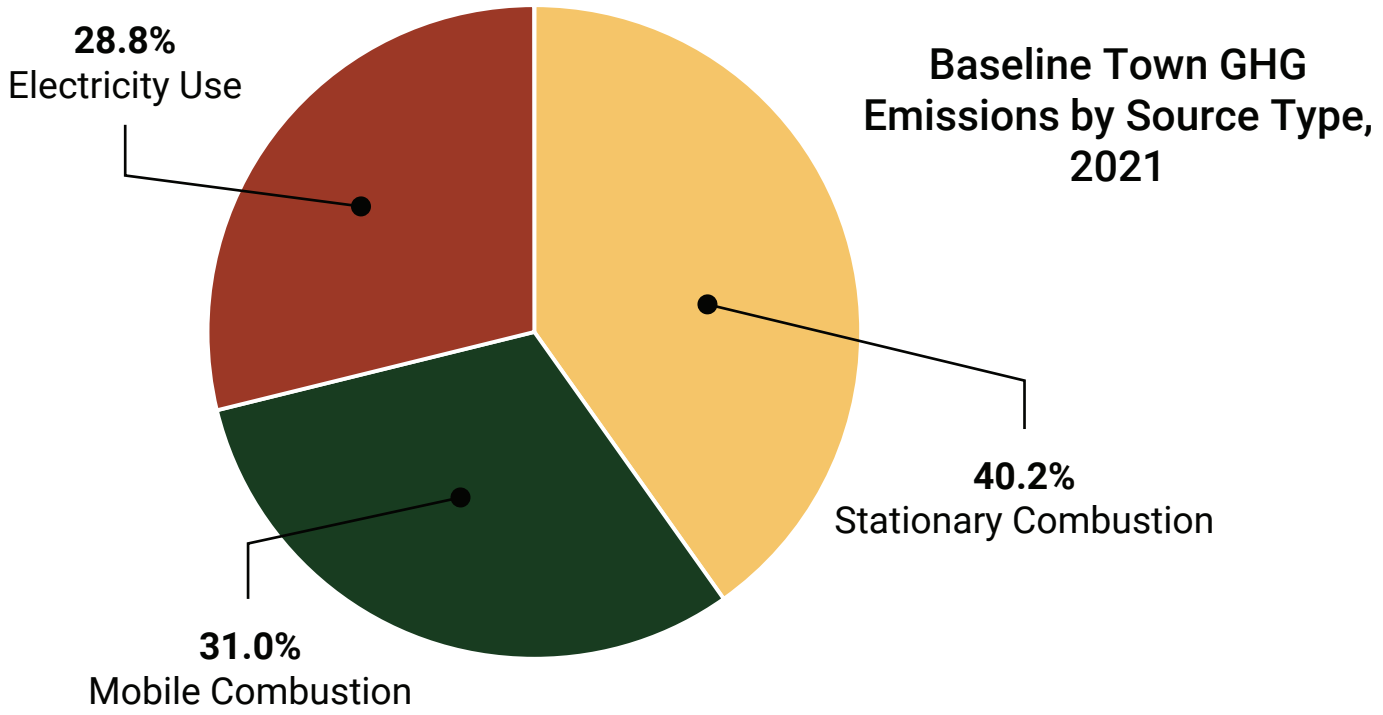
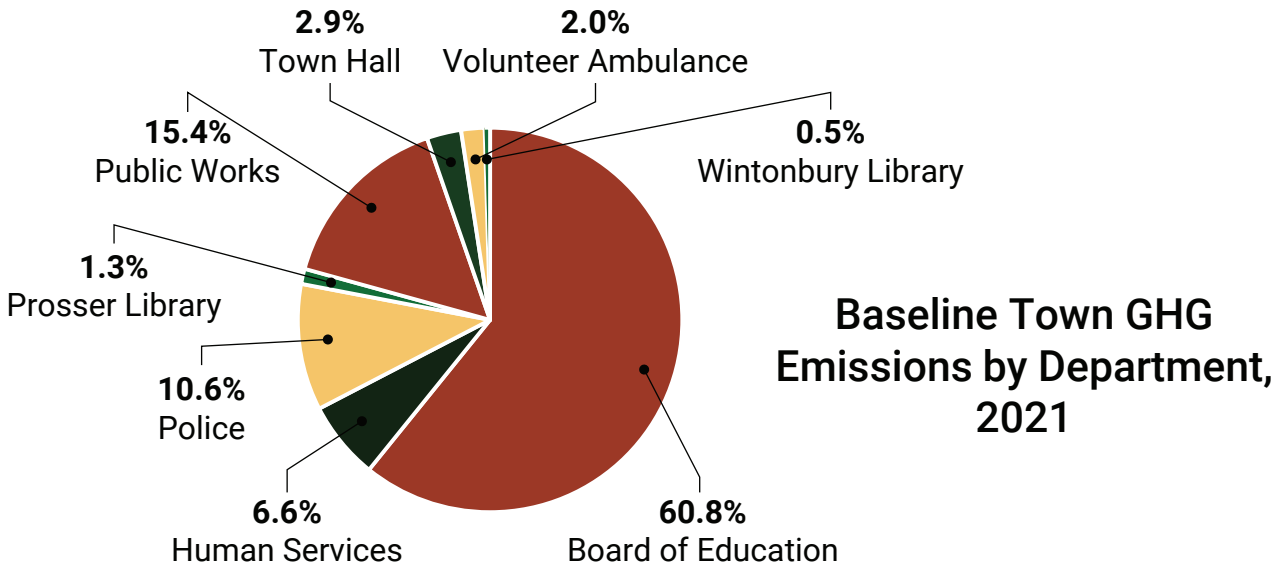


Table 3

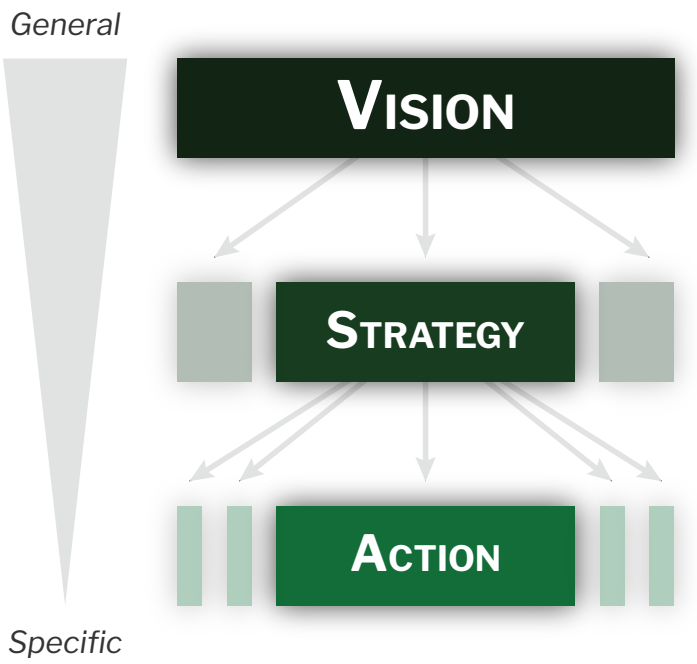
Baseline Greenhouse Gas Emissions Summary – By Department

Department	GHG Emissions (tCO2e)	Percent of Total*
Board of Education	2,445.86	60.8%
Human Services	264.07	6.6%
Police	427.20	10.6%
Prosser Library	51.32	1.3%
Public Works	619.3	15.4%
Town Hall	116.34	2.9%
Volunteer Ambulance	78.99	2.0%
Wintonbury Library	18.31	0.5%
Total	4,021.39	100%

*Percent of totals are rounded to the nearest tenth. Sum of totals may not equal 100% due to rounding.



GHG EMISSIONS REDUCTION STRATEGIES & ACTIONS



VISION

The Bloomfield Climate Emergency Resolution (2021) declares that the Town has "the goal of achieving the objective of no greenhouse gas emissions by the end of 2030."

STRATEGIES

Decrease energy use

Transition to renewable energy sources

Maximize carbon sequestration

ACTIONS

VEHICLE FLEET

- Fleet Inventory
- Fleet Rightsizing
- Alternative Fuel Vehicles
- Fleet Efficiency Policy

LOCAL POLICY

- Solar & Wind Energy Installations
- Renewable Power Purchase Agreement
- Land Use Law for Environmental Protection
- Conservation of Open Space
- Tree Planting

FACILITIES

- Power Down Policy
- HVAC Upgrades
- Green Building Standards
- Interior Lighting Upgrades
- LED Street Lights & Traffic Signals
- Clean Heating & Cooling Technology
- Green Roofs

IMPLEMENTATION PLAN

The purpose of this CEEP is to provide a framework by which the Town of Bloomfield can achieve its vision of producing no GHG emissions from Town operations by 2030. In order to do this, it is critical that the Town prioritizes the following three activities:

1. Reducing emissions from the Town **vehicle fleet** through vehicle right-sizing and transitioning to high-efficiency and alternative fuel vehicles;
2. Reducing emissions from Town **facilities** through lighting, HVAC, and building envelope upgrades; and
3. Establishing **local policies** that support the two tasks above, the transition to renewable energies, and the protection of natural resources.

To reinforce these high-priority initiatives, the Town may also consider completing additional, supportive initiatives, such as:

- Identifying gaps and barriers to sustainable development in existing municipal codes;
- Establishing model land use codes, regulations, municipal policies and/or ordinances; and
- Conducting public education and outreach to define the community's vision for implementing sustainable and livable community techniques, thereby minimizing barriers to implementation.

To guide this effort, the Actions provided in this CEEP have been integrated into an implementation matrix (see following page). For each Action, a timeframe for completion, general cost scale, potential funding source(s), and potential project partner(s) have been identified. The matrix is intended to support the Town of Bloomfield in strategizing an effective path towards implementing recommended Actions and reducing GHG emissions from its Scope 1, 2, and 3 emissions sources previously identified.

As Actions are completed and Town conditions change, it is critical that this CEEP be reviewed and revised accordingly. It is recommended that the CEEP undergo a regular update every 24 months to monitor progress and reassess the estimated timeframe and cost of each remaining Action. This process will ensure that the Town's goal of achieving no GHG emissions is met in an efficient manner.

The Town's GHG emissions reductions resulting from the implementation of this CEEP could be effectively monitored through the International Council for Local Environmental Initiatives (ICLEI) **ClearPath** tool. To gain access to this tool, the Town would need to purchase an ICLEI membership, which - as of November 2022 - would cost $1,200 for one year.

CLIMATE TASK FORCE

To spearhead the implementation and maintenance of this CEEP, it is recommended that an administrative Climate Task Force be convened and appointed by the Town Manager. This group would consist of the leaders of the following Town departments/facilities: Finance, Board of Education, Human Services, Police, Prosser Library, Public Works, Town Hall, Volunteer Ambulance, and Wintonbury Library. This group may also include of a selection of Town residents and business owners. This group would be responsible for two primary tasks:

1. Facilitating coordination across Town departments when implementing CEEP Actions, and

2. Pursuing additional funding to develop a detailed roadmap for CEEP implementation, which would include components such as: (1) a communication strategy with local leadership; (2) project descriptions with detailed cost estimates, potential funding sources, and implementation mechanisms; and (3) cost-benefit analyses that account for the protection of ecosystem services. The cost to hire a grant writing consultant can vary substantially based on the grant program being applied for. However, the Town could assume,- for a program similar to the DEEP Climate Resilience Fund - a cost of approximately $3,500-$5,000 per grant application.

KEY IMPLEMENTATION RESOURCE: CRCOG

While implementing the CEEP's Actions, it is important to remember that the Town of Bloomfield is a member of the Capitol Region Council of Governments (CRCOG). This organization provides guidance to local municipal governments in their efforts to advance regional community planning goals, including the implementation of active transportation networks, smart growth policies, sustainable land use regulations, natural hazard mitigation projects, and other activities related to climate change resiliency. The CRCOG could serve as a partner in many areas of the Bloomfield CEEP.

For reference with implementation matrix on following pages.

Strategy	Action		
Decrease Energy Use	1	**Fleet Inventory:** Complete an inventory of all municipal vehicles - including vehicle type, vehicle age, fuel type, fuel efficiency, and usage - in order to plan for high-efficiency, EV, and alternative fuel replacements	
	2	**Fleet Efficiency Policy:** Adopt a policy requiring new municipal vehicle purchases to meet a fuel efficiency standard	
	3	**Fleet Rightsizing:** Utilizing the Fleet Inventory, develop a system that matches municipal tasks with appropriate vehicle types to minimize the use of large, low-efficiency vehicles	
	4	**Alternative Fuel Vehicles:** Transition municipal fleet vehicles to alternative fuel models (EV, hybrid, compressed natural gas, hydrogen fuel, etc.) and encourage the school district and local bus fleet operators to transition as well	
	5	**Interior Lighting Upgrades:** Transition municipal facilities' light fixtures to LEDs and incorporate motion-sensing lights where appropriate	
	6	**Power Down Policy:** Adopt a policy requiring appropriate municipal equipment (lights, printers, computers, televisions, etc.) to be turned off outside of business hours	
	7	**LED Street Lights & Traffic Signals:** Complete an inventory of street lights and traffic signals (location, light bulb type, ownership, etc.) and develop and implement a plan for transitioning such light fixtures to LEDs	
	8	**HVAC Upgrades:** Adopt an energy benchmarking policy for government facilities, complete associated energy audits, and upgrade heating, ventilation, and air conditioning (HVAC) equipment to energy-efficient alternatives as deemed appropriate	
	9	**Green Building Standards:** Adopt a policy requiring new municipal facilities to achieve a green building certification* and existing facilities to incorporate green building standards when undergoing upgrades; such certification programs may include LEED Green Building Standards, US EPA ENERGY STAR, ASHRAE Standard 189.1 for the Design of High-Performance Green Buildings, and the 2012 International Green Construction Code	
Transition to Renewable Energy Sources	10	**Solar & Wind Energy Installations:** Complete and implement a feasibility study exploring the possibility of installing solar and wind energy technologies on municipal properties	
	11	**Clean Heating & Cooling Technology:** In addition to HVAC upgrades, investigate opportunities to install ground- or air-source heat pumps in municipal facilities	
	12	**Renewable Power Purchase Agreement (PPA):** Identify potential PPA providers and sites for renewable energy installations, analyze the available options, and enter into a PPA for renewable energy	
Maximize Carbon Sequestration	13	**Land Use Law for Environmental Protection:** Consider the adoption of conservation/cluster development zoning, overlay zoning, conservation zoning districts, incentive zoning, site plan review, and other regulatory land use tools as a means for protecting forested land, wetlands, and other carbon sinks	
	14	**Green Roofs:** Identify and execute opportunities for green roof installations on municipal facilities	
	15	**Conservation of Open Space:** Develop and implement an open space plan that outlines opportunities for conservation easements and municipal acquisition of open space and identifies financing mechanisms for conservation efforts	
	16	**Tree Planting:** Become a Tree City USA Community, including maintaining a tree board/department, adopting a community tree ordinance, spending at least $2 per capita on urban forestry, and celebrating Arbor Day	

