

# **Energy Efficiency Audit of the 2000 Update of the Transportation Chapter of the Master Plan**

In regard to energy efficiency, the audit looked into the transportation chapter, which has now been in place for 11 years. Since the adoption of the transportation chapter many of the recommendations have been met. Much of the content included in the transportation chapter remains up-to-date. The entire chapter would benefit from an update that reviews new technology and best practices, and establishes new goals and recommendations. Topics covered in the transportation chapter range from roads and bridges, to accessibility and mobility choices for the elderly and disabled.

The 2000 update of the transportation chapter of the master plan has been reviewed, and from SRPC's analysis, suggestions have been made regarding where changes and improvements can be made to incorporate energy efficiency measures.

## **Section 1: Purpose**

1. Create a vision that ties that includes an energy efficient transportation system.
2. Goal: Ensure there are measures, metrics, and transportation policies in place that encourage energy efficiency in our transportation system.
3. Goals for improving energy efficiency should be measurable. Create quantifiable goals, and establish baseline data. This is necessary for implementation and to measure success.

## **Section 2: Introduction**

1. City of Dover has been very successful in identifying energy efficiency opportunities in transportation planning.

*Quote from chapter: Sound planning for Dover's transportation system requires looking at the system as a whole. Issues addressed in this section include Air Transportation, Commuter Patterns, Bicycle Facilities, Parking, Pedestrian, Rail, Ridesharing, Roads, Highways, and Transit.*

Since the last update to the transportation chapter Dover has experienced significant growth. From 2000 to 2010, according to the Census, the population grew 11.5%, from 26,884 to 29,987 in 2010. This rate of growth is outpacing the planned infrastructure expansion causing both opportunities and challenges.

2. Integrate the land use and transportation chapters to capture energy efficiency opportunities. Suggested language from American Planning Association as policy statement:

*Local and regional multimode corridors and centers are maximizing our use of existing infrastructure while eliminating congestion, preserving air quality, and conserving energy.*

### **Section 3: Transportation Planning and Process and Projects**

1. The transportation control measures listed below are specific ideas that can help create a more efficient transportation system. Measures to improve energy efficiency could be integrated into mode discussions or be included with the document as a stand-alone section.

The energy strategy would focus on a number of different energy efficiency options for Dover.

- a. Design standards for “Complete Streets” policies in appropriate urbanized areas. Design standards that place a high value of aesthetics, streetscape, and pedestrian safety in multi-use areas, along with bike lanes, bike storage, and transit stops would create an environment conducive to these modes of travel. Additionally, getting people out of cars and walking on the streets helps the economy and builds social capital. The National Complete Streets Coalition provides information on the transportation cost. For example, transportation is the second largest expense for American households - spending an average of 18 cents of every dollar on transportation. For more information see the National Complete Streets Coalition <http://www.completestreets.org/webdocs/cs-brochure-features.pdf>
- b. **Vehicle Miles Traveled (VMT)** Reducing the miles traveled in vehicles is a direct way to improve the energy efficiency of the transportation system. Many of the measures to reduce VMT also benefit water quality and improve air quality. VMT reduction focuses on shifting people away from single occupancy vehicles, especially for short trips or work commutes, and taking measures to provide other options for travel that are convenient and accessible. Reducing VMTs requires education, alternative mobility options, and recognition of the relationship between land use decisions and transportation system. The first step to reducing VMT would be to establish a baseline level for vehicle miles traveled (VMT) in Dover. Use this data to create measurable goals for reducing VMT.
- c. **Explore a rideshare or vanpool programs with major businesses.** These measures take effort to establish, but can save both the City and the businesses

money over time. The City benefits by having fewer cars on the road, the business doesn't have to maintain as many parking spots, and often times the employees who use the service are compensated in some way to provide incentives for them to use the rideshare program. This is an energy efficient strategy that reduces air pollution and traffic congestion and also saves money. Use Metro Oregon as the model – Drive Less Save More <http://driveless.savemore.com/pages/carpool-incentives-portland-metro-area>  
In detail this program describes travel options, Rideshare online, and carpooling benefits and agreements.

- d. Establish school policies that encourage kids to walk, bike, rideshare, or take the bus rather than have their parents drop them off.** Transportation infrastructure near schools areas should provide a safe environment for all ages walking and biking. The City could consider Safe Routes to School (SRTS) at all eligible school sites. For more information <http://www.nh.gov/dot/org/projectdevelopment/planning/srts/index.htm>
- e. Design regulations to ensure new developments are multi-use and dense.** VMT can be reduced if the public has options in close proximity to their homes that meet their consumer, healthcare, and entertainment needs and are accessible by walking, biking, or taking transit.

