

2009
CITY OF FREDERICK
Sustainable Practice Action Plan



DEVELOPING A GREEN PATHWAY TO OUR FUTURE

APPROVED BY THE MAYOR AND BOARD OF ALDERMEN ON APRIL 16, 2009

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
POLICIES AND ACTIONS	5
Policies Internal to the City of Frederick Facilities Operations	5
Policies Relating to Citizens, Businesses, Developers and Other Concerned Parties	11

EXECUTIVE SUMMARY

For humans to live sustainably, the Earth's resources must be used at a rate at which they can be replenished. Without proper policies in place, resources may be reduced or eliminated at a rate that prohibits life from existing. Reaching environmental sustainability within our City is a long-term process requiring policy change, behavioral change, and public education. Sustainability, in a broad sense, can be defined as the ability to maintain a certain process or state. As it relates to the environment, sustainability can be defined as the ability of an ecosystem to maintain ecological processes, functions, biodiversity and productivity into the future. Sustainability has become a complex term that can be applied to almost every facet of life on Earth, particularly the many different levels of biological organization, such as; wetlands, prairies and forests and is expressed in human organization concepts, such as; eco-municipalities, sustainable cities, and human activities and disciplines, such as; sustainable agriculture, sustainable architecture and renewable energy.

The first step in the process is for the City of Frederick to adopt an Action Plan. By adopting a plan, or a similar document to organize green initiatives, the City can coordinate efforts that often cross departmental boundaries, gain input and buy-in from city staff and additional stakeholders, and track progress in order to ensure a proper policy is created and that goals are met. The development and adoption of the plan is an important exercise that can benefit the City and lead to demonstrable results. The City may chose to adopt resolutions that are circulating nationally, or their equivalent, to promote responsible actions on environmental protection through emissions reductions. While these resolutions are best coupled with plans for specific actions and policies, they represent a public commitment on behalf of the municipality and can be a positive first step.

To implement an Action Plan, it is best to have point of contact to research and coordinate the efforts. Often a Sustainability Coordinator joins City staff to perform the following important roles.

COMMUNICATIONS: The best way to coordinate initiatives is through centralized communication. It's someone for people to direct their questions and concerns. It's a way of judging what City staff and the City's residents are concerned about. You can then allow the questioner to act on the answer to their question or suggestion and create change.

CONNECTIONS: The Sustainability Coordinator plays the match maker role. People will come to this person asking for ways to get involved and offering ways to get involved. City Departments and the Public will also need to be coordinated to implement the Sustainable Projects. The Sustainability Coordinator's job is to connect these people. It's much easier to generate a Citywide interest in sustainability when you have a central point of contact.

COORDINATION: Sometimes projects have so many stakeholders that it seems almost impossible. A Sustainability Coordinator has access to all the different departments that need to participate and can coordinate complex programs and projects such as new initiatives related to the City's on-going efforts in energy conservation, environmental protection through land use regulation, open space preservation, building codes, green building and neighborhood development, solid waste management, and the use of green products, materials and vehicles.

CREDIBILITY: Having a Sustainability Coordinator in place automatically gives things credibility. This point of contact has an e-mail, phone number, and is part of City staff. The Sustainability Coordinators office can become neutral ground and an information hub.

WHO HAS A SUSTAINABILITY COORDINATOR: The following regional localities currently employ sustainability coordinators: Frederick County, Montgomery County, City of Gaithersburg, City of Alexandria, Baltimore County and the City of Baltimore.

The purpose of the plan that follows is to offer a starting point for staff to develop an appropriate working plan of policies and actions. Items listed are suggested items and will need to be researched and reviewed on an individual basis before being adopted by Mayor and Board.

The following pages note examples of policies that could be incorporated as part of the City of Frederick's Sustainable Practices Action Plan and implemented with proper coordination of resources. These policies address what the City can do internally (Leading by example) and policies that can be instituted to guide the City in its entirety to becoming a more sustainable community.

POLICIES AND ACTIONS

POLICIES INTERNAL TO THE CITY OF FREDERICK FACILITIES OPERATIONS

Leading by Example

Make Energy Efficiency a Priority for Current City Facilities by Retrofitting them With Energy Efficient and Cost Efficient Lighting and Urging Employees to Conserve Energy and Save Money.

SUGGESTED ACTION ITEMS

- Conduct an energy audit of its facilities and recommend appropriate changes.
 - An energy audit gives a snapshot look at government facility energy use trends, consumption, and potential opportunities to help better manage facilities. Such an audit evaluates energy consumption practices and provides an analysis that can be the foundation for continued business planning, especially in identifying areas for energy and cost savings within existing facilities.
 - The use of energy saving performance contracting is becoming increasingly attractive to local governments. This is when a government or organization contracts with a private firm to

assess and correct energy deficiencies - often with little or no actual cost to the locality as the long term energy savings offset the costs.

