

Chapter 13

Energy

INTRODUCTION

This chapter provides base line information on current energy consumption and dependencies and provides a road map toward future conservation and efficiency.

1.0 ENERGY POLICY

Being both environmentally aware and fiscally conservative, the Town of Littleton is committed to maximizing energy conservation and efficiency. Initial steps have been taken toward this goal, but much more remains to be done that will challenge residents, non-profits, businesses, and municipal organizations to work together in unprecedented ways. There is also a significant economic development potential for local entrepreneurs by promoting the use of renewable energy from local resources and providing energy efficient products and services.

1.1 IMPLEMENTATION

Thoughtful and incremental measures are needed through a combination of incentives, voluntary actions, and, where necessary, ordinances.

1.2 HISTORICAL CONTEXT

While the science of climate change may be debated, the economics of energy conservation and efficiency cannot. Some measures, such as swapping out light bulbs, result in immediate savings. Others, such as installing a solar heating system, have paybacks measured in years or decades. What is certain is that if nothing is done no improvements will be realized.

2.0 EARLY EFFORTS

Littleton has a long and proud history of environmental awareness. Rev. Carleton Schaller headed up the town's efforts to honor the first national Earth Day in 1970 designed to inspire awareness and appreciation for the environment. Some form of recognition of Earth Day has occurred every year since then with roadside clean up an annual event since 1991. To insure that clean up is a year round activity, the town instituted an Adopt-a-Road program that includes businesses, non-profits, and dozens of residents.

Mention should also be made of the outstanding recycling efforts at the local schools and the award-winning program at the Littleton Regional Hospital. The Littleton Transfer

Station is rated #2 in New Hampshire. The town also has organizations, such as Common Grounds, that provide recycling pick up services at local businesses for a low fee.

2.1 LOCAL ENERGY COMMITTEE FORMED

In 2007, Littleton Town Meeting passed the New Hampshire Climate Change Resolution, part of a statewide effort that resulted in approval of the resolution by 164 towns. As a direct result of the resolution, Littleton's Board of Selectmen authorized the formation of the Energy Conservation Committee (ECC). The three watchwords for the committee are Incentives, Education, and Advice. The goals of the ECC were established as:

- Reduce energy consumption town wide
- Conserve natural resources
- Save money

In addition to becoming informed and knowledgeable on the subject of alternative energy sources, energy conservation, and energy efficiency, the ECC has conducted a highly successful promotion of Compact Fluorescent Light (CFL) bulbs to Littleton residents and has instituted a pilot model recycling effort with the Police Department. This model demonstrates that a successful office recycling effort takes up a minimum of space and effort, and achieves energy and dollar savings. Another local success story example came in 2008 when the non-profit Littleton Community Center switched over to CFLs and realized a 27% savings on their electric bill. The ECC provided a recycling information booth at a regional Energy Fair and at the Littleton Farmers Market, and has published several energy savings tips in the local newspapers. In the spring of 2009, the ECC drafted an energy conservation and efficiency policy that was adopted for town departments and employees

The transformation to an energy commission would broaden the scope and flexibility of the ECC. Energy commissions can be given specific roles and their creation formalizes their mission. The local effort, be it a committee or a commission, should include a clearinghouse of available resources. Easy access to publications, fact sheets, energy tips, educational services, grant programs, and other references should be made available to everyone – ideally via an online system. The local effort should develop an integrated education, outreach, and workforce-training program. Town government should establish the standard and lead by example.

2.2 STATE-WIDE MOMENTUM

Governor John Lynch formed the Climate Change Policy Task Force in December 2007 and charged the group to develop a Climate Action Plan to achieve the greatest feasible reductions in greenhouse gas emissions while also providing the greatest possible long-term economic benefit to the citizens of New Hampshire. The Climate Action Plan, published in March 2009, states that the most significant reductions in both emissions and costs will come from substantially increasing energy efficiency in all sectors, continuing

to increase sources of renewable energy, and designing our communities to reduce reliance on automobiles for transportation. The Plan presents an opportunity to (1) spur economic growth, (2) create jobs, and (3) avoid significant costs. The Task Force set two goals:

- In the mid-term, reduce greenhouse gas emissions 20% below 1990 levels by 2025, and
- In the long-term, reduce greenhouse gas emission 80% below 1990 levels by 2050

Governor Lynch has also established the so-called “25 in 25” goal, that is, to have 25% of New Hampshire’s energy coming from renewable resources by 2025.

