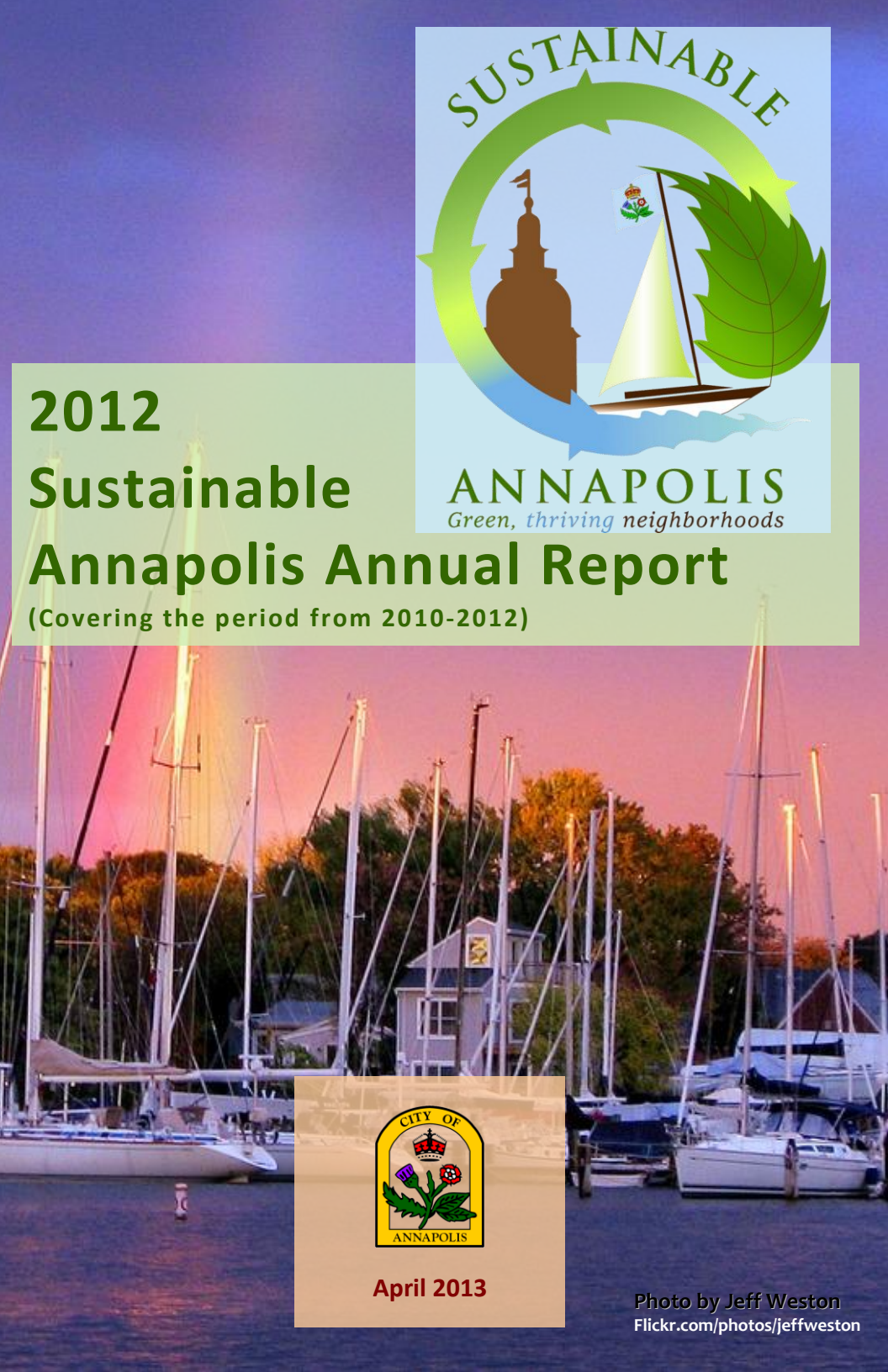
2012 Sustainable Annapolis Annual Report

(Covering the period from 2010-2012)



April 2013

Photo by Jeff Weston
Flickr.com/photos/jeffweston

Message from the Mayor...

