ENVIRONMENTAL QUALITY IN METROPOLITAN WASHINGTON

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Region Forward
April 27, 2018

Item # 2

Metropolitan Washington
Council of Governments

Region Forward: Measuring Progress

Sustainability Targets — April 2018

TARGET	By 2020, construct 5,000 **certified green buildings** (Target revised to show number of high-performance buildings. The data on square footage of LEED commercial construction is no longer available)	By 2020, **reduce regional greenhouse gas emissions** by 20% below 2005 levels	Beginning in 2014, the region's **air quality will be improving** and ambient concentrations will be reduced below federal standards (0.70)	The region will identify, conserve, and enhance a network of **protected open spaces, parks and green infrastructure** to provide ecological benefits, wildlife habitat, recreational opportunities, and scenic beauty	By 2050, 50% of **all sentinel watersheds will be in good or excellent condition**	By 2025, achieve 100% of **Chesapeake Bay Program's Water Quality Implementation Goals**	Beginning in 2012, the region will **maintain more than 497,500 acres of its area for agricultural uses**
LATEST ESTIMATE	3,553	10%	0.72	26%	Data not updated since 2010	100%	498,946
TREND	↑	↓	↓	→	Not Determined	↓	↓
MEET / DO NOT MEET TARGET	✓	✗	✗ (Attaining 2008 Ozone standard, long-term trend down)	✗	Not Determined	✓ (Measures current attainment of TMDL wastewater nutrient limits)	✓ (Original 450,000 acre goal adjusted to include Charles County)
SOURCE/ LATEST DATA	COG's 2020 Regional Climate and Energy Action Plan, 2016	Draft COG Greenhouse Gas Inventories, 2005, 2012, 2015 (report and fact sheet will be published this summer)	EPA Design Value Reports - https://www.epa.gov/air-trends/air-quality-design-values, 2016	Chesapeake Bay Program GIS data - https://www.chesapeakebay.net/what/data, 2015-2016	Chesapeake Watershed stream health data - http://www.chesapeakeprogress.com/abundant-life/stream-health	Chesapeake Bay Total Maximum Daily Load (TMDL) Tracker, https://tmdl.chesapeakebay.net/	USDA Census of Agricultural - https://www.agcensus.usda.gov/, 2012

