City of Alexandria

ENVIRONMENTAL ACTION PLAN 2030

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ECO-CITY ALEXANDRIA

Environmental Action Plan

FY 2009-2030

City of Alexandria, Virginia

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City of Alexandria
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CITY OF ALEXANDRIA VIRGINIA

Virginia Tech

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overview

The Environmental Action Plan 2030 (EAP) will serve as the road map for city leaders, staff, and citizens to implement the sustainability visions and principles set forth in Alexandria's Eco-City Charter (adopted by City Council on June 14, 2008). It explains how Alexandria can lead the new green economy, address the challenges of climate change, and continue its high quality of life while decreasing the city's carbon and ecological footprints.

The Environmental Action Plan merges the short term goals and action steps (FY-2009-2011) approved by the City Council in January 2009 with new mid and long range goals and actions (2012-2030). As a policy plan the EAP does not commit or appropriate funds, but provides strategic guidance for the City Council and City Manager as they move through their regular fiscal planning and annual budget processes.

The Overview section outlines the EAP framework and nine cross cutting strategies followed by the EAP's policy goals and action steps organized in ten chapters according to the Eco City Charter's ten principles. The EAP also includes an appendix that consists of the following items: 1) A consolidated list of targets; 2) A glossary of sustainability terms; 3) A community engagement timeline; and 4) A matrix of existing city plans. Footnotes and references are found throughout the EAP that partially explain the rationale, cross references and discussions behind certain provisions.

The Overview section explains in more detail: 1) the action planning process and community involvement process; 2) the elements of the EAP; 3) the assumptions underlying the policy goals and action steps; and 4) the general roles and responsibilities involved in the implementation and monitoring of EAP progress. Virginia Tech Urban Affairs and Planning Program (UAP) has also provided a separate report with its analysis of the EAP and the overall Eco-City Project (The Eco City GreenPrint).

I. The Action Plan Process and Community Outreach

Throughout this strategic planning process, the Alexandria Environmental Policy Commission (EPC), a commission of volunteers appointed by the Mayor and City Council, has led the effort to develop an Eco-City Charter and companion Environmental Action Plan. The EPC held numerous public work sessions, community open houses, drafting retreats and meetings with the city's Environmental Coordinating Group (ECG).[1] Thanks to the hard work and dedication of EPC, Virginia Tech's UAP faculty and students, and the City's departments, particularly Transportation & Environmental Services, Planning and Zoning, Recreation, Parks and Cultural Activities, General Services, Health, and Code Administration, the EAP reflects a high degree of community consensus.

A. Phase One Environmental Action Plan (Short Term)

During the fall of 2008 the EPC, working closely with city staff and Virginia Tech's Eco-City Studio, developed a Phase One Action Plan that involved 38 goals and 123 action steps to guide sustainability efforts through fiscal year 2011 (June 30, 2011). Given current budget and revenue limitations, existing resources and staff are already moving forward on approximately 59 of these programs and policies. These actions are highlighted with an asterisk in the goals and action plan section of this document. The City Council unanimously approved the Phase One Action Plan in January 2009.

[1] More than 200 local residents participated at different EAP events (November 2008-May 2009) sharing their ideas and insights and offering feedback on the draft EAP. Appendix 2 includes a timeline of public outreach events and matrix of public comments for the entire Eco City project.

The EPC applied the following criteria in setting the EAP's goals and action steps:

- Ensure EAP consistency/compatibility with:
  - o the vision and principles of the Eco-City Charter; and
  - o the goals and objectives across existing city plans.
- Build on current legal and policy authority in the short term and advocate for greater local authority as necessary to advance mid-to-long term actions.
- Maximize/leverage existing programs, resources, and staff and seek new resources for mid-to-long term actions.
- Promote some level of cost savings and reasonable return on overall sustainability investments.
- Deliver sustainability benefits (environmental, economic, and social) across multiple Charter principles.
- Minimize the unintended impacts or indirect consequences across Charter principles.

B. Phase Two Environmental Action Plan (Mid-Long Range)

For Phase Two the action planning process shifted its focus to the trends and challenges that Alexandria will confront from today through the year 2030. By many accounts climate change and peak oil will drive the need to build more sustainably, provide alternative transportation choices, and design renewable energy sources to meet the demands of residents and businesses alike. At the same time, the EPC and city staff recognizes the importance of retaining the historic charm and compact character of the city.

Given this 20+ year horizon, EPC's spring 2009 work sessions and meetings were devoted to special cross cutting themes, such as climate change, land use/open space, environmental health, business and civic sustainability. Virginia Tech faculty and students prepared special background reports on each topic and compiled the meeting notes on these special cross cutting topics.[2] These intense discussions set the framework for the EAP's cross cutting strategies and general performance targets. The EPC also held a two-day retreat at Virginia Tech to refine these ideas and merge the short, mid-and-long-range actions into a comprehensive draft that was released to the public at the Earth Day Celebration on April 25, 2009.

Finally, on May 11th the Environmental Policy Commission convened its second open house at the new Charles Houston Recreation Center. Unlike other events, this open house served as a "call to action" as more than 50 participants offered suggestions on how they as individuals and as businesses could advance the EAP and the Eco-City agenda. They also brainstormed about potential projects beyond the annual Earth Day celebration to demonstrate their commitment to sustainability. Many submitted pledge cards to volunteer their time as part of an emerging Eco-City Action Corps. Virginia Tech compiled all public input for final consideration by the EPC at their May 18th public meeting.[3] EPC voted unanimously with one abstention to accept the current draft and transmit it to the Mayor and City Council for its consideration.

II. The Environmental Action Plan 2030

As submitted to the mayor and city council, the draft EAP contains 48 goals, 50 preliminary targets, and 353 actions that would span the course of 21 years. Each of the 10 Charter Principles remained relatively constant with between 4-6 goals each. Nearly 42% of all actions are short term (they are already underway or will be completed by 2011) and by coincidence 42% of the actions are also mid-term (designed to be launched and ideally completed between 2012 and 2020). The remaining 16% are a combination of mid-to-long range or long range goals that would be commenced sometime before 2030. Implementation contained the most total actions steps (57) followed closely by land use and open space (56).

