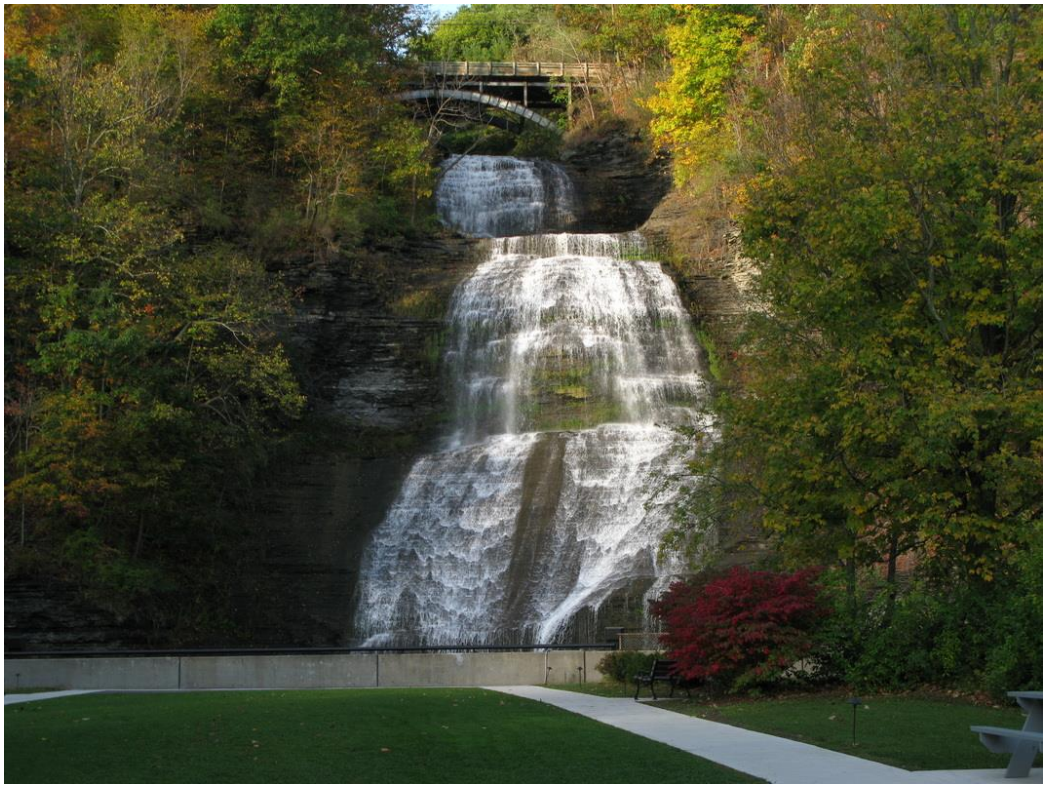
VILLAGE OF MONTOUR FALLS COMMUNITY GREENHOUSE GAS EMISSIONS BASELINE INVENTORY (2018)



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1 INTRODUCTION

1.1 WHAT IS A COMMUNITY GREENHOUSE GAS INVENTORY?

A community greenhouse gas (GHG) inventory is an accounting, analysis, and report of the GHG emissions resulting from transportation fuels, waste, energy usage in buildings, and other sources within a given geographic boundary. (NYSDEC)

A community GHG inventory provides a baseline year that benchmarks the entire Village's energy use and greenhouse gas emissions, which allows the Village to track and prioritize the potential GHG impact of policy recommendations and strategies for the Village's sustainable growth and development. The baseline year for this community inventory is 2018, which is the same reporting period for the *Local Government Operations Greenhouse Gas Inventory* and *Local Government Fleet Inventory* produced by the in 2019.

The data that are typically collected and divided into three scopes, as summarized in ***Appendix A*** and detailed in ***Appendix B***. **Scope 1** includes the community's direct emissions, including on-site fossil fuel combustion and fuel consumption for stationary combustion sources e.g. buildings and mobile combustion sources e.g. vehicles. **Scope 2** includes the community's indirect emissions, including those that result from the generation of electricity, heat, or steam at off-site utility energy generation plants or other sources. **Scope 3** includes the community's other indirect emissions that also occur within the community boundary, including from water, wastewater, urban forestry, waste disposal, agriculture, and other activities specific to the community. Scope 3 for this 2018 baseline includes water, wastewater, and urban forestry. It is recommended that the Village pursues a Scope 3 addendum that inventories municipal solid waste and land use to identify additional strategies that would reduce GHG emissions in non-power sectors.

1.2 WHY DID THE VILLAGE UNDERTAKE THIS COMMUNITY GHG INVENTORY?

The Village undertook this Community GHG Inventory to gather baseline data which will allow the Village Sustainability Committee and community stakeholders to create a plan and related project budgets with specific, measurable strategies to reduce GHG emissions, to identify community energy expense reduction strategies, and to facilitate cost-effective renewable energy procurement. These climate mitigation actions are part of the Village's long-term plan to create a more climate resilient community. Because government operations typically account for less than three percent of a community's entire emissions, it is important to understand how the industries, businesses, schools, homes, and vehicles in the entire community are contributing to climate change. (NYSDEC)

