

# City of Alexandria, Virginia

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## MEMORANDUM

**DATE:** APRIL 3, 2013

**TO:** THE HONORABLE MAYOR AND MEMBERS OF CITY COUNCIL

**FROM:** RASHAD M. YOUNG, CITY MANAGER /s/

**DOCKET TITLE:**

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Receipt of the Progress Report on Eco-City and the Environmental Action Plan 2030

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**ISSUE:** Progress report on Eco-City and the Environmental Action Plan 2030.

**RECOMMENDATION:** That City Council:

1. Receive this progress report and recognize the Environmental Policy Commission (EPC), community members and City staff that have participated in the implementation of the Environmental Action Plan 2030 aimed at leading Alexandria further toward sustainability.
2. Receive the staff report entitled "2012 Eco-City Progress Report and Key Environmental Indicators" (Attachment 1), intended for informing the public at the 2013 Alexandria Earth Day on April 20.

**DISCUSSION:** The comprehensive Environmental Action Plan 2030 (EAP 2030) was adopted by City Council on June 13, 2009 following a Council Public Hearing. It consists of 48 goals, 50 preliminary targets and 353 actions that span the course of 21 years and beyond. One of the more important short-term actions in the EAP 2030 calls for the development of key environmental indicators to measure the progress of the Eco-City initiative. In 2010, the EPC spearheaded the development of key environmental indicators that can be measured on an annual basis, in consultation with the City's Environmental Coordination Group members. These environmental indicators were first reported to the City Council in last year's progress report on the EAP 2030. Attachment 1 is this year's report entitled "2012 Eco-City Progress Report and Key Environmental Indicators." It gives an overview of the Eco-City program, provides the latest indicators and the top ten environmental achievements for 2012. This is the second year for this report and it will be released and promoted as part of the 2013 Alexandria Earth Day.

### **Key Environmental Indicators**

The 20 key environmental indicators were reported in Table I of Attachment 1. Overall, 14 of these indicators showed a positive trend as compared to the last reporting period. Four of the indicators had a negative trend, and one indicator stayed the same. There was insufficient data on one of the indicators in the current reporting period to determine its trend.

Alexandria continues to be a leader regarding Green Buildings by adopting a policy that requires new commercial and multi-family developments to be LEED Silver or LEED Certified. In FY2011, 96% of the approved development square footage is expected to comply with the green building policy. Sustainability concepts and practices are being incorporated into Small Area Plans (SAP) such as the Potomac Yard SAP and the Beauregard SAP. In addition, City's new Alexandria Police Department building achieved LEED Gold certification.

One of the major highlights is that of the City reporting its highest ever recycling rate of 48.4% to the Virginia DEQ for CY 2011. This significant increase over reported recycling rates for 2010 (41.4%) and 2009 (28.6%) was due primarily to significant increases in overall recycling collection efforts, which include the introduction of 18, 35, or 65 gallon recycling carts. The City is well on its way to achieve the 2020 target of 50% recycling rate stipulated in the City's Environmental Action Plan 2030.

The per capita energy use for the Alexandria community has been reduced by 11.5% compared to 2010 and was 12.4% less than year 2005. The economic slowdown combined with the unseasonably warm weather as well as ongoing energy conservation effort and awareness by the community could be among the contributing factors for this positive trend. More data is required to confirm specific underlying reasons for this reduction in energy use. Likewise, the Alexandria City Public School (ACPS) significantly reduced its energy usage per square foot of building space by 22.6%. This is a direct result of its investment in renewable and energy-conserving technologies over the last few years as well as ongoing energy conservation efforts. The City government's energy use was also reduced by 3.1% in FY 2011 compared to 2010 and was 22.8% less than that of the base year (FY2006).

