Maine Transportation Inventory & Baseline

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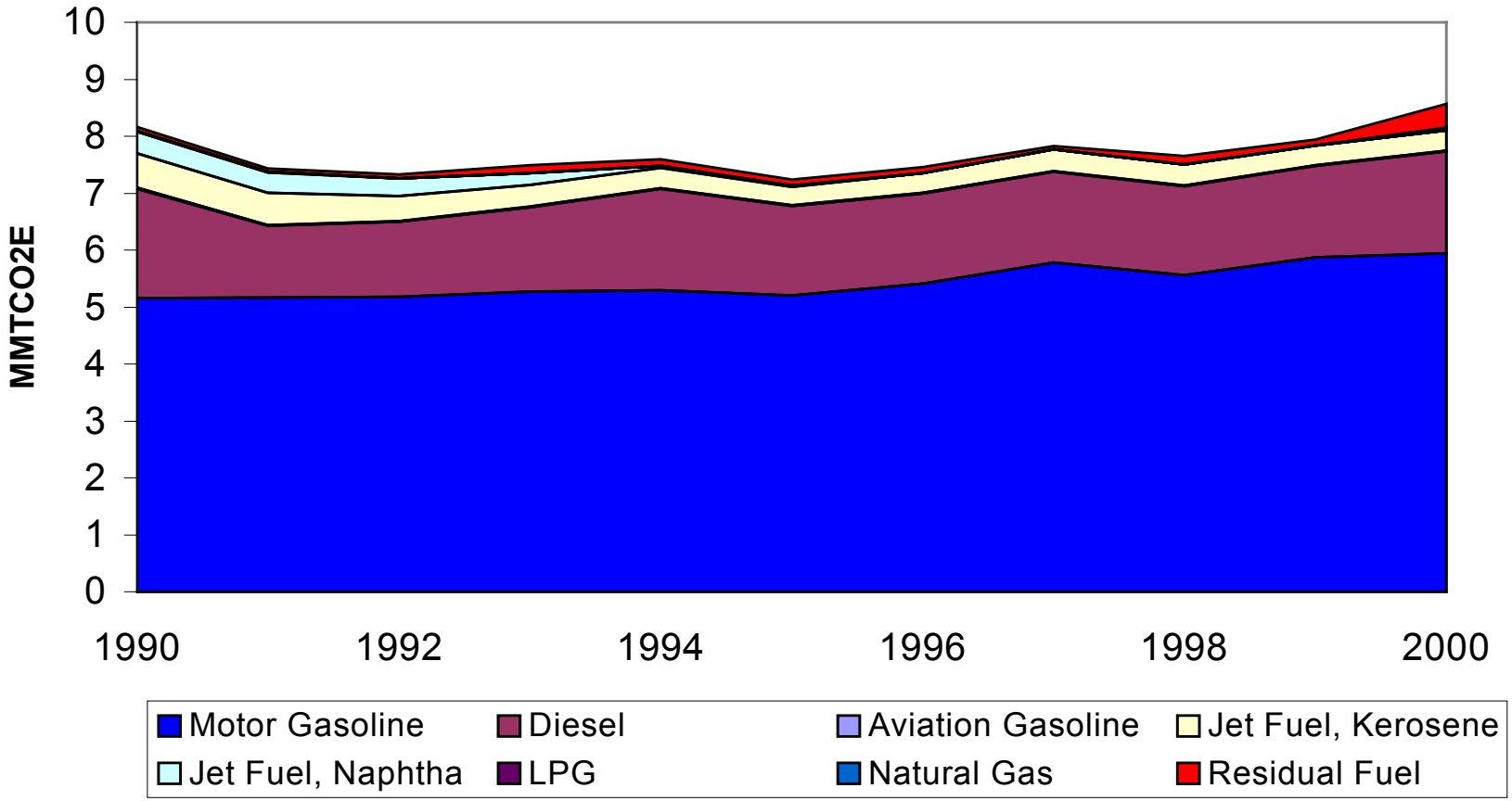
NESCAUM Transportation GHG Inventory (1990-2000)