In June 2009, members of the ECC attended the first statewide Local Energy Solutions Conference where it was apparent that now is the time for coming up with local energy solutions. Highlights of the conference included:

1. Demand for energy is on the increase by roughly 2% per annum.
2. The price for traditional energy is on the rise.
3. The timing is right to address the issue because:
 - > the technology of alternative energy sources has advanced
 - > there is enthusiasm at all levels for addressing the problem
 - > there is public and private money available
 - > banks are looking favorably at green projects
 - > guidelines are in place, such as Governor Lynch’s “25 in 25”
 - > regulations and mandates may not be too far behind
 - > energy audits at the individual or community level are a good first step
 - > the down turn in the economy is a strong motivator for savings

3.0 ENERGY CONSERVATION

The objective of conservation is to reduce the current energy load. The traditional three R’s of energy conservation are Reduce, Reuse, and Recycle. Whereas most of the emphasis has been placed on recycling, reducing and reusing are perhaps more compelling cases in the area of avoiding costs. All of these measures have the additional benefit of reducing the amount, and associated costs, of trash heading to landfills.

3.1 REDUCE

Reducing the volume of consumption is the first step. This requires conscious and consistent behavior change from the individual to the organizational level.

3.2 REUSE

Thinking about what items can be reused is the second step. Repurposing old building, for example, is more energy efficient than demolition and replacement with new construction. An unintended energy benefit of these hard economic times is that renovations in Littleton are on the increase whereas new starts are on the decline. From an energy efficient perspective, reuse of existing buildings and in-fills into existing developments are preferable to sprawl.

3.3 RECYCLE

Recycling as much as we can is the third step. The goal is to limit the amount of true trash by recycling paper, cardboard, glass, plastics, metals, etc. Fortunately, Littleton has a top notch Transfer Station that is operated at practically no cost to the taxpayer. The town also has several outstanding business, school, and municipal recycling programs, such as: ADMAC Salvage, the Littleton Coin Company, Bailiwicks Restaurant, the Littleton Regional Hospital, Lakeway Elementary School, and the Police Department. It is estimated that 75-80% of Littleton households and businesses recycle.

Nevertheless, there is always room for expansion and improvement. Consideration should be given to:

- mobile shredding services
- bins on Main Street, or other high traffic areas
- encouraging additional businesses to recycle
- commercial composting
- accept more items at the Transfer Station

3.4 RETHINK

Recently a fourth “R” – Rethink – has been added to the equation. At the personal level, this means such things as using products made from recycled materials and purchasing locally produced goods (food, clothing, furniture, etc.). The new Littleton Food Co-op is a leader in the latter area. Another suggestion would be to patronize businesses with high standards for waste reduction in the production and packaging of goods. One might also want to rethink how the conservation effort of even one person, one household, or one business actually does make a difference. Many individual efforts will aggregate to a much bigger picture.

3.5 BUILDINGS

Most energy is consumed in buildings (typically about 60%), making the reduction of this usage a common goal at both the public and private levels. New Hampshire, alone, has 500,000 homes. Efficiency can be realized through better building envelopes, operating systems, and appliances. Littleton should strive to improve energy efficiency in both existing and new buildings through a combination of audits to identify problem areas and grants or incentives to remediate inefficiencies. Consideration should be given to adopting voluntary or mandatory energy building codes. The town should consider

obtaining the services of a building inspector, which could be shared with other towns, to insure compliance with any new codes or ordinances.

There are some local examples that point out the fact that energy efficiency makes sense for new construction of any type. The modest new home on Grove Street constructed by Habitat for Humanity was built to Energy Star standards and features radiant heat and Energy Star appliances. The owners have agreed to supply the ECC with utility usage information to track the success of the features in reducing use and cost. Similarly, AHEAD's Town and Country affordable housing project is also using numerous energy efficiency features including increased insulation, Energy Star lights and appliances, krypton gas-filled window, and mandatory recycling. Homes that earn the Energy Star status offer homeowners all the features they want in a new home plus energy-efficiency improvements that deliver better performance, greater comfort, and lower utility bills. If you are concerned about start up costs – THINK LONG-TERM – energy efficiency makes good economic and environmental sense regardless of the scale of the building project.

