The INSTITUTE for Public Policy & Economic Development at Wilkes University

A partnership among Keystone College, King's College, Lackawanna College, Luzerne County Community College, Marywood University, Misericordia University, Penn State Wilkes-Barre, The Commonwealth Medical College, University of Scranton & Wilkes University

SUSTAINABLE PRACTICES FOR LOCAL GOVERNMENT AGENCIES

5/12/2016

Planning, Land use, Transportation, and Infrastructure Task Force

Sustainability is based on the belief that there is a direct or indirect relationship between the need for survival and the natural environment.[1]

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INTRODUCTION

Sustainability is based on the belief that there is a direct or indirect relationship between the need for survival and the natural environment.[2] In 1998, the United States passed the National Environmental Policy Act of 1969 which declared national policy to be "to create and maintain conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic, and other requirements of present and future generations."

A sustainable community is one that is economically, environmentally, and socially healthy and resilient. The success of such a community heavily depends upon its members' commitment and involvement through developing a healthy climate and environment, ensuring social well-being, and maintaining economic security.[3] It is important to understand that changes made do not always require large budgets and small communities have the ability to alter practices which result in sustainable living.

This report contains a detailed account of sustainable practices and how it can be easily implemented by local government agencies. In Luzerne and Lackawanna Counties, there are a total of 116 municipalities. Large-scale changes are not always necessary to see an improvement; instead, small, daily changes within municipal government can add to a significant change cross both counties. Small-scale energy efficiency initiatives create a snowball effect that is seen across the entire region with more small sustainable communities.

Local governments in Northeastern Pennsylvania have an important role in demonstrating sustainability. Government agencies use resources in daily operations that include police and fire protection, public administration, parks and recreation, libraries, and more. For a local government agency looking to adopt more sustainable practices, starting right in the municipal building can be a great way to begin. Local government agencies can also spur broader changes by setting a positive example for businesses and individuals. It is important to keep in mind, however, that simply implementing changes is not enough. It is also equally as important to track and monitor consumption as it can lay the foundation for continuous improvement.

Last year, former Wilkes-Barre mayor Thomas Leighton announced that the City of Wilkes-Barre is among a select group of high performing municipalities to become certified through the Sustainable Pennsylvania Community Certification program. Wilkes-Barre is recognized at the Gold level of certification for meeting criteria that tracks 131 policies and practices.[4] The Sustainable Pennsylvania Community Certification program enables individuals to assess their municipalities by providing information regarding the policies and practices relating to operations, community engagement, public safety, healthy communities, education, energy use, conservation, and green building, environmental stewardship, housing, land use and transportation, the local economy and other sustainability innovation. This recognition is a great way to improve future efforts by showing community members and other local governments that this level of sustainable living is attainable.

Sustainable Strategies

Energy Consumption and Reduction

MANAGE COMPUTER USE

There are many computer software programs which assist in maintaining computers while not in use. In situations when computers will not be used again in the short-term (more than 20 minutes), it is recommended to shut the computer down.[5] Even more beneficial is having all computer related products on one power strip which can then easily be turned off or unplugged at night. Even when turned off, electronic devices and appliances still draw a small amount of energy while still plugged in – sometimes called a vampire load or phantom load. For each computer, this can amount to approximately $50 per year. In a local community which multiple schools, offices, and other public buildings, these savings can add up.

Similar to computers, vending machines have long periods when they are not being used. At Tufts University in Massachusetts, a device called Vending Miser, an energy efficiency product for use with vending machines, coolers, and other similar devices. This product turns the machine lights off but still allows the machine to run in order to maintain beverage temperatures. At Tufts University, upon measuring the energy saved on their 90 machines, they estimated a saving of $17,000 as well as 100 tons of CO2 annually.

LIGHTING

At Wilkes University, the Cohen Science Center was built to LEED Silver standards for environmental sustainability. The biggest contributing factor are the large, energy saving windows which allow for natural light as well as lighting controlled by motion detectors.[6] Though they require a certain degree of energy for having to constantly remain on "stand-by" when not in use, motion detector light controls save energy in many cases, especially areas that see high traffic during certain peak times of the day, these are helpful. For more information on larger scale green building implementation, see The Institute's Sustainability Toolkit on Green Building.