[2] Reports and agendas on climate change, environmental health, land use/open space, business suitability, and civic sustainability can be found on the Virginia Tech Eco City Web site (http://ecocity.ncr.vt.edu)

[3] Members of the public also provided feedback on the draft action plan by sending e-mails to ecocity@alexandriava.gov and posting comments on the new Eco City Alexandria blog at http://ecocityalexandria.wordpress.com.

A. Relationship with Existing Plans and Initiatives

Alexandria has numerous plans that range from the City's overall Master Plan (e.g., its comprehensive land use plan) to special program master plans (e.g., Open Space, Parks and Recreation, Urban Forestry, Transportation, Water Quality, and Solid Waste). It also has several policy and development plans that focus on particular projects or areas along roughly 20 Small Area Plans administered by Planning and Zoning.

Nearly all City departments have one or more master or policy plans that guide a critical part of their respective missions. Many of these City master plans are driven by individual citizen commissions managed by that particular department.[4] Within the two year span of the Eco-City project, the City has completed and continues to work on several new plans, such as the Transportation Master Plan, the Urban Forestry Plan, and the Climate Change Action Plan and Emissions Inventory.

As the diagram below illustrates each of these plans tend to function independently of each other within their own policy and programmatic orbits. The City Council's 2015 Strategic Plan, however, seems to set the general policy direction across these individual master plans which explains why this plan is the center of the planning constellation below. The 2015 plan also includes several goals that directly relate to the environment and sustainability.

Given its broad sustainability vision and ten core principles, the Eco-City Charter together with the EAP complements the City Council's Strategic Plan as it infuses the 2015 vision with sustainability's premise of interdependence. The Charter and EAP can also create the most direct connection across all of Alexandria's plans; thus the Charter and EAP are positioned directly adjacent to the City Council's 2015 Strategic Plan.

[4] See Appendix No. 2, a Matrix of City plans and City and regional boards/commissions.

B. Cross Cutting Strategies

Throughout 2009 the EPC and City staff examined the cross cutting connections among several of the Charter's principles and sustainability concepts, such as land use, transportation, open space, energy and environmental health. Based on these conversations, the EPC devised nine broad strategies as a way to link the EAP's goals and actions across multiple principles and maximize the delivery of economic, health, and environmental benefits, such as reduction of carbon emissions and other environmental contaminants; promotion of energy conservation; generation of clean, renewable energy; promotion of healthy lifestyles and active living environments; mitigation of stormwater runoff, flooding, disease, and urban heat island impacts; assurance of good indoor air quality; and the reduction of the city's resource footprint. These strategies also offer a unique policy and programmatic lens for implementation of the entire EAP as City officials can use these cross cutting strategies to coordinate activities across City departments and infuse the city's culture with sustainability.

1. Establish a city-wide network of high quality, affordable, and accessible eco-sustainable[5] neighborhoods and villages with optimal densities to balance land use and transportation policies with open space, green infrastructure, and energy efficient building policies.

2. Develop a holistic city transportation system that puts the health, mobility, and accessibility of "people first" by implementing development and transportation programs and projects consistent with the following level of precedence: pedestrians, bicyclists, public transportation, shared motor vehicles and private motor vehicles.

3. Integrate energy-efficient green construction with sustainable building techniques, materials, and site design and the latest technology in new development and in the rehabilitation and retrofitting of existing places.

4. Build a seamless and holistic network of green infrastructure[6] that maintains and enhances existing assets, creates new amenities, improves connectivity and access among public and private green spaces, and creates a diverse local ecology by harmonizing the built and natural environments.

5. Put public and private systems in place that measure, monitor, and track the ecological efficiency[7] of buildings, transportation, infrastructure, and operations throughout the entire city.

6. Develop an economic strategy for Alexandria that promotes the integration of sustainability practices within the existing business facilities and operations and also attracts new green businesses that provide a wide range of green jobs.

7. Create a city-wide civic sustainability information and education strategy that engages schools, nonprofit, and community-based organizations in Eco-City initiatives and sustainability practices through a variety of communication and outreach activities (e.g., Eco-City cafes, summits, open houses, blogs websites, etc.).

[5] Eco-sustainable neighborhoods and villages would exhibit these essential characteristics: mixed use, walkable, bikeable, transit convenient, low impact development, green infrastructure, and energy efficiency.

[6] Green infrastructure includes all types of open space, parks, tree canopy, green roofs and walls, urban gardens, living streets, etc., on public and private property.

[7] Eco-efficiency offers a more integrated notion of how cities process resources similar to any complex metabolic system with flows and cycles and where ideally negative outputs (such as wastes) are re-envisioned as productive inputs to satisfy other urban needs, including energy. See Peter Newman, The Resilient City.