- The City of Frederick will establish an energy efficiency lighting program for all City facilities, replacing not less than 30% of bulbs and fixtures to accommodate compact florescent lighting technology in 2009.
- The City of Frederick will research an employee education program on policies/practices relating to the environment and energy conservation. An employee education program may include the development and implementation of an Environmental Management System, employee training on energy efficiency, formalization of employee energy efficiency guidelines, information on policy and practice provided on an intranet and websites, induction training and employee events such as energy symposiums.
- The City of Frederick will explore the cost/benefit of requiring all City departments and agencies to purchase Energy Star equipment when replacing existing equipment.
- The City of Frederick will create an Energy Improvement Plan (EIP)
 - An energy efficient plan outlines the measures a jurisdiction has and will implement to become more energy efficient and reduce its energy consumption. To determine what types of energy efficient measures will be implemented, the jurisdiction must first assess the current energy consumption of municipal-owned and leased facilities. It generally applies to retrofitting existing buildings and sets standards for new municipal facilities to incorporate energy efficient and sustainable building techniques in their construction.
 - Implementing energy efficient and conservation measures into daily operations are essential for reducing energy consumption. An energy improvement plan provides examples of energy efficient measures that can be applied

FACT

ENERGY STAR qualified compact fluorescent bulbs (CFL'S) provide bright, warm light but use about 75% less energy than an incandescent bulb while providing the same amount of light, and last up to 10 times longer.

<http://www.amconservationgroup.com/store/pc/viewContent.asp?idpage=9>

in areas such as lighting, temperature control, infrastructure, purchasing/procurement, renewable energy, and alternative fuels.

Employee awareness should be a fundamental part of the plan. By educating employees about the need for resource conservation and what they can do to make a difference, municipal facilities will become more energy efficient.

Reduce the Carbon Footprint of Current City Facilities Through the Use of Clean Energy.

SUGGESTED ACTION ITEMS

- Research purchasing electric power from renewable sources or install renewable energy technology (solar, wind, or geothermal) for use in government facilities. The City should consider establishing goals for the amount of renewable energy to be purchased.
 - As large consumers of electricity, municipalities' choice of electricity sources can have a significant effect on the environment. Currently, our electricity in Maryland comes from a mix of sources, including coal, nuclear, natural gas, and a small amount of renewable energy. Some municipalities, however, have chosen to power a certain percentage of their government buildings with clean renewable sources like wind and solar.
 - There are several ways to approach this opportunity. In some cases, it's possible to actually generate clean energy on site by installing solar panels on the roof of a new or existing building. In other cases, municipalities have supported the construction of new clean energy facilities such as biomass (burning organic matter), small hydroelectric or geothermal power.
 - The most common approach to serving a government building with clean energy, however, is to buy existing available clean energy through

you normal provider (not currently available for the City of Frederick). In some cases, municipalities may choose to sign long-term contracts with new facilities coming online, and their dedicated support can often provide much needed security for this growing industry. Regardless of whether clean energy is generated on site or purchased through the grid, every kilowatt-hour that comes from clean renewable sources decreases the carbon footprint of the City.

Support Recyclables Market Through the City's Procurement Process.

SUGGESTED ACTION ITEMS

- The City of Frederick will research a procurement policy of a minimum of 30% post-consumer recycled content for everyday office paper use (consistent with the current federal government policy).
- Post-consumer recycled content paper means paper made with a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Procurement policies that require 30% or higher post-consumer recycled content help create demand for post-consumer waste paper, thereby helping support markets for recyclables.

Institute Commuting Policies for City Staff.

SUGGESTED ACTION ITEMS

- The City will explore options that will encourage employees to use alternate modes of transportation.
 - Sharing your ride to work - in a carpool, vanpool, bus, train, shuttles or a combination of these - is called ridesharing. Sharing the ride with just one other person can cut your commuting costs in half. Walking is good for the environment, and good for fitness, too. Transit

includes buses, trolleys or rail transportation. Local governments can offer employee benefits or incentives to people who ride share, bike, walk or take transit to work. Popular incentives include reserved or free parking for car pools, cash back incentives for employees not taking up parking spaces, reimbursement for bus or rail tickets, gift certificates, drawings and contests, and comp time.

