ITEM # 3

Metropolitan Washington Council of Governments

22 JURISDICTIONS 5+ MILLION PEOPLE 300 ELECTED OFFICIALS

Greenhouse Gas Reduction Strategies from Previous Work Transportation Sector (On-Road)

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Presentation Outline

- Greenhouse Gas (GHG) primer
- 2005 Regional Greenhouse Gas Inventory
- Opportunities for GHG reduction from on-road sources
- Examples of GHG reduction strategies

What are the GHGs from transportation (on-road)?

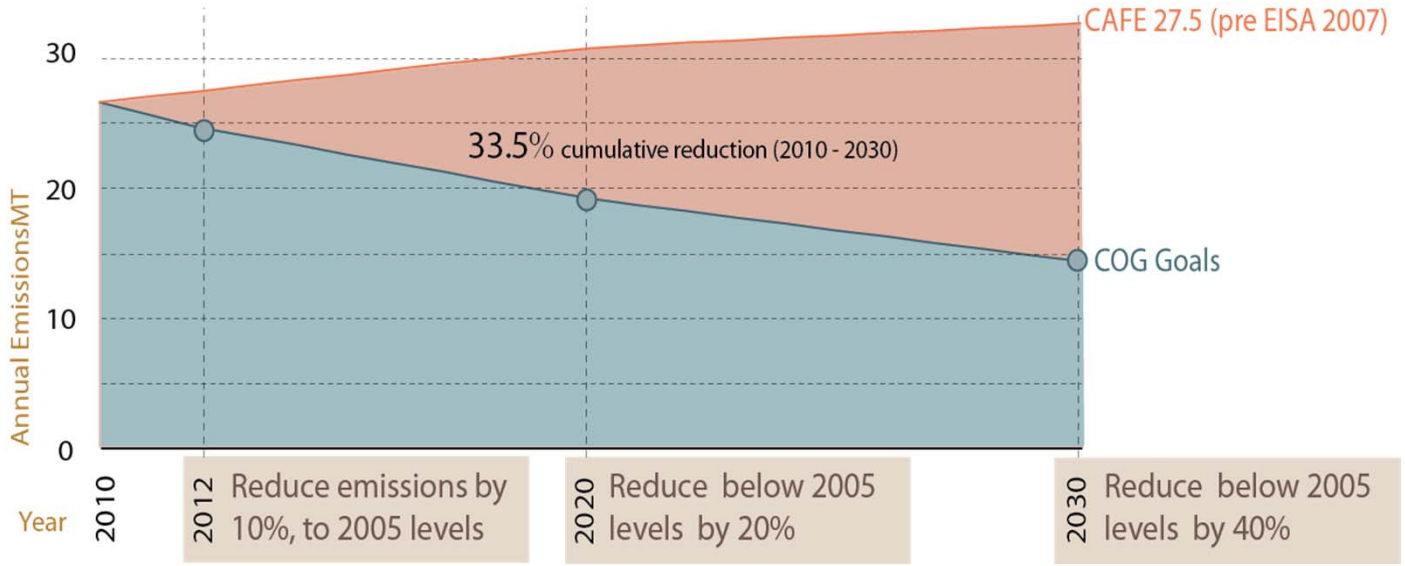
- Carbon Dioxide (CO_2)
  - Directly proportional to fuel consumption
- Methane (CH_4) and Nitrous Oxide (N_2O)
  - Dependent on engine operating conditions and emissions control technologies
- Hydrofluorocarbons (HFC)
  - Emitted from air conditioners and refrigeration (freight)

CO_2 Equivalent (CO_2e) is a unit used to measure all GHGs which takes into account Global Warming Potential