Environmental Goals

WATER QUALITY

- Ensure clean rivers & streams and a safe, resilient drinking water supply

AIR QUALITY

- Ensure no unhealthy air quality days to protect the public health

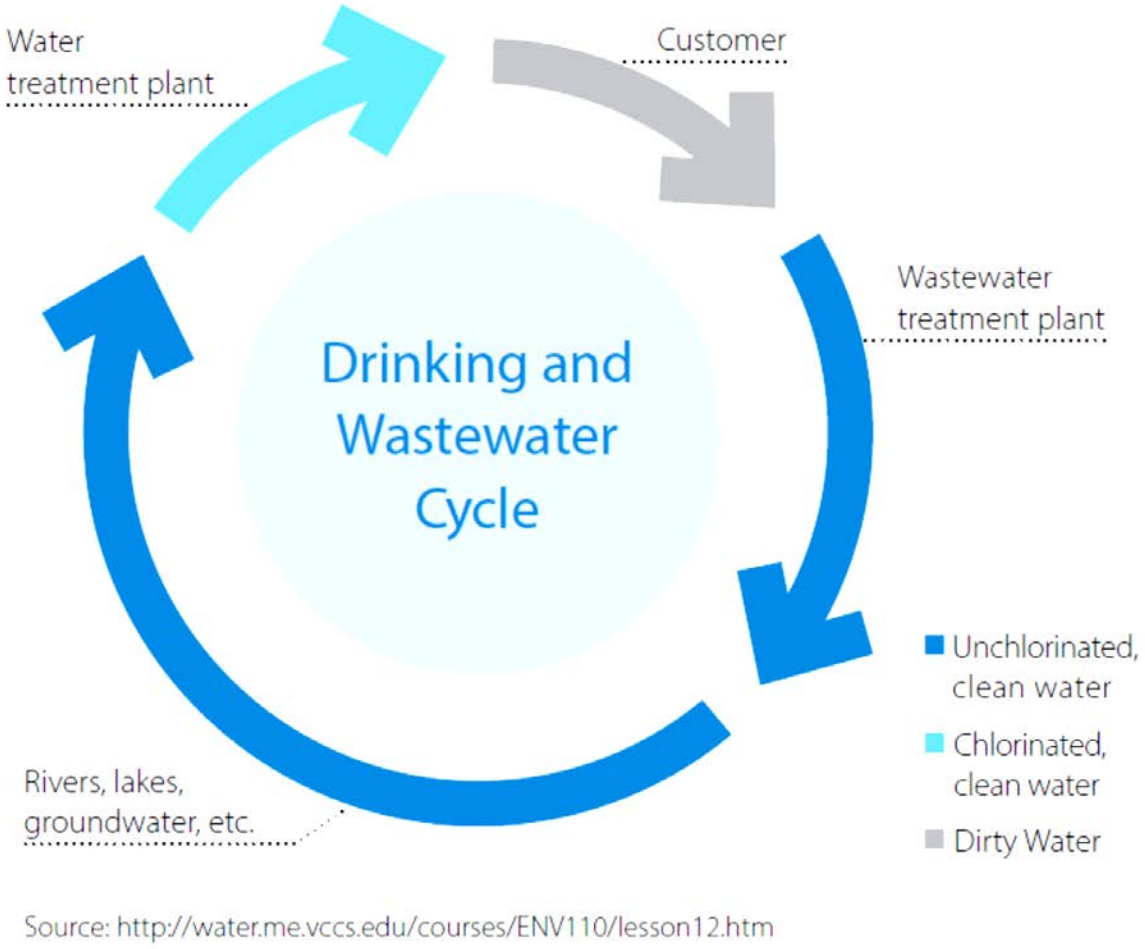
ENERGY AND CLIMATE

- Conserve energy and increase use of clean energy sources

WASTE MANAGEMENT

- Minimize waste generation and provide for safe, cost-effective collection, diversion or disposal

