



Chesapeake Sustainability Plan

Sustainable Chesapeake Initiative

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Acknowledgements

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City Council	Human Resources	Public Utilities
City Manager	Information Technology	Public Works
Development and Permits	Libraries	

Members of the City’s 2007 Green Building Task Force also participated on the SCI

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Introduction

In August 2008, Mayor Krasnoff and the Chesapeake City Council unanimously approved a resolution for the City of Chesapeake to develop an Environmental Sustainability program known as “Go Green Chesapeake: the Sustainable Chesapeake Initiative”. This resolution served to acknowledge the current accomplishments and progress made by the City to become more sustainable while establishing the necessary policy framework to develop a more comprehensive approach to environmental sustainability. Among other things, the resolution tasked the Sustainable Chesapeake Initiative (SCI) committee with developing a Sustainability Plan with short and long term goals toward making the City of Chesapeake a sustainable community. The resolution described a sustainable city as one with a high quality of life that meets the social and economic needs of its current and future citizens, employees, visitors, and business community, while maintaining and improving the quality of its natural environment. This description complements the most commonly recognized definition of sustainability which is “to meet the needs of the present without compromising the ability of future generations to meet their own needs.”

The Sustainable Chesapeake Initiative (SCI) committee was formed by the City Manager as an evolution of the City’s 2007 Green Building Task Force to pursue a broader agenda of environmental sustainability. The initial focus of the effort is to pursue environmental sustainability within the operations of the City with the longer term focus to promote and facilitate environmental sustainability within the greater community. Given this task, representatives from all major operational departments in the City have met over the past year to create the initial Sustainability Plan for the City. Over the course of the year, the SCI found that there are more environmental challenges than ever facing Chesapeake and our region such as air quality, climate change, sea level rise, waste handling, and water quality. The Committee also found that there are many opportunities for meaningful change such as hybrid vehicles, energy performance contracts, and educational resources, as well as many successful existing City programs. To organize the effort to tackle these challenges and to find additional opportunities, the committee divided the task into 7 major focus or operational areas: Fuels/Vehicles/Emissions, Green Infrastructure, Green Purchasing/Acquisition, Sustainable Buildings and Resource Conservation, Recycling/Waste Prevention, Education/Awareness, and Water Quality. The following narrative provides background for the long and short term goals for each focus area in which the SCI committee believes need to be priorities for the Year 1 Sustainability Plan.

Background

Fuels/Vehicles/Emissions

In 2010, the Hampton Roads region will likely be designated as a non-attainment area for ozone which is regulated by the Clean Air Act. Ozone is formed when volatile organic compounds (VOCs) and Nitrogen Oxides (NOx) react with sunlight. Nitrogen oxides form when fuel is burned at high temperatures, as in a combustion process. The primary sources of NOx are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuels. Ozone is a lung irritant and a primary component of smog which is particularly harmful to those with chronic respiratory conditions such as asthma and emphysema. Virginia will be required to develop an implementation plan toward attainment by 2013 and implement the plan for attainment with the current standards between 2013 and 2030.

Climate change and sea level rise are inherently linked and are arguably the biggest global environmental challenges of this century. The Intergovernmental Panel on Climate Change (IPCC) has reported that “there is very high confidence that the global average net effect of human activities since 1750 has been one of warming”, and further, that most of the observed increase in global average temperature since the mid - 20th century is very likely due to the observed increase in anthropogenic greenhouse gas (GHG) concentrations. Rising global temperatures can lead to sea level rise; a decrease in snow and ice extent; changes in precipitation patterns; and changes in extreme weather events. Carbon dioxide emissions rose in Virginia by approximately 34 percent from 1990 to 2004, a rate nearly twice the national average. The Governor’s Commission on Climate Change predicts an average warming of Virginia temperatures by 3.1°C by 2099; an 11% precipitation increase; and sea-level rise between 2.3 and 5.2 feet by 2100 and recommends reducing Virginia’s GHG emissions by 30% by the year 2025, bringing the levels back to year 2000 levels. Before the City can begin to set goals for emission reductions, there needs to be some baseline information. The Cities of Chesapeake, Norfolk, and Virginia Beach have committed to dedicating 1% of funds received from the 2009 Energy Efficiency and Conservation Block Grant (EECBG) funding toward conducting a “Carbon Footprint” or emissions inventory for the Hampton Roads localities and for the region.

