



# ENVIRONMENTAL SUSTAINABILITY

WINTER 2013

## WELCOME TO NORFOLK'S FALL/WINTER 2013 "ENVIRONMENTAL SUSTAINABILITY"

### GOALS

#### Reduce the negative impacts of coastal flooding by:

- Developing and funding a strategic plan to mitigate flooding;
- Developing appropriate regulations for land use development and redevelopment.

#### Enhance efficient use and protection of natural resources by:

- Developing and implementing a sustainability action plan;
- Creating a culture of continuous sustainability;
- Promoting investment in sustainability;
- Reducing and recycling waste.

### FEATURES

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The City of Norfolk is situated at the southeastern corner of Virginia, where the Atlantic Ocean meets the Chesapeake Bay, the largest estuary in the United States. Norfolk is home to 245,800 people, to the largest naval facility in the world, and to the plants, animals, ducks, birds, fish and other wildlife that inhabit nearly 145 miles of shoreline. Caring for this beautiful natural environment is one of the most important responsibilities of Norfolk's residents.

Norfolk's elected leaders and City staff are reaching out to individuals and organizations, forming alliances and developing partnerships with non-governmental as well as regional, state and federal agencies. You will get to know these partners in the pages of Environmental Sustainability. Together, we can spark true collaboration and real change.

## NORFOLK'S GREEN INITIATIVES

### 1 PLANT MORE TREES

Celebrate Trees is an environmental initiative developed as a community partnership offering residents and businesses ways to celebrate and grow Norfolk's tree canopy.

Norfolk's goal is to increase its tree canopy from 33 percent to 40 percent, the recommended percentage for cities east of the Mississippi River. Residents and businesses can get involved in three ways:

- Donate to the Living Legacy grove fund, to plant trees in a designated public park or open space;
- Celebrate a meaningful event by planting a tree on your own property;
- Request a tree for the City-owned median or curb area in front of your home or business.

eral District courts, and the City Jail. Last year, Norfolk invested \$1.8 million from the Department of Energy to upgrade the boilers and automated controls, resulting in a more efficient plant. Because this is a dual fuel plant that can burn either



natural gas or oil, benefits include lower cost for gas as well as significantly reduced air emissions compared with fuel oil.

Norfolk's goal is to achieve a steady reduction in energy use. The City has conducted energy audits of 100 buildings, totaling 3.5 million square feet. This analysis established an Energy Use Index for each facility and compared Norfolk's municipal buildings with similar buildings. The data is being used along with a new software program to monitor and verify energy savings in municipal buildings and facilities.

### 2 CULTIVATE COMMUNITY GARDENS

"Grow Norfolk" is a partnership working to create greener, healthier, neighborhoods by growing community gardens throughout the city. The gardens promote community connections, active living and open space. See [www.grownorfolk.org](http://www.grownorfolk.org)

### 3 INCREASE ENERGY EFFICIENCY

Norfolk's Central Energy Plant heats and cools the entire Civic Plaza. The city saves thousands of dollars by operating a 1.3 million gallon water storage system to cool City Hall, Circuit and Gen-

### 4 A GREENER FLEET

Norfolk's new Compressed Natural Gas (CNG) fueling station, and the City's Green Fleet and Vehicle & Equipment Idling policies will help to reduce energy use. CNG can be a good alternative to gas or diesel for fleets because the fuel typically retails for less per gallon equivalent, so it can

*"Norfolk strives to be a premier waterfront community that creates a positive, regenerative effect on its environment, avoids detrimental environmental impacts, and thrives economically and culturally."*

## GREEN INITIATIVES, CONTINUED

lower vehicle operation costs. CNG is cleaner burning, producing significantly fewer tailpipe emissions than gasoline or diesel.



CNG Station

### 5 REDUCE-REUSE-RECYCLE

It's a new day in Norfolk with the launch of the Recycling Perks Program! The program serves all Norfolk residents by issuing reward points that can be traded in for discounts from local businesses. Residents' carts will be fitted with Radio Frequency Identification Devices (RFID) bar codes. Once installation is complete, residents will find a cart tag placed on their individual carts.



Residents who live in apartments and condos are also eligible to participate, as points are earned via recycling, volunteering, participating in surveys, and much more. Log on to [www.recyclingperks.com](http://www.recyclingperks.com), to activate your free account. For more information contact Quwania Jefferson, Recycling and Information Specialist at 441-1347, or by email at [quwania.jefferson@norfolk.gov](mailto:quwania.jefferson@norfolk.gov)



### 6 SUPPORT OUR BLUE-GREEN INFRASTRUCTURE

Just as we rely on our urban infrastructure of roads, rail, buildings and utilities, Norfolk's interconnected natural systems form a Blue-Green Infrastructure that provides clean water, clean air and wildlife habitat. Some of the most important parts of Norfolk's Blue-Green Infrastructure are the areas along our waterfronts.