		Timeframe	Cost Scale	Funding	Potential Partners	Type
	1	Short	$	Local	CRCOG, Town CEEC	Vehicle Fleet
	2	Short	$	Local	CRCOG, Town CEEC	Local Policy, Vehicle Fleet
	3	Short	$	Local	CRCOG, Town CEEC	Vehicle Fleet
	4	Long	$$$$	CT DEEP EV Program, Sustainable CT, Local	CT DEEP, CRCOG, Town CEEC	Vehicle Fleet
	5	Medium	$$	Sustainable CT, Local	CRCOG, Town CEEC	Facilities
	6	Short	$	Sustainable CT, Local	Energize CT, Town CEEC	Local Policy, Facilities
	7	Long	$$	Sustainable CT, Local	CRCOG, Town CEEC	Facilities
	8	Long	$$$	CT DEEP State Energy Program	Town CEEC, Energize CT	Local Policy, Facilities
	9	Short	$	Local	CRCOG, Town CEEC	Local Policy, Facilities
	10	Long	$$	Sustainable CT, Local	The Connecticut Light & Power Company, Town CEEC	Local Policy
	11	Medium	$$$$	CT DEEP State Energy Program	Town CEEC, Energize CT	Facilities
	12	Medium	$	Local	Town CEEC	Local Policy
	13	Medium	$	Sustainable CT, Local	Town CEEC	Local Policy
	14	Long	$$$	CIRCA, Local	CRCOG. Town CEEC	Facilities
	15	Medium	$$	Sustainable CT, Local	CRCOG, Town CEEC	Local Policy
	16	Medium	$	Local	Town CEEC	Local Policy

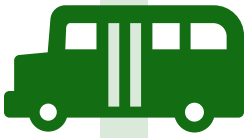
PATH TO NET-ZERO: FEASIBILITY ANALYSIS

In order to reach net-zero GHG emissions from government operations, the Town must take significant action to reduce and then eliminate sources of GHG emissions. The Town's emission reduction goal of 100% by 2030 is more ambitious than the State of Connecticut emission reduction target of 45% below 2001 levels by 2030, and 100% clean energy grid by 2040. As it currently stands, the Town's current emissions total of 4,021 tCO2e per year will need to go to zero within a 7-year timeframe to meet this goal.

In order to get to net-zero, actions such as energy efficiency and conservation are needed, which often involve capital expenditures that have short to moderate payback periods, and are focused on driving near term reductions in GHG emissions, often referred to as "low hanging fruit". These actions have planning and development aspects to them, such as fleet inventories and rightsizing, and often have low to moderate impacts for GHG reductions. In order for the Town to decarbonize completely, actions to reduce and then eliminate fossil fuel use, increase renewables and electrification, coupled with necessary building renovations, are required which are typically a long-term horizon transition. Moving to net-zero will be achieved through a combination of decreasing fossil fuel use, establishing a platform for electrification and clean energy supply technologies, using renewable energy, completing building upgrades, stewardship of physical assets, and engaging Town stakeholders.

Actions to get to net-zero by 2030 will require significant investment. The Town's largest sources of GHG emissions come from stationary sources including building heating (40.2%) and mobile sources (31.0%). Indirect emissions from non-renewable electric supply account for 28.8% of Town emissions. Although the carbon intensity (CI) of the state's grid is forecasted to decrease over time, it will not be 100% clean or renewable by 2030; therefore, additional implementation of solar PV projects and solar PPAs, owned solar PV, and/or future renewable energy grid projects will be required to get meet a net-zero emissions goal.

For initial planning purposes, high-level cost estimates for the following major climate action investments were evaluated and are provided to refine the cost scale of Implementation Plan action items, as depicted below.



School Bus Fleet EV Conversion

Passenger Fleet EV Conversion

46 cars, SUVs, light-duty trucks and vans; excludes police and emergency vehicles and large transit vans.

Clean Heating & Cooling Technology /HVAC Upgrades

Complete conversion from natural gas heating for Town buildings.

Solar PV Installation

Complete conversion to renewable for current electricity demand.

Emissions Reduced (tCO2e)	**513.19**	**136.47**	**1,616.15**	**1,160.06**
Estimated Capital Costs	**$400,000 per bus**	**$25,000-$60,000 per fleet vehicle**	**>$10,000,000**	**$1,655 per kW**

It is important to note that electrifying the Town's buildings and mobile fleet will increase electrical demand. In order to achieve net-zero emissions, the electrical supply will need to be from renewable sources.

In all, the capital costs to get to net-zero by 2030 will be a multi-million dollar investment. More refined costs and potential cost savings/payback periods should be reviewed as part of the feasibility study for each of these major actions. For example, an HVAC replacement feasibility study to convert existing building infrastructure from natural gas would be needed to assess existing conditions and make preliminary recommendations for replacement and equipment selections. Solar PV siting, sizing and PPA evaluations need to be completed prior to additional solar project implementation. Similarly, an evaluation of the feasibility to convert diesel and gasoline powered mobile vehicles and equipment to hybrid and/or all EV will be needed to make this transition cost effective. Funding may be available to offset the initial capital costs.

Note that the initial capital costs of these actions may be accompanied by annualized changes in cost of ownership. For example, conversion of school bus fleet to all EV will eliminate diesel fuel costs; however, electricity use and corresponding costs will increase. A study by Blue Bird® reported a savings of approximately $1,000 in annual maintenance costs from diesel to EV conversion. Fuel costs savings assuming an average of $4 per gallon for diesel fuel for a bus traveling 13,500 miles per year (average 6 MPG) equates to $9,000 annually. The equivalent cost for charging an EV bus assuming an average of $0.10 per kWh and an EV bus MPGe of 24.78 kWh is $1,836.

The Transition to Renewable Energy

It may not be feasible in the short-term, prior to 2030, to transition to 100% renewable energy, and 100% non-fossil fuel sources for building heating, cooling and transportation. For example, heavy equipment used by the Town such as snow plows or police/emergency vehicles may not have a viable no-emission or low-emission option by 2030. Further, costs may not be feasible even when this technology does become available. Therefore, it is recommended that the Town of Bloomfield follow the leadership of the State of Connecticut, which - through Executive Order 3 - directed the Department of Energy and Environmental Protection to evaluate pathways to transition to a 100% clean energy grid by 2040. The Town could align with the State's initiative by amending their resolution to include a goal of achieving a 100% clean energy grid by 2040. This timeline would open opportunities for the Town to learn from the State's transition to renewable energy, seek partnerships with the State, and transition to renewable energies in a well-informed and more efficient manner.

While undergoing the transition to renewable energies, the Town may also choose to evaluate the feasibility of purchasing carbon credits to offset local government emissions, until such a time when actual net-zero reductions may be achievable. Costs of carbon credit offsets vary depending on the voluntary offset market and project type, but prices can range from $10 – $20 per tCO2e. It is recommended that the Town evaluate whether this type of action is desired for achieving the goal of net-zero, and if so, establish protocols for carbon credit offset purchase so that they are real and verifiable.

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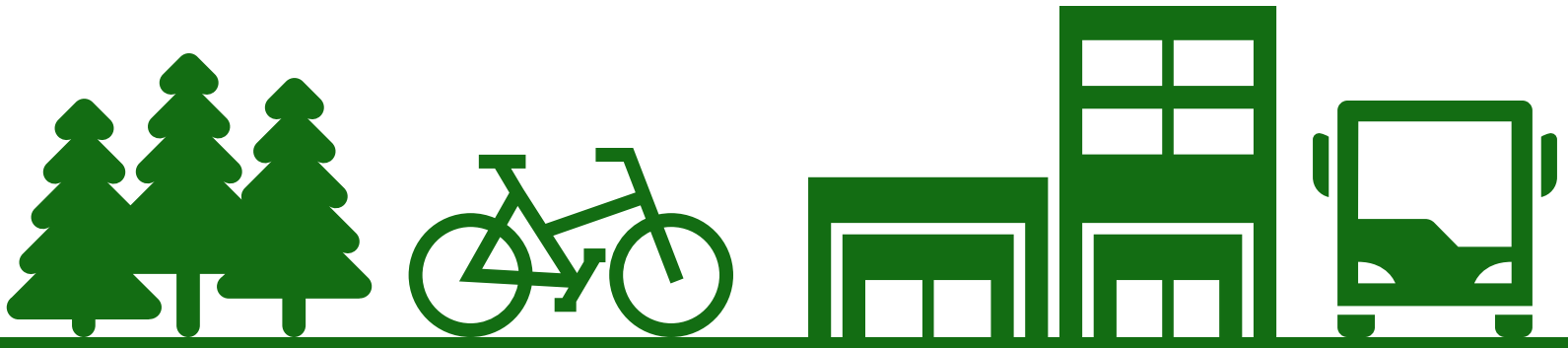
Appendix A:

State of Connecticut Efforts to Achieve GHG Emissions Reductions



2021	Governor Lamont issues Executive Order 21-3 to direct Connecticut executive branch state agencies to take significant actions to mitigate and adapt to climate change. On July 6, Governor Lamont signs Public Act 21-115, An Act Concerning Climate Change Adaptation, into law. The Governor's Council on Climate changes releases the Phase 1 Near-Term Actions Report, Taking Action on Climate Change and Building a More Resilient Connecticut for All
2020	The Governor's Council on Climate Change convenes working groups and issues working group reports.
2019	Governor Lamont issues Executive Order 3 to re-establish and expand the membership and responsibilities of the Governor's Council on Climate Change. Governor Lamont issues Executive Order 1 to recommit to and expand the Lead by Example Program.
2018	GC3 releases *Building a Low Carbon Future for CT, GHG Reduction Strategies and Recommendations* CT joins a coalition of nine states and D.C. to design a regional approach to cap GHG pollution from the transportation sector. Connecticut (CT) and eight other Northeastern and Mid-Atlantic states participating in the Regional Greenhouse Gas Initiative (RGGI) release a revised 2017 Model Rule, updates consist of several non-substantive technical revisions. DEEP releases the *2018 Comprehensive Energy Strategy* (CES). GC3 *Statement of Principles* for achieving the necessary GHG emission reductions. *An Act Concerning Connecticut's Energy Future* (Public Act 18-50) doubles Connecticut's renewable portfolio standard (RPS) from 20 percent by 2020 to 40 percent by 2030. *An Act Concerning Climate Change Planning and Resiliency* (Public Act 18-82) is signed into law by Governor Malloy setting a mandatory emissions reduction target of 45% below 2001 levels by 2030 and integrates GHG emission reduction more explicitly into the CES and Integrated Resource Plan(IRP).
2017	Connecticut (CT) and eight other Northeastern and Mid-Atlantic states participating in the Regional Greenhouse Gas Initiative (RGGI) release the updated 2017 Model Rule, which includes an additional 30% regional cap reduction between 2020 and 2030. Connecticut joins the U.S. Climate Alliance, a bipartisan coalition of governors committed to reducing greenhouse gas emissions consistent with the goals of the Paris Agreement. Launch of Sustainable CT, a statewide initiative that supports and recognizes thriving and resilient Connecticut municipalities.
2016	Release of the *GC3 Exploratory Report*. Several CT roadways are included in the U.S. Department of Transportation Electric Vehicle Corridor Designations. *An Act Concerning Electric and Fuel Cell Electric Vehicles* (Public Act 16-135) sets forth several provisions related to electric vehicles (EVs), including requirements related to data collection, EV charging stations, and electric rate structures.
2015	Launch of the GC3. The GC3 launches the Exploring Climate Solutions Webinar Series. Launch of the Connecticut Hydrogen and Electric Automobile Purchase Rebate Program (CHEAPR). *An Act Establishing a Shared Clean Energy Facility Pilot Program* (Public Act 15-113) authorizes CT DEEP to establish a two-year pilot program to support the development of shared clean energy facilities (SCEFs). A collaboration of European and North American governments, including CT, initiates the International Zero-Emission Vehicle Alliance (ZEV Alliance) to work together toward accelerating adoption of ZEVs. CT launches CTfastrak, a bus rapid transit service, in central Connecticut.
2014	Launch of the Connecticut Institute for Resilience and Climate Adaptation.
2013	EVConnecticut is jointly establish by CT DEEP and CT Department of Transportation. Release of the *2013 Comprehensive Energy Strategy*. Release of the *Connecticut Climate Change Preparedness Plan*. CT joins seven other states to sign the *State Zero-Emission Vehicles Program Memorandum of Understanding* (ZEV MOU).
2011	Establishment of the Department of Energy and Environmental Protection (CT DEEP), integrating environmental and energy policies. Establishment of the Clean Energy Finance and Investment Authority (CEFIA), the nation's first green bank, now known as the Connecticut Green Bank.
2010	The CT Summit on Business Sustainability is hosted by the CT Department of Environmental Protection (CT DEP) and the CT Business and Industry Association. The Adaptation Subcommittee of Governor's Steering Committee on Climate Change (GSC) issues *The Impacts of Climate Change on Connecticut Agriculture, Infrastructure, Natural Resources and Public Health*. The Municipal Summit on Climate Action is hosted by the Governor's Steering Committee on Climate Change. Launch of the Transportation and Climate Initiative.
2009	The GHG labeling program for cars goes into effect. The US EPA approves California's GHG emissions standard for cars to be implemented in the 14 states in which it was adopted, including CT. Northeast and Mid-Atlantic States, including CT, sign a *Memorandum of Understanding* on a Low Carbon Fuel Standard. CT signs the *Governors' Energy and Climate Coalition Statement of Principles* and the *Global Climate Solutions Declaration*.
2008	*Global Warming Solutions Act* (Public Act 08-98) sets mandatory GHG reduction targets of 10% below 1990 levels by 2020 and 80% below 2001 levels by 2050. CT signs the *Governors' Declaration on Climate Change* at Yale University.
2007	*An Act Concerning Electricity and Energy Efficiency* (Public Act 07-242) requires energy efficiency to be treated as a "resource of first choice" in meeting electricity demand, increases the Renewable Portfolio Standard to 20% from Class I resources, creates a home heating oil efficiency program, and expands appliance efficiency standards.
2005	Release of the *CT Climate Change Action Plan*.
2004	*An Act Concerning Climate Change* (Public Act 04-252) commits CT to making appropriate contributions to achieving the regional goals of reducing GHG emissions to 1990 levels by 2010 and 10% below 1990 levels by 2020. Release of the *2004 Connecticut Stakeholder Recommendations*, developed through a 9 month stakeholder process and provides a comprehensive list of recommended actions to reduce GHG emissions.
2003	CT publishes the first statewide greenhouse gas inventory.
2002	Release of the *Leading By Example Connecticut Collaborates to Reduce Greenhouse Gas Emissions*, which establishes a framework for CT to meet its GHG reduction goals.
2001	CT signs unto the New England Governor's and Eastern Canadian Premiers (NEG/ECP) *Climate Change Action Plan 2001*. This is the first international climate initiative aimed at collectively reducing GHG emissions.