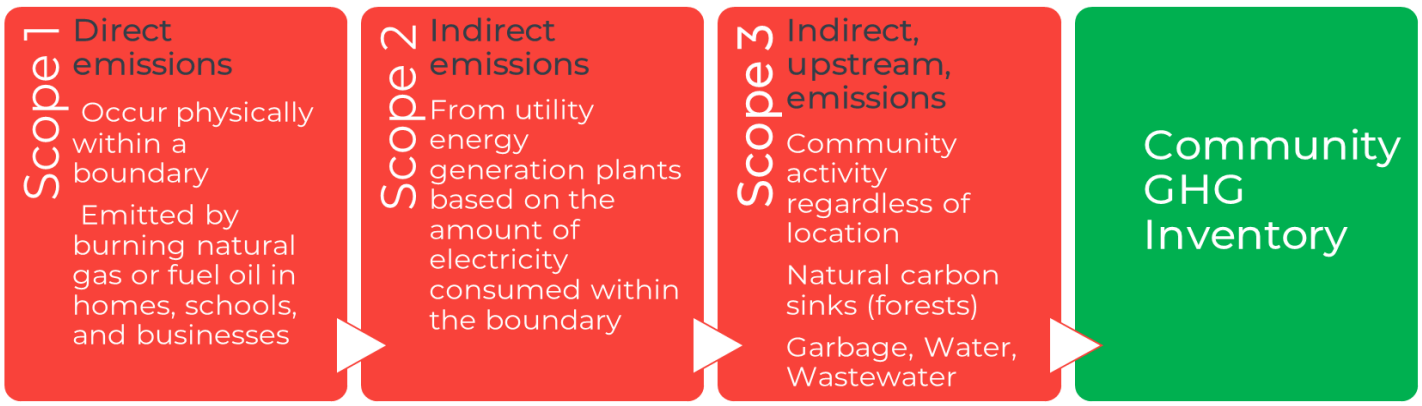

Figure 1 - Standard Greenhouse Gas Inventory Scopes

1.3 WHAT METHODS WERE USED TO CREATE THE COMMUNITY GHG INVENTORY?

At the recommendation of the NYSDEC Office of Climate Change, the Village used the United States Environmental Protection Agency (US EPA) Local Greenhouse Gas Inventory Tool (LGHGI). This free, interactive spreadsheet tool calculates GHG emissions for most sectors, including residential, commercial, transportation, waste, and water management. LGHGI references location-specific emission factors and common assumptions needed to calculate emissions with the most up-to-date values from US EPA. The LGHGI is scalable to accommodate different levels of activity data to meet the needs and constraints of

different local governments and their communities. LGHGI is comprised of two modules: one for community-wide inventories, the other for inventories of local government operations only. The 2018 Local Government Operations Inventory (see *Village of Montour Falls, New York: Greenhouse Gas Emissions Inventory: A comparison of 2013 and 2018*) utilized a different but comparable data protocol with the same emissions assumptions – the Local Government Operations Protocol.

INVENTORY MAINTENANCE AND REPORTING FREQUENCY

The LGHGI workbook is easy to use and update, making this method highly replicable with a minimum level of effort necessary to obtain accurate and verifiable data for each reporting period. While LCHGI is updated annually to include the appropriate emission factors, the Village should seek to report community emissions every two years, with a comprehensive analysis of trends in per capita emissions conducted every six years. This reporting frequency is recommended because the New York State Department of Transportation (NYSDOT) reports local traffic counts every five years. As seen in ***Table 2***, mobile combustion makes up 56% of the community's emissions. Therefore, the strongest factors influencing the community's total GHG emissions are the number of vehicle miles traveled (VMT) and the number of electric vehicle registrations within the Village's zip code.

Further, GHG inventory reporting criteria for New York municipalities are anticipated to change rapidly in coming years. In 2020, the Climate Leadership and Community Protection Act directed NYSDEC to issue an annual report on statewide greenhouse gas emissions, pursuant to Section 75-0105 of the Environmental Conservation Law (ECL). As of March 2021 NYSDEC is preparing the first annual report to be issued in 2021 and will seek public input on the format of the report, the organization of information to be included in the report, as well as the methodology and analysis used to determine annual statewide greenhouse gas emission levels. The method chosen by NYSDEC will likely inform the methods and assumptions used for future GHG inventories for local government operations and communities. In 2022, the Village should consult the NYSDEC Office of Climate Change in order to assess any new, mandatory reporting criteria for and inventorying best practices before proceeding with an update.

As shown in **Figure 2**, LGHGI is a Microsoft Excel-based workbook in which all data relevant to the greenhouse gas inventory are entered, analyzed, and displayed in a series of output tables and graphs. Users should read the *Introduction* and *Read Me* workbook tabs before attempting to input new data. Although the workbook is easy to use, the overall quality of the analysis and resulting usefulness as both a planning and progress tracking tool are dependent on the quality of the input data, which sometimes require assumptions based on the judgments of environmental subject matter experts. Annual check-ins with the NYSDEC Office of Climate Change staff are recommended for quality assurance.