In addition to this, it is highly recommended to replace the traditional incandescent light bulbs with compact fluorescent (CFL) light bulbs. At the University of Florida residence halls, 3,700 incandescent light bulbs were replaced with CFL light bulbs in 208 apartments. The anticipated savings of this change can total to approximately $15,000 annually. In Luzerne and Lackawanna County, this can be implemented at various apartment complexes, universities, as well as office buildings resulting in a significant saving annually.[7]

ALTERNATIVE FUELS

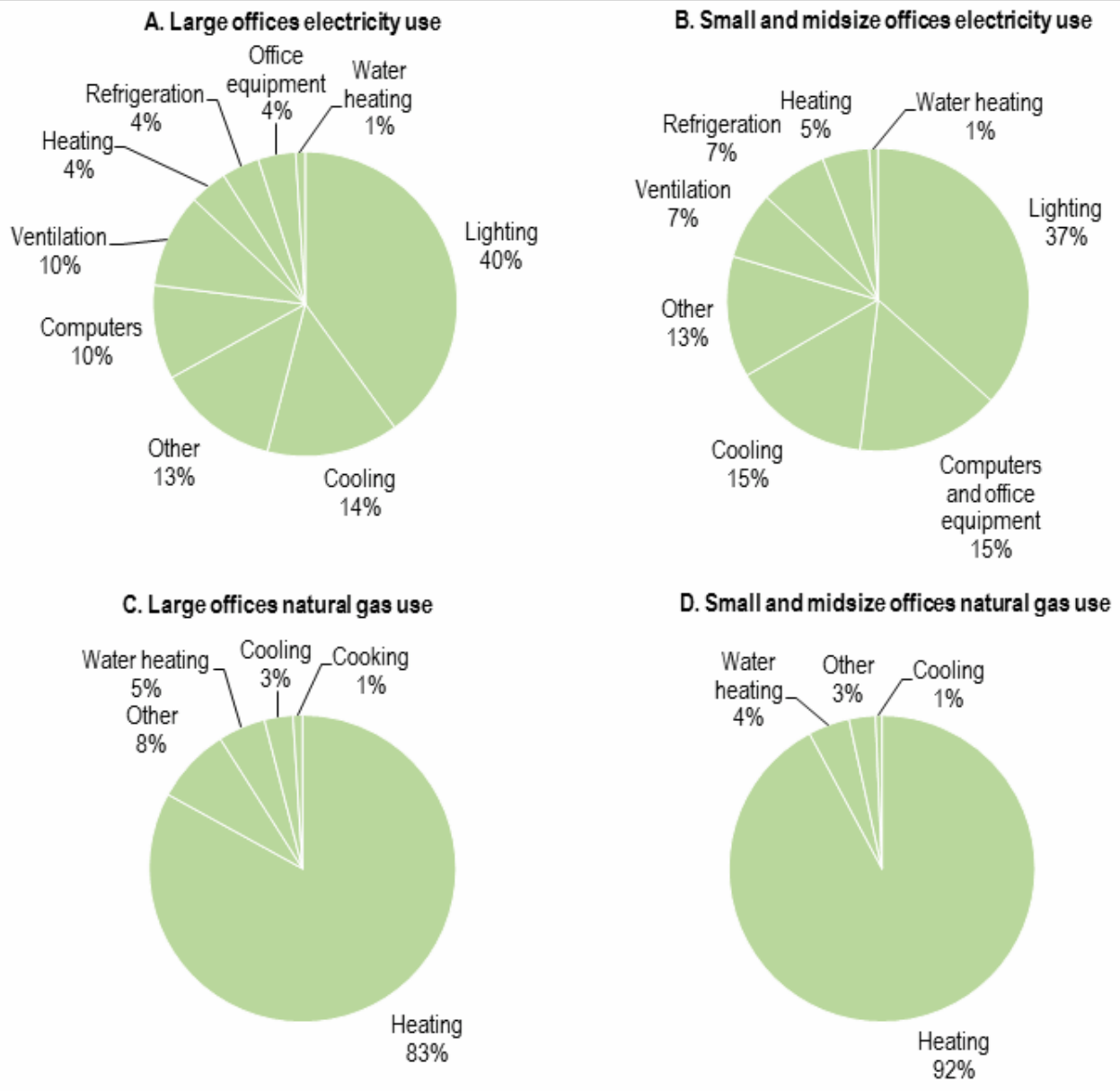
Local government agencies often rely heavily on vehicle travel to accomplish daily tasks. This includes police vehicles, public works vehicles and heavy equipment, and other municipal vehicles. The price of gasoline is volatile, and older vehicles tend to be less efficient than newer ones. Municipalities can both save money in the long term and reduce greenhouse gas emissions by considering alternative fuel vehicles, such as hybrid gas/electric vehicles, electric fuel cell vehicles, or liquid natural gas vehicles when it's time to upgrade. In some cases, existing vehicles can even be converted to liquid natural gas power.