Source: FHWA, 2013

Cumulative Impact of GHG Emissions

GHG emissions accumulate in the atmosphere over time



Source: What Would it Take? Scenario Study, 2010

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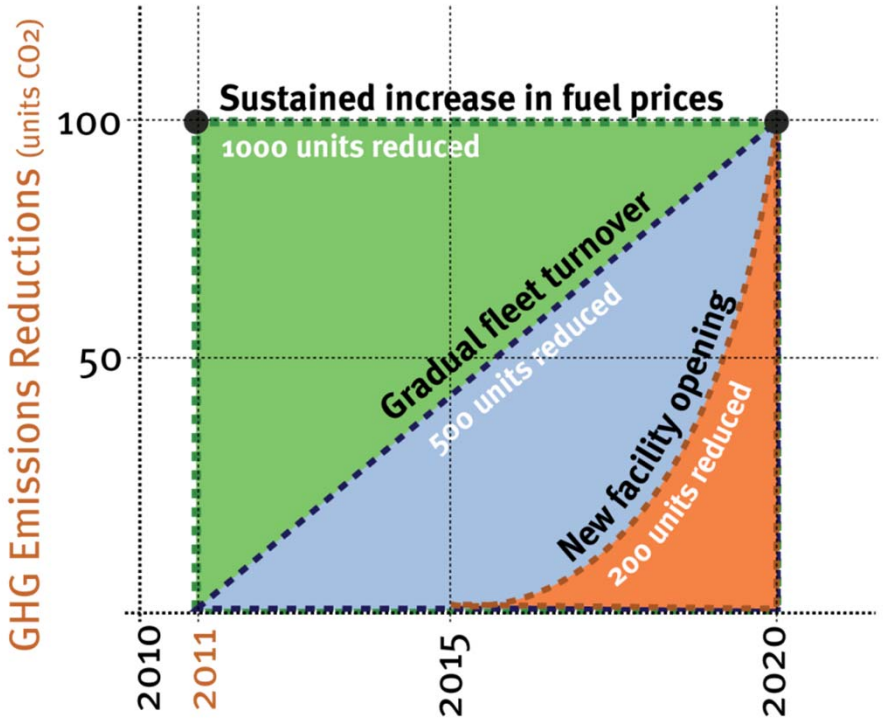
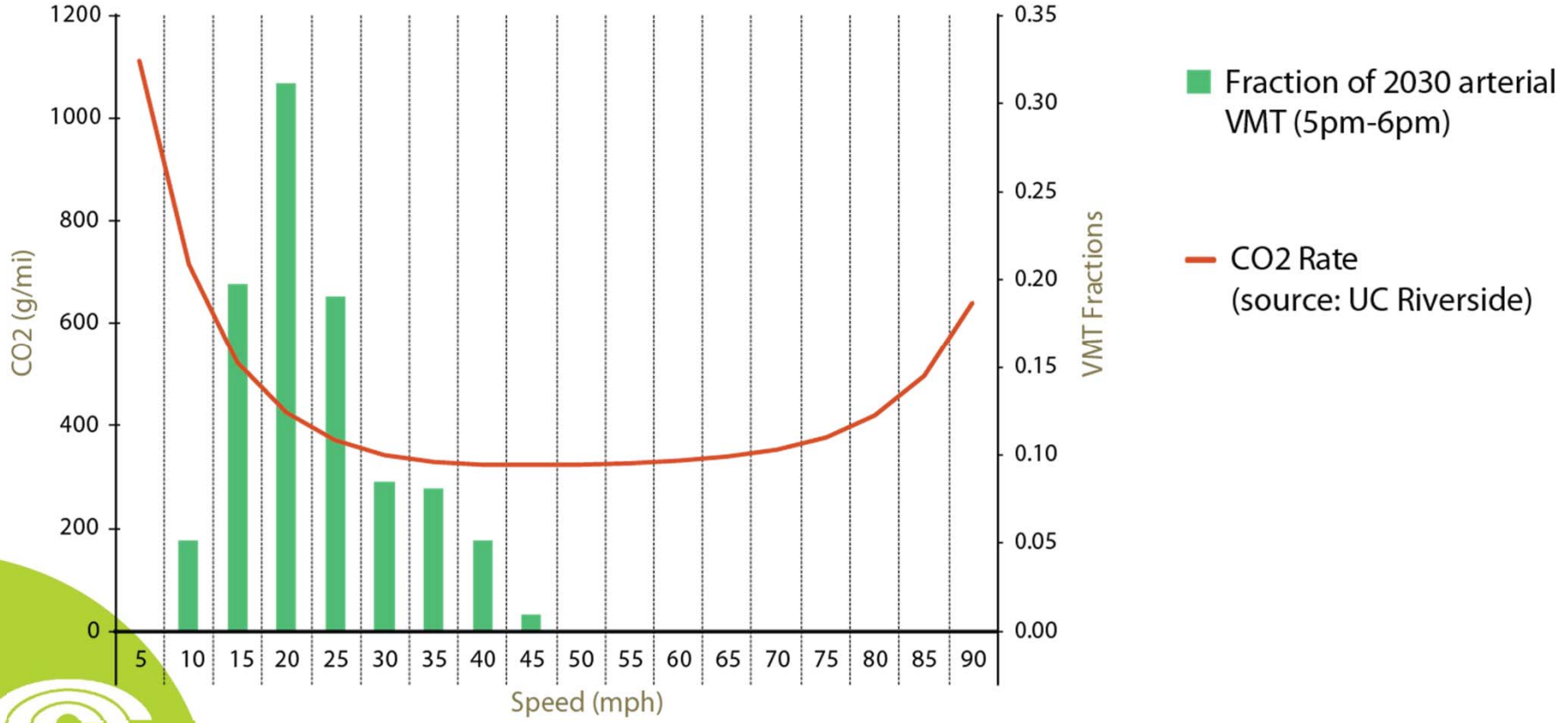
Cumulative Impact of GHG Emissions