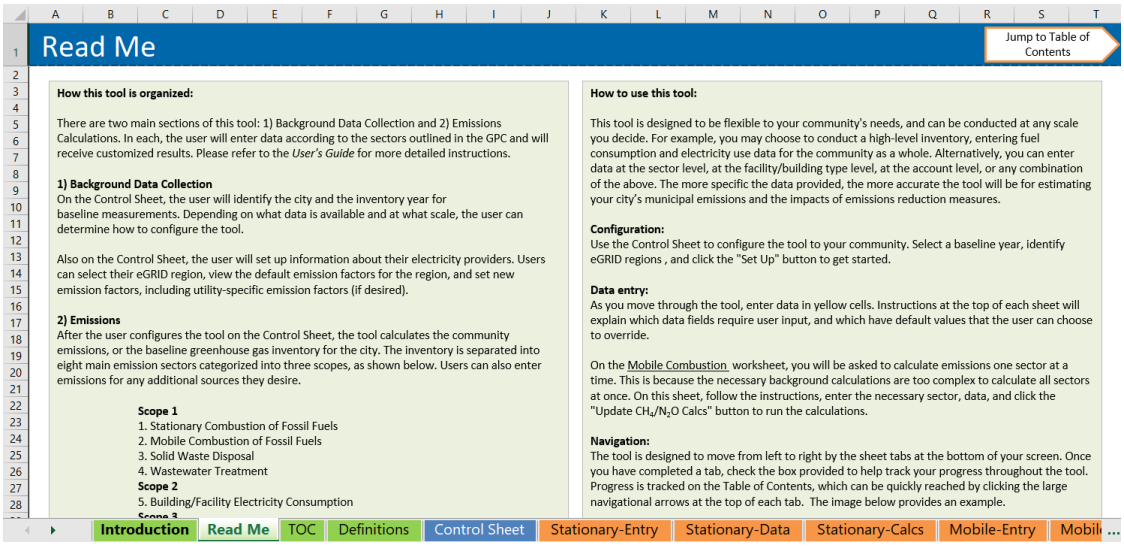

Figure 3 - US EPA Local Greenhouse Gas Inventory Tool Read Me Tab

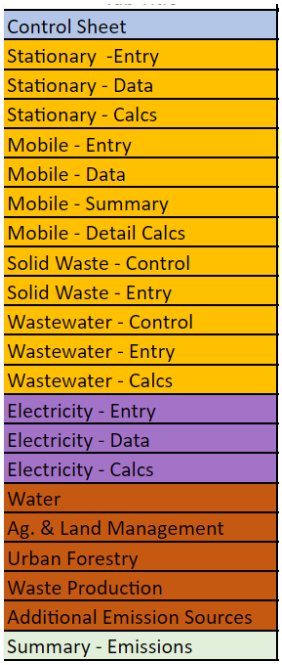

Figure 2 – Tab Titles

GHG AND ENVIRONMENTAL DATA INPUT AND OUTPUT OVERVIEW

In LGHGI each scope is completed by entering data in a data input tab, reviewing the calculations for accuracy, and verifying that the output data tables and graphs match the input values. The tab names are summarized in ***Figure 3***. Each data input tab in is labeled "[Scope]-Entry". As seen in ***Figure 4***, relevant electricity data are entered into the *Electricity-Entry* tab. For the 2018 baseline reporting year, a location-based eGRID emissions factors was used. Understanding the Village's market-based electricity emissions will become important for reporting if the Village enters into a renewable procurement contract in the

future. In this case, the party responsible for producing the environmental attributes of the procured electricity would be required to produce the values necessary to complete the *Electricity-Entry* tab.

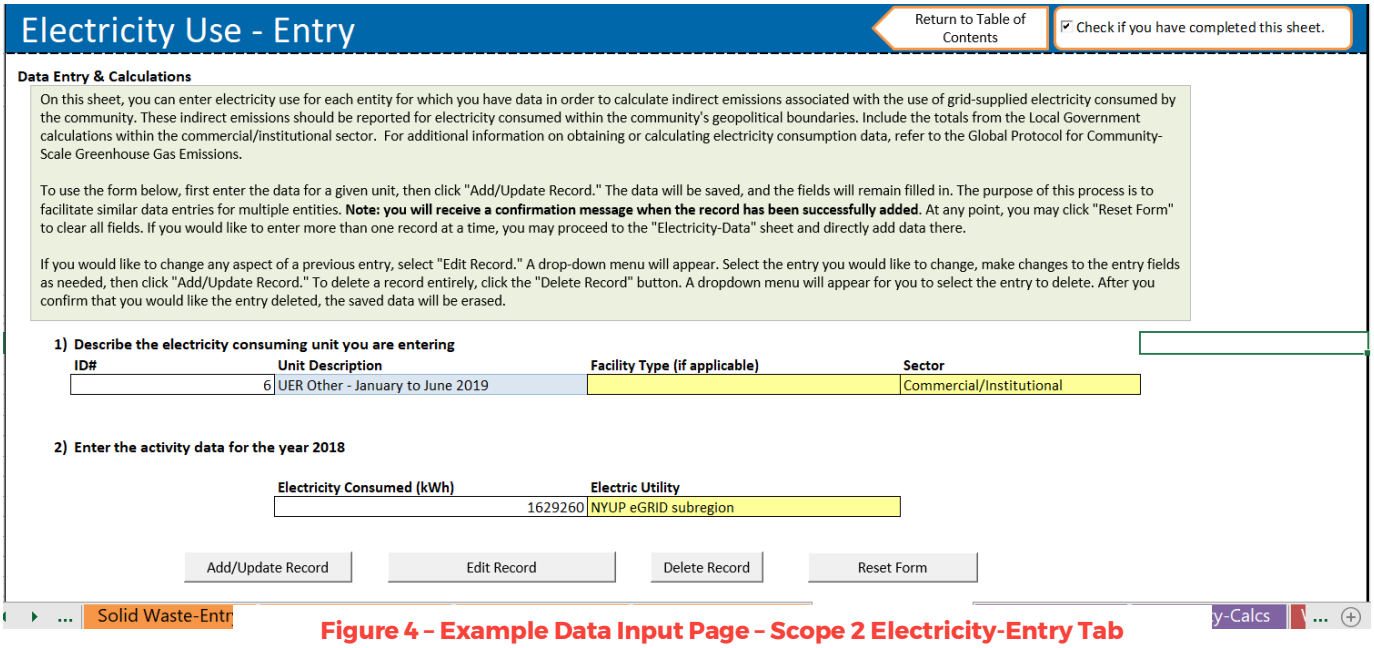

Figure 4 – Example Data Input Page – Scope 2 Electricity-Entry Tab

As seen in ***Figure 5***, the input data are then displayed in the *Electricity-Data* tab, where data entry accuracy can be easily verified.