As we begin 2013, our Clean and Green City initiative remains a priority.

We are attempting to make sustainability a standard in the City while making Annapolis' sustainability measures a model for others to duplicate.

We drastically increased the energy efficiency at our water plant, implemented significant energy efficiency improvements at City Hall, created a bicycle master plan, installed geothermal wells at the market house, and increased recycling to visitors and businesses in downtown Annapolis.

As we move forward, we will approach our updated emission targets with renewed vigor and remain steadfast in our efforts to be stewards of the environment for future generations.

Josh Cohen
Mayor of Annapolis

Background

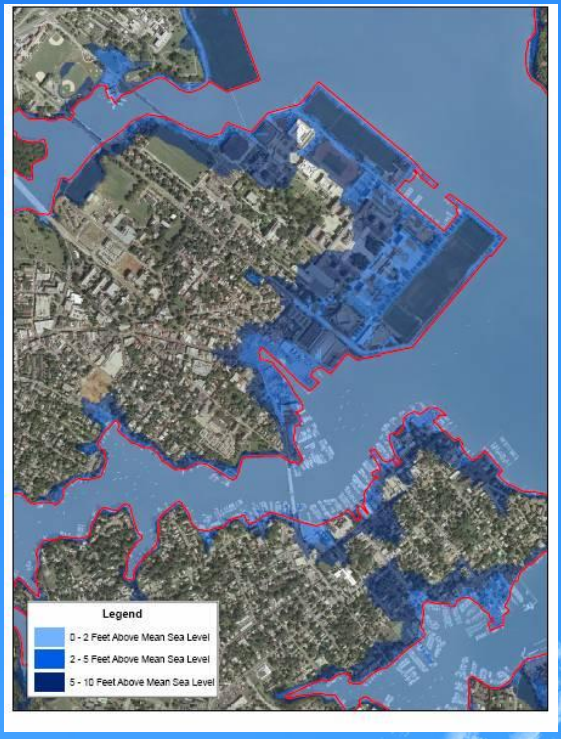
Sustainable Annapolis is a city initiative that was started in 2008, with the goal of coordinating efforts towards becoming a sustainable, carbon neutral city. One of the first tasks of the program was completing a 2006 greenhouse gas emissions inventory for the city government and the community as a whole. The centerpiece of the initiative is the 2009 Community Action Plan, which lays out ideas for programs, goals, policies, and other actions we can take to improve our environment, economy, neighborhoods, and climate. This annual report provides an update on our progress towards sustainability, and assesses our efforts at implementing the action plan and the goals therein. If you have any feedback on how we can improve our efforts, or what additional steps can be taken, contact SustainableAnnapolis@Annapolis.gov

Sea Level Rise

Goals: **25% reduction of 2006 CO2 levels by 2012 (50% for government)**
50% reduction of 2006 CO2 levels by 2025 (75% for government)
Carbon Neutrality by 2050