Another good local example of thinking long-term is the public library. The Library, through a combination of donations and reserve funds, totally renovated the children's room in 2010 and employed several energy saving products such as the newer fluorescent lights, quilted covers for radiators, and energy efficient window treatments – all of which was done at no cost to the tax payer.

3.5.1 Municipal Energy Assistance Program (MEAP)

The New Hampshire Municipal Energy Assistance Program, funded through the Public Utilities Commission, was created in 2009 to aid towns in determining their energy consumption and to provide general assistance and counsel. Littleton participated in the program and received an energy inventory, one building energy audit, and 25 hours of energy advocacy to help carry out improvements. Key findings were:

- The annual fuel expense for buildings, vehicles, and streetlights was over \$180,000
- The most expensive building to run in terms of energy cost per sq. ft. was the Highway Department (aka, the town garage)

Note: Neither the Town Building or the Town Office was inventoried, and only four months of data existed for the police station.

Based on this evidence, the Highway Department building was selected to receive a decision grade energy audit and a remediation plan is being formulated. The town should now consider funding energy audits on all town buildings.

The MEAP report recommended that the town:

> maintain the inventory database and software and conduct updates of electricity, fuel, oil, etc usage as this will, among other things, strengthen future applications for grants;

- > review the Master Plan, Zoning Ordinances, and other town policies for any inconsistencies with the goal of reducing energy usage;
- > implement a strategy to purchase Energy Star equipment and environmentally sensitive office products, and implement consumption awareness campaigns;
- > implement a behavioral change program with municipal employees; and,
- > find alternative energy sources to reduce costs and emissions.

The report also recommends bench marking other buildings such as the Library, the Community Center (House and Annex) and Parks and Recreation facilities.

Town government and the ECC should remain alert for additional opportunities like the MEAP and aggressively pursue them.

3.5.2 INCENTIVES

It is recommended that the Planning Board introduce warrant articles that reward the use of green materials in new construction (municipal, commercial, and residential) and builders that reduce or eliminate waste on site. Local tax credits for certain home improvements should also be considered to supplement state and federal programs.

3.6 TRANSPORTATION

The second biggest consumer of energy is transportation. New Hampshire residents travel 43 million miles per day in cars, trucks, and buses. We need to reduce reliance on automobiles and encourage alternative forms of transportation such as bicycles, pedestrians, and mass transit systems. We should also avoid any negative impact on transportation caused by development.

3.6.1. RURAL CHALLENGES

We live in a rural area where many people must travel great distances to work. This is inefficient and increases the demands on the family budget. While it is unrealistic to expect a fixed-route transportation system running through every town in the North Country, supplementing what exists today should be a goal. North Country Transit operates the Tri-Town Trolley in Littleton, Whitefield, and Lancaster. Tri-Town Trolley busses are equipped with bike racks. Littleton should continue to support this system to help maintain and expand services.

Currently there are no DOT Park and Ride lots in the North Country. At a minimum, a ride-sharing program would increase mobility, share costs, and conserve energy. North Country Council has obtained funding to develop, launch, and promote “North Country RideShare”, currently being piloted in four towns (Whitefield, Lancaster, Northumberland, and Stratford). North Country Council has just received a second grant to bring North Country RideShare into full operation in the Littleton and Berlin labor market areas. A ride-sharing program offers residents an alternative to single occupancy vehicle commutes, or a means to travel for residents who have no vehicle at all. Within

Grafton County, Littleton has the highest rate (10.2%) of housing units with no vehicle available. Littleton also has the county's highest rate (11.4%) of individuals living below the poverty level. Workers need an inexpensive and easily accessible means of getting to their place of employment. We should examine the feasibility of tax benefits that encourage ride-sharing programs. A robust, organized volunteer program could be a great assistance in coordinating a variety of transportation needs. In a similar manner, expanding broadband access might encourage people to work from home and reduce commuting.