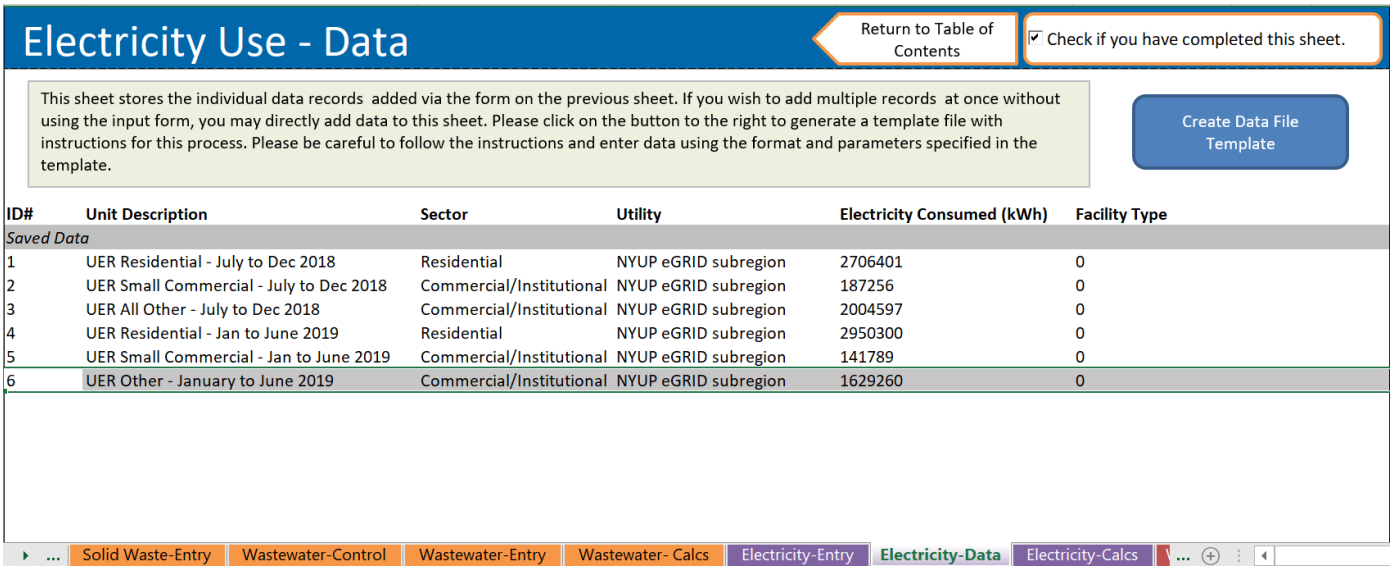

Figure 5 – Example Data Page – Scope 2 Electricity-Data Tab

As seen in **Figure 6**, the output data are then displayed in the *Electricity-Calculations* tab. The greenhouse gas emissions summary tables and graphs display GHG by sector: residential, commercial/institutional, industrial and, if relevant, energy generation and reported in metric tons of carbon dioxide equivalent abbreviated as MT CO2e. The unit "CO2e" represents an amount of a GHG whose atmospheric impact has been standardized to that of one unit mass of carbon dioxide (CO2), based on the global warming potential (GWP) of the gas. Tool formulas convert standard metrics for electricity, renewable energy, fuel use, chemical use, water use, and materials management into MTCO2e. Wherever data are available based on regional and local inputs, GHG emissions may be broken down into specific gases such as carbon dioxide, methane, and nitrous oxide. Calculation assumptions based on community characteristic selections such as utility territory and inputs are displayed in summary tables next to all formulas.

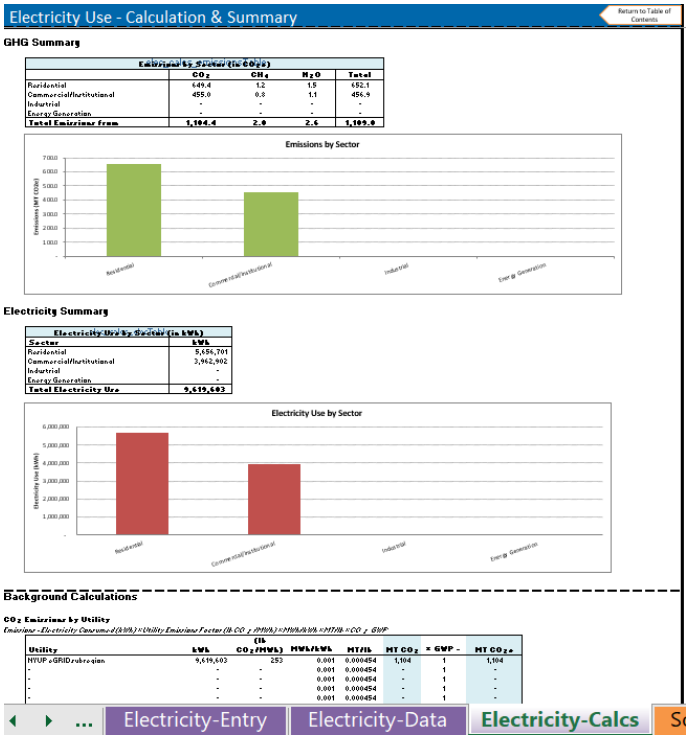

Figure 6 – Example Page – Scope 2 Electricity-Calcs Tab

1.4 2018 DATA SUMMARY

The total estimated 2018 greenhouse gas emissions for Montour Falls are displayed in ***Table 1***. This analysis included estimates of carbon dioxide, methane, and nitrous oxide. Emissions associated with hydroflourocarbons, perfluorcarbons, and sulphur hexafluoride are associated with commercial refrigeration were out of scope.