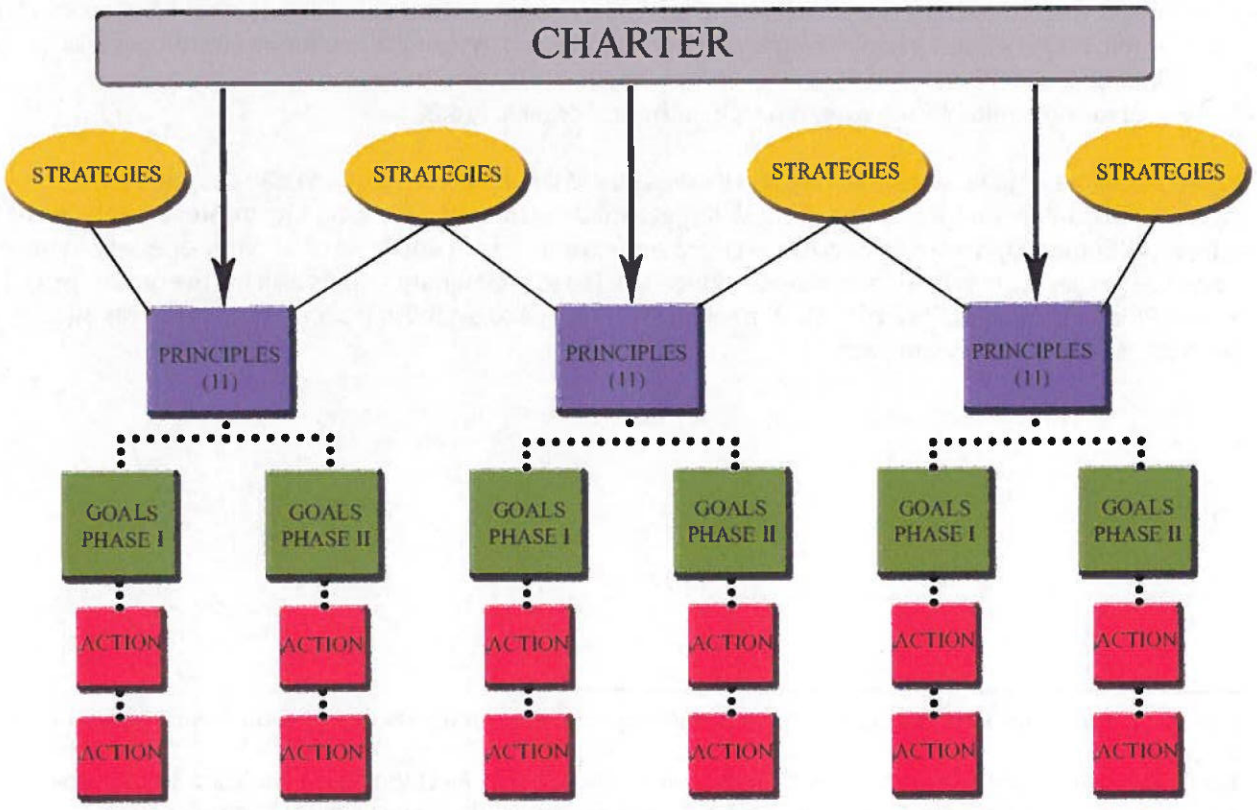
8. Establish a green fiscal policy that identifies cost savings, provides incentives, seeks new revenue sources as necessary, and creates a funding strategy that ensures the city's future operating and capital expenditures (e.g., programs, plans, CIP budgets, and projects) are consistent with the principles, goals, and actions set forth in the Eco-City Charter and Environmental Action Plan.

9. Establish a holistic decision-making process for all City actions that considers both environmental and human health issues, especially in the areas of water and air quality, toxic exposures, vector control, and the built environment.

Climate change is a primary focal point of several cross cutting strategies. They collectively present a cohesive policy agenda to help the city and the region mitigate climate change impacts through reductions of greenhouse gas emissions and adapt to anticipated climate change effects. Such effects include increases in flooding due to rising water levels, increased storm intensity, and likely adverse health and ecological effects such as outbreaks of environmentally-linked disease and changes in natural habitat. These strategies will have significant social, economic, and environmental benefits beyond climate change considerations.

Implementation, education, and outreach are vitally important to the success of the EAP. Cross cutting strategies five through nine focus on these areas and provide the City staff with critical tools, such as tracking performance, financing and funding proposed EAP action steps, and making decisions consistent with the vision of the Eco City Charter and the EAP's goals. Strategies six and seven target two critical sectors in the city's ability to address climate change and become an Eco-City – citizens and businesses.

The diagram below further illustrates the relationship of the EAP's cross cutting strategies, policy goals, specific action steps, and tentative timelines. Commission members believe these strategies will build a bridge between the Charter's sustainability vision and the general policy and programmatic goals that may be undertaken under each Charter principle.



C. Policy Goals, Targets, and Specific Action Steps

For each Charter principle the EAP sets a series of policy goals to guide implementation by the city, the business community and citizens. The action steps include the particular means (ordinances, policies, and programs, projects) to implement and achieve the EAP's goals. Based on the review of existing City plans and the plans from other cities, the EPC used the following time horizons for the EAP:

- Short Term Action Steps: FY 2009 to FY 2011
- Mid Term Action Steps: FY 2012 to FY 2020
- Long Range Action Steps: FY 2021 to 2030+

A common theme for each EAP chapter is to build on existing City master plans; for example, goals under Transportation, Water, and Green Buildings all call for following the elements of existing plans and policies.[8] Another theme is education and outreach as many of the EAP Chapters set goals and actions that will require fundamental changes in how people and businesses conduct their day-to-day activities.[9] Shifting to a carbon neutral economy and addressing the challenges of climate change will require a major shift in how people and businesses conduct their day-to-day activities. Education and outreach are imperative to help make these transitions and transformations as efficient and effective as possible. The EAP also includes a number of far reaching goals and action steps that will be critical to Alexandria's Eco-City journey, such as:

- Institutionalizing the responses and educating the public about the possible changes from climate change,
- Eliminating the harmful impacts of combined sewer overflows,
- Giving precedence to walking, biking, and transit projects over the automobile,
- Expanding an integrated rapid transportation system that includes rail, trolley, street car, and bus,
- Retrofitting existing structures to make them more energy and water efficient and with the lowest ecological impact,
- Purchasing and generating more renewable energy within Alexandria,
- Approving more compact, walkable and bikeable land use patterns and development projects,
- Improving respiratory health by mitigating the impacts of harmful air pollutants (outdoors and indoors), and
- Increasing equitable accesses to safe, healthy and organic foods.

To help make these goals more concrete and increase the chances of success, each EAP chapter includes a number of preliminary targets. Some of these targets are consistent with existing City master plans while a few go beyond. Setting ambitious targets can accelerate the commitment and level of activity necessary to meet critical challenges such as carbon emissions reductions. These preliminary targets also lay the groundwork for the EPC and the City's Office of Environmental Quality (OEQ) to establish performance measures and eventually create an EAP Score Card.

[8] For example, see Transportation Goal No. 1, Green Building Goal No. 1, Air Goal No. 1, Water Goals No. 1 and No. 2, Land Use Goal No. 1.