Climate Action Plan

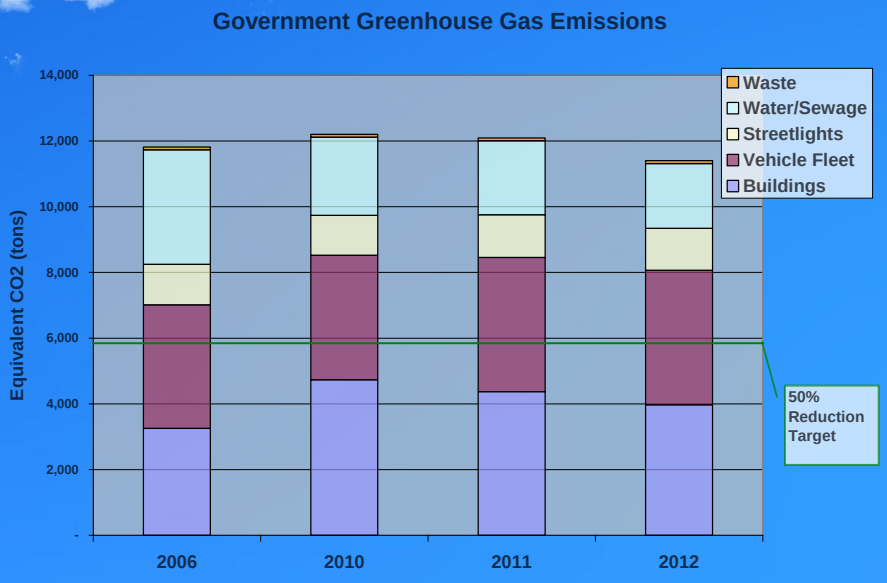
As a coastal community located on 5 bodies of water, sea level rise poses a great risk to Annapolis. The Chesapeake Bay Program's Scientific and Technical Advisory Committee, in its document titled "*Climate Change and the Chesapeake Bay: State-of-the-Science Review and Recommendations*" stated that scenarios for CO2 emissions suggest that the region is likely to experience significant changes in climatic conditions throughout the 21st century, including a relative sea level rise of 2.3 to 5.2 feet. In an effort to establish a baseline of our energy use, Annapolis completed a greenhouse gas emissions inventory for the city government in 2007, and in 2008 one was completed for the entire Annapolis community. Emissions inventories are used to identify where emissions/energy reductions can most effectively be realized. The Community Action Plan, released in 2009, gave a number of ideas on how to achieve our carbon reduction targets.



Did we meet our emissions reduction goals? No

Government Emissions

Government emissions were reduced 4% from 2006 levels. Our target was a 50% reduction by 2012, which proved to be too aggressive during a time of fiscal challenges. It is recommended that the target be adjusted to be a 25% reduction by 2020.



Government Emission Sectors

Vehicle Fleet: **Emissions Increased 9% -** *The increase in vehicle fleet emissions resulted from a slight increase in gasoline and a moderate increase in diesel fuel purchased.*

Water/Sewer: **Emissions Reduction of 43% -** *Emissions from this sector continue to fall with energy efficiency upgrades at the water plant and water wells.*

Waste: **Emissions Reduction -** *Emissions resulting from waste are minimal.*

Buildings: **Emissions Increased 22% -** *Electricity usage has increased since 2006, largely due to the addition of the Park Place parking garage, the Pip Moyer Rec Center, and the new police station. Otherwise, electricity usage has fallen every year since 2010. City Hall reduced its energy consumption by 27%, due in part to the installation of energy efficient lighting.*

Streetlights: **No significant change -** *Emissions remain relatively constant from year to year, and only contribute minimally to emissions.*

How to reduce government emissions further?

Purchase renewable energy

Purchasing 25% of our energy from renewable sources will get us much closer to our reduction target. Maryland's Renewable Portfolio Standard (RPS) requires that 20% of Maryland's Electricity be generated from renewable energy sources by 2022

Energy efficiency upgrades

The new buildings added since 2006 are some of the largest users of energy; the Pip Moyer Recreation Center, Park Place parking garage, and the new police station. Targeting these buildings for energy efficiency improvements will help to reduce emissions.

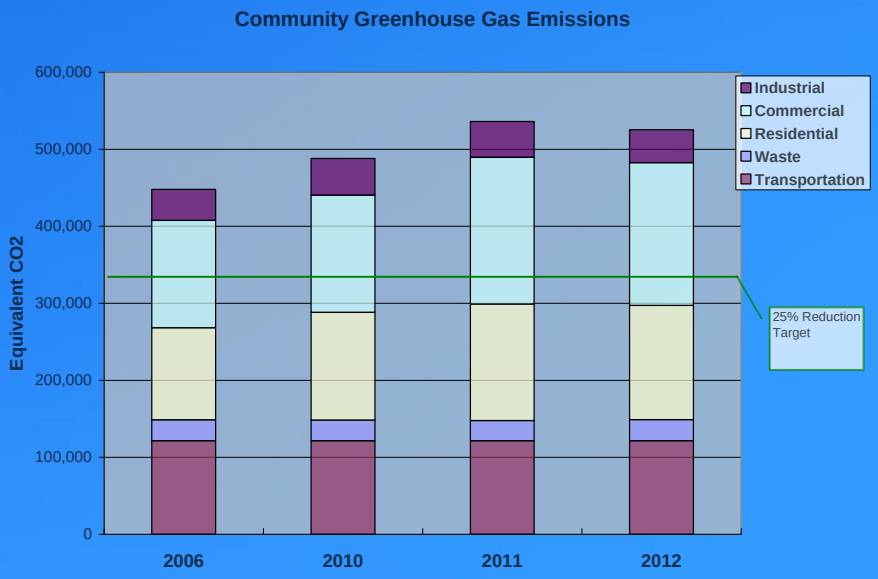
If we purchased this % of renewable energy	Overall emissions would be reduced this much
20%	16%
50%	34%
75%	49%
100%	65%