- The City of Frederick will explore policies for employees that participate in alternative work schedules or telework.
 - The City may implement for its employees an alternative work schedule (AWS) instead of traditional fixed work schedules (e.g., 8 hours per day, 40 hours per week). Within rules established by the City, AWS can enable employees to have work schedules that help the employee balance work and family or personal responsibilities, and reduce individual car commutes. Such alternative or flexible work schedules consist of workdays with (1) core hours and (2) flexible hours. Core hours are the designated period of the day when all employees must be at work. Flexible hours are the part of the workday when employees may (within limits or “bands”) choose their time of arrival and departure. AWS programs also serve as useful recruitment and retention tools.
 - Telework (also called telecommuting) is the ability to do your work at a location other than your “official duty station.” With portable computers, high-speed telecommunications links, and ever-present pocket communications devices, many employees today can work almost anywhere at least some of the time. Some of the advantages to employers are: Improves the quality of work and increases productivity; Employees concentrate on the “project” itself with less distraction from the office environment; Improves morale and reduces stress by giving

FACT

A study released in 2008 by Sun Microsystems suggests that the real climate killer in office life is the employee’s daily commute. It concluded that as much as 98 percent of its employees’ work-related carbon footprints were generated before they even reached the office.

<http://www.cnn.com/2009/WORLD/asiapcf/01/16/eco.green.offices/index.html>

employees more options to balance work and family demands.

Reduce the Carbon Footprint of the City Fleet.

SUGGESTED ACTION ITEMS

- Consider an anti-idling policy for school/government fleet vehicles. Implementing a vehicle anti-idling policy can reduce air and noise pollution, and act as public education to how idling wastes fuel, damages engines, and results in excess greenhouse gas and criteria air pollutant emissions. Due to the fact that idling cannot always be avoided, many policies have exemptions, such as in the case of emergency vehicles, traffic conditions, vehicles being repaired or serviced, or in extreme winter cold or summer heat.

FACT

A gallon of gas burned by our cars, contributes 19 pounds of carbon dioxide to the atmosphere. That's 150 tons a year for a car driving just 15,000 miles.

<http://www.reddawn.com/greenfaq.html>

Evaluate Opportunities to Increase Efficiency in Water and Wastewater Systems; Recover Wastewater Treatment Methane for Energy Production.

SUGGESTED ACTION ITEMS

- The City of Frederick will continue to make improvements to local sewer systems aimed at reducing the infiltration of storm water into the sanitary sewer system.

FACT

Why should we in the United States be concerned about the destruction of distant tropical rainforests?

Because rainforest plants are complex chemical storehouses that contain many undiscovered biodynamic compounds with unrealized potential for use in modern medicine. We can gain access to these materials only if we study and conserve the species that contain them.

<http://www.rain-tree.com/facts.htm>

Increase Recycling Rates in City Operations.

SUGGESTED ACTION ITEMS

- The City of Frederick will look into expanding the City's in-house recycling program to include such materials as: glass, metal, plastic, scrap metals and construction/demolition waste.
- Local governments operate numerous facilities and buildings that generate considerable quantities of solid waste and recyclable commodities. Formal programs that are designed to set an example for the community and may include guidelines and implementation actions to reduce waste generation, and either reuse or recycle commodities such as paper, plastic, and other materials.

POLICIES RELATING TO CITIZENS, BUSINESSES, DEVELOPERS AND OTHER CONCERNED PARTIES

*Adopt and Enforce Land-Use Policies that Reduce Sprawl,
Preserve Open Space, and Create Compact, Walkable Urban
Communities.*

SUGGESTED ACTION ITEMS

- The City of Frederick will work to promote the preservation of open space and environmental sensitive areas and develop goals to be met.
- Work with local colleges and schools to develop programs monitoring on local streams and the Monocacy River. Possible items to monitor could include:
 - Water quality and quantity
 - Aquatic Life
 - Plant Species
- The City of Frederick will explore options to protect stream corridors and wetlands.
- The City of Frederick will explore a land use or development tool that preserves open space, farmland and forests such as Purchase of Development Rights (PDRs) or Transfer of Development Rights (TDRs)
 - Under a PDR program, the City may purchase development rights from landowners who would rather sell these rights than donate them. These rights can be retired permanently or for a set number of years.