The timing of the implementation of GHG reduction strategies affects the long term impact



CO_2 Emissions Relative to Speed



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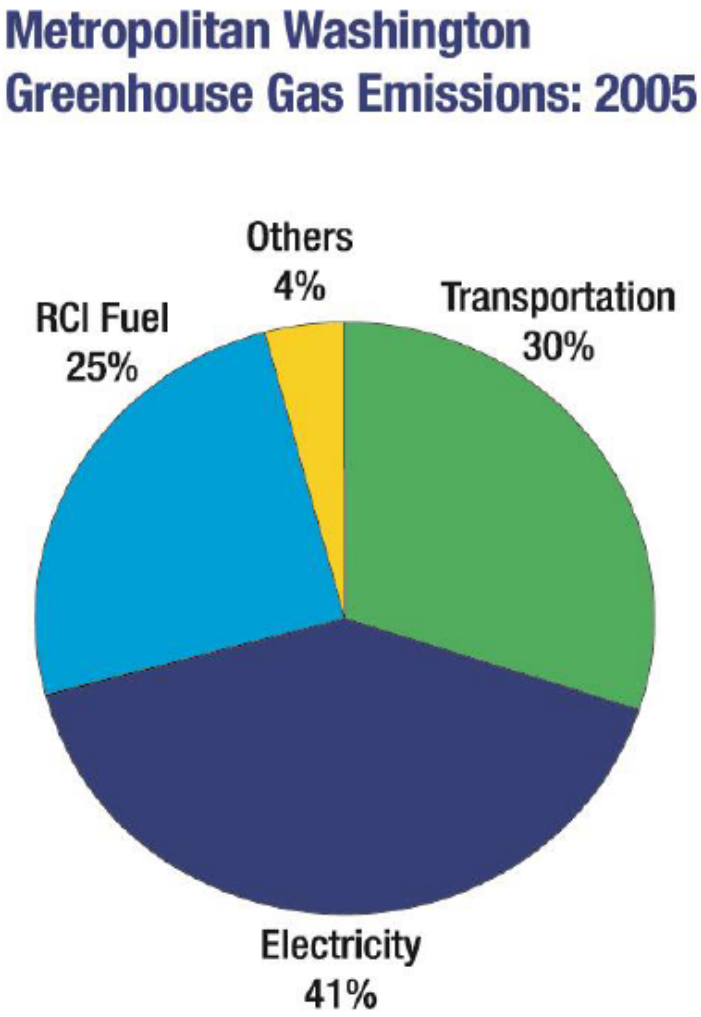
COG Regional GHG Emissions