Performance contracting

A performance contract, where savings pay for the cost of installation of new energy efficient equipment and facility upgrades, can be pursued for comprehensive improvements.

Community Emissions

Community emissions increased 17% from 2006 levels. Our target was a 25% reduction by 2012. It is recommended that the target be adjusted to a 25% reduction by 2025. Emission reductions depend on residents and businesses implementing energy efficiency measures or purchasing renewable energy.



Community Emission Sectors

Transportation: **Unable to** update - *This sector can only be updated with the release of a new count of households by the US census and when the state updates the estimated Vehicle Miles Traveled (VMT) for residents living in the Baltimore region.*

Waste: **Emissions Increased 1% -** *Emissions resulting from waste decreased from 2006 to 2011, but increased in 2012. The recycling rate has hovered around 23% from 2010- 2012.*

Residential: **Emissions Increased 24% -** *Residential emissions are derived directly from energy usage data from BGE. This sector likely increased due to the growing population and continued development.*

Commercial: **Emissions Increased 33% -** *Commercial emissions are derived directly from energy usage data from BGE. This sector likely increased due to the growing population and continued development.*

Industrial: **Emissions Increased** 6% - *Due to the low amount of industry in Annapolis, emissions from this sector are the second lowest contributor to overall emissions in the city.*

How to reduce community emissions further?

Residents and businesses purchase renewable energy

If 25% of residents and businesses purchase their energy from renewable sources, it will contribute to a 4% reduction of emissions. That reduction is increased to 25% if half of the residents purchase green energy.

Energy efficiency improvements

Residents and commercial businesses can implement energy efficiency upgrades.

Lights out program

A potentially easy place to save energy is to ensure that any unnecessary lights are turned off when not in use.

Encourage energy audits

Encourage energy audits for city-owned and privately-owned, commercial, industrial, and institutional buildings over 10,000 sq. ft.

Climate Achievements

Goals:

Transportation – Emissions reduction of the city government transportation sector
Lower public reliance on carbon-based automobiles
Reduce transportation emissions from community

Energy Efficiency – 50% reduction of energy use of all public facilities by 2012

Renewable Energy – Reduce dependence on carbon-based fuels

Education – Educate community on climate change and its effects

Waste – Zero waste

Other Carbon Reduction Strategies – Comprehensive reduction of greenhouse gasses

Transportation

- ✓ **Electric vehicle stations**
  Electric vehicle charging stations were installed in Knighton garage and on West street in front of Ram's Head Tavern
- ✓ **Encouragement of Biking**
  Mapped and improved the bike/pedestrian trail system
- ✓ **Annual Bike to Work Day**
- ✓ **Bike master plan**
  This plan was developed with significant community involvement, and aims to create a lasting bicycle transportation program that is integrated with Anne Arundel County, promotes programs for safety and education, outlines a convenient and attractive network of on-street and off-street routes, connects to other modes of transportation, and lays out a financial plan for construction and maintenance.

Energy Efficiency

- ✓ **Energy efficient forcemain**
  Back Creek Forcemain: New pipe allows for efficiency of pumps by minimizing friction loss
- ✓ **Efficient pumps installed at Water Wells**
  The new wells have Variable Frequency Drive (VFD) Pump motors, reducing energy consumption
- ✓ **LED lighting installed in City Hall**
  22 LED light fixtures were installed. The new fixture consumes only 48 to 58 watts of energy. The fixture is designed to last 50,000 hours, thereby reducing maintenance costs. The City hopes this pilot program will educate the public on the use of LED lighting in commercial applications, and to determine suitability for other City owned buildings. The pilot program was funded 100% through a grant obtained through the U.S. Department of Energy.