With regard to GHG (greenhouse gas) emissions, the per capita GHG emissions reduced by 21.1% compared to the last reporting period. The major contributing factor was the updated 2011 GHG emissions factor for electricity generation. For 2005 and 2010, this factor was 1,466 lb. of CO<sub>2</sub>e per kWh, while the same factor provided by the US Department of Energy for 2011 was 1,041.7 lb. of CO<sub>2</sub>e per kWh for the Virginia/ mid-Atlantic region. The reduction in this factor results directly from the increased use of cleaner fuels such as natural gas and renewable energies combined with more efficient power plant technologies occurring from 2005 to 2011. In this regard, the recent permanent closure of the GenOn power plant in Alexandria and the replacement of its electrical production with facilities using a cleaner fuel will contribute to additional reduction of the GHG emissions factor for the mid-Atlantic region in future.

The City made significant progress in acquiring additional open space with the number of acres protected since the adoption of the 2003 Open Space Master Plan. At the end of 2011, the City has already achieved a cumulative 88 acres of Open Space towards the 100 acre goal. Further, the per capita water use reduced by 3.6% while the per capita waste water treated increased by 8.9%. The number of storm water structural best management practices (BMP) increased by

6.4%. The number of respiratory health complaints received by the Alexandria Health Department reduced significantly by 28%.

### **Highlights of Progress in 2012**

The City launched its participation in the Capital Bikeshare Network with the installation of eight bikeshare stations in Old Town. In 2012, Alexandria Transit Company (DASH) took over operation of the King Street Trolley. This trolley service is using five brand new, ARRA funded, 30-foot low-floor hybrid electric trolleys. The new and improved King Street Trolley has been very popular because of its convenience, quiet engines, and lower emissions.

The City and Alexandria Library worked jointly to complete installation of this solar photovoltaic system at the Beatley Library. Funding from the Department of Energy's EECEBG (Energy Efficiency and Conservation Block Grant) program was used for this project. This 42.3 kW system features 180 solar panels that spread across each of Beatley's five south-facing roof sections.

Last but not least, the permanent closure of the GenOn outdated coal-fired power plant marked a significant milestone for the City of Alexandria and its residents. For several years, this plant had been the single largest air pollutant source in the Northern Virginia region. At the peak of its production during the period 2001-2003, this power plant emitted 15,000 tons of sulfur dioxide, 6,000 tons of nitrogen oxides and 600 tons of PM10 annually. Additionally, this plant had the capacity to emit up to 4.5 million tons of carbon dioxide annually, equivalent to emissions from 600,000 cars. This plant closure provides a significant improvement to local air quality as well regional ambient air quality.

Overall, the City has made significant progress towards implementation of the Environmental Action Plan 2030. This has occurred despite the challenging economic conditions and budget constraints. For the fifth straight year, the City was named a Certified Green Government by the Virginia Municipal League (VML). The City earned Platinum level certification, the highest level in VML's Green Government Challenge.

### **Emerging Environmental Challenges**

There are several environmental challenges and issues that the City must address in the short and long terms. These include, but are not limited to the impacts of TMDLs (Total Maximum Daily Load) on the City's stormwater and combined sewer permits. The new stormwater general permit, likely to be effective starting July 1, 2014 will require the City to implement stormwater management practices sufficient to achieve 5% of nutrient and sediment reduction targets by 2018. The overarching regulation will require 40% of the reduction targets to be achieved by 2023 with remaining 60 % reduction to be achieved by 2028. Fiscal impact of these requirements may range up to \$150 million, and depends on the type and mix of technologies implemented. Additionally, new regulatory requirements of bacteria TMDLs for Hunting Creek are in effect and for the City to stay in compliance with its future CSS permit, overflows from the Combined Sewer System must be mitigated. The total cost of mitigation of these overflows can range as

high as \$200-\$300 million and depends on the type and mix of technologies that get implemented.

Climate change and preparing the City and community for potential impacts remain a serious challenge.

**FISCAL IMPACT:** None

**ATTACHMENTS:**

Attachment 1: 2012 Eco-City Progress Report and Key Environmental Indicators

Attachment 2: PowerPoint Presentation

**STAFF:**

Richard J. Baier, P.E., LEED AP, Director, T&ES

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