Timeline of State of Connecticut climate actions

Source: CT DEET, *https://portal.ct.gov/DEEP/Climate-Change/Climate-Action-Timeline-for-Connecticut*, last updated February 2022

KEY STATE MILESTONES

The State of Connecticut has long been at the forefront of efforts to reduce GHG emissions at a local, regional, and state-level. Beginning with its first-ever Statewide Greenhouse Gas Inventory in 2003, the State has regularly published further inventories and plans to implement strategies to reduce emissions, such as Climate Action Plans and Comprehensive Energy Strategies. In 2014, the State launched its Governor's Council on Climate Change (GC3) and, in 2019, Governor Ned Lamont's Executive Order No.3 expanded its membership and responsibilities. The Council is tasked with monitoring and reporting on the State's implementation of GHG emissions reduction strategies and developing and implementing adaptation strategies to prepare for the impacts of climate change. GC3 has published numerous plans and reports to help address GHG emissions, including Building a Low Carbon Future for CT in 2018 and the Phase 1 Near-Term Actions Report: Taking Actions on Climate Change and Building a More Resilient Connecticut for All in 2021.

ENGAGEMENT IN REGIONAL & INTERNATIONAL EFFORTS

Connecticut is a signatory to several regional and international agreements regarding GHG emissions. In 2001, the State signed onto the New England Governor's and Eastern Canadian Premiers Climate Change Action Plan 2001, which was the first international climate initiative aimed at collectively reducing GHG emissions. In 2017, Connecticut joined the U.S. Climate Alliance, a bipartisan coalition of governors committed to reducing greenhouse gas emissions consistent with the goals of the Paris Agreement. In the same year, the State also joined eight other Northeastern and Mid-Atlantic states participating in the Regional Greenhouse Gas Initiative. Finally, in 2018, Connecticut worked with a coalition of nine states and Washington D.C. to design a regional approach to cap GHG emissions from the transportation sector.

STATE COMMITMENTS

Several state laws and executive orders signed by the current and previous governors have set Connecticut on the path towards becoming a national leader in reducing GHG emissions. As early as 2004, An Act Concerning Climate Change committed Connecticut to making appropriate contributions to achieving the regional goals of reducing GHG emissions to 1990 levels by 2010, and 10% below 1990 levels by 2020. Just four years later, in 2008, the Global Warming Solutions Act set mandatory GHG reduction targets of 80% below 2001 by 2050. These commitments to GHG emissions reduction were expanded in 2018, when An Act Concerning Climate Change Planning and Resiliency was signed into law by Governor Malloy, which set a mandatory emissions reduction target of 45% below 2001 levels by 2030 and integrated GHG emission reduction more explicitly into the Comprehensive Energy Strategy and Integrated Resource Plan.

In 2021, several executive orders signed by Governor Lamont sought to address GHG emissions. **Executive Order No. 1** directed executive branch State office buildings and vehicle fleets to become greener and more energy efficient through an expanded "Lead By Example" sustainability initiative aimed at reducing the State's carbon footprint and reducing the cost of government operations. The governor followed this order with **Executive Order No. 3**, which expanded the responsibilities of the Governor's Council on Climate Change, increased its membership, and directed the Department of Energy and Environmental Protection to evaluate pathways to transition to a 100% clean energy grid by 2040. Finally, Governor Lamont's **Executive Order 21-3** directed Connecticut executive branch state agencies to take significant actions to mitigate and adapt to climate change.

DEEP-ADMINISTERED PROGRAMMING

In the State of Connecticut there are several programs that provide funding to local

municipalities for actions that reduce GHG emissions. The Connecticut Department of Energy and Environmental Protection (DEEP) oversees different programs that municipalities can seek funding from to achieve GHG reduction goals.

State Energy Plan

The U.S. Department of Energy's State Energy Plan provides funding and technical assistance to states, territories, and Washington D.C. to enhance energy security, advance State-led energy initiatives, and increase energy affordability. Available funding from this program typically amounts to $700,000 annually, and there is no maximum individual award limit. Projects within the State of Connecticut that have the potential to be a good match for funds available thought the program are selected by DEEP in alignment with the goals of the State's Comprehensive Energy Strategy.

Sources:
https://www.energy.gov/eere/wipo/state-energy-program
https://portal.ct.gov/DEEP/Business-and-Financial-Assistance/Grants-Financial-Assistance/State-Energy-Program

Weatherization Assistance Program

An additional program that is funded at the federal level and overseen by DEEP is the Connecticut Weatherization Assistance Program. The federal grant from the Department of Energy addresses weatherization and health and safety issues in homes for low-income residents, with annual funding of about $3.7 million. While Connecticut's Weatherization Assistance Program is administered by DEEP in partnership with the Connecticut Community Action Agency Network, local community action agencies qualify households and coordinate services. Roughly 80% of funds are passed through to local community action agencies who administer the program at the ground level. Eligibility for customers is 60% State median income (SMI).

Sources:
https://portal.ct.gov/DEEP/Energy/Weatherization/Weatherization-in-Connecticut
https://portal.ct.gov/DEEP/Business-and-Financial-Assistance/Grants-Financial-Assistance/Weatherization-Assistance-Program

EVConnecticut

A third program that is overseen by DEEP is EVConnecticut, which provides information for consumers, businesses, and government entities to help introduce more electric vehicles into Connecticut.

Source:
https://portal.ct.gov/DEEP/Air/Mobile-Sources/EVConnecticut/EVConnecticut---Home

Diesel Emissions Reduction Act

The Department of Energy and Environmental Protection is also in charge of administering the Diesel Emissions Reduction Act (DERA) Grants, which are given to states and other eligible entities to achieve significant reductions in diesel emissions. DEEP receives funds from the EPA through the State DERA Program.

Source:
https://portal.ct.gov/DEEP/Air/Mobile-Sources/DERA-Grants

Volkswagen Settlement Environmental Mitigation Trust

In addition to DERA grants, DEEP is charged with allocating portions of the $55,721,170 that is available from the Volkswagen Settlement's Environmental Mitigation Trust for selected projects.

Source:
https://portal.ct.gov/DEEP/Air/Mobile-Sources/VW/VW-Settlement---Grants

OTHER PROGRAMMING

A number of programs that provide support to municipalities to achieve a reduction in GHG emissions administered outside of the State of Connecticut, including the following.

GreenerGov CT – A Lead by Example Initiative

GreenerGov CT – A Lead by Example Initiative is a program that establishes goals for State agencies to reduce GHG emissions, curb wasteful water use, and reduce the amount of waste deposed at State facilities. Under the program, each State agency is tasked with developing a Sustainability Performance Plan (SPP) that lists the necessary actions, milestones, and responsible parties to achieve the sustainability goals and targets set by Executive Order 1. The GreenerGov Data Dashboard contains agency-specific utility cost and usage data, GHG emissions, and water usage. The program assists State agencies in their efforts to secure and complete Bond-Funded Projects, which require going out to bid with State-approved contractors and have historically been utilized for projects such as lighting, rooftop unit replacements, boiler/chiller replacements, window replacements, and building automation controls or EMS controls. State agencies may also opt for Agency Projects, such as Food Scrap Diversion at DEEP, which has helped the agency's two main offices divert four tons of materials from the waste stream.

Source:

https://portal.ct.gov/GreenerGov

Connecticut Green Bank

The Connecticut Green Bank is the nation's first green bank, and was established by the Connecticut General Assembly in July 2011. The Connecticut Green Bank supports the Governor's and Legislature's energy strategy to achieve cleaner, less expensive, and more reliable sources of energy while creating jobs and supporting local economic development. The Connecticut Green Bank evolved from the Connecticut Clean Energy Fund, which was given a broader mandate in 2011 to become the Connecticut Green Bank.

Administered by Connecticut Green Bank, C-PACE (Commercial Property Assessed Clean Energy) is an innovative financing solution that makes green energy upgrades accessible and affordable for building owners across Connecticut. C-PACE offers 100% financing for a wide range of energy improvements, so building owners can modernize their buildings, lower their energy costs, and increase their bottom line.

In 2014, the Connecticut Green Bank offered financing options to support projects that were involved in the Connecticut Microgrid Program. The program offered $45 million over three rounds to fund the design, engineering, wiring, and interconnection costs for technically-feasible microgrids that addressed the State's energy security, reliability, and clean energy goals. The Microgrid Program represented a partnership between the Connecticut Green Bank and the Connecticut DEEP with the aim of providing assistance to municipalities with creating successful applications and creating financing plans for their project.

Sources:

https://www.ctgreenbank.com/about-us/

https://www.cpace.com/building-owner/

https://www.energizect.com/your-town/solutions-list/microgrid_financing

Sustainable CT

Sustainable CT is a voluntary certification program to recognize municipalities that are making exceptional efforts to improve their resiliency. The independently funded, grassroots, municipal effort that is Sustainable CT provides a diverse menu of best practices. Municipalities earn points toward certification by choosing Sustainable CT actions and implementing them. A municipality can achieve either a silver or a bronze certification depending on the number of actions that are implemented and the amount of points received for these actions. Municipalities are able to apply for certification twice annually, and once certification is obtained it will last for three years.

Starting in 2022, Sustainable CT launched its Climate Leader Designation Pilot, with municipalities eligible to apply to become a

Climate Leader after achieving at least 140 points from GHG emission reducing actions. Sustainable CT provides communities with opportunities for grant funding to help promote economic well-being and enhance equity, all while respecting the limited capacity of the natural environment. The program is designed to support all Connecticut municipalities, regardless of size, geography, or resources. Sustainable CT encourages municipalities to create collective impact for current residents and those who will call Connecticut home in the future.

Source:

https://sustainablect.org/

Energize CT

The Energize CT initiative is aimed at helping people within the State save energy in their home or business with rebates, financing, and services for energy efficiency and clean energy upgrades. Energize CT operates the Home Energy Solutions (HES) program, which is a comprehensive in-home energy efficiency service that seeks to reduce the cost of energy bills. During a 4-6 hour visit from an energy efficiency team, diagnostics are performed and improvements in the form of air sealing or duct sealing are carried out. Importantly, while residents receive around $450 of annual energy savings with the first energy audit appointment, the service costs only $50 because the program is funded through public-private collaboration.

Source:

https://energizect.org/

Project Teams

Project Teams have been assembled to support the development and implementation of sustainable projects and initiatives in State government. These nine project teams consist of delegates from almost every State agency in Connecticut along with other private and public State entities providing consulting as needed. Each of the project teams is chaired by one of the co-chairing agencies of Governor Lamont's Executive Order 1 and is categorized as either an Impact Team or System Team.

- Impact Team

  The Impact Teams are vital to develop the suite strategies needed to achieve the goals of Executive Order 1, pilot test them, refine them, and/or create standard operating procedures that will, over time, become "business as usual" for all agencies

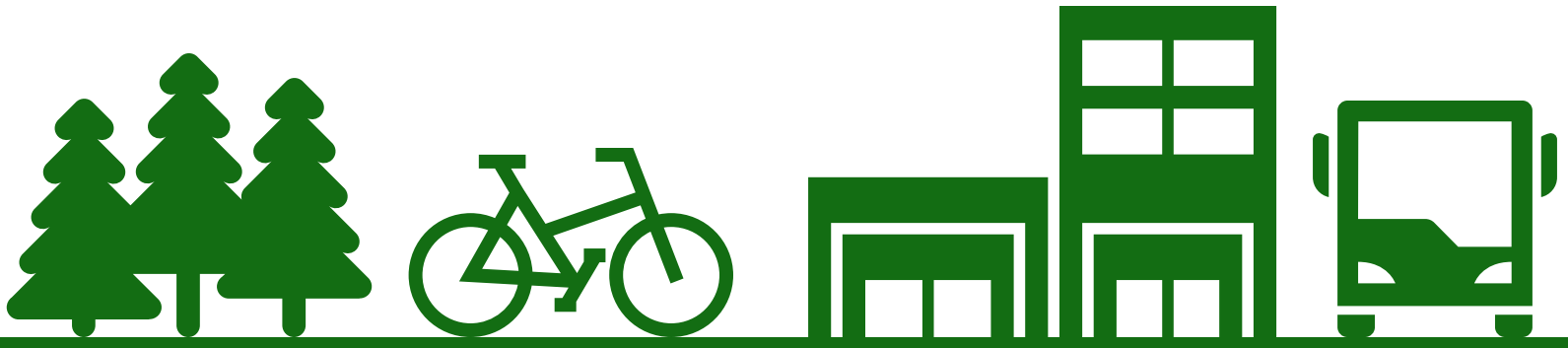
- Systems Teams

  The System Teams focus on improving processes, protocols and developing tools to ensure that the State's sustainability efforts for this initiative are widely understood by the public and providing value to agencies.