[9] For example, see Transportation Goal No. 2, Green Buildings Goal No. 2, Air Quality Goals No. 2 and 3, Water Goal No. 3, Environmental Health Goals No. 1-5, Energy Goal No. 2, Solid Waste Goal No. 4, and Climate Change Goal No. 3.

III. Assumptions Underlying the Environmental Action Plan

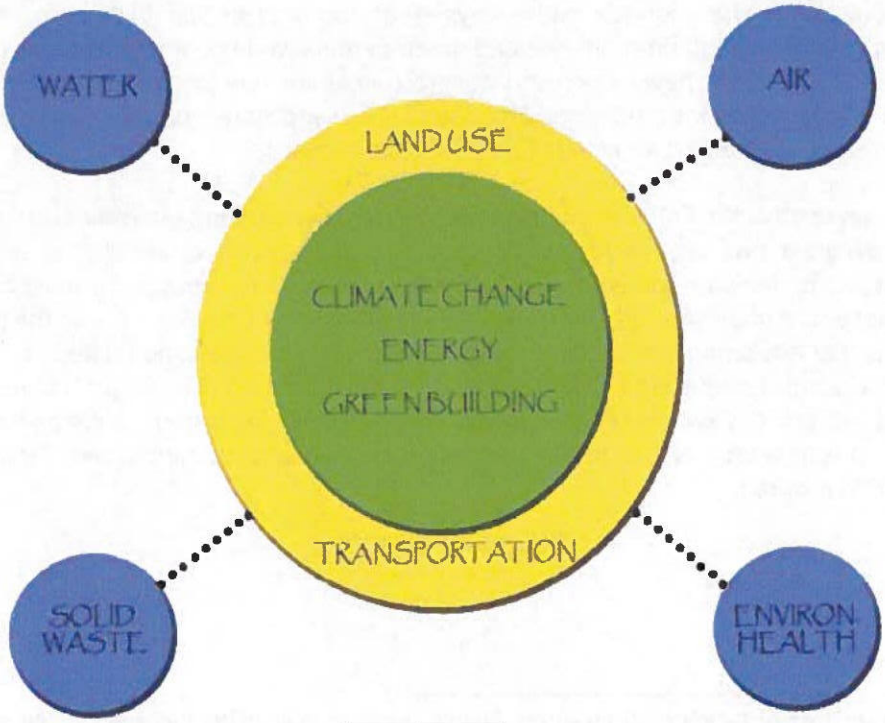
A. What are Eco-Cities?—Cities as Ecosystems

The three core tenants of sustainability—harmonizing environmental, economic, and community/social goals—set the foundation for the entire Eco-City Alexandria project. As illustrated by the Eco-City logo and letterhead, the City's Eco-City Charter and its 10 principles rest firmly on this foundation of sustainability. The concept of an Eco-City refines these notions of sustainability by viewing cities as complex ecosystems with inputs and outputs and like any other natural ecosystem.[10] Such a system's approach highlights the unsustainability of existing practices and provides a framework for action and ecological restoration. It also recognizes that cities, such as Alexandria, exit within bioregions that require it to establish partnerships and programs across political boundaries and sectors.

B. Alexandria in 2030

In developing the EAP, one of the initial decisions was the time horizon for the plan. Should it be 10, 20 or 30 years? The EPC felt 30 years was too long a period of time that might perpetuate incremental changes, so it adopted the 2030 time horizon.

In the setting of mid-to-long term action steps it was difficult for many EPC members, residents, and City staff to grasp how different Alexandria might be by 2030. Based on research from other eco-cities and its analysis of proposed sustainability policies, Virginia Tech identified the challenges of climate change and energy/peak oil as the primary policy and political drivers over the next twenty years. As the diagram below illustrates, these primary issues will also greatly influence the need to address related issues, such as water and air quality, land use planning, and transportation.



[10] Refer to Professor Peter Newman, Cities as Sustainable Ecosystems—Principles and Practices, (Island Press 2006), "[T]he best innovations in human history have arisen by learning and modeling natural systems. Cities need to develop this perspective."

Another related assumption is Alexandria will continue to grow in population and jobs given the positive growth predicated for the entire Washington, DC metropolitan region.[11] In the short-to-mid term several of the EAP action steps would require the city to seek expressed legal authority from the state legislature. For example, changes to state building codes to make them greener. As the pressure mounts for cost-efficient government actions, it is likely that Dillon's Rule will incrementally erode so that local governments can respond more quickly. In some areas, such as air, water, solid waste, and energy, the state could opt for more regional authorities or facilitate inter-local agreements among local jurisdictions.

C. Financing the EAP

The EAP provides a comprehensive menu of policy and programmatic actions for the Mayor, City Council and City Manager to evaluate as part of the City's annual budgetary process. The fiscal implications of a 20+ year action plan are difficult to quantify. Not all EAP actions will require additional funding. Some proposed actions may have initial costs, but overtime these programs will produce significant returns on investment while generating multiple social, economic and environmental benefits. Cost savings from energy and other resource conservation measures alone could generate funds to support Eco-City outreach and education activities. Certainly in the short term, the City and the EPC must prioritize the activities it can accomplish given the City's current budget limitations (see EPC cover letter to the EAP).

Cross cutting strategy eight calls for the city to "establish a green fiscal policy that identifies cost savings, provides incentives, seeks new revenue sources as necessary, and creates funding streams that insure the city's future operating and capital expenditures… are consistent with the principles, goals, and actions set forth in the Eco-City Charter and Environmental Action Plan." On the more immediate horizon, under the Implementation chapter, the short term actions under Goal No. 1 suggest the City convene a special task force to examine a wide range of economic measures, such as incentives and disincentives; the City should also explore the creation of a special Eco-City fund.

