

On November 17, 2020, the Prince William County Board of Supervisors (BOCS) adopted [Climate Mitigation and Resiliency Goals](#) and authorized the creation of a Sustainability Commission (SC). The BOCS created the SC on December 7, 2021, to advise the county on developing a Community Energy and Sustainability Master Plan that will reach its climate mitigation and resiliency goals:

- 2030 - Reducing greenhouse gas (GHG) emissions to 50% below baseline 2005 levels
- 2030 - Achieving 100% renewable electricity in Prince William County Government operations
- 2030 - Becoming a Climate Ready Region and making significant progress to be a Climate Resilient Region
- 2035 - Sourcing 100% of PWC’s electricity from renewable sources
- 2050 - Achieving 100% carbon neutrality in Prince William County Government operations

The focus of this fact sheet is the first of these goals, reducing GHG emissions by 2030.

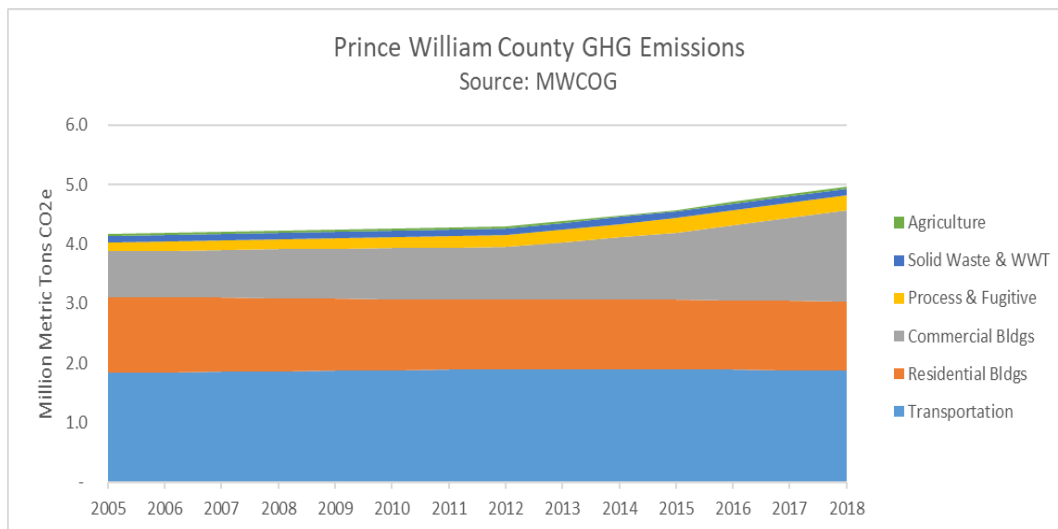
### GHG Emissions in Prince William County

The Metropolitan Washington Council of Governments (MWCOG) developed a GHG inventory for PWC, covering a base year of 2005, plus 2012, 2015, and 2018 (the most recent year available). The inventory covers 6 sectors and 22 source types, and it uses standard methods for GHG inventories.

The results indicate that PWC’s emissions increased from 4.16 million metric tons of CO<sub>2</sub> equivalent<sup>1</sup> to 4.96 MMTCO<sub>2</sub>e (an increase of 19%) between 2005 to 2018 (see Exhibit 1 below). The top four source types comprise 83% of total:

- On-road vehicles (33% of 2018 total; 13% increase since 2005)
- Commercial buildings – electricity (27% of 2018 total; 113% increase since 2005)
- Residential buildings – electricity (15% of 2018 total; 18% decrease since 2005)
- Residential buildings – natural gas (8% of 2018 total; 31% increase since 2005)

