

COMMUNITY-WIDE GREENHOUSE GAS INVENTORY SUMMARY

City of Frederick, Maryland

EMISSIONS SUMMARY

The City of Frederick community-wide net greenhouse gas (GHG) emissions decreased by 19% between 2005 and 2023, despite a 36% growth in population. Forests and trees result in the net sequestration of more than 10,000 metric tons of CO₂ equivalent (MTCO₂e) annually, or 1% of total emissions.

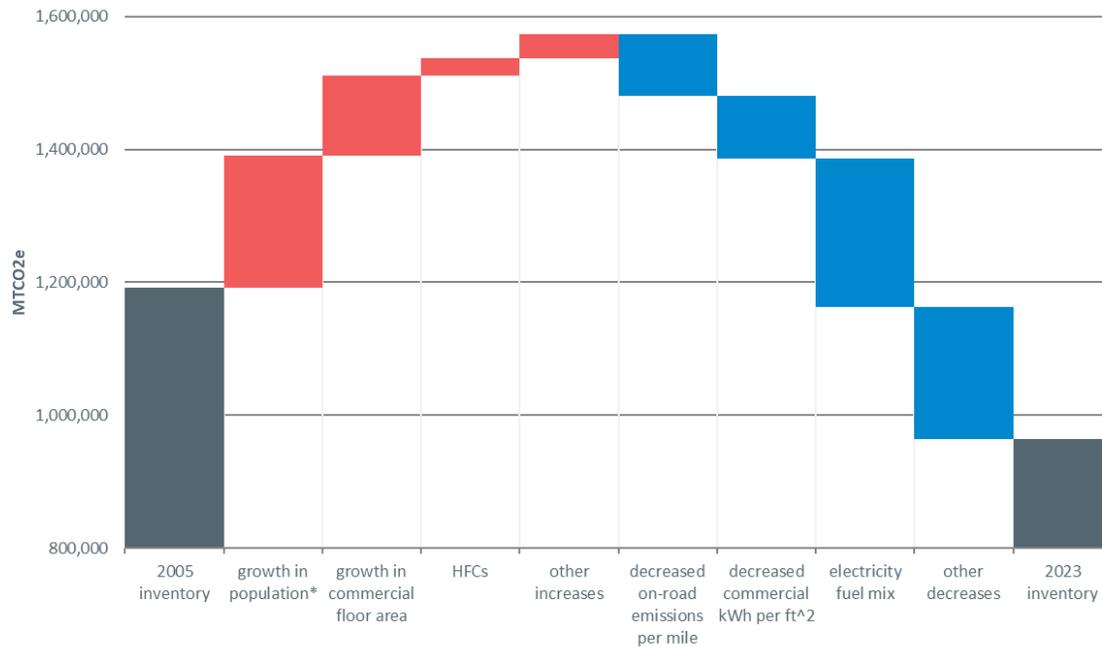


Note: Other refers to emissions associated with the release of Hydrofluorocarbons, emissions resulting from local natural gas system losses within the community, as well as emissions from Agriculture. Net emissions factors in sequestration.

 <h1 style="color: #90ee90;">227</h1> thousand MTCO ₂ e emissions reduced from 2005-2023 <i>This is the equivalent to taking over >53,000 gas-powered passenger vehicles off the road for one year.</i>	 <h1 style="color: #90ee90;">40</h1> % total GHG emissions from buildings in 2023 <i>25% from commercial energy consumption and 15% from residential energy consumption</i>	 <h1 style="color: #90ee90;">53</h1> % total GHG emissions from transportation in 2023 <i>48% from on-road, 3% from off-road, 2% from air passenger travel, <1% from commuter rail</i>	 <h1 style="color: #90ee90;">40</h1> % reduction of per capita emissions from 2005-2023 <i>Per capita emissions reduced from 19.9 MTCO₂e in 2005 to 11.8 in 2023.</i>
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GHG CONTRIBUTION ANALYSIS

The City of Frederick GHG Contribution Analysis results show what has driven increases and decreases in emissions between inventory years 2005 and 2023. The graph shows the main drivers increasing emissions (red bars) are growth in population, commercial space, and hydrofluorocarbons (HFCs). Driving down emissions (blue bars) are mainly a cleaner grid, decreased commercial electricity energy intensity, and cleaner cars.



Note: * Includes effects of population on residential energy, VMT, and waste generation.

INVENTORY BACKGROUND AND METHODOLOGY

The Metropolitan Washington Council of Governments (COG) and local governments across metropolitan Washington collaboratively established the regional GHG emission reduction goals of 10% below business-as-usual projections by 2012 (back down to 2005 levels); 20% below 2005 levels by 2020; 50% by 2030; and 80% by 2050. The City of Frederick established GHG emission reduction goals of 50% below 2010 levels by 2030 and 100% by 2050. The City of Frederick met the regional 2012 goal. Emissions from buildings and transportation saw a greater reduction than anticipated due to the 2020 pandemic.

COG completes GHG community-scale inventories for all 24 local government members, northern Virginia, and metropolitan Washington. COG GHG inventories are compliant with both the U.S. Communities Protocol for Accounting and Reporting Greenhouse Gas Emissions (USCP) and Global Protocol for Community-Scale Greenhouse Gas Inventories (GPC). The inventories measure GHG-emitting activities undertaken by residents, businesses, industry, and government located in metropolitan Washington, as well as emissions from visitors.

RESOURCES

- [COG Greenhouse Gas Emissions Inventories Methodology Guide](#)
- [COG Greenhouse Gas Inventories](#)
- [DMV Climate Partners GHGs in the DMV](#)