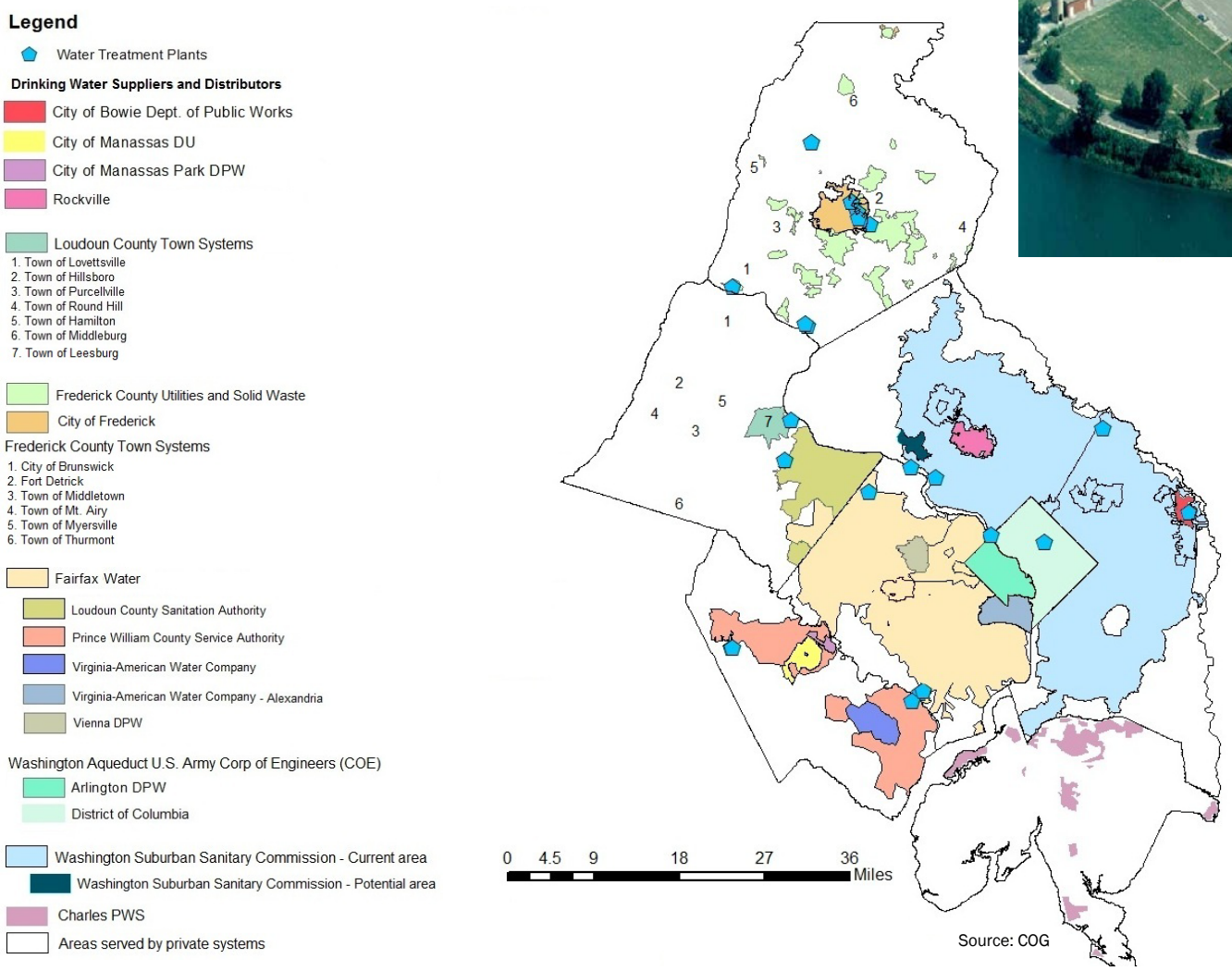
Water



Source: http://water.me.vccs.edu/courses/ENV110/lesson12.htm

Drinking Water

Source: COG



Source: COG

Wastewater Treatment

Source: DC Water

COG Region WWTPs - Major Plants (>= 2.0 MGD)

Blue Plains Service Area

Source: DC Water

Water Quality

Source: COG

The Potomac River Grades

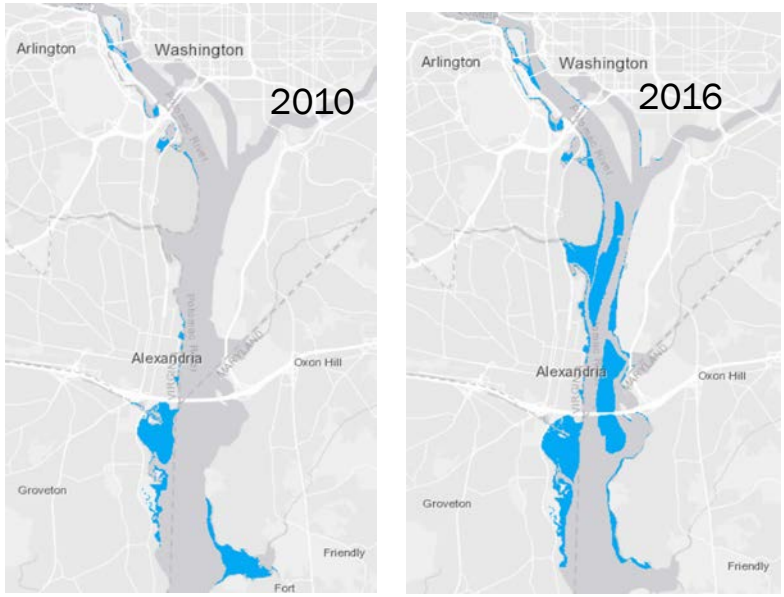
2018:	B
2016:	B-
2013:	C
2011:	D
2007:	D+