Total – 74 million metric tons in 2005

Per Capita = ~ 15 metric tons per capita/year

Source: National Capital Region Climate Change Report, 2008

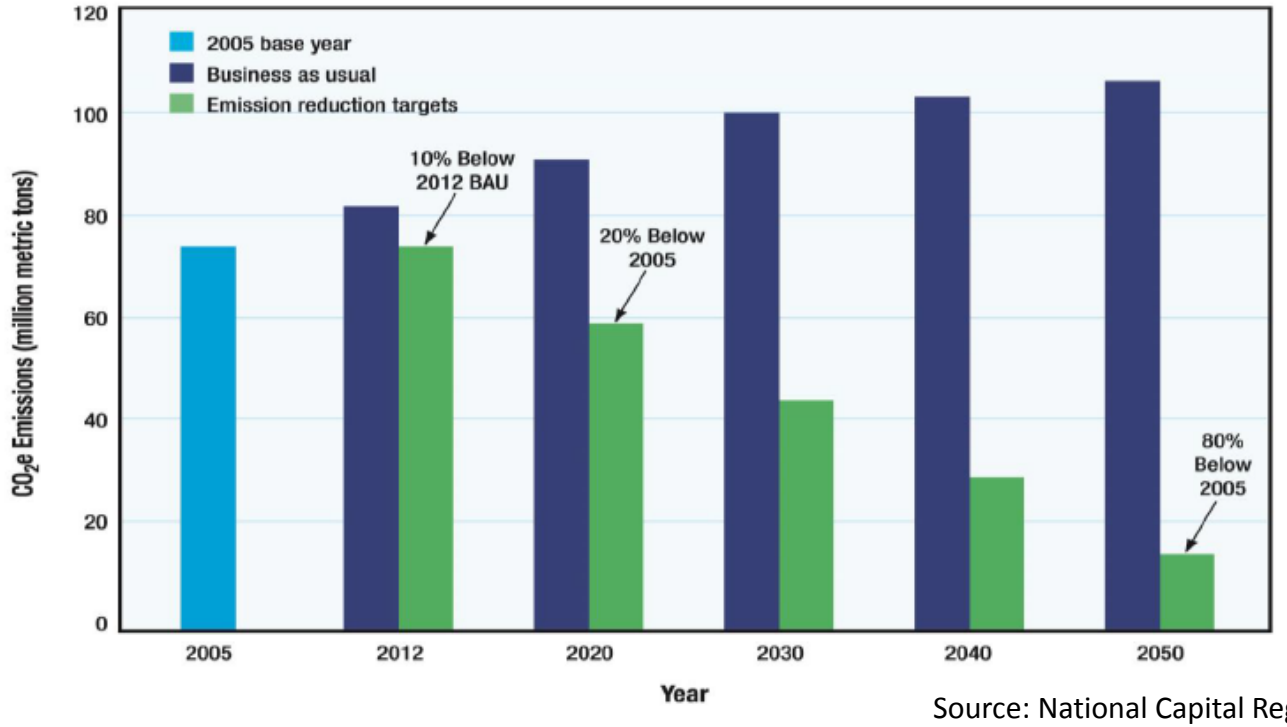
COG Regional GHG Reduction Goals

2012: Return to 2005 Levels

2020: 20% Below 2005

2050: 80% Below 2005

Recommended Regional Greenhouse Gas Emission Reduction Targets Compared to Regional Greenhouse Gas Emissions Under BAU: 2005–2050