The City of Norfolk offers three workshops designed to help residents and city staff practice environmental stewardship by caring for our dunes, wetlands and shoreline buffer areas. For information, contact Lee Rosenberg, Jack Erwin or Kevin Du Bois at 664-4752.

### 7 RESTORE THE LAFAYETTE

Currently, parts of Norfolk's Lafayette River are unsafe for swimming and harvesting oysters because of high levels of bacteria. Meanwhile, excess levels of nutrients encourage algae blooms which stress aquatic life. The Lafayette River Restoration Plan sets goals for making the Lafayette safe for swimming and limited harvest of oysters by 2014 and safe for open harvest of oysters by 2020.

This plan is a guide for citizens, governments, schools, businesses and non-profits, because each of these groups has a part to play. The Plan lists vital actions needed by citizens, and partner organizations. For a copy of the Plan, visit the Elizabeth River Project webpage at

<http://elizabethriver.org/>



### 8 PLAN FOR THE FUTURE

Norfolk's "Long Range Plan Update" devotes a chapter to "Promoting Environmental Sustainability." *PlaNorfolk 2030* identifies key issues, plus outcomes and actions to assure a sustainable environment that is not simply protected, but enhanced.

To view PlaNorfolk 2030, visit [www.norfolk.gov/Planning/GeneralPlan.asp](http://www.norfolk.gov/Planning/GeneralPlan.asp)

### 9 MAKE EARTH DAY EVERY DAY

City employees recycled coffee mugs at the Earth Day Café, distributed reusable shopping bags at the Earth Day Bag-Away, and collected unused cell phones for Cell Phones for Soldiers. In addition, employees are integrating sustainability into municipal operations every day by reducing paper copies, using both sides when copies are needed, carpooling, choosing tap water instead of bottles, turning off lights and recycling. It all adds up to a better environment for everyone.

### 10 TRAVEL GREEN: BIKE-WALK-RIDE THE TIDE

Park your car — it's time to bike and walk your way around the Mermaid City. The City's Bike-Pedestrian Commission and the Bike Task Force are making Norfolk a best-in-class bikable/walkable city. You may have noticed streets with 'sharrows' or shared lane markings placed in the center of a travel lane to indicate that a bicyclist may use the full lane. The goal is to reconnect residents to streets through alternative forms of transportation, and improve health and quality of life. And every time you travel by bike, by foot or take transit, you decrease your carbon footprint and promote a greener environment for everyone. For more information, go to [www.norfolk.gov/rpos/bikes.asp](http://www.norfolk.gov/rpos/bikes.asp)

Partner Spotlight

**LAFAYETTE WETLANDS PARTNERSHIP**

Water vistas along Norfolk's 140 miles of Chesapeake Bay, Elizabeth and Lafayette rivers, tributaries and wetlands contribute to Norfolk's incredible natural beauty. Waterways provide recreational boating, fishing and bird watching opportunities, sustain marine commerce, and add quality of life to Norfolk's neighborhoods.



Our coastal location also presents challenges in the form of floods and hurricanes. Along with structural approaches, restoring Norfolk's historic tidal wetlands is helping Norfolk become a more resilient and sustainable city. Tidal wetlands are a valuable resource for flood control, water quality enhancement, wildlife habitat, as well as neighborhood beauty.



A key partner in wetlands restoration is the Lafayette Wetlands Partnership, a citizen-driven initiative begun in 2007 that mentors individuals and community groups that want to preserve and restore wetland habitat in their part of the Lafayette River watershed. The Partnership has helped three civic leagues, a church group, a public school, and the Weyanoke Sanctuary complete a total of eight restoration projects totally over 9,000 square feet. More impor-

tantly, it invites each participating group to become stewards of the wetland it has restored and to help other groups achieve the same results.

Each project is unique, and yet all projects include the removal of trash and debris, control of Phragmites when it is present, elevation of the level of the wetland to prepare for sea level rise and flooding, planting of the wetland with new grasses, and planting of upland shrubs, flowering plants and trees to create a buffer against stormwater runoff. Norfolk Master Gardeners have been instrumental in designing the rain gardens and buffer plantings for the Partnership's most recent projects.