Measuring Outcomes

In order to ensure that sustainability practices are having the desired effects, it is important to measure and periodically assess outcomes. One simple measure of energy savings is the monthly electric bill. A local government agency can track its electricity usage in kilowatt hours to see the impact of changes being made, and quantify these changes in terms of their cost savings.

Many utility companies offer an on-line tracking system which tracks electricity usage. This can be a helpful tool to assess the impact of the changes as a result of these sustainable practices. Similarly, the Energy Stat Portfolio Manager, which is a resource provided by the EPA, is a tool that measures and tracks water and energy consumption and it also monitors greenhouse gas emissions.[8] The tool allows one to register and buildings and business into the tracker system. Once this is completed, the Portfolio Manager can be used to manage energy and water consumption of any building registered in the account. Additional functions of the Portfolio Manager include the ability to track ones carbon footprint, setting investment priorities, tracking savings upon changing consumption habits, and sharing and reporting performance. In general, these tools are helpful in order to track progress. As local governments begin to show tangible improvement in energy consumption and proof of decreased costs, more individuals and businesses are likely to participate in similar energy saving initiatives.

With regard to regional utility tracking opportunities, many of the primary utility companies within the Luzerne and Lackawanna County region offer a tracking capability on their website. For example, UGI offers customers resources to managing energy costs. In particular, one resource that is made available to anyone seeking information is information on managing energy costs in municipal government facilities.



This depiction provided by UGI shows the percentage of electricity and natural gas use per small, mid-size, and large offices. In general, the majority of the electricity consumption in all office sizes is attributed to lighting and the majority of natural gas use in all office sizes is attributed to heating. The website also provides information regarding how to calculate use and consumption. Other companies such as PPL provide similar tools. Account holders with PPL are able to change settings in order to "Start Tracking. Start Saving." This is the tool that allows individuals to view their energy consumption and savings as a result of sustainable practices.

Utilizing these tools are beneficial to local governments and businesses as it will help to provide statistics of sustainable measures which will, in turn, lead to a greater likelihood of securing grants to expand these initiatives throughout local regions.

Other energy and building related outcomes can be tracked with a building management system. In addition to helping to maintain buildings, these computer-based systems can help track building energy usage in a high level of detail.

Similarly, energy savings in vehicles can be quantified as well. By using regular odometer readings of vehicles along with the costs of fuels, it is easy to calculate the cost per mile of travel for vehicles. It is also possible to compare C02 emissions of conventional vehicles with alternative fuel vehicles.

CASE STUDIES

Fayette County

In 1966, Fayette County Community Action, Inc. organization was founded as a community-based, multi-serviced agency with the mission to strengthen individuals and families to become more self-sufficient, improving the conditions in which they live and taking ownership of the community.[9] Uniontown, PA in Fayette County was selected as one of 11 demonstration sites for sustainable communities. It was found that first and foremost, investments, resource allocation, and continued support are necessary to establish and maintain such communities. Developing a program around sustainable communities requires community support as well. As community members begin to see the change in energy consumption, decrease costs, and increase quality of life, it will become more widespread throughout the region.

University vs. Municipality

A report published regarding university and college campus sustainability practices in August 2008 shows how small and large scale changes to universities and colleges within areas such as energy efficiency, transportation, food, waste, green building, water and ecological design, education and outreach, and innovation can make a tremendous short- and long-run change.

Many large universities are comparable in size to small boroughs or townships, so these institutions can be a great place to look for sustainable practices. In 2006, St. Olaf College placed a 1.6 MW wind turbine on their campus farmland which replaces one-third of the school's energy needs and saves $300,000 in utility costs. Though this represents a significant investment, there are many funding opportunities available to develop sustainable communities.