Renewable Energy

- ✓ **Geothermal HVAC system installed for the Market House**
  Funded partially by grant money.

Waste

- **Obery Court recycling**
  The Obery Court community has implemented a recycling program for its residents.
- **Increased recycling containers downtown**
  18 recycling containers were placed throughout downtown. 10 of the new containers were repurposed from old containers.
- **Implemented a commercial recycling program**
  In 2010, the City of Annapolis began its Commercial Recycling program.

Annual cost savings - $466,898

2013 Targets

- Install occupancy sensors and LEDs in government facilities
- Increase recycling rate
- Lights out program
- Install no-idling awareness signs downtown

Environment

Goals:

Water Quality - Clean water and healthy watersheds that support the aquatic living resources of the Bay, allow for recreational opportunities, and protects human health.

Natural Resources - Preserve, protect, and restore our habitats and natural areas.

Land Use – Sound land use practices that protect and restore our natural resources.

Air - Improve air quality and reduce code red days.

Annapolis' environment is influenced largely by outside sources---from air pollution entering from neighboring cities and states, to tides bringing in poor water from the Chesapeake Bay or Severn River; however, there is much we can do to clean up our streams, improve our air quality, and protect our natural resources. Water is our main natural resource in Annapolis, and our future efforts will focus on its improvement. Reducing our impervious surfaces, upgrading our stormwater management, and restoring our living resources like oysters, wetlands, and sub-aquatic vegetation will need to be utilized to improve our water quality.

Achievements

Water Quality

- ✓ **Eastport sewer rehabilitation**
  Instead of replacing the existing sewer pipe, it was lined for low impact construction with minimal disturbance.
- ✓ **Clear Wells**
  Improved water quality and minimized use of chlorine by covering the clear wells.
- ✓ **Hybrid diesel-electric-solar propulsion systems installed on Harbormaster boats**
  The City has received the first of two cutting-edge propulsion systems, mounted on Harbormaster boats, helping to save the Bay while saving the City money. Only a dozen of these hybrid diesel-electric-solar propulsion systems exist worldwide and Annapolis was awarded grant money to purchase two of the twelve. The system updates were available through grants awarded by the United States Environmental Protection Agency (EPA) and the Canadian Government
- ✓ **Integrated Pest Management (IPM) policy for City property**
  An IPM policy was drafted to apply to any contractors that may be hired to manage City properties and landscaping. IPM seeks to limit the use of pesticides and prioritizes the use of non-pesticide alternatives first.
- ✓ **Stormwater utility fee increased - credit program implemented**
  The City's stormwater utility fee was increased to raise more money for use in addressing those issues. An associated stormwater credit program was started to allow people to receive a 50% reduction on their fee if they installed and maintained additional stormwater management devices, such as rain barrels and rain gardens

Rain barrel, compost bin, recycling & waste toter events

Between 2010 and 2013, the City has hosted sale events that have distributed a total of 1,607 rain barrels, 1,359 compost bins, 109 waste toters, and 33 recycling toters.

Natural Resources

Greenscape

Greenscape is a city-wide community beautification, cleanup and planting in public spaces program that has been ongoing since 1994. In 2012, 2305 plants and ornamental grasses, 40 trees, 115 shrubs, and 138 vegetable and herb plants were installed by over 300 volunteers at over 50 projects.

Land Use

Tree and landscape seminar

A seminar was held for residents and community associations and focused on best management practices for the landscape, integrated pest management, and tree care practices.

Tree plantings

Over 50 trees were planted in 2011 in a partnership with the Alliance for the Chesapeake Bay.