The Partnership's motto is "no one stands alone". It emphasizes collaboration among citizens, government, academia, businesses, and non-profits in gathering the knowledge and skills needed for each project. It recently completed a water quality monitoring project with ODU researchers, it collaborates with the ODU Phytoplankton Lab in "Eyes on the River", an effort to spot algal blooms early, and it partners with the Elizabeth River Project in assisting private home owners control Phragmites on their property. While it relies upon the belief that "citizens can make a difference", it also consults with city scientists and engineers to assure that all projects are accomplished reliably and with an eye toward future sustainability.



The Partnership supports its projects through grant funding and private donations. For instance, a recent Phragmites control and wetland restoration project in the River-view neighborhood was funded through a grant from the Chesapeake Bay Trust and NOAA.

The Partnership is here to help you form and build a wetland restoration initiative, including how to recruit and retain volunteers; guidance through the permitting process of site assessment, application submission, and contracting; and getting you in touch with all of the trained people who want your project to succeed. Remember, "no one stands alone" in wetland restoration along Norfolk's Lafayette River. Contact [info@lrwpartners.org](mailto:info@lrwpartners.org)



## City of Norfolk

**BUILDING THE FUTURE: CITY COUNCIL'S PRIORITIES**

In late 2011, City Council established six priorities that define and guide a shared vision for the City of Norfolk, Environmental Sustainability.

The city is looking to "Green" building practices to conserve resources and reduce the overall impact on our natural systems. For example, much of the Lambert's Point Community Center, certified Leadership in Energy and Environmental Design

(LEED) Gold, was built with recycled material. In addition, natural sunlight is reflected through tubes into inner rooms to reduce power consumption, the landscape design retains and cleans stormwater instead of dumping it into storm drains, walkways are light instead of dark to minimize the heat, and parking lot pavers allow water to soak in rather than run off.

Norfolk's commitment to green building extends to new projects, including the Slover Library expansion and the new Courthouse, both planned to be LEED projects.

By meeting the needs of the present, without compromising the ability of future generations to meet their needs, Norfolk can become a truly sustainable community.

**GETTING ENERGIZED: NORFOLK'S GREEN TEAM**

Norfolk's Green Team, an interdepartmental task force of municipal employees, is working to achieve energy efficiency in municipal buildings and operations. Reducing electricity, oil and gas use is increasingly critical because not only will this reduce harmful greenhouse gases, but it can lower energy bills and save taxpayers money. In short, managing energy conserves natural

resources and saves money.

To date, the team has adopted Green Fleet and Vehicle Idling policies; installed occupancy sensors in City Hall restrooms; and upgraded automated City Hall lighting controls based on daily schedules and building occupancy.

By understanding how we consume energy and what it costs, Norfolk has developed

a strategy for energy efficiency and conservation. The city also completed energy audits of 100 buildings, totaling 3.5 million square feet. Audit results, along with a new energy management software program, give department directors the tools to monitor and verify energy savings in municipal buildings and facilities, providing better accountability.

"Managing energy conserves natural resources and saves money."

**CREATING A LIVING LEGACY: CELEBRATE TREES!**

Living Legacy Groves are planned groupings of trees and other native plantings made possible by donations from residents, businesses and nonprofit organizations. The groves are accessible to the public and are planted in areas earmarked for restoration. The Groves are made up of native trees and mowing is

reduced in order to permit the development of a natural ecosystem within the grove.

This design helps retain soil and stormwater on the site, aids in carbon uptake, and provides habitat for birds and other wildlife.

Donating to the Living Legacy Groves project is a natural,

lasting way to mark occasions such as a birth, graduation or anniversary and to honor or remember a special person or favorite pet and help the environment.

Norfolk's new Tree Commission manages the Celebrate Trees program.

<http://celebratetrees.norfolk.gov>



Legislative Spotlight

**URANIUM MINING BAN**

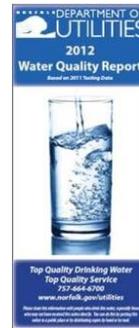
Norfolk City Council backs continuation of the state's 30-year old moratorium on uranium mining, concluding that mining and milling radioactive ore is a threat to public health and safety. Virginia Uranium, Inc. is proposing a complete uranium mining, milling and tailings storage facility at Cole's Hill in Pittsylvania County. Creeks on the property drain into waters that ultimately flow into Lake

Gaston, a source of drinking water for much of south Hampton Roads.

This will be one of the most significant legislative discussions of the 2013 General Assembly Session.

While a number of places around the world and in the western U.S. currently mine uranium, we have very different weather, geology and nearby population density.

No comprehensive program exists in any of the Commonwealth's regulatory agencies that incorporates the necessary technical standards, public transparency, public health and safety, water and water supply protection, and long-term perpetual care inspection and oversight for safe uranium mining. Furthermore, no amount of regulation can prevent the unexpected.