To ease access to the local recreation areas, for residents and tourists, the feasibility of seasonal mass transportation should be examined. The Appalachian Mountain Club operates such a system for hikers with designated stops at the major trailheads. Maybe a shuttle service could be established from a central location in Littleton to Franconia Notch and/or Crawford Notch. Perhaps such a demand-response service could be expanded in the winter to the various ski areas.

3.6.2 REDUCE CONGESTION

Daytime and seasonal peaks in vehicular traffic cause congestion, which is inefficient and can be a disincentive to making Littleton a preferred destination. We need to balance the needs of local, through, and tourist traffic. It goes without saying that tourism is an important component of the local economy. Every effort should be made to make arrival, dwell time, and departure as pleasant and inviting as possible. Bottlenecks need to be identified and alternative solutions examined and implemented, with the added benefit of reduced energy consumption. North Country Council does traffic counts each year and the information is available on the NH DOT website. There may be a need for additional, tailored vehicle counts to assist in flow patterns analysis and to evaluate and implement solutions.

Efforts should be undertaken to provide more satellite parking for Main Street employees and visitors, which will help alleviate the traffic congestion problem.

3.6.3 ALTERNATIVE TRANSPORTATION

The town should make every effort feasible to promote bicycle and pedestrian traffic. Pedestrian and bicycle pathways, such as River Walk and the covered bridge, should be expanded and integrated with recreational trails. Improved sidewalks and crosswalks will encourage bikers and walkers. Eventually we should strive for a non-motorized network "greenway" plan for the entire town. Zoning regulations should promote pedestrian and bicycling needs. For example, future commercial development should feature easier pedestrian access and connectivity (unlike what currently exists on the Meadow).

The town should fully support the nascent volunteer Safe Routes to School program in Littleton. This program promotes a healthful activity, walking or biking to school, and saves energy currently wasted by the long line of cars waiting to drop off or pick up students. SRTS grants from DOT have already been awarded for preliminary

organizational and educational activities, but this effort needs to expand to obtain grants for travel plans and infrastructure improvements. The Town and school need to continue to work together for this mutually beneficial program. There also is need for discussion with businesses and homeowners to better define and maintain driveways and aprons along designated travel paths.

3.6.4 CHANGES IN BEHAVIOR

The MEAP report recommended evaluating ways to reduce fuel usage with the town's vehicle fleet. Energy-saving technologies (such as upgraded, more fuel efficient vehicles) and energy conserving behaviors should be considered. This can be done by analyzing routes, usage, carpooling, and a strict no-idling policy. Other changes to consider are:

- A 4-day work week for certain town departments or businesses
- Actively seek auto dealerships in Littleton that specialize in low emission vehicles.
- Examine opportunities for better cooperation of existing public transportation services within the community
- Evaluate the potential for using alternate fuels in town vehicles and suggest the same be considered by the school bus fleet.

3.7 LAND USE AND MANAGED GROWTH

The Planning Board should consider ordinances that support the principles of smart growth and innovative land use as these techniques also contribute to energy conservation. This would include, for example, promoting and facilitating higher density, mixed use developments.

3.7.1 Economic Development

Managed growth communities are more successful at attracting new businesses.

- Economic development should be directed toward the center of town
- The focus should be on existing developed areas over new development

3.7.2 Smart Growth

- Create compact development with a mixture of housing and services
- Encourage the use of renewable sources of energy (RSA 674:17)

3.7.3 Innovative Land Use Planning (RSA 674:21)

- Consider making preliminary review mandatory prior to formal application
- Work with developers to modify plans in the best interest of the community
- Cluster developments

- Site Plan Review
- Impact Fees

The Planning Board should promote Smart Growth principles such as maintaining compact settlement patterns managing growth locally. Open Space development techniques have not been used due to a lack of direct incentives for the developer. Similarly, the Planning Board should promote cluster housing in rural areas, in-town housing, more mixed-use zones, and energy efficient patterns of development. Targeting most growth to already developed areas minimizes the energy usage by local residences, shops, and town services.

The Planning Board should work closely with the Conservation Commission on possible land use ordinances that would enhance the protection of natural resources such as storm water management.

3.8 FUNDING

Littleton should work with North Country Council Transportation Advisory Committee on our transportation needs in order to affect state or federal policies.

