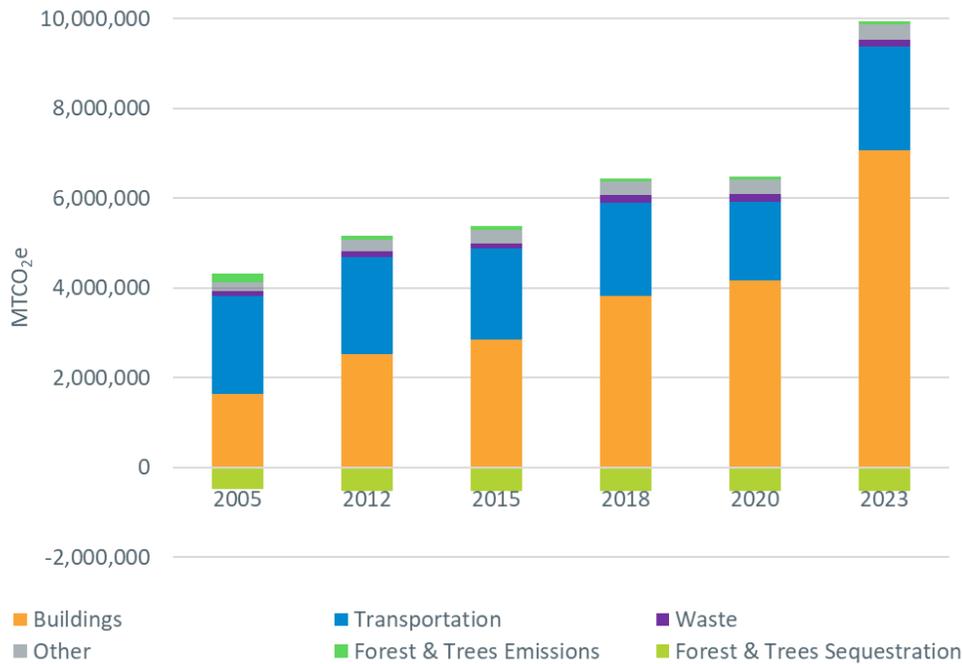


COMMUNITY-WIDE GREENHOUSE GAS INVENTORY SUMMARY

Loudoun County, Virginia

EMISSIONS SUMMARY

Loudoun County community-wide net greenhouse gas (GHG) emissions increased by 145% between 2005 and 2023, along with a 79% growth in population. Forests and trees result in the net sequestration of more than 449,000 metric tons of CO₂ equivalent (MTCO₂e) annually, or 4% of total emissions.

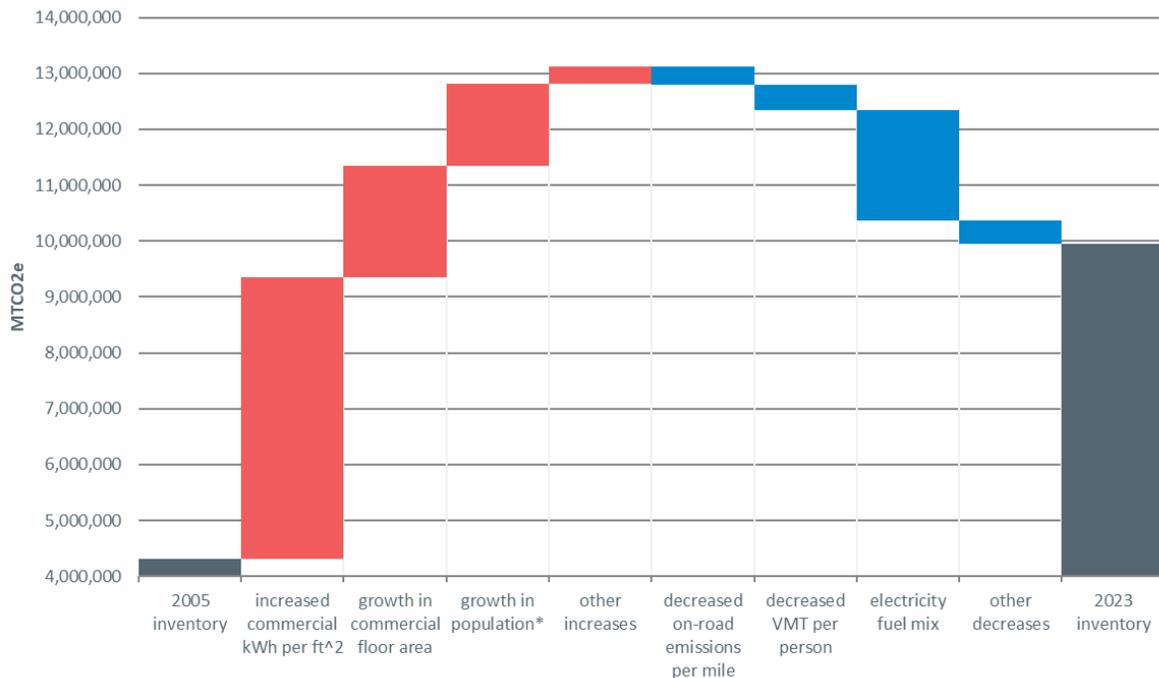


Note: Other refers to emissions associated with the release of Hydrofluorocarbons, emissions resulting from local natural gas system losses within the community, as well as emissions from Agriculture. Net emissions factors in sequestration.

 <h1 style="font-size: 2em; margin: 0;">5.62</h1> <p style="font-size: 1.2em; margin: 0;">million MTCO₂e emissions increased from 2005-2023</p> <p style="font-size: 0.8em; margin-top: 10px;"><i>This is the equivalent to adding >1,300,000 gas-powered passenger vehicles to the road for one year.</i></p>	 <h1 style="font-size: 2em; margin: 0;">71</h1> <p style="font-size: 1.2em; margin: 0;">% total GHG emissions from buildings in 2023</p> <p style="font-size: 0.8em; margin-top: 10px;"><i>62% from commercial energy consumption and 9% from residential energy consumption</i></p>	 <h1 style="font-size: 2em; margin: 0;">23</h1> <p style="font-size: 1.2em; margin: 0;">% total GHG emissions from transportation in 2023</p> <p style="font-size: 0.8em; margin-top: 10px;"><i>18% from on-road, 3% from off-road, 3% from air passenger travel, <1% from commuter rail</i></p>	 <h1 style="font-size: 2em; margin: 0;">29</h1> <p style="font-size: 1.2em; margin: 0;">% increase of per capita emissions from 2005-2023</p> <p style="font-size: 0.8em; margin-top: 10px;"><i>Per capita emissions reduced from 17.5 MTCO₂e in 2005 to 22.5 in 2023.</i></p>
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GHG CONTRIBUTION ANALYSIS

The Loudoun County 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 increased commercial electricity energy intensity, growth in commercial space, and population. Driving down emissions (blue bars) are mainly a cleaner grid, reduced vehicle miles traveled (VMT) per person, 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. Loudoun County established a GHG emission reduction goal of net-zero by 2045 in alignment with Virginia’s emission reduction 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](#)