#### **Section 4: Funding Sources**

1. Dover has been successful in pursuing and participating in the federal and state transportation programs as well as using the City development process and revenues, such as the Local Option Fee, to fund transportation infrastructure and services.
2. Continue to pursue funds from sources such as federal Transportation Enhancement (TE) and Congestion Mitigation Air Quality (CMAQ) improvement programs.
3. Consider a purchasing policy that prioritizes purchases made within a certain radius of Dover to decrease energy consumption.

#### **Section 5: Roads**

1. The City has been successful in identifying existing peak hour traffic volumes, level of services (LOS) rating, tracking growth rates, and inputting data for the Road Surface Management System (RSMS) process. In Table T-4, Critical Corridors, the location, issues, needs, next steps and priority have been identified. It would be worth revisiting and updating on a regular cycle to collect data for analysis and support of performance measures.
2. Create a Transportation Management Association in the City comprised of local business and public agencies working to strengthen partnerships. The goal would be to reduce traffic congestion and pollution by improving commuting options for employees.

- a. Promote shared ride and use of transit walking, biking, work schedule changes and telecommuting during peak travel time 4:00 pm –6:00 pm.
  - b. Achieve City and regional transportation goals by reducing drive alone trips in employment areas by 10 percent over the next 3 years.
  - c. Expand transportation choices to improve air quality, reduce congestion, and create more opportunities for walking, biking, taking transit, and carpooling.
  - d. Explore the Zipcar community. The vehicles are a flexible, public transportation option, and an alternative to the cost and hassle of owning or renting a car.
  - e. Use NH DOT snow removal & ice control policy. This is energy efficient in using the proper amount of materials to combat snow and ice such as anti icing materials, salt, and sand. The City would set up maintainance standards for rates of application. The City does not have a bare pavement or dry pavement policy.
3. Possible benchmarks are:
- a. Helped save XX gallons of gas by promoting alternatives to driving alone.
  - b. XX vehicle miles reduction throughout the City and region.
  - c. Awarded \$\$\$ in grants for projects to improve air quality and address community health issues.

## **Section 6: Air Facilities and Services**

1. Dover is centrally located between Pease International Tradeport in Newington and Skyhaven Airport located in Rochester. The City should explore economic opportunities for **passenger and freight transportation as** stated in the recommendations.

## **Section 7: Rail Facilities and Services**

1. Guilford Transportation Inc, maintains tracks through Dover. Amtrak Down Easter passenger rail service, which runs from Portland, Maine to Boston, has a stop in Dover. The City has taken many steps since 2000 to create an “Intermodal Transportation Center”.

### **2. Recommendations**

- a. Continue to encourage mixed use development around the City for further energy efficiency.
- b. Market Dover as an efficient, livable transportation hub.
- c. **Establish desired outcomes for the freight system through a public involvement process.**

- d. Provide common base of knowledge about the different elements of regional freight transportation system and identify the strengths, weakness, opportunities, and threats.
- e. Identify and prioritize network and infrastructure improvements to address energy efficiency opportunities.

## Section 8: Transit

1. The City has understood that transit plays an important role in transportation. Public transit providers, Cooperative Alliance for Seacoast Transportation (COAST) and the University of New Hampshire Wildcat Transit, serve Dover. C&J Trailways, private intercity bus, provides service to Boston.
2. Congestion can be appropriate in urban, mixed-use areas where people congregate for shopping, business, services, and community events. In these situations congestion keeps traffic speeds low improving safety, and can benefit local businesses. Congestion in these areas should be effectively planned for with recognition that these areas may not serve well as through streets. These areas need to be built with ample amenities for pedestrians and bicyclists. Additionally, traffic calming measures should be in place to keep the roads safe for all users and to indicate to drivers they are entering an area where they should expect to see people using other modes of travel.
3. Primary through streets with congestion issues are where energy savings can be found. Strip development has become a prevailing strategy for development on many primary through streets. This is for good reason as these streets are designed to carry the bulk of traffic and offer savvy businesses access to large volumes of customers. This causes obvious problems for people traveling through rather than shopping. Congestion is associated with these development patterns, along with poor air quality, constant roadway capacity expansion pressure, and acres of pavement for roads and parking lots that result in water management issues. However there are still measures that can be taken to mitigate these issues.
4. Recommendations
  - a. Transit providers in some areas have agreements with municipalities to use transponders to activate signals at signalized intersections. This convenience makes transit a more efficient and appealing option.
  - b. Create access management standards for municipally designated corridors within the urban compact and create agreements with NH DOT District 6 for state maintained corridors. These measures can be put in place to help Dover shape new construction and redevelopment by businesses on the commercial strips.