Direct emissions refer to the emissions generated on-site (as opposed to electricity delivered through a grid system), such as from the combustion of fossil fuels. Fossil fuels are any fuel derived from the pre-historic burial of organic matter. Examples include natural gas (methane or CH_4) and petroleum

products (gasoline, diesel, kerosene, propane, and others). Combustion of petroleum products releases greenhouse gases into the atmosphere.

Indirect remissions refer to emissions associated with the consumption of purchased or acquired electricity, steam, heating, or cooling. These emissions can be allocated in an inventory to an entity, but are generated offsite. An example is electricity that is not generated directly at a facility. A facility uses electricity on-site, but the fuels used to generate the electricity are combusted off-site, perhaps at a regional power plant. If the generation source is at a different site that is also operated by the Village, it is not an indirect emission source.

Table 1 - Total Community Emissions

Total Montour Falls Emissions (MT CO2e)								
	CO_2	CH_4	N_2O	HFCs	PFCs	SF_6	Total MT CO_2e	Percent of Total
Direct Emissions	7,781	35.5	158	-	-	-	7,975	88%
Indirect Emissions	1,104	2.0	2.6	-	-	-	1,109	12%
Total Gross Emissions	8,911	37.5	161	-	-	-	**9,109**	100%
Negative Emissions (Trees)	(1,862)	(0.05)	(0.06)	-	-	-	(1,862)	-20%
Total Net Emissions	7,023	37.5	161	-	-	-	**7,222**	80%

The data in ***Table 1*** show that approximately 88% of all emissions are direct emissions and approximately 12% are indirect emissions. The implication is that the community has a significant opportunity and control over potential strategies to reduce direct or on-site emissions associated with buildings and vehicles. Further, negative emissions were also measured using the tree cover percentage estimates taken from the *2019 Village of Montour Falls Natural Resources Inventory*. Also seen in ***Table 1*** , there is significant GHG mitigation value of conserving trees. Trees are valuable not only because of habitat, shading, and aesthetics but also because they ***sequester*** (or trap) carbon for an atmospherically significant period of time. Through the process of photosynthesis, trees remove carbon dioxide from the atmosphere

and store it as cellulose, lignin, and other compounds. A medium growth coniferous or deciduous tree, planted in an urban setting and allowed to grow for 10 years, sequesters 23.2 and 38.0 pounds of carbon, respectively (US EPA). In total, the current tree cover is offsetting approximately 1,862 metric tons of carbon dioxide, which is approximately 20% of the community's total GHG emissions.

Table 2 displays a more detailed summary of community emissions by source. Stationary combustion refers to the on-site combustion of fuels to produce electricity, heat, or motive power using equipment in a fixed location. Mobile combustion refers to the combustion of fuels to power a moving vehicle, such as gasoline or diesel fuel in a car or truck. In 2018, 31% of emissions came from stationary combustion and 56% of emissions came from mobile combustion. The implication for stationary combustion emissions is that the community has a significant opportunity to reduce emissions by reducing the number of businesses and residences utilizing on-site fuel such as natural gas or propane for heating. Strategies to do so are addressed in ***Chapter 2 Recommendations*** and include measures the Village can take, including:

- **Educate community stakeholders about alternative heating and cooling strategies and energy efficiency**
- **Reduce building improvement costs to owners and renters by leveraging state and federal funding sources**
- **Streamline costs to contractors by implementing NYStretch-2020, the a supplement to the 2020 Energy Conservation Construction Code of New York State**

Further, the implication for mobile emissions is that the community has a significant opportunity to reduce emissions by undertaking strategies such as converting to hybrid or electric vehicles, choosing to bicycle or walk to local destinations, and planning trips to reduce overall vehicle miles traveled. Planning strategies such as installing LED streetlights and making roadways, sidewalks, and trails even safer and more inviting for residents can also significantly reduce vehicle emissions. These strategies will be addressed in the forthcoming *2021 Village Complete Streets Plan*.

Table 2 - Detailed Total Community Emissions By Source

Emissions by Source (MT CO_2e)								
Source	**CO_2**	**CH_4**	**N_2O**	**HFCs**	**PFCs**	**SF_6**	**Total**	**Percent of Total**
Stationary Combustion	2,848.04	0.27	0.01	-	-	-	2,848.31	31%
Mobile Combustion	4,932.92	19.33	158.34	-	-	-	5,110.58	56%
Solid Waste	-	-	-	-	-	-	-	0%
Wastewater Treatment	-	15.87	-	-	-	-	15.87	0%
Electricity	1,104.42	1.96	2.60	-	-	-	1,108.99	12%
Water	25.50	0.05	0.06	-	-	-	25.61	0%
Ag & Land Management	-	-	-				-	0%
Urban Forestry	(1,887.83)	-	-				(1,887.83)	-21%
Waste Production	-	-	-				-	0%
Total (Gross Emissions)	8,910.89	37.47	161.00	-	-	-	**9,109.36**	100%
Total (Net Emissions)	7,023.06	37.47	161.00				7,221.53	

