

Energy Efficiency Audit of the 2007 Update of the Land Use Analysis Chapter of Master Plan

The ARRA Energy Efficiency Conservation Block Grant through the New Hampshire Office of Energy & Planning provided funding for this project.

In regard to energy efficiency, the audit looked at the goals and objectives, surveys, land use trends, recommendations and definitions contained in the 2007 Update to the Land Use Analysis Chapter of the Master Plan. The purpose is to provide energy efficiency recommendations to the City of Dover for use in their Sustainability Plan.

Section 1: Goals and Objectives

- Add objective: *Reduce energy consumption through comprehensive planning and urban design that incorporates strategies for both mobile and non-mobile energy efficiency. (Reference: APA Smart Growth Policy Guide and APA Policy Guide on Surface Transportation)*
- Implement: *Encourage sustainable growth that is sensitive to environmental issues and minimizes energy consumption.*
- Add objective that addresses the historic community character and natural environment: *Maintain the existing and aesthetic integrity of the downtown and various neighborhoods and continue redevelopment of the waterfront.*

Section 2: Existing Conditions

According to the 2010 U.S. Census Dover is the largest City in Strafford County at 29,987 residents, a percent change of 11.5% since 2000. The current Master Plan has the potential to provide excellent guidance to the City by using more sustainable land use patterns.

In 2008 the City of Dover was the first form based code in Northern New England. The Form Based Code is a method of regulating land use which places more emphasis on community character and the impact development has on the public realm than traditional zoning does. A Form Based Code guiding principle is that the buildings and physical alteration of land is more long lasting than the initial use found within the buildings constructed. Community character and appearance is emphasized. Under this ordinance all new construction in the downtown core must be built at the back edge of a sidewalk. Any new construction must be at least two stories tall with maximum building heights. *Efforts should be made either to replicate buildings materials completely, or to use them as decorative accents to assist the new construction in “fitting” with the existing fabric of the community.*

In the coming years as population grows this will become an important part of Dover's planning. Dover has done good work in addressing energy in the Land Use Master Plan chapter.

This is directly from the Master Plan:

Dover needs to continue to enhance and rely on its downtown as a prosperous and functional downtown, while encouraging new and diverse reuses for its storefronts. Redevelopment should be encouraged along side streets that currently are single use residential structures. They provide an opportunity for mixed-use redevelopment and an opportunity for expansion of the existing commercial services Dover provides with limited creation of new infrastructure.

Residents support mixed-use development. The highest rated commercial images within the Visual Preference Survey were those that demonstrated reuse of older buildings and those that showed mixed-use commercial buildings in a downtown area. Residents also supported stronger streetscapes and encourage pedestrian friendly designs promoting interaction and community building along commercial corridors.

Additionally, there is opportunity for further infill development along the First Street, Second Street and Chestnut Street corridors. These areas downtown offer opportunity for the City to encourage transit oriented development, which encourages development that is multi-modal. Residential growth in the B-2 zone is allowed on the second floor or above, and this should be expanded to the UMUD, B-3, and O zones.

Energy Audit

This is directly from the Master Plan

Dover should prepare an Updated Energy Action Plan, a long-term vision for the City's energy needs through 2020. The goals of the plan should be to:

- Secure, safe, and reasonably priced energy supplies and services to Dover's commercial, industrial, transportation, and residential customers, reduce dependence on traditional fossil fuels within municipal operations, decrease electricity and natural gas consumption, use efficient and renewable resources to supplement the city's energy needs, proactively plan for a reduction in the demand for energy.
- Promote economic growth and development. The plan should encourage and maintain economic growth prospects by recognizing and fostering the multiple functions of energy in the economy as an integral part of producing and transporting goods and services and as a potential driver of new areas of economic activity.
- Protect the environment. The plan should seek to promote the achievement of federal and state environmental requirements and objectives effectively and at reasonable cost,

considering environmental and public health costs and, where appropriate, possibly provide market-based incentives to achieve those goals.