We should approach the DOT for Transportation Enhancement funds that support local projects that save on energy use and cost.

4.0 ENERGY EFFICIENCY

Once energy conservation techniques have been employed to the maximum feasible, the goal of energy efficiency is to make improvements in the use of the load. The most significant reduction in emissions and cost will come from substantially increasing energy efficiency. For example, the MEAP report recommended a comprehensive inventory to determine the effect of the new lights on portions of Main Street. The old streetlights were not energy efficient and quite costly to operate. Such an inventory might reveal lights that are not being maintained or are no longer needed, or point to the need to replace other street lights with more energy efficient types.

It is important for owners of rental units to emphasize the importance of using energy efficiency in their apartment.

LRH installed “snowmelt sidewalks” for both safety and cost savings; they save money by having a lower snow removal bill and the use of salt goes down.

The Office of Energy and Planning has a program called “Stay Warm New Hampshire”, which has information on how to winterize your home, heating and cooling energy tips, automobile energy tips, equivalent fuel price comparisons, etc.

4.1 AUDITS

Energy audits are excellent tools to determine efficiency. Audits come in various grades ranging from residential to industrial and from simple blower test to modern thermal scans. While these can be expensive, grants are available. ADMAC Salvage was successful in obtaining an energy audit grant for the entire Tannery building worth \$10,000.

4.2 OFFICE PRACTICES

An energy efficient office saves money and helps the environment. The Town of Littleton is strongly committed to good stewardship of its citizens' tax dollars, and energy efficiency at the office is just good business. It is recommended that one person be placed in charge of energy efficiency at each organization.

4.2.1 Office Equipment

Office equipment is the fastest growing use of electricity in commercial and governmental buildings. Equipment left on overnight, or for long periods during the day when not in use, accounts for a large share of electricity use. Even turned off, electronics and appliances use some energy any time they are plugged in and in stand-by mode. Certain things, such as shredders or televisions, not used on a regular basis can be unplugged and even more things can be turned off at night and over the weekend and holidays when employees are gone. On the other hand, items necessitating 24-hour operations, such as a fax machine or security lighting, should be exempt from this policy.

4.2.2 Lighting and HVAC

The right lighting will save energy and money, from desk lamps to ceiling lights. The use of fluorescents are encouraged for both energy savings and safety purposes. Obviously, lighting should be held to the minimum required for proper office operations and needs to be turned off at night.

The same logic applies to the use of heating and air conditioning. In the case of "comfort" appliances such as space heaters, fans, and dehumidifiers, employees should make every attempt to address uncomfortable conditions with building management. In the colder seasons workers should dress warmly rather than relying on space heaters.

4.3 CARBON CHALLENGE

The Carbon Challenge does two things: first, it shows you how much energy you consume and a number of ways to reduce consumption; second, it translates your potential energy savings into dollars. The on-line Carbon Challenge only takes about 10 or 15 minutes to complete. All you have to do is provide how much fuel and electricity you use each year. The tool will then calculate your total energy consumption. The average residence taking and maintaining the pledge has been realizing about 16% in savings or between \$700 and \$800 dollars annually. This free, online service can be found at <http://carbonchallenge.sr.unh.edu>. The Littleton Public Library has "Kill A

Watt” energy detectors to loan to patrons. Individuals can take these detectors home for up to two weeks and measure energy being used by appliances, lamps, computers, etc.

4.4 BUY LOCAL

We’ve already mentioned the value to buying produce locally at such places as the Littleton Co-op and Farmer’s Market. The same principles of efficiency and cost avoidance apply to the construction industry. Projects that use local subcontractors not only bring money into the economy but also reduce energy involved in transporting material and products from far away. It was encouraging to see the Littleton High School Future Business Leaders of America adopt a “buy local” theme for their 2010 project.

5.0 ENERGY SOURCES

Oil and propane gas are the predominant energy sources used to heat and air-condition our municipal buildings. Older structures, such as the fire station and highway garage, use oil but the new police station and the renovated Town Building/Opera House uses propane. Inadequate data is available at this time to determine the energy efficiency of the buildings running on propane. Baselines need to be established for these buildings after a full year of operation.