COG Targets

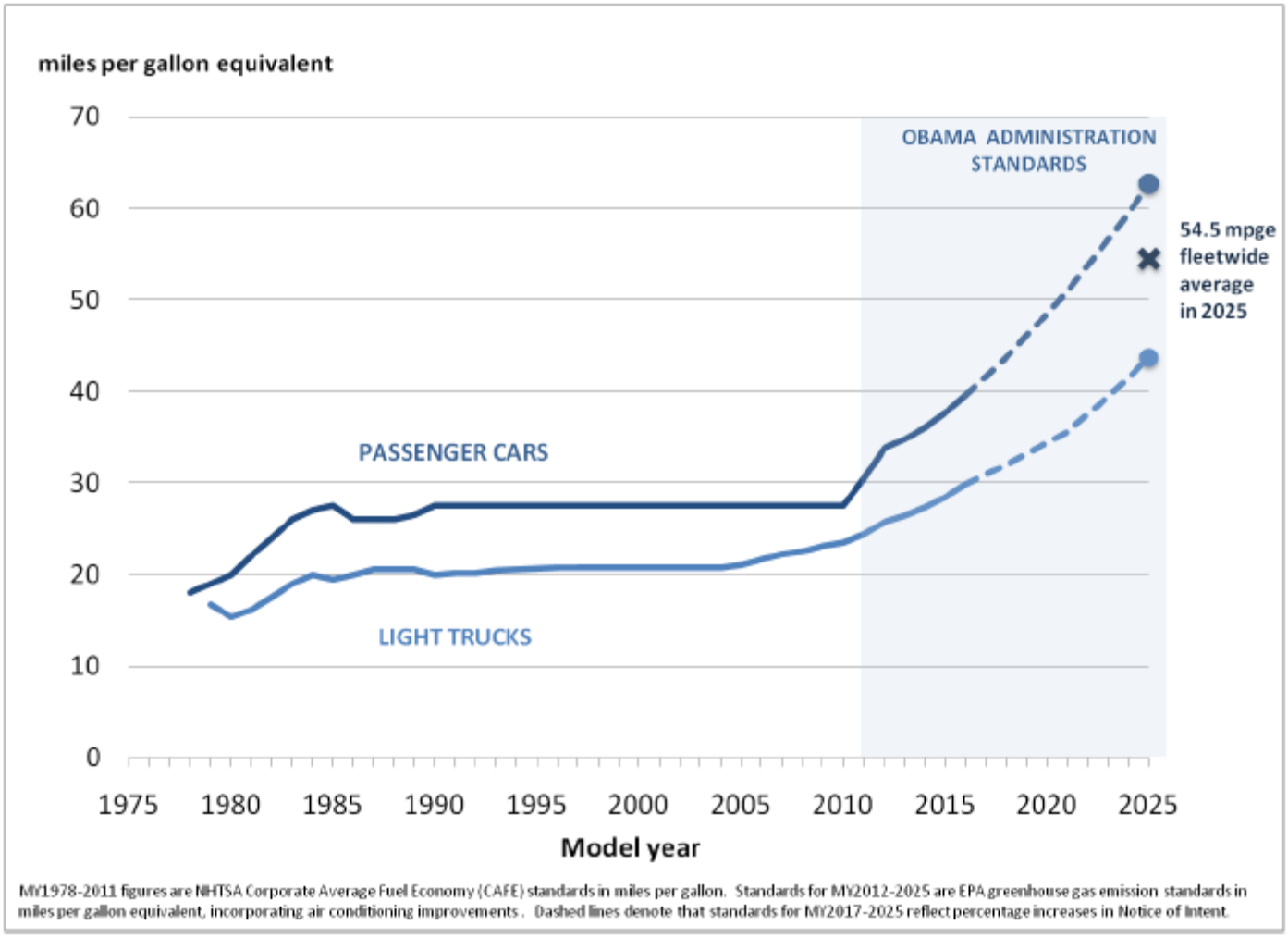
- 2012: 10% below BAU
- 2020: 20% below 2005 levels
- 2050: 80% below 2005 levels

Source: National Capital Region Climate Change Report, 2008

Opportunities to Reduce On-Road GHG Emissions

- Increase fuel efficiency and introduce low-carbon fuels
- Improve system and operational efficiencies
- Reduce growth in vehicle-miles traveled (VMT) and single-occupant vehicle (SOV) travel activity

Fuel Efficiency



Source: www.whitehouse.gov

Fuel Efficiency

- Fuel efficiency standards are the most effective way to reduce on-road greenhouse gas emissions; however,
  - Impact is dependent on fleet turnover rate
  - Travel demand management and operational strategies become less effective as fleet fuel efficiency increases

Operational and Travel Demand Management Strategies

Locally/regionally implementable strategies are most effective if they:

1. Affect the whole fleet
2. Affect the majority of VMT (light-duty vehicles)
3. Target the highest polluting vehicles
4. Provide networks of non-polluting transportation options
5. Incentivize alternative commute patterns

Source: What Would it Take? Scenario Study, 2010

Example Strategies (Handout)

- National Capital Region Climate Change Report (MWCOG, 2008)
- What Would it Take? Scenario Study (TPB, 2010)
- *A Performance-Based Approach to Addressing Greenhouse Gas Emissions through Transportation Planning* (FHWA, December 2013).
- *Incorporating Greenhouse Gas Emissions into the Collaborative Decision-Making Process* (SHRP2, 2013)
- Strategies submitted by MSWG members (Item 4)
- Other MPOs (March Meeting)

Other Considerations

- Co-benefits
  - Many transportation strategies are not cost-effective solely based on GHG reduction potential, but are important to the transportation system
- Cross-sector Considerations
  - Strategies can complement or work against strategies in other sectors
- Life-cycle
  - GHG emissions are produced during fuel production and transport

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Questions?

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Regional Strategy Brainstorm

Instructions

- Focus on broad strategies but be inclusive
- Strategies must have potential to reduce GHGs
- Include state, local, regional, national, or other responsibility
- Focus on this subgroup sector but OK to include strategies that are synergistic or apply to other sectors
- Think REGIONALLY
  - Think BIG: achievable to stretch
  - Strategies or measures at policy-level, program-level (but not specific projects)
- Consider what might carry Co-BENEFITS
- Goal 2020 = 20% Reduction from 2005 levels
- Goal 2050 = 80% Reduction from 2005 levels