- c. Ensure connectivity in strip areas for all modes of travel. The inability to safely navigate these corridors and the lack of intermodal facilities within these corridors are prohibitive barriers for people trying to access services. Poor connectivity for modes in the transportation system necessitates a reliance on vehicular travel.
- d. Establish goals and standards for signal coordination in congested areas. As technology changes signal coordination is becoming more sophisticated. Intelligent Transportation Systems can now respond to traffic conditions in real time and coordinate signals in a way that maximizes throughput capacity.

## **Section 9: Bicycle and Pedestrian Facilities**

1. Dover has encouraged the use of bicycles for transportation, which saves energy by reducing petroleum, traffic congestion, air and noise pollution.

The City should implement the recommendations in the 2000 Master Plan (such as actively pursue bicycle Transportation Enhancement and Congestion Mitigation and Air Quality Improvement programs, encourage the use of bicycle transportation, and provide bicycle infrastructure). The City lacks street facilities needed for biking to be a practical alternative to cars for daily transportation.

### 2. Recommendations

- a. Explore a complete bike network.
- b. Continue participating in Commute Green New Hampshire Challenge.
- c. Create a page on the Recreation website that describes bike, walking routes.
- d. Use Metro website in Portland, Oregon as model. They describe bike routes including attractions, length, number of miles difficulty, etc. Market your existing bike paths on a web page or at the Dover Chamber of Commerce.
- e. Integrate the recreation, and transportation master plan chapters.
- f. Survey local residents aged 50 and up about concerns and obstacles to walking and using transit. The AARP recommends high quality walking and transit options for older residents.
- g. Set priorities for improving the City's walking infrastructure include maintenance and crossings.

## **Section 11: Public Involvement**

1. Dover public involvement policies identify standards when developing transportation projects and programs. Standards include outreach to communities underserved by

transportation projects, public notices and opportunities for comment. It was surprising to not see this information in the 2000 Transportation Master Plan There many be potential energy efficiency options not explored as of yet by surveying local citizens.

## **Section 12: Recommendations**

1. Language included that relates new Federal Highway Administration policies that treat all modes of travel as equally important in new transportation infrastructure projects.
2. Ensure that transportation policies and standards show consistency with other city plans and policies and are integrated into them.
3. Define designated through corridors and local streets to help target where and which measures are appropriate for achieving respective goals for different corridors. Certain corridors could have management plans to help accomplish city goals.
4. Create an energy policy for Dover's municipal fleet that meets Dover's needs. This could consist of goals and guidance that indicate what types of vehicles are purchased, fuel efficiency standards for vehicles, and the fuel mix for the fleets. Create maintenance strategies for municipally owned vehicles.
5. Proper maintenance of roadways can maximize the life and energy efficiency of the investment. This chapter would benefit from updates to the recommendations and by sharing projected cost figures for alternate maintenance scenarios. These help clarify Dover's maintenance strategies.
6. Street lighting is an ongoing cost and energy sink for municipalities. LED lighting is now being tested in areas across the country. The technology uses drastically less energy than traditional lighting sources. The bulbs last longer, provide higher quality light, and reduce the amount light pollution because the lamps are more narrowly focused. Many cities, including Boston and Worcester, are currently involved in LED demonstration projects in which they are replacing traditional metal halide and high-pressure sodium fixtures with LEDs.
7. Partner with other municipalities in the region to create coordinated strategies to address energy efficiency in transportation.
8. Include information conveying historic, baseline (2010), and projected VMT data in the section about traffic growth. Energy figures, such as gallons of fuel, or fuel wasted idling can be translated into dollar figures and are derived from VMT and congestion data. GHG figures can also be extrapolated from these numbers and can be helpful in discussing climate change.
9. Near the end of the introduction there is a discussion about Dover's historic transportation trends and the influence they have had on shaping Dover's built

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environment. Include a description about the modes of transportation that will drive Dover's future development.