More and more communities have found creative ways to support their sustainability programs with cost savings and cost recovery through program fees and green permits while generating capital through sustainability bonds.[12] Moreover, new federal and state resources are now available for facilitating energy conservation and carbon emissions reductions. Proposed federal and state legislation will likely create a new carbon economy that could support a myriad of proposed EAP actions

Many of the ideas set forth in the EAP are not only good for the environment, but offer Alexandria the opportunity to grow green businesses and jobs. Cross cutting strategy six requires the City and its economic development partners to develop a green business/economic strategy for existing business facilities and operations and that also attracts new green businesses and green jobs. Goal No. 4 under the Implementation chapter recognizes that education, outreach, and training to local businesses and related organizations will be critical to the EAP's business sustainability activities. The short term actions suggest creating business leadership groups and eco-city awards programs; providing web/internet based educational resources; and identifying certain business sectors (e.g., tourism, rental property, and restaurants) ready for a possible green business certification program.

[11] See the analysis from the Greater Washington 2050 Initiative; the Metropolitan Washington Council of Governments (COG) leads this initiative along with a coalition of public, business, civic and environmental stakeholders. Greater Washington 2050 will build on what many people now believe is an opportunity for convergence of agreement on big issues of growth, transportation and the environment. See www.greaterwashington2050.org

[12] See Virginia Tech's Funding Sustainability Report, Eco-City Studio, Fall 2008. See http://ecocity.ncr.vt.edu

IV. Implementation and Next Steps

Successful implementation of the EAP will require changes in how Alexandria currently does things—changes in city operations and its organizational culture, changes in business and commerce, changes in how everyone get around, and changes at home. Everyone has a role to play. Climate change, peak oil and the new energy economy are too complex for anyone to tackle on its own. These challenges also offer a vast array of potential partnerships that can foster new opportunities, such as green businesses and jobs, regional sustainability initiatives, and Eco-City volunteer and demonstration projects.

The EAP's Implementation chapter builds on these themes by focusing on six strategic sectors of sustainability: 1) Civic; 2) Business; 3) Financing; 4) City Government; 5) EPC Roles and Responsibilities; and 6) Regional Partnerships. Each sector plays a critical role in achieving the EAP's goals and implementing its specific programmatic actions.

A. Regular Review and Prioritizing of the EAP

The Environmental Policy Commission (EPC) will continue to serve as the primary guardian of the action plan as set forth in the Charter and the EAP. With assistance from the Office of Environmental Quality (OEQ) and the City's Environmental Coordination Group (ECG), the EAP tasks the EPC to "monitor, measure and report on the implementation of the Environmental Action Plan and refine it as circumstances and conditions change."[13]

Given the sheer number of action steps, the EPC will need to regularly review progress and revaluate the EAP. In the short term perhaps the EPC and OEQ can identify the top policy and programmatic actions at the beginning of each fiscal year. In the long term, the EAP and Charter direct the EPC to update the EAP at least every five years and the Eco-City Charter every 10 years.[14]

B. Evolution within City Hall

Operations within many local and regional governments have changed with the ebb and flow of environmental policy models over the years. During the 1990s many cities consolidated traditional solid waste, water, and public work functions into new environmental services departments. After Alexandria's 1998 Quality of Life Summit the City Manager brought together these departments under the umbrella of a new department, Transportation and Environmental Services, which also included staff from City's Environmental Health. Last year after the 2008 Eco-City Summit the City Manager elevated the Division of Environmental Quality to the Office of Environmental Quality, which elevated the new OEQ Director to participate in regular department director meetings.

All of these changes are good initial steps towards sustainability; however, much more will need to occur in order to effectively implement the EAP. For example, the current Environmental Coordinating Group may need expanding and reconfiguring so that it can more effectively operate within the broader scope of sustainability, not just the environment. Most of the leading sustainability cities have dedicated sustainability departments or at least a coordinator that works with City departments to move them towards sustainability.[15] Many of these positions and staff also lead initiatives outside of city hall, such as green business certification, community education, and volunteer corps.

[13] Goal 5 under the Implementation Section of the EAP.
[14] Goal 5, midterm action, under the Implementation Section of the EAP.
[15] Refer to VA Tech's Implementation Report, Eco-City Studio, Fall 2008. See http://ecocity.ncr.vt.edu

Throughout the draft EAP the policy goals and action steps call for the development of several supplemental policies, plans, and strategies over the next 20 years as City operations evolve towards a sustainability model. Some of these plans, such as energy and perhaps climate change, might eventually become special programmatic master plans.

- Expand, enhance and implement the Transportation Master Plan with a focus on alternative transportation
- Develop a city wide environmentally sustainable comprehensive parking strategy
- Develop a green building policy for retrofitting all existing buildings
- Initiate an energy planning process that includes the feasibility study on the potential for renewable power generation within the city
- Initiate a process for establishing a City Energy Master Plan
- Create a City fleet management plan to minimize the emissions of greenhouse gases from city vehicles.
- Revise the City's strategic plan and master plan to incorporate principles of sustainability from the Eco-City Charter and EAP as the requirements for all land use decisions.
- Finalize and release the Urban Forestry Master Plan
- Revise and update the Solid Waste Management Plan
- Establish the City's Climate Action Plan (draft plan already done)

C. Next Steps

The most immediate implementation challenge for EPC and OEQ is where to start. The EPC's EAP cover letter sets forth its list of top priorities in order to maintain the momentum generated by the Eco City Alexandria Project. Many of these priorities highlight the dozens of outreach and educational tasks involving local businesses, schools, and civic/neighborhood groups, such as establishing an Eco-City Award program, mapping green assets, and developing a network of green businesses.[16] One of the legacies from Virginia Tech is the outreach tools it created from the successful formats of the Eco-City Cafes and Open Houses to its website and Eco-City Alexandria Blog.

While EPC and OEQ will play major roles in moving these initiatives forward, they will need renewed support from others within city hall, especially in areas of communication, e-news lists, web page development, and event support. EPC has a draft outreach strategy that offers a good framework, but the City must devote regular attention to messaging and take full advantage of the web infrastructure created by Virginia Tech.

Another critical activity is to build on the steady citizen interest by forming an informal Eco-City Volunteer Corps. Based on attendance at the recent Eco-City Cafes and Open Houses, there seems to be approximately 150 Alexandrians who are firmly interested and ready to serve. Organizing this group around a series of demonstration pilot projects could be a critical turning point in the evolution of Eco-City Alexandria.

