



**PRINCE WILLIAM**  
COUNTY

# Sustainability Commission

## November 17, 2022



# Citizen's Time

## Regular Meeting

### Call to Order

### Citizen's Time

### Old Business (10 Mins)

- Meeting Minutes of October 27, 2022
- Introduction of Admin Specialist to ESO/ Clerk for Sustainability Commission
- Discuss meeting schedule for 2023
- Update on standing up the Joint Environmental Task Force

### New Business (75 Mins)

- Process review- introducing resolutions and transmitting them to the BOCS; closing meetings
- Introduction of new utilities representative on commission
- AECOM methodology and key assumptions for CESMP
- Status report to the BOCS on CESMP progress, due in December

### Commissioner's Time

### Adjournment

## Old Business

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# Welcome New Commission Members - Local Utilities Representatives

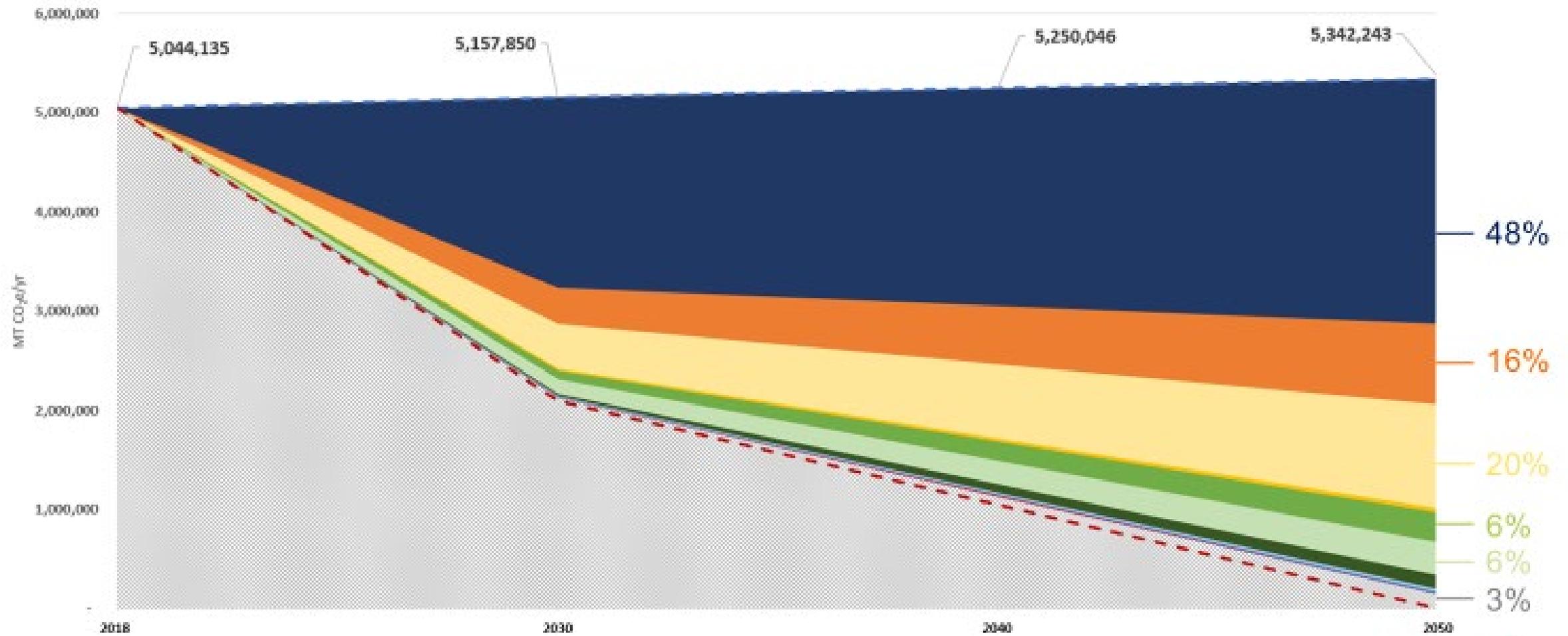
- ▶ Don Pannell, Prince William County Service Authority
- ▶ Brendon Shaw, Dominion
- ▶ Scott McGeary, Washington Gas
- ▶ Gilbert Jaramillo, Northern Virginia Electric Cooperative
- ▶ TBD, Virginia American Water