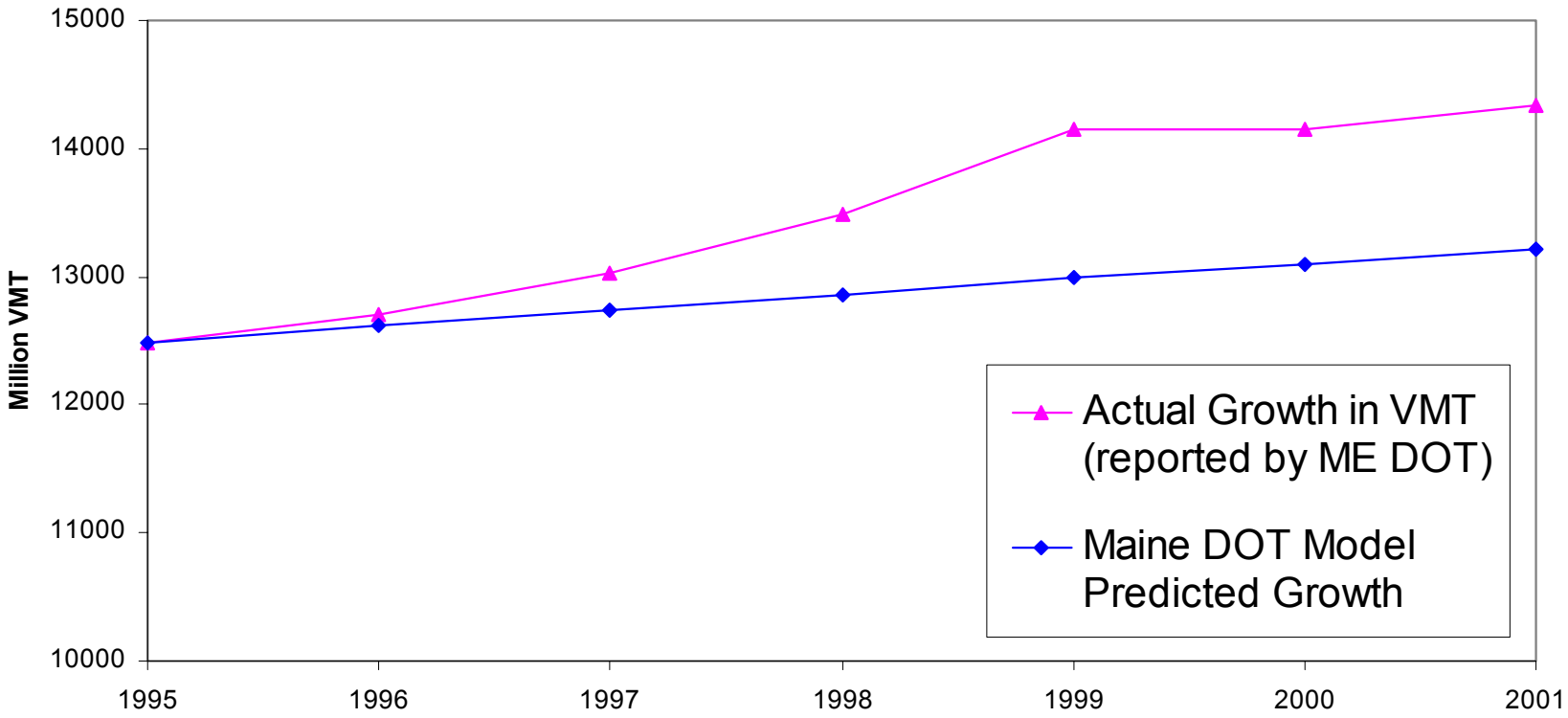
CCAP Analysis of Historic Fuel Sales and VMT data

- There is often a discrepancy between trends in state data on fuel sales and fuel consumption (derived from VMT)
  - **Can manifest as apparent increase or decrease in mpg**
  - **due for example, to out-of-state travel, or data inconsistencies**
- CCAP found only minor differences in Maine
  - **Our attempt to address the discrepancy made a 4-7% change in historic transportation GHG emissions, which is within the likely uncertainty of the calculation**
- Therefore we do not recommend any adjustment
  - **More thorough examination of individual fuels might lead to improved data, but is beyond the scope of this process**

VMT Forecast: Maine DOT and USDOE

- ME DOT VMT forecast = 18.8% growth (2000 – 2020)
- ME DOT has noted that the Travel Demand model under-predicted VMT growth from 1995-2001 by about 9%. They noted that this may be due to:
  - **Inadequate estimate of number of trips or trip lengths, or**
  - **Growth in socioeconomic variables (population, households, jobs) growth may have outpaced model inputs**
- ME DOT plans to update the statewide Travel Demand model in late 2004
- U.S. DOE VMT forecast for New England (2000 – 2020)
  - **Gasoline Vehicles: +37.7%, Diesel Vehicles: +46.4%**
  - **Assumes population growth of 9% and 79% US GDP growth**