Due to the incomplete information available on buildings, the inventory completed in 2009 depicted unusually high percentages of total energy cost attributable to vehicles and streetlights. These percentages were elevated in all three categories: annual fuel expense, annual CO₂ emissions, and annual energy use. In any event, the proportion of total energy use from streetlights dictates that the town should further investigate this sector of consumption.

Twenty percent of manmade CO₂ emissions are caused by conversion of forestland to some other purpose. Trees are valuable, among other things, for their ability to absorb and store carbon. Steps should be taken to ensure local oversight of good management practices that minimize conversion of forests to other purposes. A more aggressive timber cut regimen should be considered to insure compliance with regulations.

6.0 ALTERNATIVE SOURCES

Renewable energy is an important step toward addressing climate change and saves money on expenses that seem to increase progressively every year. In 2008, consumption of renewable sources in the United States totaled only about 7% of all energy used nationally (U.S. Energy Information Administration). The five most commonly used renewables are:

- Biomass: including wood and wood waste, municipal solid waste, landfill gas, and biogas, ethanol and biodiesel
- Water (hydropower)
- Geothermal

- Wind
- Solar

Given that New Hampshire is 84% forest, wood would seem to be the best locally available alternative.

Currently we heat our homes, businesses, schools, and town buildings primarily with oil. Nearly all of our transportation is powered by oil, and most of this oil comes from overseas. The Energy Information Administration reported that in 2008 we imported 57% of our petroleum (which includes crude oil and refined petroleum products). Over half the electrical energy we use is generated by burning fossil fuels located great distances from its point of use, at great direct cost to the environment. We did not create this situation but we do participate in it and have the opportunity and responsibility to help change it. Diversity in energy sources is a good thing, particularly in an emergency situation.

The most practical alternate systems of harvesting energy available to the North Country are wood, hydroelectric, direct solar collection, and wind (there are no local sources of natural gas). RSA 674:17 I (j).

Electric energy is generated with wood burning plants in the North Country. While that uses a renewable and local resource, it may not save money or be clean enough to make it attractive to Littleton. Wood burning in pellet form for heat is growing in popularity and should be considered for municipal and school use. We should promote the use of firewood, wood chips, and wood pellets.

Littleton shares in the advantages of large-scale hydropower both in tax revenue and high quality recreational opportunities at the Moore Dam Reservoir. There may be opportunities elsewhere for small-scale production by LW&L or individuals.

Direct solar systems can collect heat to supplement building systems and can generate electricity. These systems should be researched for use in all public buildings.

Practical wind generation is becoming mainstream and economically viable. LW&L would be a natural choice to develop this resource, which may need public endorsement. Certainly, a small-scale demonstration project could serve to promote wind as an alternative, renewable energy source. A similar case could be made for a small solar demonstration project.

Littleton might consider providing incentives to local businesses that have, or are developing, product lines for builders and homeowners that use natural, sustainable, or recycled materials.

Another currently untapped source is the conversion of methane gas from the Bethlehem landfill. While there are start-up financial hurdles, this has the potential of becoming a regional energy source. Grant opportunities should be examined to help allay the costs of the necessary transmission lines.

Littleton should emulate our neighbors in Franconia who have voted through special warrant articles to allow energy-saving additions to homes without increasing local taxes. Property tax exemptions from the assessed value were approved for persons owning property equipped with solar energy or wood heating energy systems.

At the minimum, existing zoning ordinances and other policies should be reviewed to make sure they do not limit renewable energy systems.

6.1 RETROFITS

The Police Facility Study Committee considered using a geo-thermal energy system for the new police station. Unfortunately, the upfront cost of this system drove the overall bottom line for the project to a point that threatened passage of the warrant article. A retrofit of this building should be considered if stimulus or other grant monies become available.

Littleton might want to consider municipal incentives to supplement federal and state monies available for winter weatherization. This money is typically directed toward the needy and non-profit organizations.

Conversion of existing systems to more efficient systems should be encouraged. This would include wind, wood, solar, geo-thermal and biomass and should be considered for all types of existing structures (municipal, school, business, residential).