Table 3 - Community Emissions By Scope

Total Montour Falls Emissions (MT CO2e)								
	CO_2	**CH_4**	**N_2O**	**HFCs**	**PFCs**	**SF_6**	**Total MT CO_2e**	**Percent of Total**
Scope 1	7,780.96	35.47	158.34	-	-	-	7,974.77	88%
Scope 2	1,104.42	1.96	2.60	-	-	-	1,108.99	12%
Scope 3	(1,862.33)	0.05	0.06	-	-	-	(1,862.22)	-20%
Total Gross Emissions	8,910.89	37.47	161.00	-	-	-	**9,109.36**	79%
Total Net Emissions	7,023.06	37.47	161.00	-	-	-	**7,221.53**	79%

As summarized in **Appendix A**, another way to display community emissions is by scope. Scope 1 refers to all direct GHG emissions. Indirect GHG emissions from the consumption of purchased electricity, heat, or steam. Other indirect emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, outsourced activities, etc. The Scope 3 emissions included in this Community GHG Inventory are wastewater treatment and urban forestry. Future inventories using this tool could also take into account a more specific look at waste generation by type and agricultural and land management.

Another useful way of categorizing greenhouse gas emissions is by sector. As seen in **Table 4**, approximately 54% of gross emissions is residential and 46% is commercial. This shows that all community actors and stakeholders have an opportunity to contribute to emissions reduction. At the time of reporting, the New York Utility Energy Registry (UER) was in beta testing and did not allow for an accurate estimation

of *Industrial Sector* or *Energy Generation Sector* emissions. In future reporting years, this tool will become available and will significantly reduce the reporting burden to these sectors. The Village has limited farm-related manufacturing that would be classified as industrial, likely representing a very small percentage of gross emissions. However, the Village has expressed interest in remediating a brownfield site jointly owned with the Town of Montour in order to develop a community solar PV project. This project has significant potential to reduce GHG emissions by having local businesses and residents invest in or subscribe to a certain kW capacity or kWh of production of solar energy. If the project proceeds, the methodology for the expected GHG mitigation impacts of the project should be clearly documented and included in community GHG inventory updates.

Gross Emissions by Sector		
Sector	**Total Total (MT CO_2e)**	**Percent of Total**
Residential	4,879.36	54%
Commercial/Institutional	4,230.01	46%
Industrial	-	0%
Energy Generation	-	0%
Total	**9,109.36**	**100%**

Table 4 - Gross Community Emissions By Sector.

Note: Due to current New York Utility Energy Registry (UER) reporting limitations on electricity account type categorization, Commercial and Industrial Emissions cannot be reported separately at this time. All *Industrial* emissions are reported in *Commecial/Institutional*. No electricity generation currently takes place within the Village jurisdiction.

2 KEY RECOMMENDATIONS

2.1 WHAT CAN THE COMMUNITY DO WITH THE RESULTS?

Creating an emissions baseline allows the community to assess the relative contributions of emissions sources and track emissions trends over time. The inventory can be used to communicate with stakeholders, partner with other municipalities to create a regional inventory, and develop mitigation strategies and policies. Regular updates and public reviews are important to measuring progress toward meeting GHG reduction goals.

2.2 MITIGATION STRATEGIES & POLICY RECOMMENDATIONS

The policy recommendations associated with the findings for the 2018 baseline year can be divided into five focus areas:

1. **Inventory Management and Reporting Policies**
2. **Energy Efficiency**
3. **Renewable Energy Generation Procurement & Electrification**
4. **Electric Vehicle Procurement**
5. **Transportation Planning & Education**
6. **Land conservation & Tree Planting**

These policy recommendations should be incorporated into key planning processes and forthcoming documents intended to guide the Village's climate mitigation and adaptation actions.

REPORTING POLICIES

Currently, the Village does not have a standard policy or procedure in place that establishes the GHG or other sustainability metrics reporting practices. While the LGHGI tool provides significant guidance and documentation on how to implement a community GHG inventory and describes organizational

boundaries, it is not a substitute for an inventory management plan (IMP). An IMP describes a community's process for completing a high-quality greenhouse gas (GHG) inventory. Communities can use an IMP to institutionalize a process for collecting, calculating, and maintaining GHG data. When the Village undertakes its next community GHG inventory, the first step should be to complete an IMP in order to organize and document the efforts and decide which sectors are most important to prioritize and what analytical depth is necessary to inform decision-making about mitigation strategies and relative cost-benefit of individual projects or initiatives.

The seven major sections of an IMP are:

1 **Community Information**: Inventory manager and coordinator roles and contact information

2 **Boundary Conditions**: jurisdictional and operational boundary descriptions

3 **Emissions Quantification**: quantification methodologies and emission factors

4 **Data Management**: data sources, collection process, and quality assurance

5 **Base Year**: descriptions of base year adjustments for structural and methodology changes

6 **Management Tools**: roles and responsibilities, training, and file maintenance

7 **Auditing & Verification**: auditing, management review, and corrective action

ENERGY EFFICIENCY

New buildings:

- Implement NYStretch Energy Code to improve development standards

Existing buildings:

- Encourage Schuyler County Legislature to pass PACE financing (a NYSERDA CEC high-impact action) in order to unlock access financing for cost-effective, energy efficiency commercial building improvements