Actual vs. Predicted VMT Growth



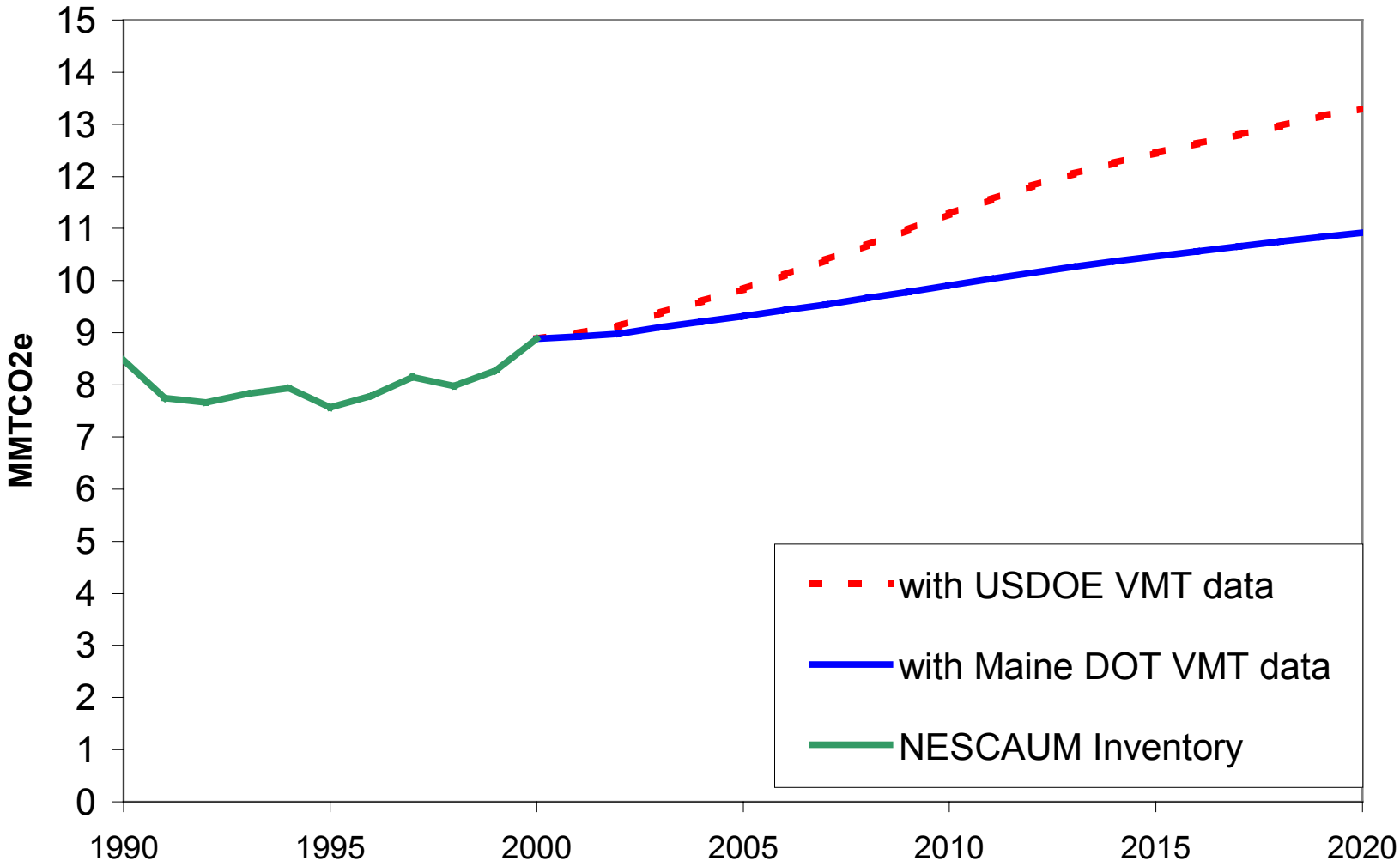
Which VMT Forecast?

- The State will use the updated VMT forecast for the transportation GHG baseline, when it becomes available (i.e., late 2004)
- For now, we need working group input to develop an interim baseline that we can use in the time frame of the Maine GHG process
- Current Options for Interim Forecast:
  - **Use Maine DOT estimate for VMT growth (18.8%)**
  - **Use U.S. DOE estimate from New England (≈ 40%)**
  - **Use something in between?**

Draft Transportation GHG Forecast

- For illustrative purposes, we have used the Maine DOT VMT forecast to calculate gasoline and diesel use
  - **Using US DOE vehicle technology forecasts**
    - Passenger Vehicles: 5.6% mpg increase (2001-2020)
    - Freight Trucks: 8.3% mpg increase (2001-2020)
- For other fuels (≈ 11% of total) we used USDOE regional growth rates for lack of Maine-specific data