Source:
https://portal.ct.gov/GreenerGov/Project-Teams/Projects

Appendix B:

Town of Bloomfield GHG Inventory Inputs, Calculations, & Summaries



Attachment 1

Greenhouse Gas Inventory Inputs

Attachment 1A

Baseline Greenhouse Gas Emissions Inputs
Stationary Sources

Stationary Combustion - Data

ID#	Unit Description	Department	Fuel Type	Amount of Fuel Used	Unit	Facility Type
1	Volunteer Ambulance (total)	Volunteer Ambulance	Natural Gas	485.1	mcf	Health
2	Human Services Center	Human Services	Natural Gas	1,818.0	mcf	Other
3	Public Works Buildings	Public Works	Natural Gas	2,043.2	mcf	Office Building
4	Wintonbury Library	Wintonbury Library	Natural Gas	318.0	mcf	Other
5	Town Hall	Town Hall	Natural Gas	1,033.2	mcf	Office Building
6	Police Department Building	Police	Natural Gas	1,318.6	mcf	Other
7	Prosser Library	Prosser Library	Natural Gas	799.3	mcf	Other
10	Kohler Standby Generator 350KW, no load	Public Works	Diesel	405.6	gallons	Other
11	Kohler Standby Generator 350KW, with load	Public Works	Diesel	318.0	gallons	Other
12	Cummins Standby Generator- 60KW, no load	Volunteer Ambulance	Diesel	98.8	gallons	Other
13	Cummins Standby Generator- 60KW, with load	Volunteer Ambulance	Diesel	56.4	gallons	Other
14	RTU-1 through RTU-19 and DHWH. BOE Central C	Board of Education	Natural Gas	1,268.0	mcf	Office Building
15	Boilers B-1, B-2, B-3 & B-4 and DHWH. Bloomfielc	Board of Education	Natural Gas	7,491.7	mcf	School
16	Boilers B-1, B-2 & B-3 and DHWH. Carmen Arace !	Board of Education	Natural Gas	4,998.0	mcf	School
17	Boilers B-1 & B-2.Global Experience Magnet Scho	Board of Education	Natural Gas	661.0	mcf	School
18	Boilers B-1 & B-2 and DHWH. Laurel Elementary S	Board of Education	Natural Gas	2,091.0	mcf	School
19	Boilers B-1 & B-2 and DHWH. Metacomet Elemen	Board of Education	Natural Gas	1,745.0	mcf	School
20	Boilers B-1 & B-2 and DHWH. Wintonbury Early C	Board of Education	Natural Gas	3,121.0	mcf	School

Attachment 1B

Baseline Greenhouse Gas Emissions Inputs
Mobile Sources

Mobile Combustion - Data

ID#	Vehicle or vehicle group description	Department	Vehicle Year	Vehicle Type	Vehicle Model (optional)	Fuel type	Fuel consumption	VMT
1	100. HD	Public Works	2020	Heavy-Duty Vehicle	IH HV507 DUMP	Diesel	525.0	2,113.0
2	100. HD	Public Works	2021	Heavy-Duty Vehicle	IH HV507 DUMP	Diesel	115.0	375.0
3	155. SUV	Public Works	2020	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPLORER	Gasoline	814.0	18,603.0
4	156. Van	Public Works	2020	Light Truck (Vans, Pickup Trucks, SUVs)	FORD TRANSIT	Gasoline	282.0	3,153.0
5	222. SUV	Public Works	2015	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPLORER	Gasoline	507.0	15,296.0
6	224. SUV	Public Works	2013	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPLORER	Gasoline	768.0	11,131.0
7	232. Car	Public Works	2011	Passenger Car	FORD TAURUS	Gasoline	91.0	1,373.0
8	300. Pickup	Public Works	2008	Light Truck (Vans, Pickup Trucks, SUVs)	FORDF-150	Gasoline	252.0	2,105.0
9	310. Sweeper	Public Works	2003	Utility and Recreational Equipment	FTL BROOM	Diesel	340.0	0.0
10	312. Pickup	Public Works	2008	Light Truck (Vans, Pickup Trucks, SUVs)	FORD F-250	Gasoline	559.0	3,107.0
11	314. Pickup	Public Works	2008	Light Truck (Vans, Pickup Trucks, SUVs)	FORD F-250	Gasoline	623.0	2,668.0
12	315. Pickup	Public Works	2001	Light Truck (Vans, Pickup Trucks, SUVs)	FORD F-350	Diesel	213.0	946.0
13	319. Small Dump	Public Works	1999	Light Truck (Vans, Pickup Trucks, SUVs)	FORD F-350	Diesel	157.0	1,016.0
14	323. HD	Public Works	2001	Heavy-Duty Vehicle	IH S-4900 DUMP	Diesel	344.0	3,500.0
15	325. HD	Public Works	1990	Heavy-Duty Vehicle	FORD L-8000 DUMP	Diesel	119.0	2,044.0
16	328. HD	Public Works	1996	Heavy-Duty Vehicle	FORD L-8000 DUMP	Diesel	177.0	378.0
17	329. Sweeper	Public Works	2008	Utility and Recreational Equipment	ELGIN PELICAN	Diesel	168.0	3,712.8
18	331. Box Truck	Public Works	1993	Heavy-Duty Vehicle	CHEVY C-3500	Gasoline	102.0	368.0
19	334. Bucket Truck	Public Works	1988	Heavy-Duty Vehicle	FORD L-8000	Diesel	17.0	95.0
20	335. Rack Truck	Public Works	1987	Light Truck (Vans, Pickup Trucks, SUVs)	GMC-50	Gasoline	0.0	0.0
21	339. Pickup	Public Works	2008	Light Truck (Vans, Pickup Trucks, SUVs)	FORD F-250	Gasoline	695.0	5,068.0
22	341. Pickup	Public Works	2008	Light Truck (Vans, Pickup Trucks, SUVs)	FORD F-250	Gasoline	388.0	2,182.0
23	343. Utility	Public Works	1995	Utility and Recreational Equipment	GMC-3500	Diesel	13.0	10.0
24	346. Small Dump	Public Works	2008	Heavy-Duty Vehicle	FORD F-350	Gasoline	658.0	3,620.0
25	351. HD	Public Works	2005	Heavy-Duty Vehicle	IH 7400 DUMP	Diesel	531.0	2,255.0
26	352. HD	Public Works	2005	Heavy-Duty Vehicle	IH 7400 DUMP	Diesel	380.0	2,000.0
27	359. Box Truck	Public Works	1990	Heavy-Duty Vehicle	FORD UTILIMASTER	Gasoline	2.0	10.0
28	360. Mini Excavator	Public Works	2012	Construction Equipment	BOBCAT E-80	Diesel	325.0	0.0
29	364. Hot Box	Public Works	2021	Construction Equipment	FALCON	Diesel	119.0	0.0
30	365. Backhoe	Public Works	2020	Construction Equipment	CAT 440	Diesel	784.0	0.0
31	368. Pickup	Public Works	2011	Light Truck (Vans, Pickup Trucks, SUVs)	CHEVY 1500	Gasoline	439.0	5,333.0
32	377. HD	Public Works	2012	Heavy-Duty Vehicle	IH 7400 DUMP	Diesel	593.0	2,726.0
33	378. HD	Public Works	2012	Heavy-Duty Vehicle	IH 7400 DUMP	Diesel	513.0	2,064.0
34	379. HD	Public Works	2012	Heavy-Duty Vehicle	IH 7400 DUMP	Diesel	354.0	1,044.0
35	535. Jeep	Public Works	2000	Passenger Car	JEEP CHEROKEE	Gasoline	66.0	340.0
36	1301. Loader	Public Works	2012	Construction Equipment	JOHN DEERE 524	Diesel	824.0	0.0
37	1302. Skid Steer	Public Works	2013	Construction Equipment	BOBCAT S750	Diesel	234.0	0.0
38	1303. Loader	Public Works	2014	Construction Equipment	JOHN DEERE 624K	Diesel	714.0	0.0
39	1308. Small Dump	Public Works	2016	Construction Equipment	FORD F-350	Gasoline	897.0	5,237.0
40	1309. Small Dump	Public Works	2016	Construction Equipment	FORD F-350	Gasoline	951.0	2,284.0
41	1310. Utility	Public Works	2015	Utility and Recreational Equipment	FORD F-350	Gasoline	599.0	3,605.0
42	1311. Utility	Public Works	2015	Utility and Recreational Equipment	FORD F-350	Gasoline	820.0	4,807.0
43	1320. HD	Public Works	2014	Heavy-Duty Vehicle	IH 7500 DUMP	Diesel	460.0	1,692.0
44	1321. HD	Public Works	2014	Heavy-Duty Vehicle	IH 7500 DUMP	Diesel	626.0	2,427.0
45	1322. HD	Public Works	2014	Heavy-Duty Vehicle	IH 7500 DUMP	Diesel	358.0	2,025.0
46	1323. HD	Public Works	2015	Heavy-Duty Vehicle	IH 7500 DUMP	Diesel	631.0	1,975.0
47	1324. HD	Public Works	2015	Heavy-Duty Vehicle	IH 7500 DUMP	Diesel	808.0	2,894.0
48	1325. HD	Public Works	2016	Heavy-Duty Vehicle	IH 7400 DUMP	Diesel	586.0	2,106.0
49	SUV	Police	2015	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPLORER	Gasoline	867.0	15,530.0
50	HD	Public Works	2016	Heavy-Duty Vehicle	IH 7400 DUMP	Diesel	586.0	2,106.0
51	1326. Van	Public Works	2016	Light Truck (Vans, Pickup Trucks, SUVs)	FORD TRANSIT	Gasoline	285.0	2,893.0
52	1327. Pickup	Public Works	2016	Light Truck (Vans, Pickup Trucks, SUVs)	FORD F-250	Gasoline	1,298.0	13,467.0
53	1328. SUV	Public Works	2017	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPLORER	Gasoline	323.0	4,766.0
54	1329. Flatbed	Public Works	2017	Light Truck (Vans, Pickup Trucks, SUVs)	FORD F-350	Gasoline	683.0	2,373.0
55	1330. HD	Public Works	2017	Heavy-Duty Vehicle	IH 7400 DUMP	Diesel	471.0	1,795.0
56	1331. HD	Public Works	2017	Heavy-Duty Vehicle	IH 7400 DUMP	Diesel	956.0	2,963.0
57	303. Toolcat	Public Works	2015	Construction Equipment	BOBCAT 5600	Diesel	241.0	0.0
58	307. Leaf Loader	Public Works	2016	Utility and Recreational Equipment	SCAG M#6306	Gasoline	0.0	0.0
59	363. Mower	Public Works	2010	Utility and Recreational Equipment	HARPER	Diesel	18.0	0.0
60	506. Mower	Public Works	2010	Utility and Recreational Equipment	TORO WORKMAN	Gasoline	4.0	0.0
61	524. Turf Gator	Public Works	0	Utility and Recreational Equipment	JOHN DEERE	Gasoline	0.0	0.0
62	548. Mower	Public Works	2005	Utility and Recreational Equipment	TORO Z MASTER	Gasoline	0.0	0.0
63	558. Mower	Public Works	2007	Utility and Recreational Equipment	TORO Z MASTER	Gasoline	0.0	0.0
64	559. Mower	Public Works	2007	Utility and Recreational Equipment	TORO Z MASTER	Gasoline	7.0	0.0
65	571. Mower	Public Works	2009	Utility and Recreational Equipment	SCAG 36"	Gasoline	94.0	0.0
66	572. Mower	Public Works	2009	Utility and Recreational Equipment	SCAG 36"	Gasoline	0.0	0.0
67	573. Mower	Public Works	2009	Utility and Recreational Equipment	SCAG 48"	Gasoline	2.0	0.0
68	593. Mower	Public Works	2015	Utility and Recreational Equipment	TORO GROUNDM	Gasoline	1,159.0	0.0
69	1501. Mower	Public Works	2014	Utility and Recreational Equipment	HUSTLER SUPER Z	Gasoline	97.0	0.0
70	1502. Mower	Public Works	2014	Utility and Recreational Equipment	HUSTLER SUPER Z	Gasoline	232.0	0.0
71	1503. Mower	Public Works	2014	Utility and Recreational Equipment	HUSTLER SUPER Z	Gasoline	106.0	0.0
72	1504. Tractor	Public Works	2014	Utility and Recreational Equipment	STEINER 75-7210	Diesel	10.0	0.0
73	1525. Hot Box	Public Works	2020	Utility and Recreational Equipment	FALCON	Diesel	56.0	0.0
74	1528. Mower	Public Works	2017	Utility and Recreational Equipment	HUSTLER SUPER Z	Gasoline	119.0	0.0
75	1529. Mower	Public Works	2017	Utility and Recreational Equipment	HUSTLER SUPER Z	Gasoline	38.0	0.0
76	226. Sedan	Police	2012	Passenger Car	CHEVY IMPALA	Gasoline	448.0	7,605.0
77	236. Sedan	Police	2012	Passenger Car	CHEVY IMPALA	Gasoline	189.0	3,776.0
78	260. Sedan	Police	2015	Passenger Car	FORD TAURUS	Gasoline	376.0	6,532.0
79	265. Sedan	Police	2015	Passenger Car	FORD TAURUS	Gasoline	488.0	7,505.0
80	267. Bus	Police	2008	Heavy-Duty Vehicle	CHEVY C-4500	Diesel	0.0	0.0
81	600. SUV	Police	2019	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPLORER	Gasoline	1,244.0	24,020.0