- Utilize CEC coordinator resources and approved FlexTech providers to conduct energy audits and building studies (significant incentives subsidizing up to 95% of total costs)
- Facilitate school district connections to NYPA K-12 Services to implement benchmarking and reduce school energy costs
- Assist low-to-moderate income (LMI) households with reducing energy costs by accessing Weatherization Assistance Program (WAP) and EmPower New York

RENEWABLE ENERGY PROCUREMENT & ELECTRIFICATION

- Work with NYPA and NYSERDA to procure electricity from renewable sources
    - Implement the 100% Renewable Energy for Municipalities NYSERDA CEC high-impact action
    - NYPA Municipal Services consultation
        - Alternative to a CCA
- Clean Heating & Cooling – educate local businesses and residents about how to electrify heating and cooling loads and reduce dependence on natural gas and propane
    - Use CCE Schuyler resources and rebates/vouchers from NYSERDA-qualified installers

ELECTRIC VEHICLE PROCUREMENT & EDUCATION

- Track (current values shown in ***Table 5****)* and Increase the number of EVs owned or leased by local businesses and residents
- Utilize CEC coordinator to undertake a sponsored electric vehicle education campaign
- Report on the number of annual EV registrations
- Encourage the use of rideshare and carpooling tools

Table 4 - 2021 Electric Vehicle Registrations for Schuyler County and Montour Falls. Schuyler County Department of Motor Vehicles.

Electric Vehicle Registration Data (Updated Monthly from NYSERDA)				
Community	PHEV/EREV	BEV	Total EVs	Percentage of EV Registrations in Schuyler County
Montour Falls	5	1	6	15%
Schuyler County	25	16	41	

TRANSPORTATION PLANNING

- Integrate GHG reduction into Complete Streets initiatives
- Continue to improve roadway safety: residents safely enjoy picturesque vistas
    - Local events downtown and access to core needs: groceries, library, pharmacy
        - Reduces vehicle miles traveled and encourages walking
    - Continue to maintain and promote the local EV charger network
- Increase access to on-demand rides and public transit
    - Coordinate with Schuyler County Transit and community-based mobility access services
- Encourage expansion of Gadabout services
    - Educate vendors to consider using the New York Truck Voucher Incentive Program (NYTVIP)
- Encourage conversion of Schuyler school district busses to electric or hybrid fleets

LAND CONSERVATION & TREE PLANTING

- Create a Community Climate Action Plan which includes a tree planting program

- Draft a list of Climate Smart Communities actions related to land conservation for Silver-certification planning

2.3 ALIGNMENT WITH NEW YORK STATE PROGRAMS

Next steps include aligning opportunities identified by the Community GHG Inventory outcomes with key New York State programs which offer funding and financing, technical support, and guidance on federal, utility, or other incentives for actions which reduce greenhouse gas emissions.

NYSDEC

- Pursue Silver-Level Climate Smart Communities Certification
- Consider applying for 2021 Consolidated Funding Application certification and/or implementation grants

NYSERDA

- Pursue Clean Energy Communities designation high-impact actions
- Explore potential project development with Clean Fleets and NYTVIP funding support
- Conduct an Electric Vehicle Community Campaign
- Encourage adoption of Open C-PACE (at County level)
- Implement NYStretch Energy Code
- Connect to FlexTech Consultants for building studies and energy audits

EFC STORMWATER STREET TREES/URBAN FORESTRY PROGRAM

- Explore funding eligibility for the development of an Urban Forestry Plan in order to map out existing trees, plant new trees, and manage the urban canopy

EMPOWER NEW YORK, WAP & HEAP

- Connect to Economic Opportunity Program, Inc. of Chemung and Schuyler (NYSERDA approved contractor) to discuss LMI family programming and support options
- Educate residents about energy efficiency for LMI households (WAP & HEAP eligibility through NYS HCR) via vendor rebates for energy audits, solar, and efficient appliances

3 REFERENCES AND RESOURCES

Annual Traffic Volume Report – State Roads. New York State Department of Transportation. https://www.dot.ny.gov/divisions/engineering/technical-services/hds-respository/NYSDOT_2019TrafficVolumeReport-Routes.pdf

Clean Energy Communities Program. New York State Energy Research and Development Authority. https://www.nyserda.ny.gov/all-programs/programs/clean-energy-communities

Climate Smart Communities Program. New York State Department of Environmental Conservation. https://climatesmart.ny.gov/