Source: The Potomac Conservancy

Potomac River Shad

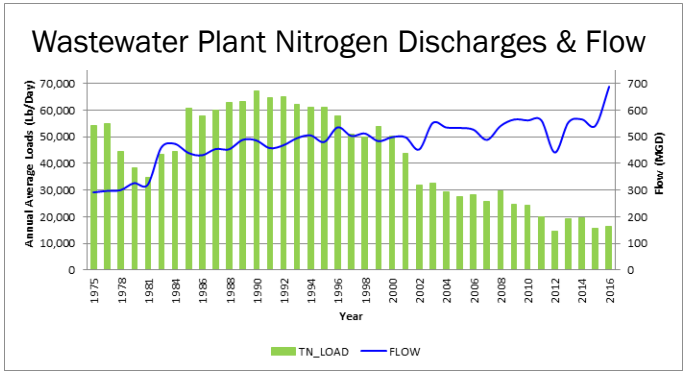
Source: chesapeakebay.net

Potomac River Submerged Aquatic Vegetation



Source: http://www.chesapeakeprogress.com/abundant-life/sav

Wastewater Plant Nitrogen Discharges & Flow



Source: MWCOG

Water Infrastructure

District of Columbia

- Drinking Water
  - 2 water treatment plants
  - 1,300 miles water pipes
  - 4 pumping stations
  - 5 reservoirs
  - 4 elevated tanks
  - 43,860 valves
  - 9.500 hydrants
- Wastewater
  - 1 wastewater treatment plant
  - 1,900 miles sewer pipes
  - 22 flow-metering stations
  - 9 pumping stations

