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Connecticut's Transportation and Air Quality Challenges

Air Quality Requirements

In accordance with the federal Clean Air Act, the U.S. Environmental Protection Agency (EPA) establishes health-based National Ambient Air Quality Standards (NAAQS) for certain pollutants. Once EPA sets a standard, states must submit State Implementation Plans (SIPs) to attain and maintain air quality at levels below the NAAQS. Currently, the entire state of Connecticut has been designated as non-attainment for the ozone NAAQS. Fairfield and New Haven Counties have been designated as non-attainment for the annual fine particulate matter (PM_{2.5}) NAAQS. The non-attainment designation means that the air quality in our state exceeds the limits for ozone and PM_{2.5} established by EPA.

Over the years, EPA has gradually tightened the health-based standards for ozone and PM in light of advancing scientific information regarding the potential health impacts of these pollutants. In October 2006, EPA issued a more stringent 24-hour standard for PM_{2.5}. Connecticut has recommended to EPA that Fairfield and New Haven Counties be designated, again, as non-attainment for the new, more stringent 24-hour PM_{2.5} standard. EPA is required, under a court order, to make final designations before the end of 2008. Most recently, in March 2008, EPA finalized a more stringent 8-hour ozone standard. Connecticut expects to recommend a statewide nonattainment designation to EPA by March 2009. EPA is scheduled to make final designations for the new ozone NAAQS by March 2010.

Under federal law, Connecticut must identify legally binding strategies to attain the federal NAAQS. Failure to attain the federal health-based standard within prescribed time frames, and failure to maintain that level of air quality once achieved, can result in sanctions, including the loss of federal highway funds.

Connecticut's non-attainment status for ozone and particulate matter requires strategies designed to reduce emissions of nitrogen oxides (NO_x), volatile organic compounds (VOCs), sulfur dioxide (SO₂) and PM_{2.5}. The mobile source sector, which includes cars, trucks, buses, locomotives, construction equipment, and marine engines, is a significant source of these pollutants. The state has recognized that diesel-powered engines produce black carbon, a significant contributor to global warming, and emissions of toxic air pollutants, along with carbon dioxide and PM_{2.5}. Therefore, minimizing vehicle miles traveled (VMT) for the on-road sources, is an important strategy to improve Connecticut's air quality.

State efforts to address Climate Change consider the substantial contribution of mobile sources to the state's total annual emissions of the greenhouse gas, carbon dioxide. The Global Warming Solutions Act calls for a minimum of an 80% reduction of greenhouse gas emissions from 2001 by 2050. Success in achieving this goal will require draconian measures directed at stationary, area and mobile sources, of which mobile sources will be a significant focus. There are many mobile source options available that have not yet been fully realized, but their implementation will require a change in the transportation culture of Connecticut.

Transportation Strategies

State-wide plans have been developed as part of an integrated approach to addressing air quality impacts from transportation sources. These plans include the Climate Change Action Plan, The Governor's Energy Plan, the Connecticut Clean Diesel Plan, and the Global Warming Solutions Program, as well as the state's on-going SIP development. Key transportation initiatives identified in these plans include:

- Reducing VMTs by 3% below anticipated 2020 levels of approximately 110 million VMT per day through identification of innovative VMT management opportunities including:
 - Encouraging transit, bicycle and pedestrian components for the strategic transportation network;¹ and
 - Conducting feasibility studies for congestion pricing, and using location efficient mortgages to encourage shorter commutes;¹
- Encouraging inclusion of climate modeling data in repair/replacement of transportation infrastructure;^{1,4}
- Encouraging acquisition of vehicles meeting stringent emissions standards and using cleaner fuels (Cal LEV II, low GHG, Ultra-Low Sulfur Diesel);^{1,2}
- Implementing rail service between New Haven-Springfield;^{1,4}
- Implementing the New Britain-Hartford and Hartford East Bus Rapid Transits;¹
- Moving forward on the I-95 Corridor Coalition-Freight Initiative;¹
- Reducing emissions from legacy fleets, in the transit, construction, school bus and motor transport sectors (some 40,000 vehicles in Connecticut) by means of:
 - Aggressive transition to newer, cleaner fleet vehicles;^{1,2,3}
 - Exploration of creative financing or incentives for retrofits;^{1,2} and
 - Developing financing options for stationary and on-board idle reduction technologies;^{1,2}
- Enhancing education and enforcement of the state's existing anti-idling strategy;²
- Maximize opportunities for achieving emission reduction from ports, rail and airports;²
- Establishing incentive program to encourage clean technologies such as:
 - Construction of biofuels production facilities;³
 - Installation of alternate energy fuel pumps;^{1,3} and
 - Advocating for expanded fuel cell research;^{1,3}
- Decrease dependence on fossil fuels by reducing consumption by 20% by using alternate fuels;³
- Evaluating the use of low carbon fuel standards, which take into account the energy used and emissions produced in processing fuels;⁴ and
- Investigating potential improvements in the state and regional transportation system that will reduce greenhouse gas emissions.^{1,4}

Areas for Interagency Collaboration

DEP is developing opportunities to implement work with other agencies to reduce emissions through such activities as:

- Using CMAQ funding for mitigation of diesel emissions;
- Continuing emphasis on retrofitting initiatives; and
- Planning for achieving multipollutant emission reductions from diesel trucks.

Ongoing diesel reduction efforts that advance DEP's implementation of the Clean Diesel Plan:

- DOT is retrofitting or replacing the 477 transit buses discussed in the Clean Diesel Plan.
- DOT has retrofit pieces of 104 construction equipment at the Q Bridge through specifications in contracts and is exploring other opportunities to expand the program.
- DPW has adopted DOT's retrofit specifications and is including them in construction contracts.

1: *Based on goals in Connecticut's Climate Change Action Plan of 2005.*

2: *Based on goals in Connecticut's 2006 Clean Diesel Plan.*

3: *Based on goals in the Governor's Energy Vision 2006.*

4: *Based on goals in the 2008 Connecticut Global Warming Solutions Act.*