Draft Transportation Baseline with Maine and USDOE VMT Data



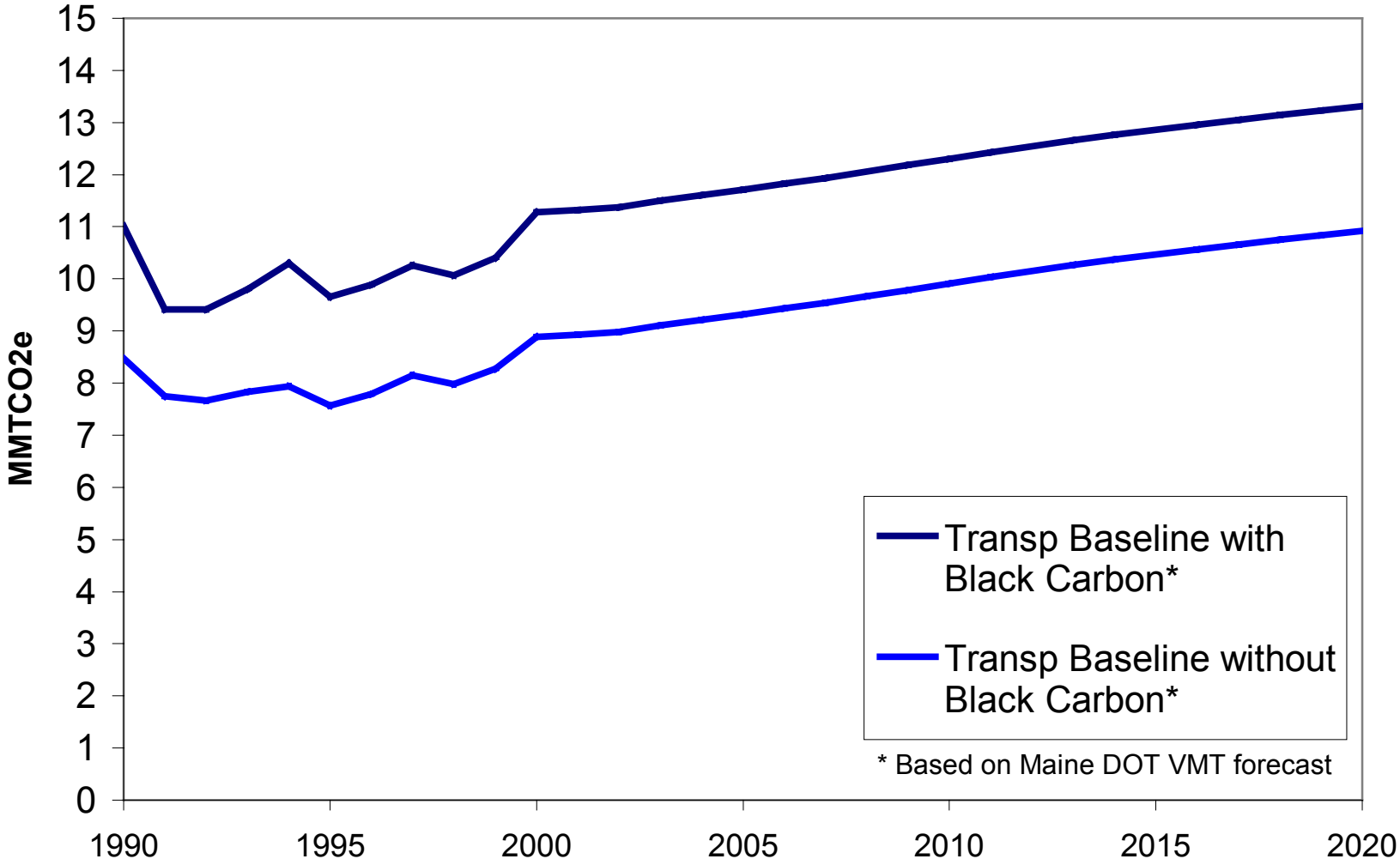
Initial Black Carbon Estimate

- Context: Black Carbon may responsible for up to 25% of global warming to date
- Goal: Incorporate new scientific research to develop a comprehensive baseline
- Methodology for Initial Estimate
  - **Use emissions factors developed by Energy and Environmental Analysis, Inc.**
  - **Calculate CO_2 equivalence based on the findings of Prof Mark Jacobson of Stanford University**
    - Developed by Environment Northeast in CT process
  - **Refine methodology as scientific understanding evolves**

Estimating 2020 Black Carbon Emissions

- Lacking adequate vehicle inventory data and turnover rates we have for now assumed 2020 BC levels are the same as 2000
  - **Conservative assumption because excludes growth after 2000**
  - **Reflects the 2007 EPA rules for new diesel vehicles**
  - **Assumes that by 2020 only a small portion of the total diesel fleet will have been replaced**
- Potential policy opportunity window exists to retrofit or replace more polluting vehicles
  - **Black carbon savings can be as high as 75% -90%**

Draft Transportation Baseline with Black Carbon



Impact of Black Carbon on Draft Baseline (compared to 1990)

	1990	2010	2020
Baseline	8,477	9,910	10,925
Percent above 1990		17%	29%
Baseline with Black Carbon	11,019	12,303	13,318
Percent above 1990		12%	21%