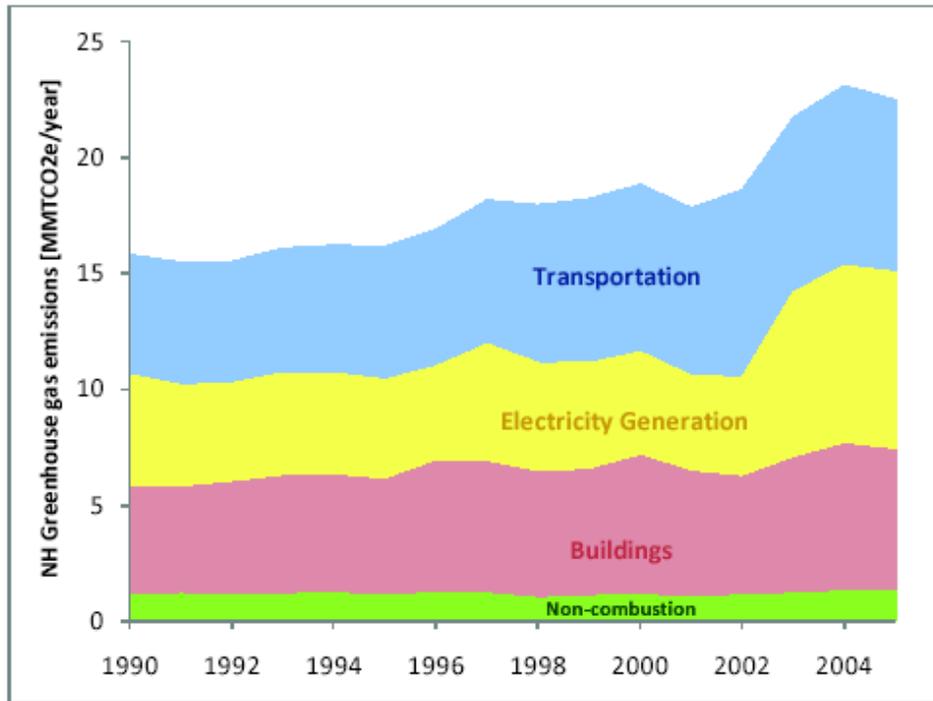
Recommendation: *Continue the development of regulations and use of best practices and standards, use of incentives for landscaping, building materials, LEEDS Certification, and other environmentally progressive requirements.*

Directly from the Master Plan.

Energy

1. Adopt mandatory LEEDS certification for multi-family / commercial / industrial office projects over a certain size.
2. Mandate LEEDS certification for any new institutional projects.
3. Promote sustainable development through use of recycled materials, Energy Star rated products and sustainable building materials.
4. Encourage the use of local suppliers to minimize fuel costs and pollution and promote local job creation.
5. Encourage increase of required landscaping to mitigate CO2 emissions.
6. Encourage use of alternate/forms sources of energy, such as solar power.
7. Investigate incentives for LEEDS certification for projects that retro-fit and reuse existing buildings.

Historical Emissions by Sector



Source: NH Climate Action Plan

Recommendations:

- *Decisions affecting land use directly affect energy use and the production of greenhouse gases because of the relationship between where people live and transportation needs. Integrate transportation, land use, economic development and all the master plan chapters by using energy as the link in the comprehensive planning process.*
- *Include references to Sustainable Dover and context of initiative throughout City documents, plans, marketing, presence...*
- *Make Action Plan with a time line with achievable goals to show success on the website.*
- *Continue to implement the 2007 Land Use Chapter*
- *Encourage LEED certification standards.*
- *Encourage Low Impact Development design features such as porous pavement.*
- *Review design standards to ensure that buildings can handle severe storm events such as reviewing culvert size and function.*
- *Encourage alternative energy in community whenever possible.*
- *Require quality materials and sustainable design influenced by the historic buildings in the community.*