Source: COG

Source: VIMS

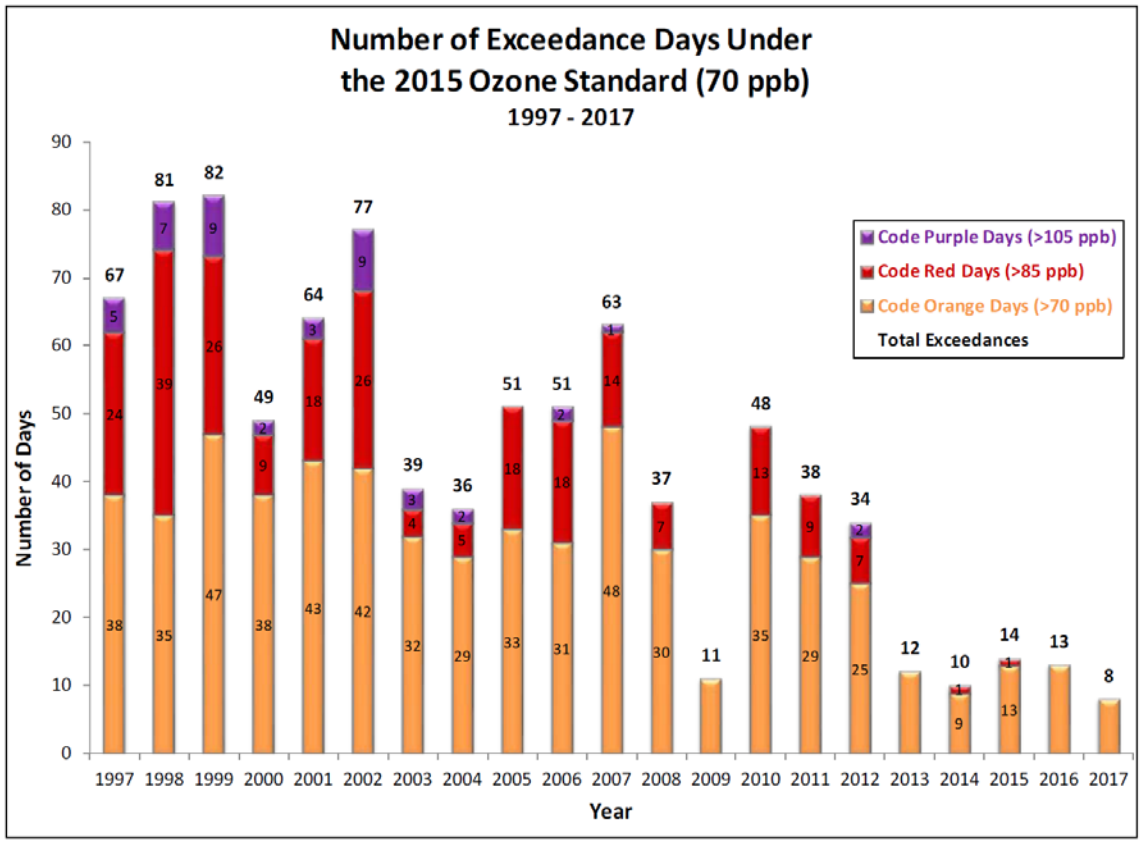
Air Quality

Source: Clean Air Partners

Source: COG

Air Quality

Source: COG



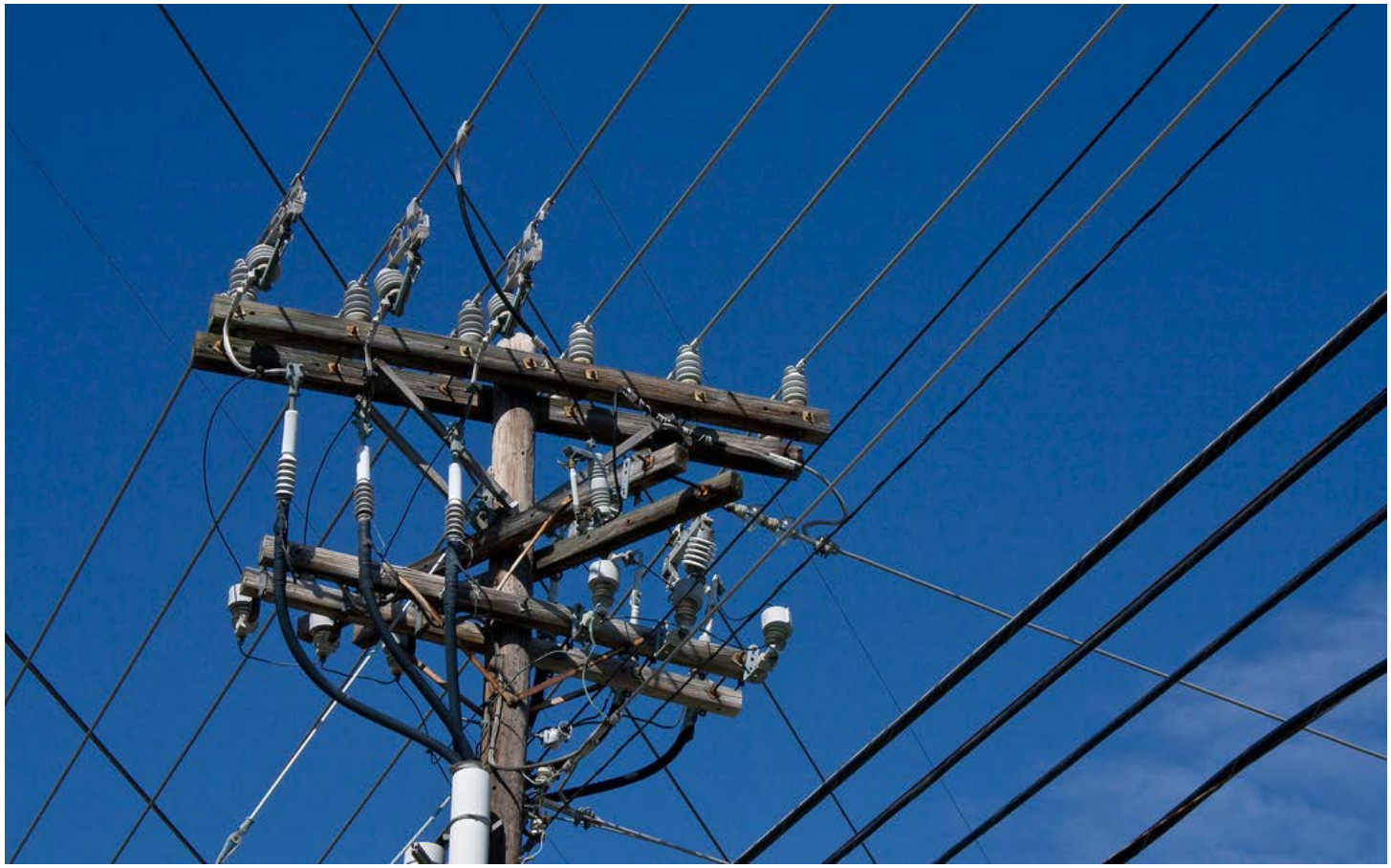
Source: COG

Air Quality Index (AQI) Values	Levels of Health Concern
When the AQI is in this range:	*...air quality conditions are:*
0 to 50	Good
51 to 100	Moderate
101 to 150	Unhealthy for Sensitive Groups
151 to 200	Unhealthy
201 to 300	Very Unhealthy
301 to 500	Hazardous

