

Appendix 10 -- Greenhouse Gas Emissions

The City of Raleigh, City of Durham, Town of Chapel Hill, Town of Carrboro, Town of Hillsborough, Town of Cary, Durham County, and Orange County are members of the organization ICLEI Local Governments for Sustainability. As members, these jurisdictions have committed to reducing greenhouse gas emissions from their local government operations and in their communities. Many of the Triangle area ICLEI members are in the process of creating a local greenhouse gas emissions inventory and adopting an emissions reduction target. The effort to reduce greenhouse gas emissions is currently a local effort. It is not required in the air quality conformity process. The modeling and analysis is completed separately from the air quality conformity analysis.

In September 2007, the City of Durham and Durham County completed an emissions inventory and adopted greenhouse gas emission reduction targets. **One of Durham's targets is to reduce emissions by thirty percent from 2005 levels by 2035 from the community at-large.** This emission target includes emissions from the transportation sector as well as the residential, commercial, industrial, and solid waste sectors.

The DCHC MPO used the traffic modeling results and ICLEI's Cities for Climate Protection software to create a comparison of greenhouse gas emissions from the transportation sector for the 2005 baseline year and the 2035 planning year for Durham County. The results are shown in the table below.

	Daily VMT	Greenhouse Gases (equivalent CO ₂)	Percent Change from 2005
2005 Baseline	10,673,559	2,624,880	(not applicable)
2035 E+C	17,397,077	3,595,980	+37.0%
2035 Projection	17,603,017	3,921,560	+49.4%

The analysis shows that the **2035 Long Range Transportation Plan does not meet Durham's thirty percent target** for the reduction of greenhouse gas emissions from the 2005 baseline. Achieving the 2035 greenhouse gas target would require a reduction in vehicle-miles-travelled from the 2005 baseline and/or less polluting vehicles. The modeling results show that vehicle-miles-travelled will increase by 65% from 2005 to 2035. In addition, the modeling uses the current fuel efficiency standards in the estimation of future greenhouse gas emissions. These standards currently are not designed to address the effects of climate change and reduced greenhouse gas emissions. However, it is likely that fuel efficiency standards will soon be changed to address the growing concern of climate change. In 2007, the United States Supreme Court ruled that the U.S. Environmental Protection Agency must regulate new vehicle emission standards to control greenhouse gas emissions that contribute to climate change (*Commonwealth of Massachusetts et al. v. Environmental Protection Agency et al.*). New vehicle emission standards would greatly help Durham meet its targets.

As the other local governments complete their greenhouse gas emission inventories and set their reduction targets, the DCHC MPO and the Capital Area MPO will further evaluate the impact of their LRTPs on greenhouse gas emissions. In addition, if new federal or state regulations on greenhouse gas emission take effect, the two MPOs will ensure that the two LRTPs are in compliance.