Air Quality

Ram's Head plug-in station

Installed an electric plug-in station for busses to use while parked along West street for shows, to minimize generator use and the resulting air pollution

2013 Targets

- Consider banning use of coal-tar sealant in city
- Identify grant funding for living shoreline projects and stream restorations
- Create an urban nutrient management program
- Stormwater improvements at George Washington Davis Park and Truxtun Park ballfield
- Achieve the National Wildlife Federation Community Habitat certification
- Investigate feasibility of a "No discharge zone" for Annapolis waters

Economy

Goals:

Local Economic Development – An economy that promotes local purchasing of necessities

Green Jobs – Thriving green business sector that provides employment and training

Building a local economy, with locally owned businesses, purchasing and selling locally produced goods, not only helps to keep money and jobs in our community, but also helps to reduce emissions associated with shipping products long distances. With the renewed focus on environmental sustainability and green products, there is an opening for new green businesses.

Achievements

Local Economic Development

- **Green plate special program**

  This program incorporates the use of a logo, allowing restaurants to identify dishes that feature local ingredients. In order to participate in the program, more than 50% of a menu item's main ingredients must be locally sourced within 300 miles.

- **The Environmental Stewardship Certification Programs for businesses**

  Almost twenty businesses have been certified. The certification program now extends to restaurants, households, automobile establishments, retail & office establishments, schools, places of worship, and other Institutions. Training sessions for businesses and homeowners were offered by city staff.

- **Mainstreets Annapolis Program (MAP)**

  MAP is the non-profit entity that is participating in the Main Street Maryland comprehensive downtown revitalization program created in 1998 by the Maryland Department of Housing and Community Development.

2013 Targets

- Recruit more environmental stewards
- Promote growth of eco-tourism
- Promote and attract green businesses
- Encourage use of roof-top gardens

Photo by mr t in dc
Flickr.com

Neighborhoods

Goals:

Children, Health, and Safety - Improve public health & public safety

Education, Arts, & Community – Educate public on importance of the environment and sustainability

Sustainability is a term that has a capacity to be broadly interpreted, which allows it to be tailored based on a neighborhood's needs. Some may want to focus on improving safety, others may want to focus on educating their children about sustainability, while others may want to work on improving public health. Becoming more sustainable can strengthen and improve our neighborhoods.

Achievements

Children, Health, and Safety

- ✓ **Community gardens demonstration**
  GroAnnapolis created a community garden demonstration project on city property downtown
- ✓ **Geocacthing in Truxtun Park**
  An outdoor treasure hunt using GPS, promotes being outdoors and physical activity.
- ✓ **Give/Get Respect Campaign**
  ADOT/APD handed out educational flyers to motorists and cyclists as multiple locations around the City to promote respect of motorists and cyclists within the City.
- ✓ **Playground replacement**
  Two playgrounds were replaced.
- ✓ **Bike Rodeo**
  A Bike Rodeo was hosted to teach children bicycle education and improve skills.
- ✓ **Mighty Milers Youth Program:**
  After-school fitness program offered by Rec & Parks
- ✓ **Annapolis Community Health Initiative (ACHI)**
  The City partnered with the Anne Arundel Medical Center, Anne Arundel County Department of Health, The Pediatric Group, Annapolis Pediatrics, and Anne Arundel County Public Schools to create the ACHI. ACHI works to make the healthy choice in Annapolis the easy choice by promoting policy and environmental changes to support health and wellness.
- ✓ **Truxtun Park Penguins**
  Summer youth swim team
- ✓ **Green Plate Special program**
  This program encourages restaurants to serve locally-sourced ingredients in their dishes

2013 Targets

- Sustainable Annapolis promotion
- Playground replacement at Turner Park
- Educate public on ways to minimize mosquito breeding

Photo by mostly.unoriginal

Green Project Highlight: Gotts Court Parking Facility

The Gotts Court parking facility was renovated utilizing grant money from MDE, to include:

- Five integrated bioretention ponds.
- Solar-powered parking lot lights.
- A permeable pavement system for the parking lot.
- Landscaping with native plants.
- Salvaged and reused hardscape materials (bricks, granite curbs, granite cobblestones).
- Solar powered Pay n Display parking meters.
- Solar-powered lighted bollards for walkway safety.
- Refurbished existing street lights for reuse.

SUSTAINABLE ANNAPOLIS
Green, thriving neighborhoods

CITY OF ANNAPOLIS