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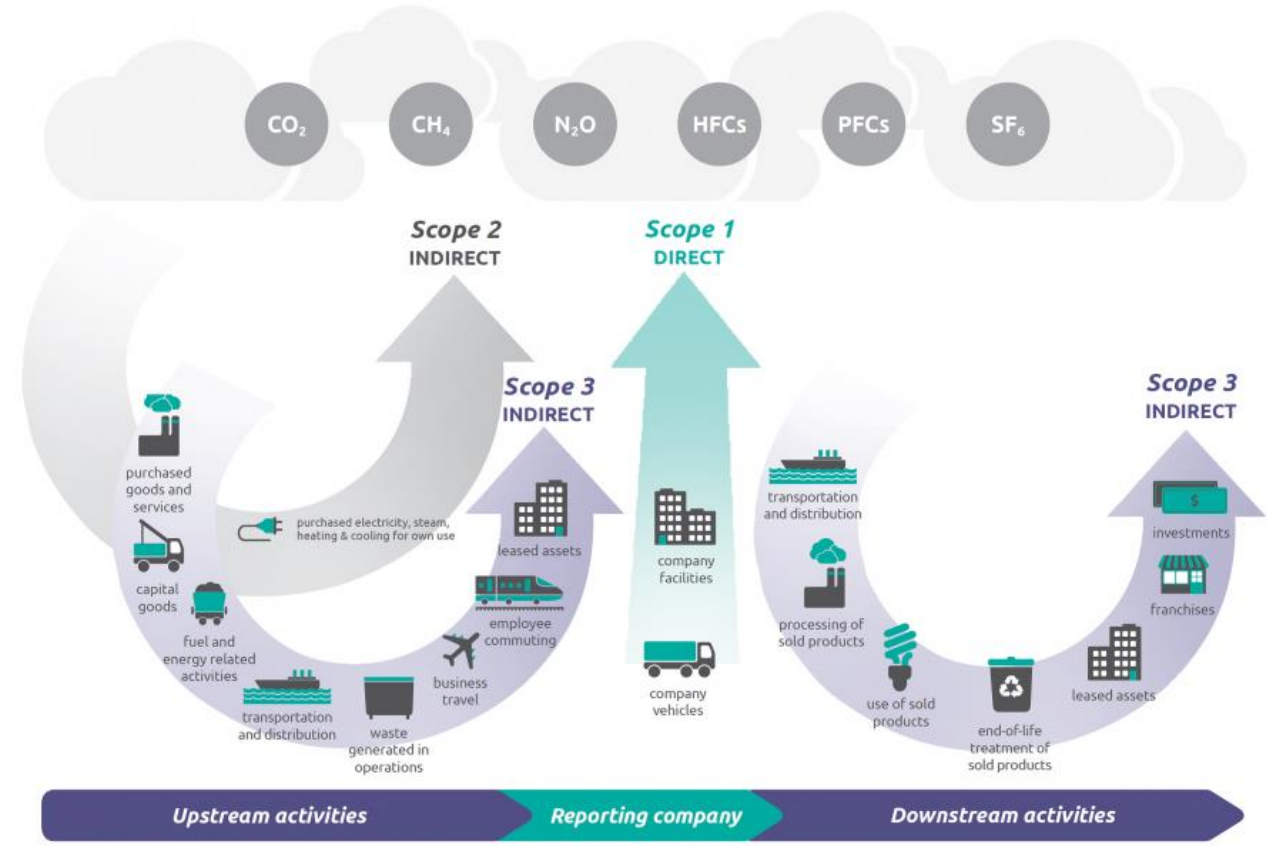
New York Community and Regional GHG Inventory Guidance - Methods and Data Sources For Community-Wide (Geospatial) GHG Emissions Inventories. New York State Department of Environmental Conservation. https://climatesmart.ny.gov/fileadmin/csc/documents/GHG_Inventories/ghgguide.pdf

WRI/WBCSD Value Chain (Scope 3) Accounting and Reporting Standard. https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporing-Standard_041613_2.pdf

4 APPENDICES

A: VISUAL SUMMARY OF OF GHG INVENTORY SCOPES



Source: https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporing-Standard_041613_2.pdf

B: DETAILED SUMMARY OF GHG SCOPES BY SECTOR

Sector / Source	Description of the Source	Scope
Built Environment		
Residential Energy	Direct emissions from natural gas, fuel oils, wood, and propane consumed within the boundary.	1
	Indirect emissions attributed to electricity consumption.	2
Commercial Energy	Direct emissions from natural gas, fuel oils, wood, and propane consumed within the boundary.	1
	Indirect emissions attributed to electricity consumption.	2
Industrial Energy	Direct emissions from natural gas, fuel oils, wood, propane, coal, residual fuel oils, petroleum coke, and others consumed within the boundary.	1
	Indirect emissions attributed to electricity consumption.	2
Power Generation	Direct emissions from grid-connected power generating facilities of capacity 1 MW or greater within the boundary.	1
Transmission Losses (T&D)	Direct fugitive emissions of natural gas that leaks from the gas transmission and distribution system within the boundary.	1
	Direct fugitive emissions from gas, oil, and coal production sites.	1
Industrial Processes and Product Use	Direct chemical process emissions (non-energy related) from the cement, paper, metals, and other industries.	1
	Direct emissions of PFC, HFCs (refrigerants), and NF_3 used in vehicles, buildings, and industry.	1
	Direct fugitive emissions of SF_6, a specialized coolant used in the utility industry.	1
Materials Consumption	Indirect / lifecycle emissions related to consumption of raw materials, durable goods, and food in boundary.	3
Transportation		
On road	Direct emissions from on-road vehicles within the boundary.	1
	Indirect (community-induced) emissions caused by a community.	3
Off-road	Direct emissions from off-road equipment (construction, agricultural, lawn care, etc.) within the boundary.	1
Rail	Direct emissions from rail locomotives within the boundary.	1
	Indirect (community-induced) emissions caused by a community	3
Marine	Direct emissions from boats including private craft on lakes and rivers, and commercial shipping operating on rivers and around ports.	1
Air	Indirect emissions attributed to regional domestic and international air travel demand.	3
Waste		
Solid Waste	Direct emissions from regional landfills and waste incinerators. Grid-connected waste-to-energy (WTE) facilities are reported under Scope 1 in Power Generation.	1
	Indirect emissions attributed to communities based on the amount of solid waste they create within the boundary.	3
Sewage Waste	Direct emissions from waste water treatment plants and septic systems within the boundary.	1
Agriculture		
Livestock / Manure	Direct emissions from livestock operations (enteric fermentation and manure management) within the boundary.	1
Fertilizer and Soils	Direct emissions from cropland management and fertilizer application within the boundary.	1

Source: https://climatesmart.ny.gov/fileadmin/csc/documents/GHG_Inventories/ghgguide.pdf