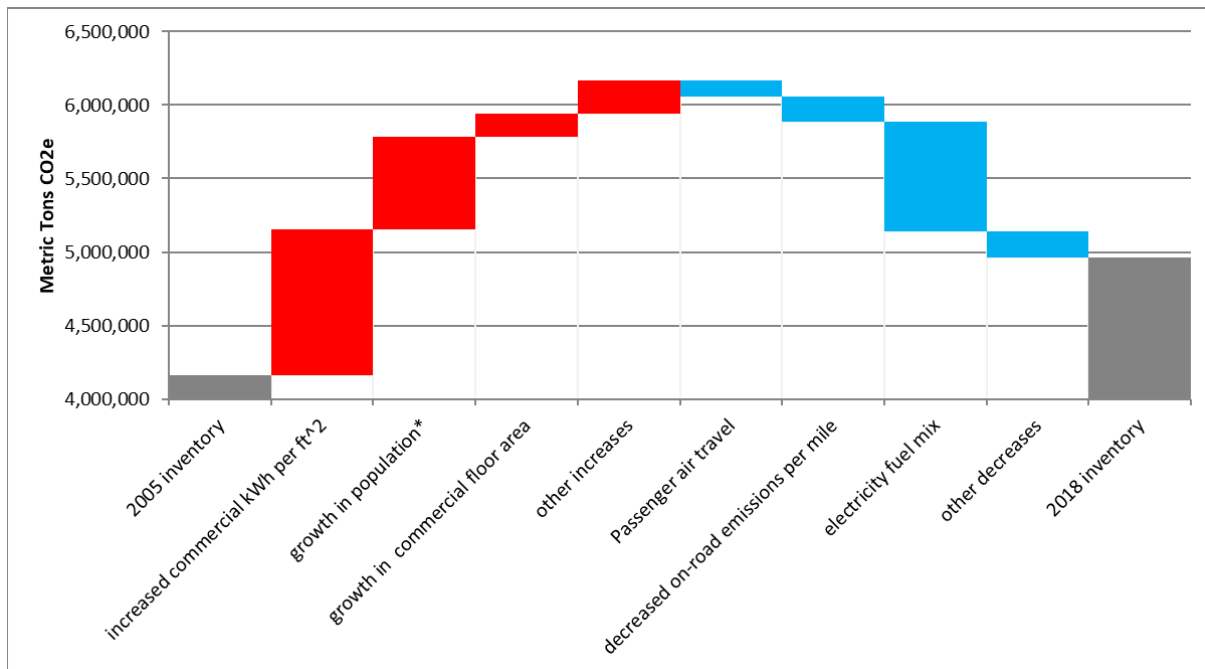
**Exhibit 1. MWCOG GHG Inventory for PWC: Emissions Trend from 2005 - 2018**



<sup>1</sup> Greenhouse gases include carbon dioxide (CO<sub>2</sub>), methane, nitrous oxides, and fluorinated gases, which have different heat-trapping intensities in the atmosphere. To express heat-trapping potential using a common unit, scientists use CO<sub>2</sub> as the index gas, and express emissions in units of tons of CO<sub>2</sub> equivalent (CO<sub>2</sub>e).

MWCOG has provided a “contributions analysis” to summarize high-level factors driving increases and decreases in emissions between 2005 and 2018. Exhibit 2 below summarizes the key factors behind the emission increases (primarily higher energy use intensity in commercial buildings and growth in population) and countervailing emission decreases (primarily the reduced carbon intensity of Virginia’s electric power grid, which, according to [State Carbon Dioxide Emissions Data - U.S. Energy Information Administration \(EIA\)](#), emitted 43% less CO<sub>2</sub>e per kilowatt-hour produced in 2018 compared to 2005).

**Exhibit 2. MWCOG High-level GHG Contributions Summary for PWC: Change Drivers from 2005 - 2018**



The county’s 50% GHG reduction goal matches MWCOG’s regional goal as well as the US national commitment under the Paris Agreement. The Paris Agreement is a legally binding international treaty intended to avoid the most severe climate change impacts. To attain the county’s goal, we will need to reduce emissions to 2.08 MMTCO<sub>2</sub>e by 2030. This represents a 58% reduction in GHG emissions from 2018 levels. Given the county’s continued population and economic growth, current emissions are probably higher than 2018 levels, requiring even greater proportional cuts.

Given our emission profile, the Community Energy and Sustainability Master Plan will need to focus on reducing emissions from the transportation sector and from commercial and residential buildings. Federal and state-level actions to reduce the carbon intensity of the electric grid and the transportation sector will help. But it is clear even now, at the early stages of our planning process, that we will need to take aggressive action at the county level – making dramatic changes to our business-as-usual approaches – if we are to deliver our fair share toward reducing the world’s climate change problem.

The Sustainability Commission will continue working with the PWC Environment/Energy Sustainability Officer, with contractor support, on a plan to present to the BOCS to attain the Climate Mitigation and Climate Resilience goals.