# Development of GHG Forecast to 2050 for CESMP

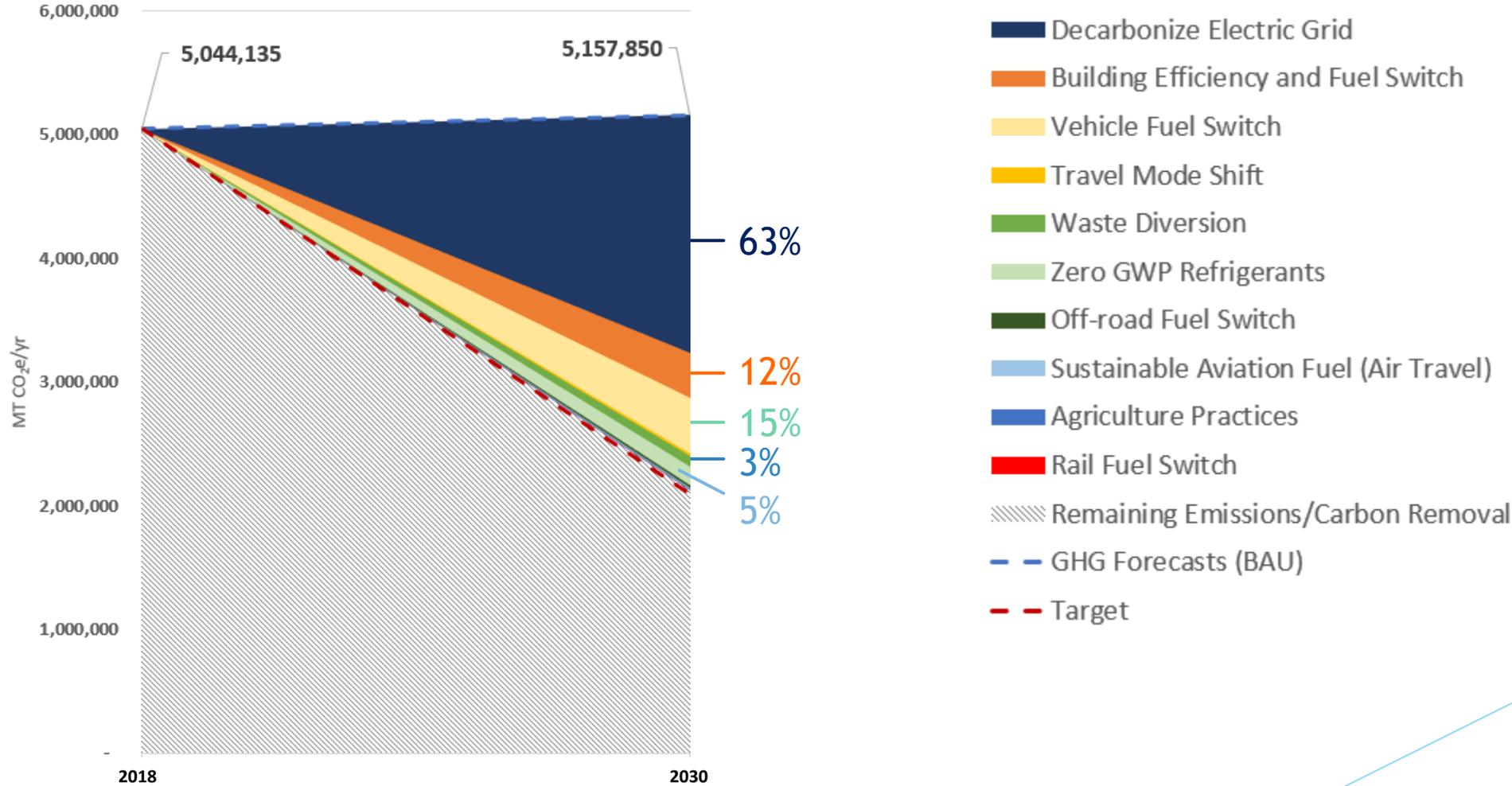
Office of Sustainability

# Estimated Reductions Needed to Hit 2050 GHG Goal from extrapolated MWCOG Forecast

- Decarbonize Electric Grid
- Building Efficiency and Fuel Switch
- Vehicle Fuel Switch
- Travel Mode Shift
- Waste Diversion
- Zero GWP Refrigerants
- Off-road Fuel Switch
- Sustainable Aviation Fuel (Air Travel)
- Agriculture Practices
- Rail Fuel Switch
- Remaining Emissions/Carbon Removal
- GHG Forecasts (BAU)
- Target