Similarly, Massachusetts Maritime Academy, installed a similar wind turbine which produces over one million kWh a year and saves the academy $160,000 annually. There is a large upfront cost associated with these large-scale changes, but as mentioned, many organizations are interested and willing to provide funding to improve sustainable communities.

Another topic to consider is transportation. Many large universities, such as the University of North Carolina, offer incentives for riding bikes to class and others, such as the University of Washington or the University of Michigan, offer incentives for carpooling. In Luzerne and Lackawanna Counties, an incentive to use the public transit system would be more beneficial. More than 50 percent of the population for both counties live less than ten miles from where they work, if the use of the public transit system was facilitated by employers. The Luzerne County Transit Authority and the County of Lackawanna Transportation system have multiple buses on various schedules throughout the day which can be helpful and reduce congestion and CO2 pollution throughout the region.

IMPLEMENTATION PLAN

As many of the changes that can be made for the small-scale sustainable living are not extensive, the first step is to understand the cost of pursuing such changes. To start, there are many free computer programs, such as Switch Off, that can be acquired which allows a computer to shut down or sleep computers after extended periods of idle time, or can be further programed to turn off at other times. This is a free, efficient way to save energy and promote sustainable practices.

The standard CFL bulb ranges is approximately five dollars per bulb and less if bought in larger quantities. This is a very low cost that can be fronted by the local or state governments as well as individual business and property owners.

Other changes are costlier, but it is critical to consider the long-term benefits that they may provide, both in environmental and economic terms. While an alternative fuel vehicle may have a higher upfront cost, over the lifespan of the vehicle, the owner may achieve substantial cost savings.

Regional Sustainability Management Plan

In order to ensure continued efforts, it is also important to track and manage consumption and savings that coincide with each sustainable practice. It is beneficial to establish a regional sustainability management plan that can provide guidance on practices, measuring tools, and provide insight regarding the efficacy of the changes being implemented.

The first step to enforce this plan for local governments includes selecting individuals to oversee these changes and ensure the tracking is taking place. This can be done by developing a task force or a committee to educate and expand the reach of sustainable practices. Local governments and municipalities should prepare a plan and create benchmarks for the future. By changing small habits, these benchmarks can be easily overcome. Once these changes are managed and recorded, it will facilitate the process of securing the grant funding to pursue even larger sustainable practices throughout the community. In order to manage the consumption and savings for larger regions, the EPA's Energy Star Portfolio Manager is most recommended as it can cover larger regions.

RESOURCES

One of the biggest obstacles to overcome is how these projects will be funded. Many municipalities have limited budget due to fiscal challenges and other are simply very small and therefore have a small budget. Financial support is available through a variety of channels.

Financial Assistance

Many of the changes to be made require little to no planning, however, funding can sometimes be a challenge. The Department of Transportation, Environmental Protection Agency, and the Department of Housing and Urban Development, had developed an interagency partnership for Sustainable Communities which provides partnership grants, assistance, and programs.

The Department of Transportation offers funding for the support for more livable, walkable communities. The Environmental Protection Agency offers support for activities that improve the quality of development and protect human health and the environment. HUD offers funding opportunities to help communities to realize their own visions. Collectively, these agencies strive to support sustainable communities.

Locally, the Department of Environmental Protection (DEP) provides support for projects and programs that are directed toward environmental education such as sustainable living, watershed education, air quality,

brownfields, energy, Keystone Energy Education Program, environmental literacy, etc. In April 2015, DEP awarded 110 grants totaling over $304,000 to such groups.

Another potential source of funding for local government is the Local Share Account program. This source of funding, generated from gaming revenues, is available to any municipality that wishes to apply. The funds can be used for more energy efficient vehicles or equipment, or other projects in the public interest.

Technical Assistance

The Local Initiatives Support Corporation (LISC) has a mission to ensure that all small communities have a chance to thrive by equipping the struggling communities with the capital, strategy, and know-how to become places where people can thrive. LISC has a five-point strategic plan that can help develop a sustainable community.

- Expanding Investment in Housing and Other Real Estate
- Increasing Family Income and Wealth
- Stimulating Economic Development
- Improving Access to Quality Education
- Supporting Healthy Environment Lifestyles

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