Mobile Combustion - Data

ID#	Vehicle or vehicle group description	Department	Vehicle Year	Vehicle Type	Vehicle Model (optional)	Fuel type	Fuel consumption	VMT
82	602. SUV	Police	2021	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPLORER	Gasoline	29.0	536.5
83	603. SUV	Police	2021	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPLORER	Gasoline	199.0	3,681.5
84	619. Van	Police	2009	Light Truck (Vans, Pickup Trucks, SUVs)	CHEVY EXPRESS	Gasoline	302.0	3,821.0
85	622. SUV	Police	2012	Light Truck (Vans, Pickup Trucks, SUVs)	CHEVY TAHOE	Gasoline	320.0	3,482.0
86	630. Motorcycle	Police	2014	Motorcycle	HARLEY DAV	Gasoline	0.0	0.0
87	632. SUV	Police	2016	Light Truck (Vans, Pickup Trucks, SUVs)	FORD INTERCEPT	Gasoline	1,196.0	11,863.0
88	633. SUV	Police	2016	Light Truck (Vans, Pickup Trucks, SUVs)	FORD INTERCEPT	Gasoline	1,400.0	11,030.0
89	635. SUV	Police	2018	Light Truck (Vans, Pickup Trucks, SUVs)	FORD INTERCEPT	Gasoline	697.0	5,911.0
90	636. SUV	Police	2018	Light Truck (Vans, Pickup Trucks, SUVs)	FORD INTERCEPT	Gasoline	2,011.0	20,294.0
91	641. SUV	Police	2019	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPLORER	Gasoline	1,503.0	13,008.0
92	650. SUV	Police	2021	Light Truck (Vans, Pickup Trucks, SUVs)	FORD INTERCEPT	Gasoline	1,307.0	12,783.0
93	651. SUV	Police	2021	Light Truck (Vans, Pickup Trucks, SUVs)	FORD INTERCEPT	Gasoline	1,374.0	10,955.0
94	652. SUV	Police	2020	Light Truck (Vans, Pickup Trucks, SUVs)	FORD INTERCEPT	Gasoline	1,264.0	11,781.0
95	653. SUV	Police	2020	Light Truck (Vans, Pickup Trucks, SUVs)	FORD INTERCEPT	Gasoline	739.0	6,270.0
96	699. SUV	Police	2020	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPLORER	Gasoline	890.0	19,153.0
97	1607. SUV	Police	2014	Light Truck (Vans, Pickup Trucks, SUVs)	FORD INTERCEPT	Gasoline	208.0	947.0
98	1608. SUV	Police	2014	Light Truck (Vans, Pickup Trucks, SUVs)	FORD INTERCEPT	Gasoline	365.0	1,952.0
99	1613. SUV	Police	2015	Light Truck (Vans, Pickup Trucks, SUVs)	FORD INTERCEPT	Gasoline	789.0	7,637.0
100	1623. SUV	Police	2014	Light Truck (Vans, Pickup Trucks, SUVs)	FORD INTERCEPT	Gasoline	715.0	6,469.0
101	1624. SUV	Police	2015	Light Truck (Vans, Pickup Trucks, SUVs)	FORD INTERCEPT	Gasoline	1,454.0	14,062.0
102	1625. SUV	Police	2017	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPLORER	Gasoline	1,495.0	28,198.0
103	1626. SUV	Police	2017	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPLORER	Gasoline	1,286.0	11,657.0
104	1627. SUV	Police	2017	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPLORER	Gasoline	2,371.0	21,047.0
105	1628. SUV	Police	2017	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPLORER	Gasoline	578.0	9,358.0
106	1630. Sedan	Police	2017	Passenger Car	FORD TAURUS	Gasoline	479.0	8,282.0
107	1631. SUV	Police	2018	Light Truck (Vans, Pickup Trucks, SUVs)	FORD INTERCEPT	Gasoline	2,139.0	19,391.0
108	241. Ambulance	Volunteer Ambulance	2009	Light Truck (Vans, Pickup Trucks, SUVs)	CHEVY CG	Diesel	218.0	7,597.0
109	904. Ambulance	Volunteer Ambulance	2019	Light Truck (Vans, Pickup Trucks, SUVs)	FORD E-450	Gasoline	1,620.0	11,166.0
110	293. Ambulance	Volunteer Ambulance	2014	Light Truck (Vans, Pickup Trucks, SUVs)	FORD E-450	Gasoline	1,520.0	10,539.0
111	621. SUV	Volunteer Ambulance	2010	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPEDITION	Gasoline	1,003.0	8,182.0
112	160. SUV	Town Hall	2015	Light Truck (Vans, Pickup Trucks, SUVs)	FORD INTERCEPT	Gasoline	72.0	1,332.0
113	262. Sedan	Town Hall	2013	Passenger Car	FORD TAURUS	Gasoline	170.0	2,551.0
114	263. Sedan	Town Hall	2013	Passenger Car	FORD TAURUS	Gasoline	253.0	4,243.0
115	113. Van	Town Hall	2001	Light Truck (Vans, Pickup Trucks, SUVs)	CHEVY VAN	Gasoline	17.0	143.0
116	225. SUV	Town Hall	2013	Light Truck (Vans, Pickup Trucks, SUVs)	FORD EXPLORER	Gasoline	113.0	1,050.0
117	361. Pickup	Town Hall	2008	Light Truck (Vans, Pickup Trucks, SUVs)	FORD RANGER	Gasoline	108.0	3,327.0
118	369. Pickup	Town Hall	2011	Light Truck (Vans, Pickup Trucks, SUVs)	CHEVY 1500	Gasoline	0.0	0.0
119	1201. Van	Town Hall	2009	Light Truck (Vans, Pickup Trucks, SUVs)	DODGE CARAVAN	Gasoline	19.0	258.0
120	1202. Van	Town Hall	2009	Light Truck (Vans, Pickup Trucks, SUVs)	DODGE CARAVAN	Gasoline	28.0	469.0
121	1203. Sedan	Town Hall	2013	Passenger Car	FORD EDGE	Gasoline	71.0	122.0
122	1204. Van	Town Hall	2012	Light Truck (Vans, Pickup Trucks, SUVs)	CHRY T&C	Gasoline	88.0	1,148.0
123	243A. Bus	Human Services	2017	Heavy-Duty Vehicle	FORD TRANSIT	Gasoline	93.0	990.0
124	564. Bus	Human Services	2011	Heavy-Duty Vehicle	FORD F-550	Diesel	1,156.0	9,250.0
125	568.Bus	Human Services	2007	Heavy-Duty Vehicle	CHEVY C-5500	Diesel	1,268.0	9,521.0
126	508. Bus	Human Services	2019	Heavy-Duty Vehicle	FORD E-450	Gasoline	1,622.0	8,542.0
127	1560. Bus	Human Services	2015	Heavy-Duty Vehicle	FORD E-450	Gasoline	643.0	4,210.0
128	1561. Bus/Hybrid	Human Services	2016	Heavy-Duty Vehicle	FORD E-450	Gasoline	1,926.0	12,314.0
129	1562. Bus	Human Services	2017	Heavy-Duty Vehicle	FORD E-450	Gasoline	1,777.0	11,511.0
130	254. Sedan	Board of Education	2005	Passenger Car	FORD TAURUS	Gasoline	455.0	2,042.0
131	404. Van	Board of Education	2010	Light Truck (Vans, Pickup Trucks, SUVs)	FORD E-350	Gasoline	710.0	5,378.0
132	406. Box Truck	Board of Education	2008	Heavy-Duty Vehicle	FORD E-350	Gasoline	140.0	977.0
133	409. Pickup	Board of Education	1999	Light Truck (Vans, Pickup Trucks, SUVs)	FORD F-250	Gasoline	0.0	0.0
134	413. Van	Board of Education	2009	Light Truck (Vans, Pickup Trucks, SUVs)	FORD F-250	Gasoline	684.0	6,320.0
135	416. Box Truck	Board of Education	2015	Heavy-Duty Vehicle	FORD F-550	Diesel	1,213.0	8,401.0
136	427. Bus	Board of Education	2000	Heavy-Duty Vehicle	CHEVY EXPRESS	Gasoline	45.0	225.0
137	441. Pickup	Board of Education	2014	Light Truck (Vans, Pickup Trucks, SUVs)	FORD F-250	Gasoline	667.0	6,719.0
138	442. Pickup	Board of Education	2014	Light Truck (Vans, Pickup Trucks, SUVs)	FORD F-250	Gasoline	707.0	6,200.0
139	454. Bobcat	Board of Education	2009	Construction Equipment	BOBCATS-100	Diesel	0.0	0.0
140	455. Steiner	Board of Education	2012	Construction Equipment	STEINER 430-21D	Diesel	0.0	0.0
141	458. Gator	Board of Education	2015	Construction Equipment	JOHN DEERE	Gasoline	0.0	0.0
142	459. Small Dump	Board of Education	2016	Heavy-Duty Vehicle	FORD F-350	Gasoline	363.0	1,438.0
143	261. Sedan	Board of Education	2012	Passenger Car	CHEVY IMPALA	Gasoline	128.0	1,953.0
144	400. Pickup	Board of Education	2020	Light Truck (Vans, Pickup Trucks, SUVs)	FORD F-250	Gasoline	465.0	3,568.0
145	14. Rockboss	Public Works	2014	Utility and Recreational Equipment	Stihl gs461	Gasoline	32.3	0.0
146	15. Cut off Saw	Public Works	2017	Utility and Recreational Equipment	Stihl ts420	Gasoline	24.5	0.0
147	16. Cut off Saw	Public Works	2019	Utility and Recreational Equipment	Stihl ts420	Gasoline	24.5	0.0
148	17. Backpack Blower	Public Works	2014	Utility and Recreational Equipment	Br600	Gasoline	127.0	0.0
149	18. Backpack Blower	Public Works	2014	Utility and Recreational Equipment	Br600	Gasoline	127.0	0.0
150	19. Backpack Blower	Public Works	2015	Utility and Recreational Equipment	Br600	Gasoline	127.0	0.0
151	20. Backpack Blower	Public Works	2016	Utility and Recreational Equipment	Br600	Gasoline	127.0	0.0
152	21. Backpack Blower	Public Works	2018	Utility and Recreational Equipment	Br600	Gasoline	127.0	0.0
153	22. Backpack Blower	Public Works	2018	Utility and Recreational Equipment	Br600	Gasoline	127.0	0.0
154	23. Backpack Blower	Public Works	2020	Utility and Recreational Equipment	Br600	Gasoline	127.0	0.0
155	24. Backpack Blower	Public Works	2020	Utility and Recreational Equipment	Br600	Gasoline	127.0	0.0
156	29. Pole Saw	Public Works	2015	Utility and Recreational Equipment	Stihl ht131	Gasoline	52.9	0.0
157	30. Pole Saw	Public Works	2016	Utility and Recreational Equipment	Stihl ht131	Gasoline	52.9	0.0
158	31. Pole Saw	Public Works	2017	Utility and Recreational Equipment	Stihl ht133	Gasoline	52.9	0.0
159	32. Pole Saw	Public Works	2018	Utility and Recreational Equipment	Stihl ht133	Gasoline	52.9	0.0
160	35. Weed wacker	Public Works	2015	Utility and Recreational Equipment	Stihl fs100rx	Gasoline	46.8	0.0
161	36. Weed wacker	Public Works	2016	Utility and Recreational Equipment	Stihl fs100rx	Gasoline	46.8	0.0
162	37. Weed wacker	Public Works	2017	Utility and Recreational Equipment	Stihl fs100r	Gasoline	46.8	0.0

Mobile Combustion - Data

ID#	Vehicle or vehicle group description	Department	Vehicle Year	Vehicle Type	Vehicle Model (optional)	Fuel type	Fuel consumption	VMT
163	38. Weed wacker	Public Works	2018	Utility and Recreational Equipment	Stihl fs111r	Gasoline	46.8	0.0
164	39. Weed Wacker	Public Works	2018	Utility and Recreational Equipment	Stihl fs111r	Gasoline	46.8	0.0
165	40. Weed Wacker / Saw	Public Works	2018	Utility and Recreational Equipment	Stihl fs111r	Gasoline	46.8	0.0
166	41. Weed Wacker	Public Works	2021	Utility and Recreational Equipment	Stihl fs111r	Gasoline	46.8	0.0
167	42. Weed Wacker	Public Works	2021	Utility and Recreational Equipment	Stihl fs111r	Gasoline	46.8	0.0
168	3000. DATTCO School Buses	Board of Education	0	Heavy-Duty Vehicle		0 Diesel	50,053.9	648,698.5
169	604. SUV	Police	2020	Light Truck (Vans, Pickup Trucks, SUVs)	Ford Explorer	Gasoline	499.0	15,236.0
170	254. Ford Taurus (Facilities)	Board of Education	1993	Passenger Car	Ford Taurus	Gasoline	276.0	2,400.0
171	261. 2011 Chevy Impala (Facilities)	Board of Education	2011	Passenger Car	Chevy Impala	Gasoline	300.0	2,820.0
172	400. 2020 Ford F-250 Service Truck (Fa	Board of Education	2020	Light Truck (Vans, Pickup Trucks, SUVs)	Ford F-250	Gasoline	1,092.0	3,000.0
173	406. 2008 Ford E-350 Van (Facilities)	Board of Education	2008	Light Truck (Vans, Pickup Trucks, SUVs)	Ford E-350	Gasoline	300.0	4,200.0
174	409. 99 Ford Pick-Up VoAg	Board of Education	1999	Light Truck (Vans, Pickup Trucks, SUVs)	Ford Pick-Up	Gasoline	0.0	0.0
175	413. 09 Ford E-250 Cgo Van (Facilities)	Board of Education	2015	Light Truck (Vans, Pickup Trucks, SUVs)	Ford E-250	Gasoline	324.0	3,360.0
176	416. 2015 Ford F-550 4x2 (Facilities)	Board of Education	2000	Light Truck (Vans, Pickup Trucks, SUVs)	Ford F-550	Gasoline	0.0	0.0
177	427. 2000 Chevy Bus (VoAg)	Board of Education	2014	Heavy-Duty Vehicle	Ford Small Bus	Gasoline	0.0	0.0
178	441. 2014 Ford F-250 Pick-Up (Facilities	Board of Education	2014	Light Truck (Vans, Pickup Trucks, SUVs)	Ford F-250	Gasoline	312.0	3,480.0
179	442. 2014 Ford F-250 Pick-up (Facilities	Board of Education	2014	Light Truck (Vans, Pickup Trucks, SUVs)	Ford F-250	Gasoline	312.0	2,784.0
180	454. Bobcat (Facilities)	Board of Education	0	Construction Equipment	Bobcat	Gasoline	0.0	0.0
181	455. Steiner (VoAg)	Board of Education	0	Construction Equipment	Steiner	Gasoline	0.0	0.0
182	459. 2016 F-350 Dump Truck	Board of Education	2016	Light Truck (Vans, Pickup Trucks, SUVs)	Ford F-350	Gasoline	300.0	2,100.0