EPC and OEQ will also need to devise a more robust tracking and performance measurement system. OEQ already has a preliminary matrix of all short term action steps and is working with relevant City departments to identify a point of contact and offer some preliminary analysis about potential costs and funding sources. Pursuant to the EAP the EPC must also develop an EAP scorecard that translates these internal details into a digestible format for the general public. While these are good preliminary steps, in the next six months EPC and OEQ should develop a more robust set of performance measurements. They should also spend a more time on the targets to ensure the action steps are the right ones to move the city closer to meeting these targets.

[16] See cross cutting strategy No. 7: "Create a city-wide civic sustainability information and education strategy that engages schools, nonprofit and community based/neighborhood organizations in eco city initiatives and sustainability practices through a variety of communication and outreach activities (e.g., eco city cafes, summits, open houses, blogs, web sites, etc.)."

V. Appendices

- Appendix 1: Consolidated list of targets
- Appendix 2: Timeline of community events
- Appendix 3: Matrix of existing and adopted city plans.
- Appendix 4: Glossary of terms

principle
Chapter 1: Transportation

Encourage modes of transportation that reduce dependence upon the private automobile by promoting mass transit and pedestrian- and bike-friendly transportation networks. The city will integrate transportation options with land use decisions in order to ensure a healthy environment while continuing economic growth.

Targets

By 2020:

- Beginning in 2012, reduce the number of daily Vehicle Miles Traveled (VMTs) on a per capita basis by 5% every five years.
- Increase the number of commuters who use public transportation by 25% using 2000 Census data as the baseline.

By 2030:

- Create three high capacity transit corridors as set forth in the 2008 Transportation Master Plan.
- Increase the number of non-single occupant vehicle (SOV) commuting trips to 50%.

Goal 1:

Move aggressively toward a culture of city streets that puts "people first" by implementing development and transportation projects consistent with the following level of precedence: pedestrians, bicyclists, public transportation, shared motor vehicles, and private motor vehicles.

Short-Term Actions (2009 – 2011)

- Implement actions outlined within the following completed plans: Transportation Master Plan, Bicycle and Pedestrian Mobility Plan, and An Environment for a Healthier Alexandria, and treat these actions as high priorities. The City will take advantage of all potential funding sources, in particular following through with the improvements listed in the Congestion Mitigation and Air Quality Improvement Program and the Regional Surface Transportation Program.*

- Pass a resolution adopting the principles of Complete Streets (as recommended by the Transportation Master Plan) and Low Impact Development in road projects wherever practicable.

- Continue to conduct audits of the streetscape to improve safety for vehicles, pedestrians, and cyclists, and remove street clutter that contributes to the causes of accidents.*

- Continue to improve facilities for cyclists by*:
  - o Adding 2 miles of bikeways annually and piloting innovative projects on an annual basis as outlined in the Transportation Master Plan;
  - o Conducting a feasibility study for a bike sharing program; and
  - o Increasing bike storage and bike parking as outlined in the Transportation Master Plan, and continuing to offer temporary bicycle parking at special events.

*Denotes actions already underway

Mid-Term Actions (2012 – 2020)

- Complete the capital projects contained in the Transportation Master Plan that refer to pedestrians and cyclists, such as:
    - o Complete the Shared Path Network by 2020;
    - o Complete the Bike Network by 2020; and
    - o Offer safety lessons for cycling and walking to all school age children by 2012.
- Continue to increase the number of commuters using mass transportation and increase by 25% using2000 Census data of the numbers of commuters taking public transport by 2020.
- Provide an efficient network of express bus routes that take commuters to their destinations in a travel time that does not exceed 125% of the time traveled in a SOV.
- Implement the Complete Street principles, including green infrastructure, when improving roads in the city, where practicable.

Long-Term Actions (2021 – 2030)

- Be prepared to implement a new transportation system that better addresses travel patterns of residents, commuters, and visitors.

Goal 2:

Educate individuals and organizations on the availability of transportation alternatives that will reduce dependency on single occupancy vehicles.

Short-Term Actions (2009 – 2011)

- Continue, expand, or implement current transportation and bike pedestrian education programs, such as*:
    - o Programs that encourage children to walk or cycle to school;
    - o Cycling proficiency program with a test for all school age youth; and
    - o Local Motion workshops and other related transportation demand management programs.
- Meet with local associations—residential and commercial—to discuss and promote the merits of reduced dependency on private vehicles.*
- Use existing informational tools, such as Local Motion, Alexandria eNews, FYI Alexandria, local media, the EPC, and other organizations to promote the benefits of transportation alternatives.*

*Denotes actions already underway

Goal 3:

Improve and expand an integrated rapid transportation system that includes intercity passenger rail, heavy rail, trolleys, streetcars, and buses.

Short-Term Actions (2009 – 2011)

- Continue to improve the experience of current and potential transit users by*:
    - o Continuing the development and deployment of transit information technologies and the eventual coordination of these systems with other regional service providers to provide a seamless delivery to users;
    - o Undertaking a study of rapid transit needs across the city; and
    - o Improving access to transit by requiring all new buses added to the DASH Bus fleet to have bicycle racks.

Mid Term Actions (2012 – 2020)

- Retrofit all existing DASH buses with bike racks.
- Implement a real-time information system for buses.
- Study the design of circulator bus routes and interlinking local routes to maximize efficiency and reduce wait times.
- Develop a DASH policy that requires all new buses to be low emission, hybrid, or CNG vehicles.
- Explore the feasibility of constructing a street car line that would connect to Arlington and serve the Beauregard Street corridor.
- Create a fully integrated public transport information system accessible across the normal range of digital media, to be in place by 2015.
- Establish one rapid transit route in operation by 2012 and a further two routes in use by 2017, thereby meeting the need for three routes as expressed in the Transportation Master Plan.
- Add a Metrorail station to the Potomac Yard development by the time occupancy of the development reaches 70%.
- Develop plans to have the rapid transit routes converted to zero emission vehicles by 2020.
- By 2012, develop benchmarks and baselines to achieve Transportation Master Plan goals, especially ways to assess VMTs, SOV usage, and commuter journey modes.
- By 2012, create a plan with financial incentives and disincentives designed to deter single occupancy vehicle trips, and monitor the plan's effects.
- Review the Transportation Master Plan every three years and revise as necessary in order to anticipate changing transportation needs and react in a timely manner.