**WHAT'S BEING PROPOSED AT COLE'S HILL?**

Proposed is an industrial facility that would include open pit or subsurface mining for ore; processing the ore to separate out the usable uranium; and milling by physical and chemical processes to concentrate the uranium oxide or yellow cake into a marketable product.

Uranium is a very small percentage of the ore. The wastes from the milling proc-

ess are referred to as tailings, that are stored on-site forever. These radioactive wastes represent a serious public health and environmental threat for as long as they are stored.

Because the radioactive waste tailings will be stored on-site, regulatory agency monitoring of the site would continue to be required even if the site becomes inopera-

tive at some future date.

Uranium is unique, and mining and processing uranium and storage of hazardous radioactive waste by-product is very different from mining coal or other minerals in Virginia. A uranium mine is a completely new and unfamiliar industry to the Commonwealth, requiring an entirely new regulatory framework.

"The water supply of southeastern Virginia is too critical to accept even a measured risk of contamination ... that could result from lifting the ban on uranium mining..."

**WHAT ARE THE POTENTIAL RISKS?**

The water supply of southeastern Virginia is too critical to accept even a measured risk.

A catastrophic failure of a containment cell could potentially contaminate Lake Gaston, the primary source of drinking water for Virginia Beach. Currently, Lake Gaston water is pumped into Norfolk's reservoirs before it

is transported to Norfolk's water plants, where it is treated and distributed to more than 850,000 people in Norfolk, Chesapeake, Virginia Beach and at local military installations. We also serve Portsmouth and Suffolk during droughts, and Isle of Wight County in the near future. For the residents of Hampton Roads the fear of

radioactive contamination is so great that, even if the City could filter any radioactive elements that entered its drinking water supply due to a catastrophic failure, public opinion would require the City to close a contaminated lake or reservoir as a drinking water source.



## Flood Prevention & Mitigation

### FLOOD AWARENESS

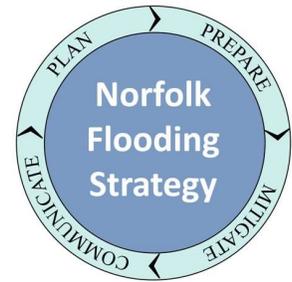
Norfolk has long experience with flooding. Like any other low lying coastal area, Norfolk's elevation, its proximity to the Chesapeake Bay and several rivers make it susceptible to flooding. Nearly every year, and sometimes several times throughout the year during periods of heavy rain, hurricanes or nor'easter storms, residential and commercial properties are damaged by precipitation, tidal and wind-driven flooding or low-land

flooding, particularly in neighborhoods around Norfolk's many water ways.

Some residents may remember when Norfolk flooded in a hurricane in 1933, and again in the 1960 Ash Wednesday Storm. In the late 1960's, the US Army Corps of Engineers built the Downtown Floodwall, flood gates and pump station. Additional projects are planned. Residents also should follow these

#### Storm-Wise Tips:

- Do not drive through standing water
- Have a Plan and Emergency Kit
- Keep your storm drains clear of debris and trash
- Make sure your gutters and downspouts are clean
- Maintain the grade around your house so that rain water drains away.



### WHY IS OUR RELATIVE SEA LEVEL RISING?

More recently, we're seeing changes to our environment: four of the seven most significant tidal events in the past 80 years have happened in only the last ten years. Put another way: more than half of the biggest tidal storm events since 1933 all have occurred since 2003. So the time between major storms seems to be decreasing.

As we all know, scientists are measuring rising water levels

around the world, particularly around the Chesapeake Bay. Norfolk is fortunate to have long-term data on tide levels at the National Oceanic and Atmospheric Administration's tide gage at Sewells Point to help us understand these changes. The data document that since 1930, the relative mean sea level at Sewells Point has risen 14.5 inches. Experts believe Norfolk's relative sea level rise is due to a

combination of factors: rising seas, sinking and compaction of filled areas, loss of wetlands, and regional geology, including continued influence of the Chesapeake Bay Meteor Impact Crater. Recently, researchers linked a possible slow-down in the Gulf Stream to faster-than-average rising sea levels along the northeastern US coast, starting at about Norfolk and heading to Canada.

"Our 'blue-green infrastructure' of trees, rain gardens, wetlands and open spaces allows water to slow down, soak in and spread out."