Attachment 1C

Baseline Greenhouse Gas Emissions Inputs
Electricity Use

Electricity Use - Data

ID#	Unit Description	Department	Utility	Electricity Consumed (kWh)	Facility Type	Contractual Instrument Description	Supplier-Specific CO2 Emissions Rate	Supplier-Specific CH4 Emissions Rate	Supplier-Specific N2O Emissions Rate
1	21 Southwood Drive (Public Works)	Public Works	NEWE eGRID subregion	178973	Office Building	0	0	0	0
2	21 Southwood Drive (Bloomfield Volunteer Ambulance)	Volunteer Ambulance	NEWE eGRID subregion	54004	Health	0	0	0	0
3	Wintonbury Library	Wintonbury Library	NEWE eGRID subregion	3587	Other	0	0	0	0
4	Human Services Center	Human Services	NEWE eGRID subregion	297553	Other	0	0	0	0
5	Police Station	Police	NEWE eGRID subregion	437718	Office Building	0	0	0	0
6	Town Hall	Town Hall	NEWE eGRID subregion	228627	Office Building	0	0	0	0
7	Prosser Library	Prosser Library	NEWE eGRID subregion	32640	Other	0	0	0	0
8	Town Green	Human Services	NEWE eGRID subregion	2016	Other	0	0	0	0
9	Filley Park	Human Services	NEWE eGRID subregion	732	Other	0	0	0	0
10	Mary Hill Park	Human Services	NEWE eGRID subregion	45647	Other	0	0	0	0
11	Street Lights	Public Works	NEWE eGRID subregion	774458	Outdoor Lighting	0	0	0	0
12	Traffic Signals	Public Works	NEWE eGRID subregion	53720	Other	0	0	0	0
13	Municipal Pool	Human Services	NEWE eGRID subregion	22695	Other	0	0	0	0
14	La Salette Park	Human Services	NEWE eGRID subregion	7472	Other	0	0	0	0
15	Tennis Courts, Pedestal Signage	Human Services	NEWE eGRID subregion	7898	Other	0	0	0	0
16	BOE Central Office Building Electricity	Board of Education	NEWE eGRID subregion	204320	Office Building	0	0	0	0
17	BOE Central Office Parking Lot	Board of Education	NEWE eGRID subregion	1949	Outdoor Lighting	0	0	0	0
18	Bloomfield High School Building	Board of Education	NEWE eGRID subregion	925920	School	0	0	0	0
19	Bloomfield High School Football Field	Board of Education	NEWE eGRID subregion	7480	Outdoor Lighting	0	0	0	0
20	Carmen Arace School Building	Board of Education	NEWE eGRID subregion	675585	School	0	0	0	0
21	Global Experience Magnet School Building	Board of Education	NEWE eGRID subregion	189696	School	0	0	0	0
22	Laurel Elementary School Building	Board of Education	NEWE eGRID subregion	400584	School	0	0	0	0
23	Metacomet Elementary School Building	Board of Education	NEWE eGRID subregion	322176	School	0	0	0	0
24	Wintonbury Early Childhood Magnet School	Board of Education	NEWE eGRID subregion	303840	School	0	0	0	0

Attachment 2

Baseline Greenhouse Gas Emissions Calculations and Summaries by Source Type

Attachment 2A

Baseline Greenhouse Gas Emissions Calculations and Summary
Stationary Sources

Stationary Combustion - Calculation & Summary

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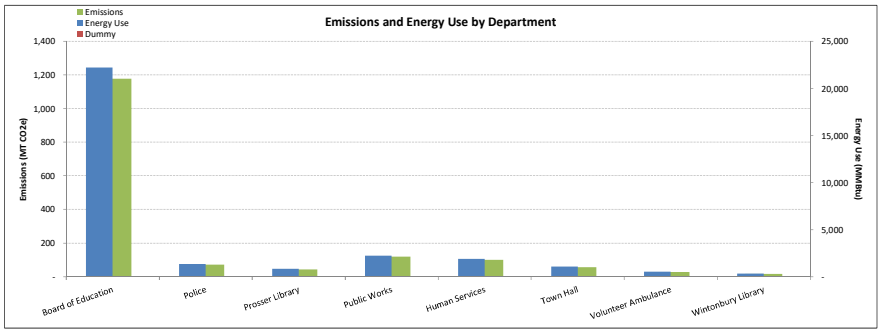
Department Summary

Emissions by Department (MT CO_2e)				
Department	**CO_2**	**CH_4**	**N_2O**	**Total**
Board of Education	1,174	3	1	1,177
Police	72	0	0	73
Prosser Library	44	0	0	44
Public Works	120	0	0	120
Human Services	100	0	0	100
Town Hall	57	0	0	57
Volunteer Ambulance	28	0	0	28
Wintonbury Library	17	0	0	18
Total Stationary Combustion Emissions	**1,612**	**4**	**1**	**1,616**

Fuel and Energy (MMBtu) Use by Department				
Department	**mcf**	**gal**	**tons**	**Energy Use**
Board of Education	21,376	-	-	22,188
Police	1,319	-	-	1,369
Prosser Library	799	-	-	830
Public Works	2,043	724	-	2,221
Human Services	1,818	-	-	1,887
Town Hall	1,033	-	-	1,072
Volunteer Ambulance	485	155	-	525
Wintonbury Library	318	-	-	330
Total Stationary Combustion Energy Use	29,191	879	-	**30,422**

Check to display: ☑ Emissions ☑ Energy Use



Fuel Summary

Emissions by Fuel Type (MT CO_2e)				
Fuel Type	**CO_2**	**CH_4**	**N_2O**	**TOTAL**
Natural Gas	1,603	4	1	1,607
Diesel	9	0	0	9
Gasoline	-	-	-	-
LPG	-	-	-	-
Propane	-	-	-	-
Butane	-	-	-	-
Residual Fuel Oil No. 5	-	-	-	-
Residual Fuel Oil No. 6	-	-	-	-
Jet Fuel	-	-	-	-
Bituminous Coal	-	-	-	-
Digester Gas	-	-	-	-
Distillate Fuel Oil	-	-	-	-
Kerosene	-	-	-	-
Total Emissions from Stationary Fuel Combustion	**1,612**	**4**	**1**	**1,616**

Fuel and Energy Use by Type			
Fuel Type	**Fuel Used**		**Energy Use (MMBtu)**
Natural Gas	29,191	mcf	30,300.36
Diesel	879	gal	121.36
Gasoline	0	gal	-
LPG	0	gal	-
Propane	0	gal	-
Butane	0	gal	-
Residual Fuel Oil No. 5	0	gal	-
Residual Fuel Oil No. 6	0	gal	-
Jet Fuel	0	gal	-
Bituminous Coal	0	tons	-
Digester Gas	0	mcf	-
Distillate Fuel Oil	0	mcf	-
Kerosene	0	mcf	-
Total Stationary Fuel Consumed			**30,421.72**

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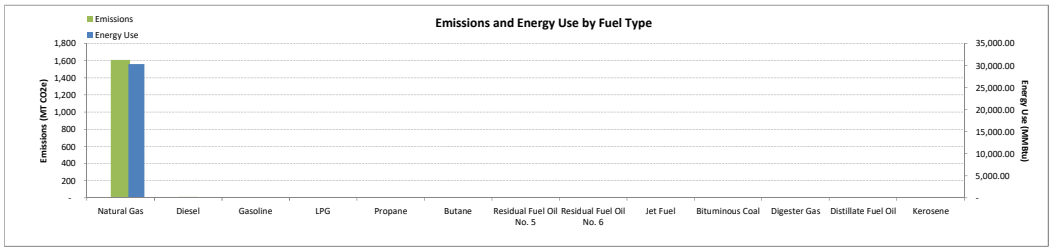

Background Calculations

CO_2 Emissions by Fuel Type

CO_2 Emissions = Fuel use × CO_2 Emission Factor (kg CO_2/unit of fuel) × MT/kg

	Fuel Use	Unit	kg CO_2/unit	MT/kg	MT CO_2	× GWP =	MT CO_2e
Natural Gas	29191.1	mcf	54.90	0.001	1602.68	1	1,602.68
Diesel	878.8	gal	10.21	0.001	8.97	1	8.97
Gasoline	0	gal	8.50	0.001	0.00	1	-
LPG	0	gal	5.89	0.001	0.00	1	-
Propane	0	gal	5.72	0.001	0.00	1	-
Butane	0	gal	6.67	0.001	0.00	1	-
Residual Fuel Oil No. 5	0	gal	10.21	0.001	0.00	1	-
Residual Fuel Oil No. 6	0	gal	11.27	0.001	0.00	1	-
Jet Fuel	0	gal	9.75	0.001	0.00	1	-
Bituminous Coal	0	tons	2325.47	0.001	0.00	1	-
Digester Gas	0	gal	34.11	0.001	0.00	1	-
Distillate Fuel Oil	0	gal	10.28	0.001	0.00	1	-
Kerosene	0	mcf	10.15	0.001	0.00	1	-

CH_4 Emissions by Fuel Type

CH_4 Emissions = Fuel use × CH_4 Emission Factor (kg CH_4/unit of fuel) × MT/kg; CO_2 equivalent emissions = MT CH_4 × Global Warming Potential of CH_4

	Fuel Use	Unit	kg CH_4/unit	MT/kg	MT CH_4	× GWP =	MT CO_2e
Natural Gas	29191.1	mcf	0.00	0.001	0.14	25	3.56
Diesel	878.8	gal	0.00	0.001	0.00	25	0.01
Gasoline	0	gal	0.00	0.001	0.00	25	-
LPG	0	gal	0.00	0.001	0.00	25	-
Propane	0	gal	0.00	0.001	0.00	25	-
Butane	0	gal	0.00	0.001	0.00	25	-
Residual Fuel Oil No. 5	0	gal	0.00	0.001	0.00	25	-
Residual Fuel Oil No. 6	0	gal	0.00	0.001	0.00	25	-
Jet Fuel	0	gal	0.00	0.001	0.00	25	-
Bituminous Coal	0	tons	0.27	0.001	0.00	25	-
Digester Gas	0	gal	0.00	0.001	0.00	25	-
Distillate Fuel Oil	0	gal	0.00	0.001	0.00	25	-
Kerosene	0	mcf	0.00	0.001	0.00	25	-

N_2O Emissions by Fuel Type

N_2O Emissions = Fuel use × N_2O Emission Factor (kg N_2O/unit of fuel) × MT/kg; CO_2 equivalent emissions = MT N_2O × Global Warming Potential of N_2O

	Fuel Use	Unit	kg N_2O/unit	MT/kg	MT N_2O	× GWP =	MT CO_2e
Natural Gas	29191.1	mcf	0.00	0.001	0.00	298	0.90
Diesel	878.8	gal	0.00	0.001	0.00	298	0.02
Gasoline	0	gal	0.00	0.001	0.00	298	-

Stationary Combustion - Calculation & Summary

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LPG	0	gal	0.00	0.001	0.00	298	-
Propane	0	gal	0.00	0.001	0.00	298	-
Butane	0	gal	0.00	0.001	0.00	298	-
Residual Fuel Oil No. 5	0	gal	0.00	0.001	0.00	298	-
Residual Fuel Oil No. 6	0	gal	0.00	0.001	0.00	298	-
Jet Fuel	0	gal	0.00	0.001	0.00	298	-
Bituminous Coal	0	tons	0.04	0.001	0.00	298	-
Digester Gas	0	gal	0.00	0.001	0.00	298	-
Distillate Fuel Oil	0	gal	0.00	0.001	0.00	298	-
Kerosene	0	mcf	0.00	0.001	0.00	298	-

Activity Data by Department and Fuel Type

Fuel use data by department and fuel type. Units: Natural Gas and Digester Gas (mcf), Bituminous Coal (short tons), all other (gallons)

	Natural Gas	Diesel	Gasoline	LPG	Propane	Butane	Residual Fuel Oil No. 5	Residual Fuel Oil No. 6	Jet Fuel	Bituminous Coal	Digester Gas	Distillate Fuel Oil	Kerosene	Gas Products (mcf)	Petroleum Products (gal)	Coal (tons)
Board of Education	21375.7	0	0	0	0	0	0	0	0	0	0	0	0	21375.7	0	0
Police	1318.6	0	0	0	0	0	0	0	0	0	0	0	0	1318.6	0	0
Prosser Library	799.3	0	0	0	0	0	0	0	0	0	0	0	0	799.3	0	0
Public Works	2043.2	723.6	0	0	0	0	0	0	0	0	0	0	0	2043.2	723.6	0
Human Services	1818	0	0	0	0	0	0	0	0	0	0	0	0	1818	0	0
Town Hall	1033.2	0	0	0	0	0	0	0	0	0	0	0	0	1033.2	0	0
Volunteer Ambulance	485.1	155.2	0	0	0	0	0	0	0	0	0	0	0	485.1	155.2	0
Wintonbury Library	318	0	0	0	0	0	0	0	0	0	0	0	0	318	0	0
Total	29191.1	878.8	0	0	0	0	0	0	0	0	0	0.00	0	29191.1	878.80	0

Emissions by Department and Fuel Type (MT CO_2e)

CO_2 Emissions = Units of Fuel Consumed × kg CO2 / unit × MT/kg

CO_2	Natural Gas	Diesel	Gasoline	LPG	Propane	Butane	Residual Fuel Oil No. 5	Residual Fuel Oil No. 6	Jet Fuel	Bituminous Coal	Digester Gas	Distillate Fuel Oil	Kerosene	**TOTAL**
Board of Education	1,173.59	-	-	-	-	-	-	-	-	-	-	-	-	1,173.59
Police	72.40	-	-	-	-	-	-	-	-	-	-	-	-	72.40
Prosser Library	43.88	-	-	-	-	-	-	-	-	-	-	-	-	43.88
Public Works	112.18	7.39	-	-	-	-	-	-	-	-	-	-	-	119.57
Human Services	99.81	-	-	-	-	-	-	-	-	-	-	-	-	99.81
Town Hall	56.73	-	-	-	-	-	-	-	-	-	-	-	-	56.73
Volunteer Ambulance	26.63	1.58	-	-	-	-	-	-	-	-	-	-	-	28.22
Wintonbury Library	17.46	-	-	-	-	-	-	-	-	-	-	-	-	17.46
Total	1,602.68	8.97	-	-	-	-	-	-	-	-	-	-	-	**1,611.65**