*Denotes actions already underway

Long-Term Actions (2021 – 2030)

- Plan and implement an intelligent mix of transport styles to encourage residents, workers, and tourists to use alternative transportation. Develop regional control centers to monitor the flow and volume rate of vehicles.
- Coordinate with key stakeholders to accommodate the increase in freight and high-speed passenger rail.

Goal 4:

Develop a city-wide environmentally sustainable comprehensive parking strategy.

Mid-Term Actions (2012 – 2020)

- Implement the King Street Retail Area recommendations for parking without sacrificing environmental principles.
- Reduce parking ratios and encourage shared parking.
- Encourage people who work in Alexandria to use alternative modes of transportation by developing incentives and disincentives that discourage employee parking (e.g., eliminating monthly parking subsidies,prohibiting retail employees to park long term at parking meters).
- Use green infrastructure techniques in the new comprehensive parking strategy.[1]

Long-Term Actions (2021 – 2030)

- Support the King Street trolley and other alternative modes of moving people into the historic and retail districts easily and quickly.

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[1] Cross reference Landuse and Green Building sections

*Denotes actions already underway

principle

Chapter 2: Green Building

Alexandria's government, businesses, and citizens impact our environment through the choices they make when renovating existing structures and constructing new ones. These choices manifest themselves in the quantity and types of energy we use, the impact we have on our water quality, the amount of waste we create, the amount and quality of green space available to us, and our public health.

Targets

By 2020:

- All new buildings to achieve LEED Gold standards.
- 60% of all existing buildings achieve a 20% energy consumption reduction.

By 2025:

- Existing City buildings in the aggregate are 25% more energy efficient.
- All new buildings will achieve LEED Platinum standards.

By 2030:

- All new buildings will be carbon neutral.

Goal 1:

Building on the City's Green Building Policy, all development, either new or renovation, should be constructed with the lowest ecological impact as is reasonably practical by advancing energy-efficient green construction, sustainable building location, site design, and emerging technologies.

Short-Term Actions (2009-2011)

- Establish and promote green building standards for new commercial and residential development. Use nationally recognized criteria, such as those of the Leadership in Energy and Environmental Design (LEED) in establishing such standards.*
- Pursue conformance with green building standards as part of the Development Special Use Permit process.
- Provide green building and site design education and training to development staff in appropriate City departments.
- Arrange for Plan Review staff to receive certification in at least one nationally recognized green building standard.

*Denotes actions already underway

Mid-Term Actions (2012-2020)

- Develop a green building policy for retrofitting all existing buildings, including residences and buildings in historic districts. Use nationally recognized criteria, such as those of the Leadership in Energy and Environmental Design (LEED), the Passive House Institute US, and the Environmental Protection Agency's ENERGY STAR criteria, in establishing such standards.
- Initiate a pilot study to look at ways renovations can be undertaken in a sustainable way, noting the special needs of property in a historic district.
- Establish low impact development guidelines and ensure that new buildings meet these guidelines, where appropriate. Consider the impact of maintenance and public funding issues in applying such policies.
- Require that all property owners provide full energy audit results at time of sale or legal transfer of the property.
- Develop incentives for energy conservation through tax policy, fees, and green funding.
- Require all new buildings to incorporate alternative energy systems (e.g., wind, solar) on the roof, consistent with the building design, or otherwise ensure that each rooftop maximizes its productive space (e.g., green infrastructure, green roofs, and urban agriculture) by 2020.

Long-Term Actions (2021-2030)

- Require all new construction by 2030 to be carbon neutral.
- Upgrade all existing City buildings to be 25% more efficient by 2025.
- Require that when seeking to replace existing roofs property owners either integrate alternative energy systems into the space or otherwise ensure that each rooftop maximizes its productive space (e.g., green roofs or urban agriculture) by 2030.
- Require that when property owners are retrofitting surface parking lots, they maximize its productive space (e.g., green infrastructure) by 2030.
- Encourage universal design standards for buildings and homes to accommodate persons with disabilities and facilitate aging in place.

Goal 2:

Expedite the Commonwealth's adoption of further green building standards/building codes and expansion of local government authority to adopt green building ordinances, programs, and policies.

Short Term Actions (2009-2011)

- Request the Commonwealth's adoption of the latest International Code Council (ICC) Building Code amendments (which include elements to increase energy conservation measures) by 2011.
- Identify and encourage enhanced green building measures that may be added to the next Virginia State Amendments to the ICC Building Code.

*Denotes actions already underway

Mid-Term Actions (2012-2020)

- Seek local authority to adopt additional green building regulations and require energy efficient technologies such as smart metering technology and energy audits at time of sale or legal transfer.

Goal 3:

Promote green building practices, share information and provide educational, technical, and financial assistance to the building industry, businesses, and residents.

Short-Term Actions (2009-2011)

- Identify a local non-profit that can provide green building information and technical assistance to citizens.
- Incorporate information and technical assistance into existing city programs and processes.

Mid-Term Actions (2012-2020)

- Encourage the installation of the latest smart metering technology by offering incentives and technical assistance.
- Encourage design teams for all new development to include a professional experienced in sustainable development practices at the start of the project and throughout design and construction.
- Create a Green Building Clearinghouse that provides educational, financial, and technical assistance regarding green building practices.
- Create a fund for residents and businesses to provide low-interest loans for green renovations.
- Use the City's buying power to get volume discounts on green building materials for residents and businesses.

Goal 4:

The City will lead by example in green building practices.