6.2 NEW CONSTRUCTION

New construction should incorporate state-of-the-art energy efficiency and renewable energy sources into the design of the building envelope, operating systems, and energy consuming appliances and devices. The new Medical Office Building at the Littleton Regional Hospital will run off a geo-thermal driven heat pump system, with energy savings estimated in the 60 to 70% range.

As a municipal government, Littleton is the primary authority having jurisdiction over construction in the town. Life safety regulations include fire, plumbing, and structure. Other government responsibilities include location, use, and appearance.

Today, many governments regulate construction for its energy efficiency. For instance, buildings may be inspected during construction for properly installed insulation and heating plants. The town could certainly consider mandating energy efficiency in all public works.

To this end, it is proposed that Littleton adopt standards for construction. This might include Energy Star, LEEDS, and/or other standards. Cluster developments should be fostered or incentivized because they protect valuable land resources and save energy in

transportation. Reinstating site plan review would go a long way towards realizing the goal of properly managed growth. Another area for consideration would be incentives to reduce or eliminate construction waste and increase the use of combined heat and power systems.

The school system should thoroughly research funding aid for new construction and renovations using energy efficient technologies.

Municipal incentives for energy efficiency should be considered as was done in 2009 when Franconia adopted tax credits for solar energy construction or conversion. Organizations such as the Jordan Institute and the North East Collaborative for High Performance Schools can provide technical assistance for town and school construction projects.

7.0 RECOMMENDATIONS

The following possible actions are recommended.

7.1 Organization

- Affirm the town's commitment to conservation and efficiency by transitioning from an energy committee to an energy commission.
- Expand awareness through educational and informational programs to include conservation and efficiency in the school curriculum
- Examine options for a local web-based information/education service

7.2 Conservation

- Expand list of items accepted for recycling at the Transfer Station
- Promote recycling by placing bins in high traffic areas, encouraging businesses to recycle and compost, and establishing a mobile shredding service
- Maintain energy inventory database and conduct yearly updates on usage of electricity, heating/cooling, and vehicle fuel consumption
- Review the Master Plan, zoning ordinances, and other town policies for any inconsistencies with the goal of reduced energy usage; for example, promote cluster housing in rural areas, and energy conservation patterns in developments
- Implement a municipal strategy to purchase Energy Star equipment and environmentally sensitive office products; encourage the same at the residential, industrial, and commercial levels
- Introduce warrant articles that reward the use of green materials in new construction and companies that reduce on-site waste
- Investigate the feasibility and efficacy of hiring a building inspector, perhaps shared with another town(s)

- Consider ordinances that support the principles of managed growth and innovative land use techniques that also conserve energy
- Examine the effect that tax benefits or other incentives might have on encouraging ride sharing programs, mass transportation, working from home, and shuttle services to recreation areas
- Study traffic counts and flows with an eye toward reducing congestion
- Take measures to establish more satellite parking in town
- Promote bicycle and pedestrian traffic, to include: a review of zoning ordinances; bike racks and travel lanes; and, easier biker and walker access within both residential and retail areas
- Town and School officials need to cooperate closely in vigorously supporting the Save Routes to School program, and to involve businesses and residences along travel paths
- Evaluate ways to reduce fuel usage by the town's vehicle fleet
- Explore land use ordinances that might promote energy goals by enhancing protection of natural resources
- Work with North Country Council on our transportation needs and DOT for funding assistance

7.3 Efficiency

- Conduct a thorough study of the energy efficiency of our streetlights
- Encourage energy inventories and audits of municipal, school, residential, and commercial buildings
- Assist remediation of low efficiency buildings through grant research and incentive programs
- Promote best practices for energy efficiency at the residential, school, municipal, and commercial levels
- Consider municipal incentives that supplement federal and state programs for winter weatherization
- Adopt local standards for construction that are energy efficient
- Consider ways to encourage local business that provide energy efficient products or that use natural, sustainable, or recycled materials
- Buy local

7.4 Resources

- Promote the use of solar, wind, and wood-based energy systems through local tax exemptions or other incentives
- Consider small scale demonstration projects for wind and solar
- Encourage other sources of energy for new construction or retrofits, such as biomass and geo-thermal
- Pursue acquisition of access to untapped sources of methane gas such as the Bethlehem landfill