# Estimated Reductions needed to hit 2030 GHG Goal extrapolated from MWCOG Forecast



# MWCOG Commercial Energy Methodologies

- ▶ Commercial building square footage: MWCOG uses software CoStar to run commercial real estate data, in combination with projected job growth data provided by the County planning office
- ▶ Standard commercial energy intensity (kWh/sqft) from the Energy Information Administration (EIA) is then used to project the energy consumption of new commercial space. This is broken out by building type
- ▶ Business As Usual scenario assumes current energy intensity is consistent in the future.

EIA Commercial Building Energy Intensity (electricity)

Building Type	kWh/sqft
Office	15.9
Retail (mercantile)	18.3
Flex Industrial/Warehouse	6.6
Other	28.3

EIA Commercial Building Energy Intensity (natural gas)

Building Type	Gas scf/sqft
Office	26.8
Retail (mercantile)	21.5
Flex Industrial (Warehouse)	19.4
Other	57.2

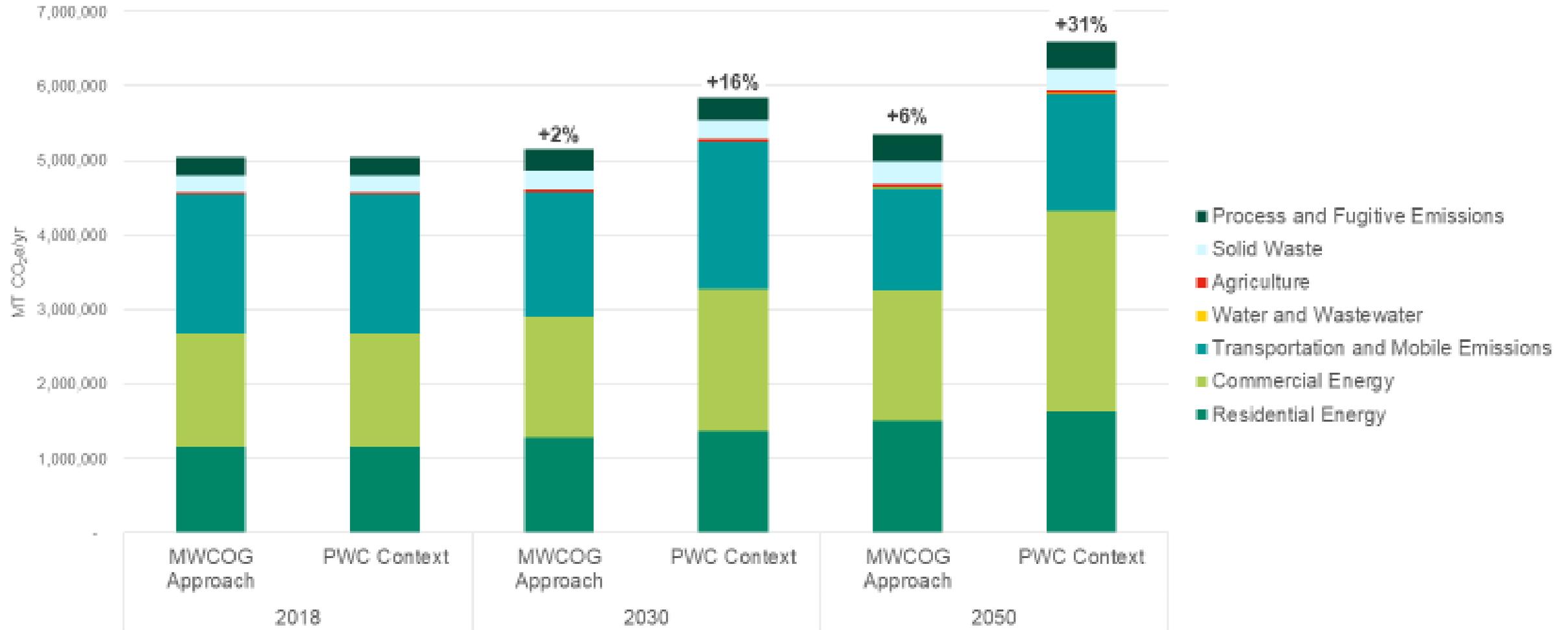
## Revised GHG Forecast with Key Assumptions