FACT

The average American driver spends 443 hours per year - the equivalent of 55 eight-hour workdays - behind the wheel. Residents of sprawling communities drive three to four times as much as those living in compact, well-planned areas

<http://www.sierraclub.org/sprawl/factsheet.asp>

- Under a TDR, development rights are separated from a parcel of land and sold to a private party, usually a developer, for use on another property. The City would decide where development rights can be sent from and what areas can receive them. From the perspective of long-term planning, it makes sense to transfer development rights to areas that are already well served by highways, water and sewer.
- The City of Frederick will explore the benefits of using permanent conservation easements on private property within a community and/or implement a permanent conservation easement on public land.
 - Conservation easements are recorded perpetual restrictions over the use of land donated to a qualified organization (such as a nonprofit land trust) exclusively for four purposes: natural, historic, recreational, or open space. Landowners who voluntarily restrict the development potential of their land are eligible for certain federal tax benefits provided that the conservation easement protects the conservation values of the property as described above and reduces the value of the land as shown by a qualified appraisal. The City could encourage landowners to participate in this program by supporting the efforts of the local land trust in their area (such as through a Memorandum of Understanding) and by officially designating classes of land with specific identified conservation values defined by use, location and attributes. By such designations, through public ordinance or comprehensive plan, local governments establish “safe harbors” giving the landowner confidence in claiming federal (see 26 CFR Section 1.170A-14(d)(4)) income tax benefits.
- The City of Frederick will explore the effectiveness of a Low Impact Development (LID) storm water management policy and/or Environmental Site Design (ESD) guidelines.
 - Low Impact Development (LID) is an alternative

site design strategy that uses natural and engineered infiltration and storage techniques to control storm water where it is generated. LID combines conservation practices with distributed storm water source controls and pollution prevention to maintain or restore watershed functions. The objective is to disperse LID devices uniformly across a site to minimize runoff. Examples of LID devices include bioretention facilities, dry wells, filter/buffer strips, grassed swales, rain barrels, cistern and infiltration facilities.

- The City of Frederick will explore a land-use plans that allow higher-density development either near public transit nodes or in areas with existing infrastructure AND encourage mixed-use communities
 - How a locality guides its growth will greatly influence the long-term sustainability and energy consumption of the community. Adoption and revision of our land use plans is a fundamental local government responsibility. Directing development to areas with existing infrastructure saves money and often reduces the need for longer commutes.

Practice and Promote Sustainable Building Practices Using the U.S. Green Building Council's LEED Program or a similar system for Commercial Construction.

SUGGESTED ACTION ITEMS

- Research a resolution that requires the inclusion of Green Building technologies and LEED certification (or similar program) for all new commercial construction and renovation projects.
 - Green Buildings - Recent analyses indicate that buildings are responsible for 70 percent of our electricity use, 39 percent of primary energy use, 38 percent of our carbon dioxide emissions, 40 percent of raw materials extraction, 60 percent of non-industrial waste generation, and 12

FACT

Buildings in the United States are responsible for around 40 percent of all energy consumption. The commercial sector accounts for nearly half of all this.

<http://www.cnn.com/2009/WORLD/asiapcf/01/18/eco.greenbuildingfacts/> (Source: Commercial Buildings Initiative)

percent of our potable water use. Buildings result in higher levels of stormwater runoff and reduce forest cover. Buildings are also where people spend a great deal of time either at work, at home, or attending events and thus have a huge effect on our quality of life.

- LEED, which stands for “Leadership in Energy and Environmental Design,” is a nationally recognized rating system established by the U.S. Green Building Council (USGBC) for new and existing buildings. LEED promotes sustainable building practices through a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. There is a graduated point system where buildings can be rated either LEED “certified,” “silver,” “gold,” or “platinum.” Buildings can receive LEED certification through a process managed by the USGBC. LEED certified buildings may have an initial cost-premium, which is generally offset through lower life-cycle operating savings. A recent study provided by the USGBC suggests that new buildings designed to meet LEED ratings at the outset result in no capital cost premium and significant operating cost savings. Energy operating savings of 15% or higher are commonplace, and reported payback periods for green building investments with capital cost premiums are 3 to 5 years. LEED certification may affect the initial cost of the building, but with proper analysis it may be possible to capture the cost saving over the lifetime of the building’s use, often within 5 years.

- Consider a policy of LEED certification (or similar certification) for all new government facilities
 - Construction or major renovation of buildings that meet at least the U.S. Green Building Council “LEED certified” level have been carried out in many localities throughout the United States by government, school systems, and the private sector. The LEED rating system is flexible and can be applied to a wide range of buildings traditionally constructed by local government, including government centers, recreation and parks buildings, and other facilities. Incorporation of green building elements beginning with the initial phase of design can reduce or eliminate cost-premiums and result in lower operating costs as well as a healthy workplace or public space.

Increase Recycling Rates Within the Community

SUGGESTED ACTION ITEMS

- The City of Frederick will work with the County to institute a recycling program for businesses within the City.
- The City of Frederick will encourage greater participation in recycling by City residents.