Source: COG

Source: COG

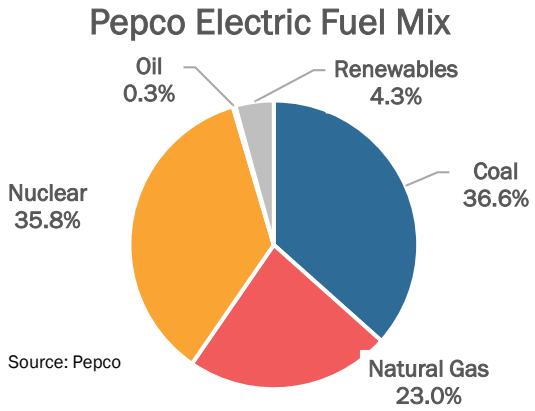
Energy and Climate



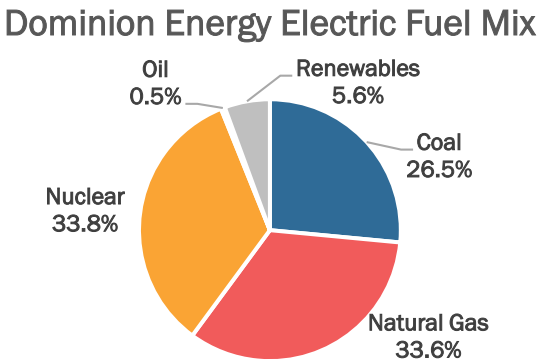
Source: COG

Energy and Climate

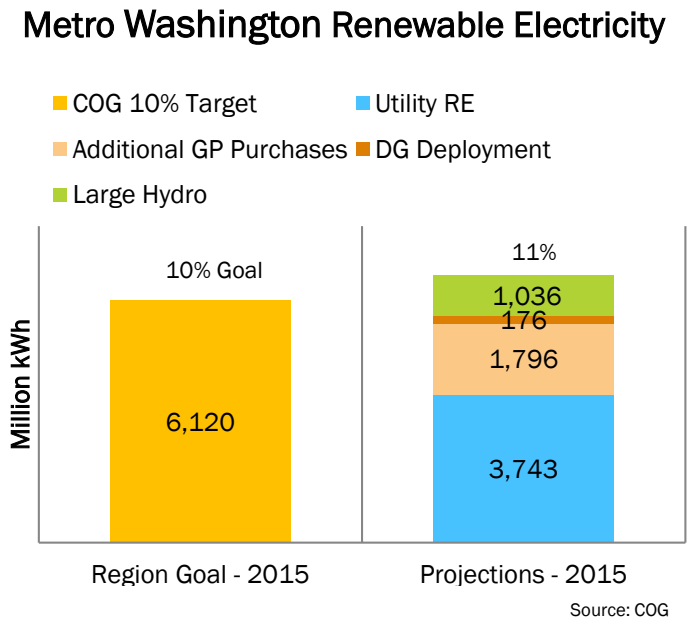
Source: EPA



Source: Pepco



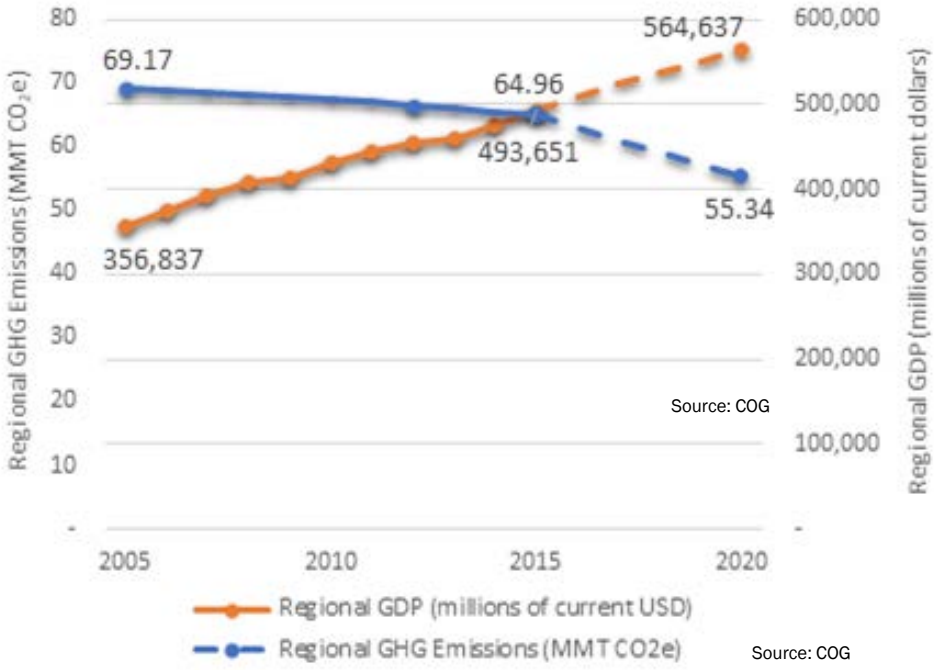
Source: Dominion energy



Source: COG

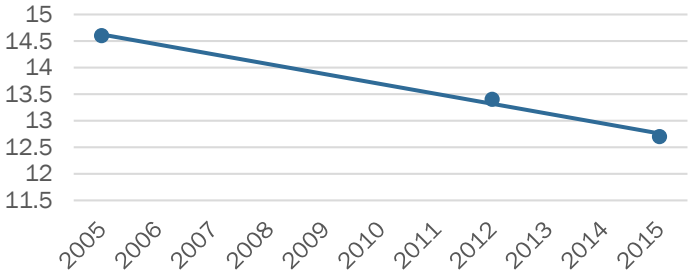
Energy and Climate

Metro Washington Greenhouse Gas Emissions



Source: COG

Metro Washington Per Capita Greenhouse Gas Emissions

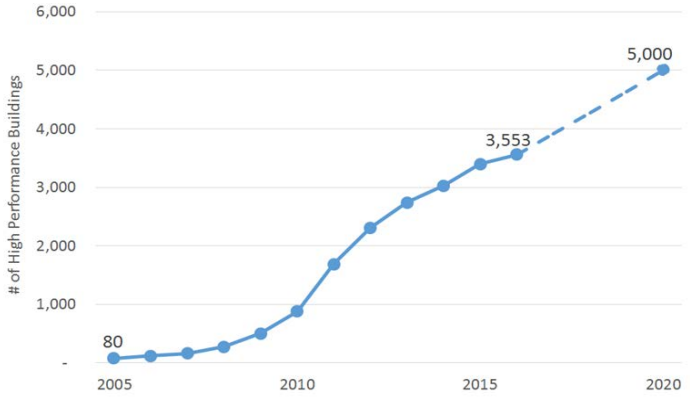


Source: COG

Energy and Climate

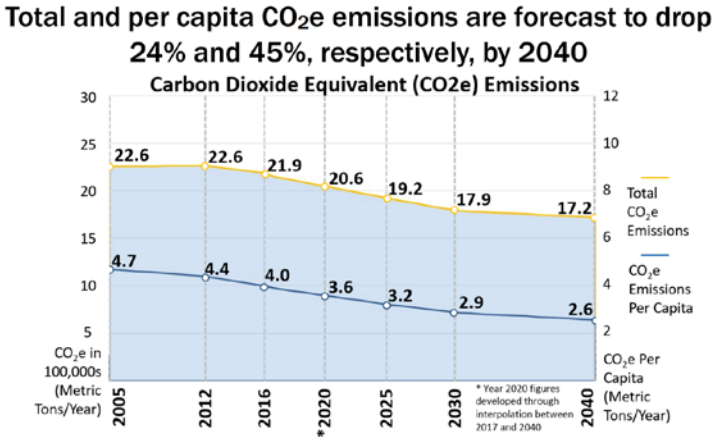
Source: EPA

Metro Washington High Performance Buildings



Source: COG

Mobile Source Greenhouse Gas Emissions



Source: COG

Regional Comparison – LEED Certified Buildings

Metropolitan Area	# Projects	Total Size - Square Feet
Washington	2,675	183,363,225