Background

One area that has been identified for continual improvement is the type of fuels and energy used. The City can reduce GHG emissions, one trip at a time, by changing the types of vehicles driven and types of fuels used. Hybrid electric vehicles (HEV) combine the benefits of high fuel economy and low emissions with the power, range, and convenience of conventional diesel and gasoline fueling. Flex-fuel vehicles (FFV) can run on gasoline or 85% ethanol (E85). The City currently maintains a fleet of 24 HEVs and 89 FFVs with a desire to increase those numbers. Additionally, biodiesel is made from sustainable, renewable resources which are available in the U.S. It is made from plant oils, animal fats, and recycled grease. For every gallon of biodiesel consumed (vs. petroleum based diesel) approximately 16 lbs of GHG emissions are reduced. Other technologies which reduce GHG emissions are being explored as well, including the use of ethanol (in flex fuel vehicles) and compressed natural gas (CNG) or propane vehicles. The use of alternative fuels and energy will become increasingly important in the coming years.

Green Infrastructure

In September 2007, the City Arborist with assistance from the Information Technology Department created the City's first State of the Urban Forest report. The report served to quantify the amount of forest canopy that currently exists in the City and also to describe the monetary benefits of this canopy coverage. The report found that the benefits of this canopy are close to \$1.5 billion overall with a \$100 million annual benefit in terms of stormwater management, air pollution abated, and energy conserved. The report found that the canopy percentage in 2005 (excluding the Dismal Swamp) was 36% compared to 38% in the early 1990's using available data. As more data is collected in future years, we will have a benchmark to compare the changes to the City's canopy coverage. Urban forestry is one component contained within the concept of Green Infrastructure which is a strategic approach to land conservation and management that links networks of working land, recreational open space, and natural lands. This network can help to sustain ecosystems which provide many ecologic services such as the ones described in the Urban Forest Report. The Hampton Roads Planning District Commission (HRPDC) is currently working on a regional green infrastructure network by identifying lands that provide ecological services and creating partnership opportunities to link the network across community boundaries. The City is currently working to implement green infrastructure principals through the City's Open Space program, the Trails Plan, and the Northwest River Watershed Plan that is currently being drafted in partnership with the Nature Conservancy and the HRPDC.

Background

Green Purchasing/Acquisition

In September 2008, the City Manager signed an administrative regulation requiring departments to purchase office paper containing a minimum of 30% post consumer recycled content and to reduce the use of paper to the extent possible. This was established as the first regulation to be included in a more comprehensive Environmentally Preferable Product (EPP) Purchasing Policy. EPPs are defined as products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. An additional benefit of the paper policy is to help sustain markets for recycled materials. This initial policy can be expanded to include additional office supplies, durable goods, and materials used in facility alterations and additions. This was also a finding of the City's 2007 Green Building Task Force.

Sustainable Buildings and Resource Conservation

In January 2007, City Council formed the Green Building Task Force to research and explore green building topics with a goal of presenting recommendations to City Council. The Task Force found that buildings represent major consumers of natural resources and also represent unique opportunities to save money over the long term through energy conservation and better design. According to the United States Green Building Council (USGBC) buildings in the United States are responsible for 39% of CO₂ emissions, 72% of electricity consumption, 14% of water consumption and 15% of GDP per year, making green building a source of significant economic and environmental opportunity. The USGBC finds that the typical green building can reduce CO₂ emissions by 33%-39%, energy use by 24%-50%, water use by 40%, and solid waste by 70% over a typical conventional building. The USGBC administers the predominant certification program for green buildings, called Leadership for Energy and Environmental Design or LEED. There are currently 35,000 projects participating in the LEED system, comprising over 4.5 billion square feet of construction space in all 50 states and 91 countries. In recognition of these impacts and opportunities, City Council adopted a policy in June 2007 requiring all new City-funded buildings over 5000 square feet to be LEED certified. Beyond the City's activities associated with LEED there have been a number of recent efforts towards energy conservation and efficiency. The largest effort was the City Hall Energy Performance Contract which has already shown significant energy and water savings. The Chesapeake School system has adopted many innovative green building practices in the recent Grassfield High School and Oscar Smith Middle School projects.

Background

Recycling/Waste Prevention

Chesapeake currently operates a bi-weekly (every other week) curbside recycling program for residents. This program is in the process of transitioning from utilizing 18 gallon bins to an enhanced service using 95 gallon rolling carts. Additionally, the City will be partnering with the Chesapeake Schools to implement a recycling program for municipal buildings. The program will initially begin with a pilot at several municipal buildings with a goal of eventually expanding the program city-wide. A number of successful recycling programs are already underway within the City including a mixed stream recycling program at the City Garage, metals recycling at the Garage and Public Utilities, a tire re-tread program at the City Garage, and cardboard recycling at the City Jail to name a few. There is great potential to expand and build on these effective programs while realizing economic as well as environmental benefits. The City's recycling program is a step within the concept of reducing, reusing, and recycling. Every product has a certain amount of embodied energy throughout its life cycle from the extraction of raw materials, the production process, and the transportation to the consumer and for disposal. Reducing consumption or choosing products with less embodied energy can help preserve these renewable and non-renewable resources. Reducing waste also reduces the use of landfills. When consumption cannot be reduced, the next step in the process is to explore ways to reuse the product. When materials cannot be reduced or reused, the final step in the process is to recycle the material. The benefits of recycling over disposal are many including: protecting and expanding U.S. manufacturing jobs; reducing the need for landfills and incineration; preventing pollution caused by manufacturing from virgin materials; saving energy; decreasing GHG emissions; conserving natural resources such as timber, water, and minerals; and sustaining the environment for future generations.