Develop a Policy to Utilize Energy Efficient and Dark Sky Compliant Outdoor Light Fixtures.

SUGGESTED ACTION ITEMS

- Dark sky compliant outdoor light fixtures serve to preserve and protect the nighttime environment and our heritage of dark skies through quality outdoor lighting. They stop the adverse effects of light pollution, such as energy waste, and the air and water pollution caused by energy waste, harm to nocturnal wildlife and ecosystems, poor nighttime ambience, etc.

FACT

America is the queen of trash. Every day in the U.S., we produce enough trash to equal the weight of the Empire State Building.

<http://webecoist.com/2008/11/26/amazing-frightening-green-facts-environmental-statistics/>

Create a Separate Real-Estate Classification and Lower Tax Rate for Buildings that are More Efficient than Required by the Current Building Code.

SUGGESTED ACTION ITEMS

- The City of Frederick will research whether energy-efficient buildings are to be considered a separate class of real property for purposes of local taxation. The legislation will allow for localities to establish a different rate of taxation for such buildings from that levied on other real property. The legislation will also define an energy-efficient building as that which exceeds the energy efficiency standards by X% as contained in the current code.

Promote Transportation Options such as Bicycle Trails, Commute Trip Reduction Programs, Incentives for Car Pooling and Public Transit.

SUGGESTED ACTION ITEMS

- The City of Frederick will update the Bicycle and Multi-Use Trail Master Plan for the City and apply for Grant funding to expand master plan.

Maintain Healthy Urban Forests, Promote Tree Plantings to Increase Shading and to Absorb CO₂.

SUGGESTED ACTION ITEMS

- The City of Frederick will research and develop a plan for tree preservation & planting. This will include quantifying the number of trees planted by the City and plant a certain amount of new trees each year.
- Explore options for monitoring streams on an annual basis in specific locations to measure the health of the streams.

Work with Frederick County Public Schools to Establish Sustainable Policies.

SUGGESTED ACTION ITEMS

- Work with Frederick County Public Schools to possibly establish a program in one or more schools that connects students to local

farms and/or local produce (such as the farm to school program)

- The carbon footprint of local produce is considered to be substantially less because it does not have to travel as far to reach consumers. These programs can take place through science or nutrition classes or through field trips where students learn about the local farming process, horticulture, soil and erosion issues, etc, and even through sponsorships of local produce in school cafeterias. Such programs encourage students to learn more about the farming/agricultural process while connecting them with nutritious, local foods.
- Farm to School programs are popping up all over the U.S. These programs connect schools with local farms with the objectives of serving healthy meals in school cafeterias, improving student nutrition, providing health and nutrition education opportunities that will last a lifetime, and supporting local small farmers.
- Establish a Safe Routes to School program, which encourages walking and bicycling to neighborhood schools.
 - Safe Routes to Schools programs are designed to decrease traffic and pollution and increase the health of children and the community. The program promotes walking and biking to school through education and incentives that show how much fun it can be. The program also addresses the safety concerns of parents by encouraging greater enforcement of traffic laws, educating the public, and exploring ways to create safer streets such as completing sidewalks and trails for students to travel safely to school.
- Establish clubs dealing with the environment or energy conservation in local high schools.
- A high school club can serve as a tool to educate students and contribute to the local community regarding the environment and conservation. Clubs can vary in size, mission and types of activities undertaken. They generally have at least one academic adviser or sponsor at the high school who does not have to be a science teacher.

FACT

Economic stimulus investments in education and training are among the most effective for short-term job creation and sustained, across-the-board economic growth.

<http://www.nwf.org/news/story.cfm?pageId=BC15671F-5056-A868-A07D94005FF0EE4E>

FACT

In 1969, 42 percent of students walked or bicycled to school. In 2001, 16 percent of students between the ages of 5 and 15 walked or bicycled to or from school.

<http://www.m-bike.org/blog/2008/12/11/safe-routes-to-school>

Help Educate the Public, Schools, Professional Associates, Business and Industry about Creating a Sustainable Community.

SUGGESTED ACTION ITEMS

- Adopt a resolution encouraging businesses to follow the City's lead and adopt green practices that support the reduction of carbon emissions.
- Promote the City Green Initiatives through outreach and advertisement.
- Develop and implement an education program for the local community dealing with the environment and energy conservation.
 - A public education program can be implemented using a range of mediums such as leaflets, websites, local media, or through public events.
 - Energy conservation education may encompass a range of measures, such as providing CFL giveaways, residential and business education on energy efficiencies, heating, lighting, insulation, home renovation and green power advice.