CH_4 Emissions = Units of Fuel Consumed × kg CH_4 / unit × MT/kg × GWP CH_4

CH_4	Natural Gas	Diesel	Gasoline	LPG	Propane	Butane	Residual Fuel Oil No. 5	Residual Fuel Oil No. 6	Jet Fuel	Bituminous Coal	Digester Gas	Distillate Fuel Oil	Kerosene	**TOTAL**
Board of Education	2.61	-	-	-	-	-	-	-	-	-	-	-	-	2.61
Police	0.16	-	-	-	-	-	-	-	-	-	-	-	-	0.16
Prosser Library	0.10	-	-	-	-	-	-	-	-	-	-	-	-	0.10
Public Works	0.25	0.01	-	-	-	-	-	-	-	-	-	-	-	0.26
Human Services	0.22	-	-	-	-	-	-	-	-	-	-	-	-	0.22
Town Hall	0.13	-	-	-	-	-	-	-	-	-	-	-	-	0.13
Volunteer Ambulance	0.06	0.00	-	-	-	-	-	-	-	-	-	-	-	0.06
Wintonbury Library	0.04	-	-	-	-	-	-	-	-	-	-	-	-	0.04
Total	3.56	0.01	-	-	-	-	-	-	-	-	-	-	-	**3.57**

N_2O Emissions = Units of Fuel Consumed × kg N_2O / unit × MT/kg × GWP N_2O

N_2O	Natural Gas	Diesel	Gasoline	LPG	Propane	Butane	Residual Fuel Oil No. 5	Residual Fuel Oil No. 6	Jet Fuel	Bituminous Coal	Digester Gas	Distillate Fuel Oil	Kerosene	**TOTAL**
Board of Education	0.66	-	-	-	-	-	-	-	-	-	-	-	-	0.66
Police	0.04	-	-	-	-	-	-	-	-	-	-	-	-	0.04
Prosser Library	0.02	-	-	-	-	-	-	-	-	-	-	-	-	0.02
Public Works	0.06	0.02	-	-	-	-	-	-	-	-	-	-	-	0.08
Human Services	0.06	-	-	-	-	-	-	-	-	-	-	-	-	0.06
Town Hall	0.03	-	-	-	-	-	-	-	-	-	-	-	-	0.03
Volunteer Ambulance	0.02	0.00	-	-	-	-	-	-	-	-	-	-	-	0.02
Wintonbury Library	0.01	-	-	-	-	-	-	-	-	-	-	-	-	0.01
Total	0.90	0.02	-	-	-	-	-	-	-	-	-	-	-	**0.92**

Energy Use by Department and Fuel Type

Energy Consumed (MMbtu) = Units of Fuel Consumed × Heat Content of Fuel (MMBtu/unit)

	Natural Gas	Diesel	Gasoline	LPG	Propane	Butane	Residual Fuel Oil No. 5	Residual Fuel Oil No. 6	Jet Fuel	Bituminous Coal	Digester Gas	Distillate Fuel Oil	Kerosene	**TOTAL**
Board of Education	22,187.98	-	-	-	-	-	-	-	-	-	-	-	-	22,187.98
Police	1,368.71	-	-	-	-	-	-	-	-	-	-	-	-	1,368.71
Prosser Library	829.67	-	-	-	-	-	-	-	-	-	-	-	-	829.67
Public Works	2,120.84	99.93	-	-	-	-	-	-	-	-	-	-	-	2,220.77
Human Services	1,887.08	-	-	-	-	-	-	-	-	-	-	-	-	1,887.08
Town Hall	1,072.46	-	-	-	-	-	-	-	-	-	-	-	-	1,072.46
Volunteer Ambulance	503.53	21.43	-	-	-	-	-	-	-	-	-	-	-	524.97
Wintonbury Library	330.08	-	-	-	-	-	-	-	-	-	-	-	-	330.08
Total	30,300.36	121.36	-	-	-	-	-	-	-	-	-	-	-	**30,421.72**

Attachment 2B

Baseline Greenhouse Gas Emissions Calculations and Summary
Mobile Sources

Mobile Combustion - Summary

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GHG Summary

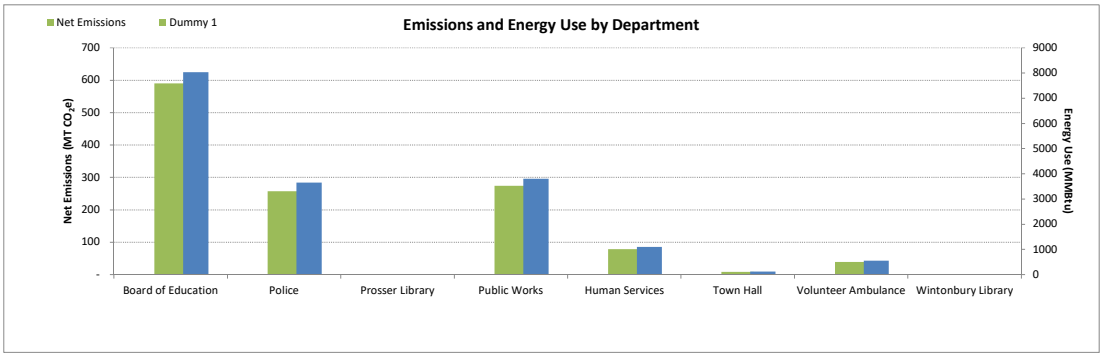
Net Emissions by Department (MT CO_2e)				
	CO_2	CH_4	N_2O	TOTAL
Board of Education	590	-	-	590
Police	257	-	-	257
Prosser Library	-	-	-	-
Public Works	274	-	-	274
Human Services	78	-	-	78
Town Hall	8	-	-	8
Volunteer Ambulance	39	-	-	39
Wintonbury Library	-	-	-	-
Total Mobile Emissions	1,245	-	-	**1,245**

CO_2 Detail Emissions (MT CO_2e)		
Gross CO_2	- Biogenic =	Net CO_2
590	-	590
257	-	257
-	-	-
274	-	274
78	-	78
8	-	8
39	-	39
-	-	-
1,245	-	1,245

Energy Use Summary

Energy Use by Department and Fuel Type (MMBtu)												
	Gasoline	Diesel	Biodiesel (B5)	Biodiesel (B20)	Ethanol (E85)	CNG	LNG	LPG	Residual Fuel	Jet Fuel	Aviation Gasoline	TOTAL
Board of Education	948	7,080	-	-	-	-	-	-	-	-	-	8,027
Police	3,653	-	-	-	-	-	-	-	-	-	-	3,653
Prosser Library	-	-	-	-	-	-	-	-	-	-	-	-
Public Works	1,955	1,846	-	-	-	-	-	-	-	-	-	3,801
Human Services	758	335	-	-	-	-	-	-	-	-	-	1,092
Town Hall	117	-	-	-	-	-	-	-	-	-	-	117
Volunteer Ambulance	518	30	-	-	-	-	-	-	-	-	-	548
Wintonbury Library	-	-	-	-	-	-	-	-	-	-	-	-
Total	7,948	9,290	-	-	-	-	-	-	-	-	-	**17,239**

Check to display: ☑ Emissions ☑ Energy Use



Mobile Combustion - Calculation

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Activity Data

Fuel Use by Department and Fuel Type

This table summarizes fuel consumption by department. These are the activity data used to calculate CO_2 emissions.

	Gasoline	Diesel	Biodiesel (B5)	Biodiesel (B20)	Ethanol (E85)	CNG	LNG	LPG	Residual Fuel	Jet Fuel	Aviation Gasoline
Units	Gallons	Gallons	Gallons	Gallons	Gallons	G.G.E.	Gallons	Gallons	Gallons	Gallons	Gallons
Board of Education	7,580	51,267	-	-	-	-	-	-	-	-	-
Police	29,221	-	-	-	-	-	-	-	-	-	-
Prosser Library	-	-	-	-	-	-	-	-	-	-	-
Public Works	15,643	13,366	-	-	-	-	-	-	-	-	-
Human Services	6,061	2,424	-	-	-	-	-	-	-	-	-
Town Hall	939	-	-	-	-	-	-	-	-	-	-
Volunteer Ambulance	4,143	218	-	-	-	-	-	-	-	-	-
Wintonbury Library	-	-	-	-	-	-	-	-	-	-	-
Total	**63,587**	**67,275**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Energy Use by Department and Fuel Type

This table summarizes energy use by department (MMBtu).

	Gasoline	Diesel	Biodiesel (B5)	Biodiesel (B20)	Ethanol (E85)	CNG	LNG	LPG	Residual Fuel	Jet Fuel	Aviation Gasoline	TOTAL
Board of Education	948	7,080	-	-	-	-	-	-	-	-	-	8,027
Police	3,653	-	-	-	-	-	-	-	-	-	-	3,653
Prosser Library	-	-	-	-	-	-	-	-	-	-	-	-
Public Works	1,955	1,846	-	-	-	-	-	-	-	-	-	3,801
Human Services	758	335	-	-	-	-	-	-	-	-	-	1,092
Town Hall	117	-	-	-	-	-	-	-	-	-	-	117
Volunteer Ambulance	518	30	-	-	-	-	-	-	-	-	-	548
Wintonbury Library	-	-	-	-	-	-	-	-	-	-	-	-
Total	7,948	9,290	-	-	-	-	-	-	-	-	-	**17,239**

CO_2 Calculations

Gross CO_2 Emissions

CO_2 Emissions (MT) = Fuel use × kg CO_2/unit of fuel × MT/kg

	Gasoline	**Diesel**	**Biodiesel (B5)**	**Biodiesel (B20)**	**Ethanol (E85)**	**CNG**	**LNG**	**LPG**	**Residual Fuel**	**Jet Fuel**	**Aviation Gasoline**	**TOTAL**
EF: kg CO_2/gal (or g.g.e.)	8.78	10.21	10.17	10.06	6.20	6.84	4.46	5.79	11.80	9.57	8.31	
Board of Education	67	523	-	-	-	-	-	-	-	-	-	590
Police	257	-	-	-	-	-	-	-	-	-	-	257
Prosser Library	-	-	-	-	-	-	-	-	-	-	-	-
Public Works	137	136	-	-	-	-	-	-	-	-	-	274
Human Services	53	25	-	-	-	-	-	-	-	-	-	78
Town Hall	8	-	-	-	-	-	-	-	-	-	-	8
Volunteer Ambulance	36	2	-	-	-	-	-	-	-	-	-	39
Wintonbury Library	-	-	-	-	-	-	-	-	-	-	-	-
Total	558	687	-	-	-	-	-	-	-	-	-	**1,245**

Biogenic CO_2 Emissions

Biogenic CO_2 (MT) = Fuel use × Biogenic kg CO_2/unit of fuel × MT/kg

	Gasoline	Diesel	Biodiesel (B5)	Biodiesel (B20)	Ethanol (E85)	CNG	LNG	LPG	Residual Fuel	Jet Fuel	Aviation Gasoline	TOTAL
EF: kg CO_2/gal (or g.g.e.)	-	-	0.47	1.89	4.89	-	-	-	-	-	-	
Board of Education	-	-	-	-	-	-	-	-	-	-	-	-
Police	-	-	-	-	-	-	-	-	-	-	-	-
Prosser Library	-	-	-	-	-	-	-	-	-	-	-	-
Public Works	-	-	-	-	-	-	-	-	-	-	-	-
Human Services	-	-	-	-	-	-	-	-	-	-	-	-
Town Hall	-	-	-	-	-	-	-	-	-	-	-	-
Volunteer Ambulance	-	-	-	-	-	-	-	-	-	-	-	-
Wintonbury Library	-	-	-	-	-	-	-	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Net CO_2 Emissions

Net CO_2 Emissions (MT) = Gross CO_2 Emissions - Biogenic CO_2 Emissions

	Gasoline	Diesel	Biodiesel (B5)	Biodiesel (B20)	Ethanol (E85)	CNG	LNG	LPG	Residual Fuel	Jet Fuel	Aviation Gasoline	TOTAL
Board of Education	67	523	-	-	-	-	-	-	-	-	-	590
Police	257	-	-	-	-	-	-	-	-	-	-	257
Prosser Library	-	-	-	-	-	-	-	-	-	-	-	-
Public Works	137	136	-	-	-	-	-	-	-	-	-	274
Human Services	53	25	-	-	-	-	-	-	-	-	-	78
Town Hall	8	-	-	-	-	-	-	-	-	-	-	8
Volunteer Ambulance	36	2	-	-	-	-	-	-	-	-	-	39
Wintonbury Library	-	-	-	-	-	-	-	-	-	-	-	-
Total	558	687	-	-	-	-	-	-	-	-	-	**1,245**

Attachment 2C

Baseline Greenhouse Gas Emissions Calculations and Summary
Electricity Use

Location-based Electricity Use - Calculation & Summary

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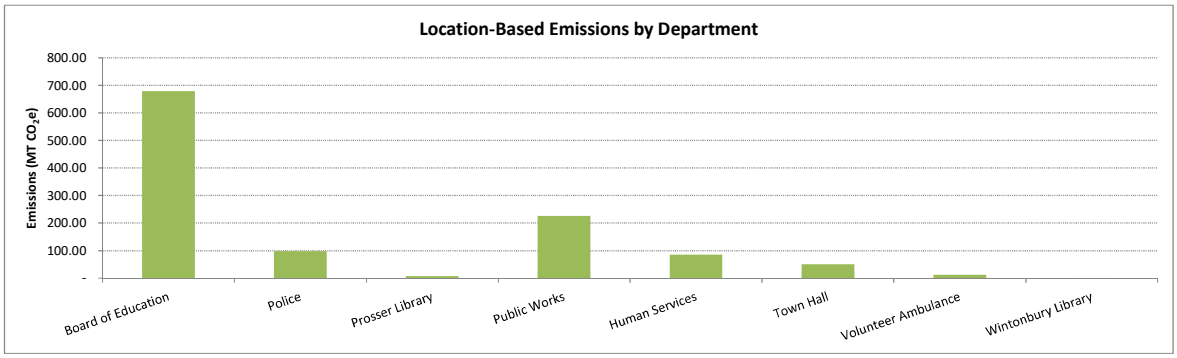
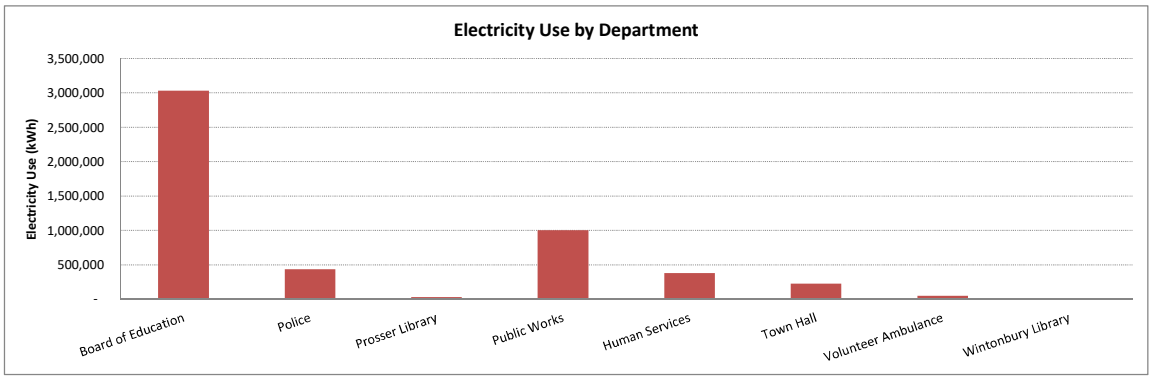
GHG Summary