Education/Awareness

Education is a central component in creating a more sustainable Chesapeake. This is a critical step within the process of producing a cultural shift throughout the operations of the City and in the greater community. The City has created a number of educational opportunities using existing City resources such as the City webpage, employee newsletter, and in house training. There are many opportunities to expand this effort to create long term positive changes in behaviors, norms, and values.

Background

Water Quality

Chesapeake is nearly surrounded on three sides by water. About 10.2 square miles or almost 3% of the City is waterways. Protecting those waterways is vital to the quality of life and economic vitality of Chesapeake. The Virginia Department of Environmental Quality has listed over 20 waterbodies as “impaired” within the City of Chesapeake. Impairments include dissolved oxygen, bacteria, PCB contamination, chloride, TBT, and mercury. Additionally, the Chesapeake Bay is impaired for phosphorus, nitrogen, and sediment. The Environmental Protection Agency, by way of an Executive Order from President Obama, has a mandate to clean up the Chesapeake Bay and to make reducing pollutants from Urban/Suburban runoff major priorities. The Commonwealth of Virginia is on the brink of implementing stringent new regulations for controlling stormwater from new development and redevelopment which will be required to be implemented at the local level. Chesapeake is currently negotiating reissuance of its Municipal Separate Storm Sewer System (MS4) permit from the Virginia Department of Conservation and Recreation and it will be far more stringent and far reaching than the current or previous permits. Cleaning up the Region’s waterways is a daunting task. In the coming years, challenges to and expectations from local governments toward meeting water quality goals will be greater than ever before, while trying to do more with less. The status quo for stormwater management will no longer be enough.



I. Fuels/Vehicles/Emissions

Short Term:

- ✓ Continue to maintain current fleet of hybrid electric and flex-fuel vehicles
- ✓ Purchase at least 5 more hybrid vehicles leveraging EECBG grant funds
- ✓ Purchase biodiesel (B10) as funds allow
- ✓ Conduct Carbon Emissions Study/Inventory for the City as part of a regional study
- ✓ Maintain Central Fleet participation in the Department of Environmental Quality (DEQ) Virginia Environmental Excellence Program
- ✓ Develop or participate in a Climate Change Resolution
- ✓ Promote the City's anti-idling policy

Long Term:

- ✓ Continue to explore the possibility of a Compressed Natural Gas (CNG) or 85% Ethanol (E85) fueling station and converting some of the garbage fleet to CNG
- ✓ Use EECBG grant funds to build a solar Photovoltaic (PV) demonstration project at Central Library
- ✓ Set goals for reducing carbon emissions



II. Green Infrastructure

Short Term:

- ✓ Complete the Urban Forestry Plan
- ✓ Continue to participate in the Hampton Roads Urban Forestry Roundtable
- ✓ Support legislative changes to allow greater flexibility for Hampton Roads localities to increase canopy requirements
- ✓ Promote the “Stop the Mowing, Start the Growing” campaign for reforestation
- ✓ Continue to participate in the regional green infrastructure planning process

Long Term:

- ✓ Create a green corridor between City Park, the Chesapeake Arboretum, the Great Bridge Visitor Center, and the Albemarle Chesapeake Canal
- ✓ Ensure that Municipal properties comply with a 10% canopy coverage
- ✓ Implement additional reforestation projects and perimeter plantings for Parks and Schools
- ✓ Create long term funding source for open space protection
- ✓ Create/promote incentives for private conservation of forest canopy and other natural resources

III. Green Purchasing/Acquisition

Short Term:

- ✓ Implement a comprehensive City wide Environmentally Preferred Purchasing (EPP) policy
- ✓ Host a Green Products Seminar
- ✓ Create policy requiring Energy Star standards for electronic equipment
- ✓ Continue to participate in the "Virginia Green" program by holding "green" events

Long Term:

- ✓ Review and update City wide EPP policy as necessary



IV. Sustainable Building/Resource Conservation

Short Term:

- ✓ Initiate City Jail energy performance contract
- ✓ Continue meeting with City Department energy liaisons
- ✓ Continue meeting with regional partners
- ✓ Implement tasks under the Energy Efficiency Conservation Block Grant (EECBG)
- ✓ Create Citywide Energy Management Plan
- ✓ Review proposed City Wind Turbine Ordinance

Long Term:

- ✓ Train City staff under Leadership in Energy and Environmental Design (LEED) programs
- ✓ Achieve LEED Existing Building (EB) certification for City Hall
- ✓ Become an Energy Star Partner
- ✓ Purchase power management software for City computers
- ✓ Create incentive package for voluntary application of private sector green building construction
- ✓ Evaluate the integration of green building options/ incentives into City Code
- ✓ Design a green roof demonstration project



V. Recycling and Waste Prevention

Short Term:

- ✓ Implement an enhanced single stream curbside recycling program in the community
- ✓ Implement a single stream recycling program in selected Chesapeake Office buildings in partnership with Chesapeake Schools
- ✓ Develop a Grasscycling program
- ✓ Continue successful "pilot" recycling program at the City Garage

Long Term:

- ✓ Develop E-recycling program for residents
- ✓ Propose code enhancements to encourage greenwaste and curbside recycling
- ✓ Secure long term contract for recycling for City computers and computer related equipment
- ✓ Stay informed of new green technology that would enhance Chesapeake's recycling and waste prevention activities

Chesapeake's Environment

Sustainable Chesapeake Initiative

The **Sustainable Chesapeake Initiative** is a dedicated group of City leaders and associates who have unanimously adopted a resolution for the sustainability program known as "[Go Green Initiative](#)".

What is Sustainability?

A common definition is "meeting the needs of the present without compromising the ability of future generations to meet their own needs". In other words, we need to feed, house, clothe, and supply energy for ourselves, but still leave plenty for our children and grandchildren. This includes leaving a good quality of life for the air, land, and water.

The concept of sustainability encompasses values that continue to inspire public and private organizations to become better stewards of the environment and that promote positive economic growth and social objectives. The principles of sustainability stimulate technological innovation, advance competitive business, and improve our quality of life.

Information can be found on these pages regarding the sustainability resolution, local business, and sustainability issues.

Ready to Be Green?

VI. Education/Outreach

Short Term:

- ✓ Outline the Ambassador/"Turn a New Leaf" Program
- ✓ Support existing programs such as the Chesapeake Environmental Improvement Council
- ✓ Recruit additional non-City employees as members for the outreach sub-committee
- ✓ Identify standard methods of publicizing information and programs to employees
- ✓ Investigate incorporating a "Green Star" award into the City's existing "Star Performer" Award Program
- ✓ Create Internet and Intranet web content and resources on Sustainability efforts of the City

Long Term:

- ✓ Develop relationships with businesses and citizens through events and outreach efforts
- ✓ Sponsor/Partner events to highlight and promote work of the SCI
- ✓ Create marketing plan for each Plan Focus Area and overall brand and marketing plan for SCI
- ✓ Incorporate "Sustainability Awareness" into the New Employee Orientation
- ✓ Develop curbside recycling marketing plan



VII. Water Quality

Short Term:

- ✓ Review current codes/ordinances to identify barriers to and feasibility of Low Impact Development (LID) strategies
- ✓ Implement storm drain marker program
- ✓ Create educational signs to identify riparian buffers such as the Arboretum and watershed drainage areas
- ✓ Promote the connection between increased tree canopy and water quality benefits

Long Term:

- ✓ Continue to identify and partner in wetland and buffer restoration projects such as Scuffletown Creek
- ✓ Continue to participate in the regional Elizabeth River Restoration Program with neighboring communities, the State, Army Corp of Engineers, and the non-profit Elizabeth River Project
- ✓ Actively participate in the upcoming Total Maximum Daily Loads (TMDL) for Chesapeake waterbodies
- ✓ Identify additional City properties which are eligible for the River Stars Program and obtain additional designations

Conclusion

The SCI committee has strived to create a Plan with goals that are realistic, achievable, economically constrained, and in many cases covered by existing City programs. The creation of short and long term goals is only the beginning of what will be a continual process of implementation and evaluation of these efforts. The SCI is committed to accounting for the progress made in implementing the goals of the Plan. In this regard, the Sustainability Plan will be the first in a ongoing series of annual reports to City Council. As progress is made and lessons are learned, priorities may change, goals may evolve, and resources may shift, but to ensure success, City Council as well as the City Administration will need to continue to be engaged in the process of creating a more environmentally sustainable Chesapeake. This is an effort that can have long lasting positive impacts to the City by better utilizing our natural resources, saving scarce City funds, and by being good stewards of our natural heritage for this and future generations. The next step in the process is to start the challenging task of implementing this plan by creating action items, measures of success, responsible parties, estimated costs, and anticipated completion dates. While we work towards creating City operations that are more sustainable, we will continue to pursue our longer term goal of implementing this broader vision throughout the community. This will be accomplished by engaging the community in the process and working to promote, facilitate, and encourage adoption of the principles and practices of sustainability.



In the end, we will conserve only what we love. We will love only what we understand. We will understand only what we are taught. Baba Dioum