- ▶ Revisions are continuing to be made as the Draft 2040 Comprehensive Plan process has progressed
- ▶ The County provided data on projected number of households, resident population and number of employees based off of long-range land use changes up to 2040, which were then extrapolated to 2050
- ▶ The County provided Vehicle Miles Traveled (VMT) projections through 2040 using a travel demand model, which were extrapolated to 2050. This includes projection of VMT's occurring in the jurisdiction's boundary (trips that start, stop, and pass through jurisdiction with no stops)
- ▶ Revised forecast to include Digital Gateway projection of additional 27 million sq ft of data center development over time.

# Current High Level Revisions to GHG Forecast -DRAFT

Emissions Source	Update	Resulting 2030 change from old forecasts to new forecasts
Residential electricity and natural gas	Updated with PWC number of households growth rate (assuming electricity emissions factor remains constant, as outlined in MWCOG Forecasts)	Residential electricity and natural gas emissions increased 6%
Commercial electricity and natural gas	Updated with non-residential square footage growth rate derived from PWC employee and square foot per employee forecasts as well as the Digital Gateway commercial square footage addition of 27 million sqft of data centers not previously assumed in the staff-recommended long-range land use changes (assuming electricity emissions factor remains constant, as outlined in MWCOG Forecasts)  *Note: This construction timeline is aggressive, will likely be revised	Commercial electricity and natural gas emissions increased 18%
On-road transportation	Updated using the on-road emissions growth rate derived from PWC projected VMT and MWCOG projected emissions factor (PWC VMT increases but the MWCOG emissions factor decreases over time)	On-road transportation emissions increased 21%
Wastewater Treatment, Waste Generation, and HFCs	Updated with PWC resident population growth rate	Wastewater, solid waste, and HFC emissions increased 2%
Natural gas fugitive emissions	Updated based on the new residential and commercial natural gas forecasts (see above)	Natural gas fugitive emissions increased 7%

# Side by Side Comparison – DRAFT



## Key Takeaways of Current Revisions to GHG Forecast - **DRAFT**

- ▶ Substituting the PWC growth indicators in the identified sectors increased projected 2030 emissions by 13% from the initial forecasts using the MWCOG methodology and 2050 emissions by 23%. This is mainly due to:
  - The **increase in on-road vehicle miles traveled**. These emissions are responsible for 24% of the 2030 emissions increase from MWCOG to PWC forecasts.
  - The **increase in commercial electricity consumption**. These emissions are responsible for 22% of the 2030 emissions increase from MWCOG to PWC forecasts.
  - There are also **smaller increases in the residential electricity and natural gas use** due to PWC's projected household number growth rate (6% of 2030 emissions increase).

The revised forecasts help to further highlight two priority areas for action in the plan: **commercial electricity emissions and on-road emissions** (both of which were already identified as priority emissions sectors).

# Integration of Res 22-006: SUSTAINABILITY COMMISSION COMMENTS ON THE LAND USE CHAPTER OF AUGUST 25, 2022 DRAFT 2040 COMPREHENSIVE PLAN

Planning Office incorporated two land use action strategies into current draft, expected to be released next week:

- ❖ LU 19.8 Promote reforestation of rural, semi-rural, and suburban areas to store forest carbon and restore watershed integrity, and promote tree planting to increase tree canopy in urban areas to combat the urban heat island effect.
- ❖ LU 19.9 Encourage high density development and the majority of future growth to occur within adopted small area plans, activity centers and redevelopment corridors.

(Note: this language is modified from the resolution)

# Commissioner's Time

# Adjournment