Emissions by Department (in MT CO_2e)				
	CO_2	CH_4	N_2O	Total
Board of Education	672.26	2.65	4.10	679.01
Police	97.07	0.38	0.59	98.04
Prosser Library	7.24	0.03	0.04	7.31
Public Works	223.34	0.88	1.36	225.58
Human Services	85.16	0.34	0.52	86.01
Town Hall	50.70	0.20	0.31	51.21
Volunteer Ambulance	11.98	0.05	0.07	12.10
Wintonbury Library	0.80	0.00	0.00	0.80
Total Emissions from Electricity Use	**1,148.54**	**4.52**	**7.00**	**1,160.06**



Grid Electricity Summary

Electricity Use by Department (in kWh)	
Department	**kWh**
Board of Education	3,031,550
Police	437,718
Prosser Library	32,640
Public Works	1,007,151
Human Services	384,013
Town Hall	228,627
Volunteer Ambulance	54,004
Wintonbury Library	3,587
Total Electricity Use	**5,179,290**



Background Calculations

CO_2 Emissions by Utility

Emissions = Electricity Consumed (kWh) × eGRID Regional Emissions Factor (lb CO_2/MWh) × MWh/kWh × MT/lb × CO_2 GWP

Utility	kWh	eGRID Regional EF (lb CO_2/MWh)	MWh/kWh	MT/lb	MT CO_2	× GWP =	MT CO_2e
NEWE eGRID subregion	5,179,290	489	0.001	0.000454	1,149	1	1,149
-	-	-	0.001	0.000454	-	1	-
-	-	-	0.001	0.000454	-	1	-
-	-	-	0.001	0.000454	-	1	-
-	-	-	0.001	0.000454	-	1	-
-	-	-	0.001	0.000454	-	1	-

CH_4 Emissions by Utility

Emissions = Electricity Consumed (kWh) × eGRID Regional Emissions Factor (lb CH_4/MWh) × MWh/kWh × MT/lb × CH_4 GWP

Location-based Electricity Use - Calculation & Summary

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Utility	kWh	eGRID Regional EF (lb CH_4/MWh)	MWh/kWh	MT/lb	MT CH_4	× GWP =	MT CO_2e
NEWE eGRID subregion	5,179,290	0.0770	0.001	0.000453592	0	25	4.52
-	-	-	0.001	0.000453592	-	25	-
-	-	-	0.001	0.000453592	-	25	-
-	-	-	0.001	0.000453592	-	25	-
-	-	-	0.001	0.000453592	-	25	-
-	-	-	0.001	0.000453592	-	25	-

N_2O Emissions by Utility

Emissions = Electricity Consumed (kWh) × eGRID Regional Emissions Factor (lb N_2O/MWh) × MWh/kWh × MT/lb × N_2O GWP

Utility	kWh	eGRID Regional EF (lb N_2O/MWh)	MWh/kWh	MT/lb	MT N_2O	× GWP =	MT CO_2e
NEWE eGRID subregion	5,179,290	0.0100	0.001	0.000453592	0	298	7.00
-	-	-	0.001	0.000453592	-	298	-
-	-	-	0.001	0.000453592	-	298	-
-	-	-	0.001	0.000453592	-	298	-
-	-	-	0.001	0.000453592	-	298	-
-	-	-	0.001	0.000453592	-	298	-

Activity Data by Department and Utility

Electricity use data by department and fuel type (kWh)

Department	WE eGRID subregion	-	-	-	-	-	TOTAL
Board of Education	3,031,550	-	-	-	-	-	3,031,550
Police	437,718	-	-	-	-	-	437,718
Prosser Library	32,640	-	-	-	-	-	32,640
Public Works	1,007,151	-	-	-	-	-	1,007,151
Human Services	384,013	-	-	-	-	-	384,013
Town Hall	228,627	-	-	-	-	-	228,627
Volunteer Ambulance	54,004	-	-	-	-	-	54,004
Wintonbury Library	3,587	-	-	-	-	-	3,587
Total	5,179,290.00	-	-	-	-	-	**5,179,290**

CO_2 Emissions by Department and Utility

Emissions = Electricity Consumed (kWh) × eGRID Regional Emissions Factor (lb CO_2/MWh) × MWh/kWh × MT/lb × CO_2 GWP

Department	WE eGRID subregion	-	-	-	-	-	TOTAL
Board of Education	672	-	-	-	-	-	672
Police	97	-	-	-	-	-	97
Prosser Library	7	-	-	-	-	-	7
Public Works	223	-	-	-	-	-	223
Human Services	85	-	-	-	-	-	85
Town Hall	51	-	-	-	-	-	51
Volunteer Ambulance	12	-	-	-	-	-	12
Wintonbury Library	1	-	-	-	-	-	1
Total	1,149	-	-	-	-	-	**1,149**

CH_4 Emissions by Department and Utility

Emissions = Electricity Consumed (kWh) × eGRID Regional Emissions Factor (lb CH_4/kWh) × MWh/kWh × MT/lb × CH_4 GWP

Department	WE eGRID subregion	-	-	-	-	-	TOTAL
Board of Education	2.647	-	-	-	-	-	2.65
Police	0.382	-	-	-	-	-	0.38
Prosser Library	0.029	-	-	-	-	-	0.03
Public Works	0.879	-	-	-	-	-	0.88
Human Services	0.335	-	-	-	-	-	0.34
Town Hall	0.200	-	-	-	-	-	0.20
Volunteer Ambulance	0.047	-	-	-	-	-	0.05
Wintonbury Library	0.003	-	-	-	-	-	0.00
Total	5	-	-	-	-	-	**4.52**

N_2O Emissions by Department and Utility

Emissions = Electricity Consumed (kWh) × eGRID Regional Emissions Factor (lb N_2O/kWh) × MWh/kWh × MT/lb × N_2O GWP

Department	WE eGRID subregion	-	-	-	-	-	TOTAL
Board of Education	4.098	-	-	-	-	-	4.10
Police	0.592	-	-	-	-	-	0.59
Prosser Library	0.044	-	-	-	-	-	0.04
Public Works	1.361	-	-	-	-	-	1.36
Human Services	0.519	-	-	-	-	-	0.52
Town Hall	0.309	-	-	-	-	-	0.31
Volunteer Ambulance	0.073	-	-	-	-	-	0.07
Wintonbury Library	0.005	-	-	-	-	-	0.00
Total	7	-	-	-	-	-	**7.00**

Attachment 3

Overall Baseline Greenhouse Gas Emissions Summary

Inventory Emissions Summary

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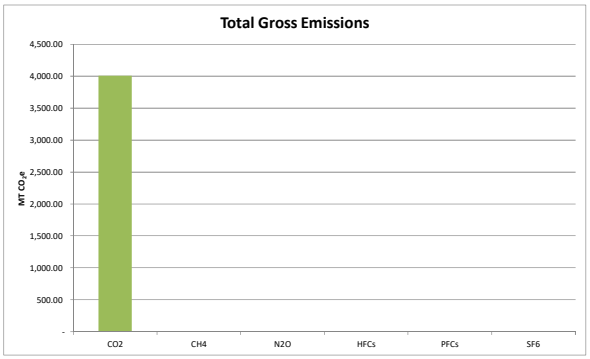
Please use the drop-down menu in the Scope 2 Emissions Selection box to determine which scope 2 emissions methodology is used in the summary

Scope 2 Emissions Selection:	Location Based

0.19 Per capita Emissions for Town of Bloomfield (MT CO2e/person)

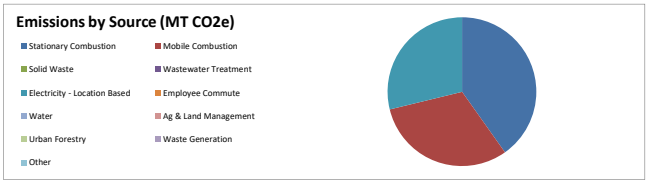
Total Town of Bloomfield Emissions (MT CO2e)

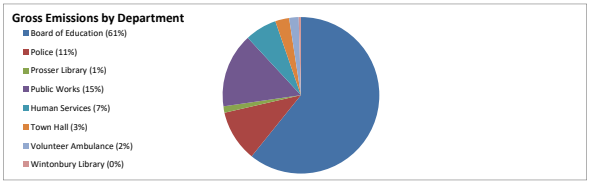
	CO_2	CH_4	N_2O	HFCs	PFCs	SF_6	Total MT CO_2e	Percent of Total
Scope 1	2,856.82	3.57	0.92	-	-	-	2,861.32	71%
Scope 2 - Location Based	1,148.54	4.52	7.00	-	-	-	1,160.06	29%
Scope 2 - Market Based (for informational purposes only)	1,148.54	4.52	7.00				1,160.06	
Scope 3	-	-	-	-	-	-	-	0%
Total Gross Emissions	**4,005.36**	**8.09**	**7.93**	**-**	**-**	**-**	**4,021.38**	**100%**
Total Net Emissions	**4,005.36**	**8.09**	**7.93**	**-**	**-**	**-**	**4,021.38**	**100%**



Emissions by Source (MT CO_2e)

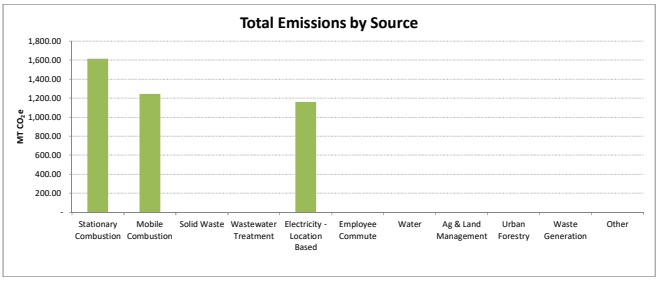
Source	CO_2	CH_4	N_2O	HFCs	PFCs	SF_6	Total	Percent of Total
Stationary Combustion	1,611.65	3.57	0.92	-	-	-	1,616.15	40%
Mobile Combustion	1,245.17	-	-	-	-	-	1,245.17	31%
Solid Waste	-	-	-	-	-	-	-	0%
Wastewater Treatment	-	-	-	-	-	-	-	0%
Electricity - Location Based	1,148.54	4.52	7.00	-	-	-	1,160.06	29%
Electricity - Market Based (for informational purposes only)	1,148.54	4.52	7.00				1,160.06	
Employee Commute	-	-	-	-	-	-	-	0%
Water	-	-	-	-	-	-	-	0%
Ag & Land Management	-	-	-				-	0%
Urban Forestry	-	-	-				-	0%
Waste Generation	-	-	-				-	0%
Total (Gross Emissions)	**4,005.36**	**8.09**	**7.93**	**-**	**-**	**-**	**4,021.38**	**100%**
Total (Net Emissions)	**4,005.36**	**8.09**	**7.93**	**-**	**-**	**-**	**4,021.38**	**100%**

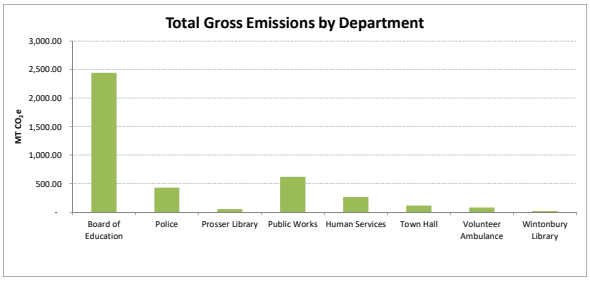




Gross Emissions by Department

Department	Total (MT CO_2e)	Percent of Total
Board of Education	2,445.86	61%
Police	427.20	11%
Prosser Library	51.32	1%
Public Works	619.30	15%
Human Services	264.07	7%
Town Hall	116.34	3%
Volunteer Ambulance	78.99	2%
Wintonbury Library	18.31	0%
Total	**4,021.38**	**100%**





Total Emissions by Department and Source (MT CO_2e)

Department	Stationary	Location Based Electricity	Mobile	Solid Waste	Waste water	Employee Commute	Water	Agriculture & Land Management	Urban Forestry	Other	TOTAL GROSS	TOTAL NET
Board of Education	1,176.86	679.01	589.99	-	-	-	-	-	-	-	2,445.86	2,445.86
Police	72.60	98.04	256.56	-	-	-	-	-	-	-	427.20	427.20
Prosser Library	44.01	7.31	-	-	-	-	-	-	-	-	51.32	51.32
Public Works	119.90	225.58	273.81	-	-	-	-	-	-	-	619.30	619.30
Human Services	100.09	86.01	77.96	-	-	-	-	-	-	-	264.07	264.07
Town Hall	56.88	51.21	8.24	-	-	-	-	-	-	-	116.34	116.34
Volunteer Ambulance	28.30	12.10	38.60	-	-	-	-	-	-	-	78.99	78.99
Wintonbury Library	17.51	0.80	-	-	-	-	-	-	-	-	18.31	18.31
Total	**1,616.15**	**1,160.06**	**1,245.17**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**4,021.38**	**4,021.38**