New York	1,651	168,933,622
Los Angeles	2,251	102,139,125
Chicago	680	89,548,520
Seattle	975	74,393,475
San Francisco	537	65,565,552
Boston	484	63,456,756
Miami	721	59,321,717
Dallas	3,797	41,383,503
Denver	448	32,217,024

Source: Adapted from abodo.com

Energy Infrastructure

Electricity

- 75,000 miles distribution wires
- 470 substations
- 260,000 transformers
- 600+ smart switches
- 2 million electric meters

Source: COG

Natural Gas

- 18,000 miles distribution pipelines
- 15 million gallons propane storage
- 1.1 million gas meters

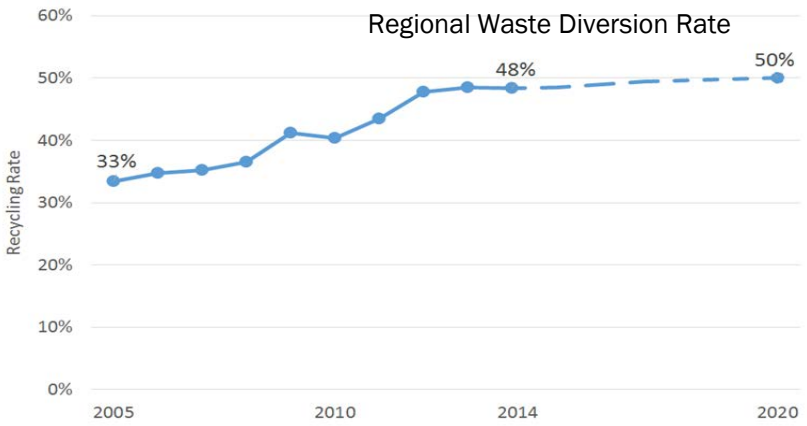
Source: VIMS

Recycling and Solid Waste

Source: Alexandriava.gov

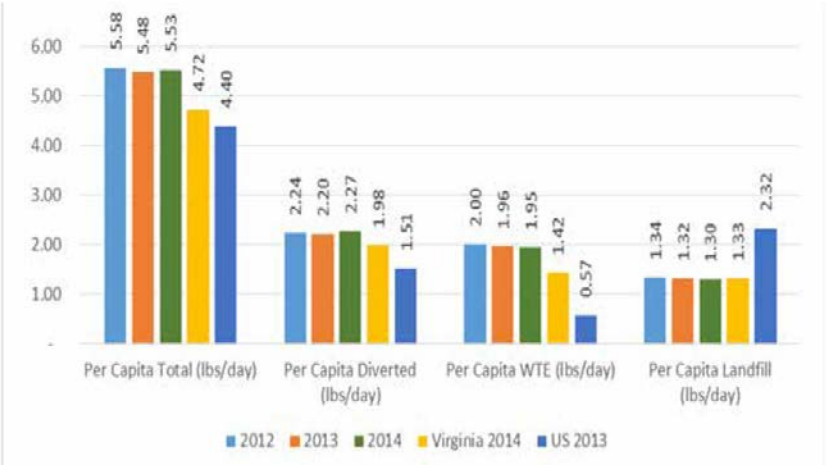
Recycling and Solid Waste

Source: City of Georgetown, TX



Source: COG

Figure F: Per Capita Waste Generation and Diversion



Source: NVRC

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