### WHAT IS NORFOLK'S PLAN?

Norfolk has crafted a proactive, four-part approach to PLAN-PREPARE-MITIGATE-and COMMUNICATE its flood strategy. This strategy includes civil engineering and structural approaches – flood walls, elevating roads, extending outfalls and installing pumping equipment. The Netherlands-based firm FUGRO Atlantic Inc and the Timmons group are

assisting the city with planning studies to determine the most cost-effective of these alternatives.

Equally important are appropriate regulations for land use development and redevelopment. We're increasing the number of Certified Floodplain Managers on staff, integrating sea level rise and flood mitigation into Plan Nor-

folk 2030, our long-range Comprehensive Plan, and improving flood mapping. The City also is integrating our 'blue-green infrastructure' of trees, rain gardens, wetlands and open spaces, to allow water to slow down, soak in, and spread out.

Norfolk has actively involved and engaged civic leagues and neighborhood associations,

plus solid support from our Main Street, academic, conservation and government partners. This means that City officials and staff can rely on our Citizens Focus Group and the Experts Advisory Group as partners. Other partners are federal and state agencies, whose funding assistance will be critical. Visit [www.norfolk.gov/flooding](http://www.norfolk.gov/flooding) for the latest engineering studies and flooding news.

## Norfolk Environmental Commission

### NORFOLK ENVIRONMENTAL COMMISSION GETS RESULTS

The Norfolk Environmental Commission's (NEC) mission is to lead citizens toward environmental stewardship.

This volunteer Commission, citizens appointed by City Council, includes representatives selected from the following major segments of the city: citizen interest, business and industry, professions, communications, schools, armed forces, and community organizations. Ex officio members

appointed by the director of public works, the superintendent of waste management, the director of public health, the environmental services manager, and the stormwater engineer.

NEC's standing committees include Governance, Communications, Legislative and Solid Waste Advisory. Special committees include Community Gardens, Green Transportation, Litter Plan, Municipal

Sustainability, Sustainable Shorelines.

The Commission gets results: This year nearly 7,500 volunteers collected more than 125,000 pounds of litter and debris from our city's waterways, shorelines, green spaces and roadsides!

To volunteer or find out more, go to [www.norfolkbeautiful.org](http://www.norfolkbeautiful.org)



### FRIENDS OF NORFOLK'S ENVIRONMENT

Friends of Norfolk's Environment (FONE) is a non-profit organization run by a group of volunteer community members. FONE works to support the environmental programs of Keep Norfolk Beautiful. Established in 1999, FONE engages with individual citizens, businesses and organizations to improve Norfolk's environment

through education and restoration.

FONE raises money to provide the resources for educational programming such as bringing sustainability education to our classrooms, providing teacher training, and managing the Green Reader program. For more information, call Kat Ferguson at 757-441-1347.



## CITY OF NORFOLK

Environmental Protection Programs

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## VISION INTO ACTION: Q&A TO HELP YOU GO GREEN

### Q. When should I plant trees?

In Norfolk, the ideal time to plant a tree is between October 15 and March 31. During these months, weather conditions are cool and allow for root establishment before spring rains and summer sun promote top growth.

### Q. Where does my drinking water come from?

Norfolk is fortunate to have a plentiful supply of high-quality water. Norfolk has eight reservoirs, including the Intown Reservoirs located in Norfolk and Virginia Beach, and the Western Reservoirs located in Suffolk and Isle of Wight County.

### Q. What can I recycle?

The following materials are collected curbside in Norfolk:

- Metals- aluminum cans, pie plates, foil, and steel food cans.
- Glass- clear, brown, and green glass bottles and jars.
- Plastics- #1 & #2 bottles and jugs.
- Paper-newspaper, telephone books, advertising inserts, unwanted mail, magazines, catalogs, mixed office paper, and flattened corrugated cardboard.

### Q. Why are oysters important?

Each adult oyster filters and cleans up to 50 gallons of water per day—gobbling up algae, and removing dirt and nitrogen pollution. That's good news for the health of the Chesapeake Bay and for us.

### Q. Where can I launch a kayak?

For information about City boat ramps, piers, and kayak launch sites, visit Norfolk Department of Recreation, Parks & Open Space at [www.norfolk.gov/rpos/BoatRamp.asp](http://www.norfolk.gov/rpos/BoatRamp.asp).

### Q. What is Phragmites australis (frag-MY-teez)?

Phragmites are a large perennial wetland grass. These invasive phragmites can reach 15 feet in height creating tall, dense stands which degrade wetlands and coastal areas.

### Q. What is LEED?

LEED (Leadership in Energy and Environmental Design) is a voluntary, consensus-based, market-driven program that provides third-party verification of green buildings.



Thank you for choosing to ride the Tide. By choosing mass transit, you're decreasing your carbon footprint and increasing your Green handprint.