Short-Term Actions (2009-2011)

- All new construction and renovation of City buildings, where feasible, will meet a LEED Silver rating or performance-based standards such as those of the Passive House Institute US, as a minimum.
- Identify a potential demonstration project for the City to achieve LEED Platinum status.
- Conduct a feasibility study to install, in phases, a green roof on City Hall.*
- Encourage city-wide support for the conservation and improvement of the city's existing built resources while maintaining the unique character of the city's districts.*

*Denotes actions already underway

Mid-Term Actions (2012-2020)

- All new construction and renovation of City buildings, where feasible, meet a LEED Gold, passive house rating, or equivalent standard.
- Conduct training sessions with boards and commissions whose mission involves building and construction (Planning Commission, Board of Zoning Appeals, Boards of Architectural Review) regarding green building requirements, technology and sustainability.

*Denotes actions already underway

principle
Chapter 3: Air Quality

Alexandria faces significant challenges in improving outdoor air quality including those presented by emissions from vehicles, older industrial facilities, and the regional transport of air pollution. Given that one in eight city residents has a respiratory illness, the city should influence and control emission sources in a manner that reflects the choices and wishes of the community.

Targets

- Reduce fugitive emissions from the ash loading operations at Mirant Potomac River Generating Facility by 25% and coal yard operations by 20% by 2011.
- Reduce stack PM emissions at Mirant Potomac River Generating Station by a minimum of 20% by 2013.

Goal 1:

Maintain and continue efforts to obtain tangible air quality improvements with the overall goal of compliance with National Ambient Air Quality Standard (NAAQS).

Short-Term Actions (2009 – 2011)

- Continue efforts to comply with all NAAQS to reduce exposure to ambient air pollution.*
- Continue existing compliance efforts with major point sources to reduce air pollution in Alexandria.*
- Produce an easy-to-read publication (including maps and GIS tools) that detail, existing emission inventory data on stationary source emissions in the city.*
- Continue and expand education for city staff in the use of City vehicles and equipment by establishing an Air Quality Action Day Plan for City operations.*
- Post "NO IDLING" educational signs at or near Metro or other drop-off locations such as schools and transportation hubs where idling is prevalent.

Mid- to Long Term-Actions (2011 – 2030)

- Continue to work with local, regional, state, and federal governments to improve air quality.
- Continue to expand, enhance, and implement the Transportation Master Plan with a focus on alternative transportation in order to reduce mobile emission sources.
- Continue operation of air pollution monitoring stations in the city and expand monitoring to include PM2.5.
- By 2015, provide real-time information to residents on ozone and PM on the City's website, where feasible.

*Denotes actions already underway

Goal 2:

Reduce off-road/mobile emissions by promoting more environmentally efficient lawn care and construction equipment.

Short-Term Actions (2009 – 2011)

- Convene a work group of City staff and equipment providers/businesses to discuss the pending U.S. Environmental Protection Agency (EPA) regulation of two- and four-stroke engines, with a long term goal of banning the sale and use of gas-powered garden equipment.
- Educate citizens on the environmental impacts of old lawn/mobile equipment using existing city and community outreach activities and publications (e.g., FYI, web sites, civic association newsletters, etc.).

Mid-Term Actions (2012 – 2020)

- Examine the feasibility of implementing a residential financial incentive program to support the replacement of gas-powered lawn mowers and other lawn care equipment.[2]

GOAL 3:

Engage stakeholders in air quality management efforts.

Mid- to Long-Term Actions (2012 – 2030)

- Expand the City's Air Quality Action Day program by establishing an educational outreach package for local businesses.
- Expand and enhance outreach to the community on the implications of poor air quality and actions that can be taken to mitigate the hazards thereof.
- Partner with the Alexandria schools to incorporate the topic of air quality, such as the Clean Air Partner's On the Air education program, into the curriculum.

[2] Also See Implementation Goal 3.

*Denotes actions already underway

GOAL 4:

Promote and support high mileage/low emissions vehicles to reduce emissions and improve local air quality.

Short-Term Actions (2009 – 2011)

- Encourage the development of a Green Taxi fleet by setting tight miles per gallon standards for new vehicles.

Mid-to Long-Term Actions (2012 – 2030)

- Promote and support state and federal regulations and standards related to National Ambient Air Quality Standards and emissions.
- Expand the City biodiesel purchase program to include other alternative fuels.
- Provide incentives to residents who purchase zero emission vehicles.
- Partner with the U.S. Department of Energy's Clean Cities Program to adopt community-wide practices that contribute to the reduction of petroleum consumption.
- Identify and apply for grants to retrofit diesel-powered vehicles and construction equipment.
- Promote new infrastructure to support zero or low emission vehicles, such as hydrogen, electric, or plug-in hybrids.[3]

[3] Also see Energy Goal 5.

*Denotes actions already underway

principle
Chapter 4: Water Resources

Alexandria's past, present, and future are indelibly linked to the Potomac River and the quality of life the river sustains. Water quality in Alexandria will be managed in a sustainable manner consistent with good stewardship of the local streams, the Potomac River and the Chesapeake Bay for the public health, ecological, and recreational benefit of current and future generations.

Targets

By 2010:
- Obtain a funded OEQ outreach position to manage MS4 and Eco-City outreach.

By 2015:
- Establish mechanism for long-term dedicated funding for the purpose of maintaining and improving stormwater infrastructure by 2013.
- Complete Cameron Run Master Plan.
- By 2015, reduce per-capita water consumption by 10%, as estimated from wastewater volume conveyed from the city to its treatment facilities.

By 2020:
- Complete 90% of the in-stream portion of the Four Mile Run Master Plan.
- Retrofit 70% of feasible City facilities with BMPs and explore water reuse operations.

By 2030:
- Retrofit 100% of feasible City facilities with BMPs.

Goal 1:
Enhance the ecological integrity of waterways and promote citizen awareness of water quality and resource issues, particularly with regard to regulatory requirements of the Municipal Separate Storm Sewer System (MS4) permit.

Short-Term Actions (2009 – 2011)

- Continue compliance with Commonwealth and Federal statutes, and continue to improve the City's Municipal Separate Storm Sewer System (MS4).

- Establish a citizen stream monitoring and clean-up program, and encourage active participation by Alexandria City Public Schools (ACPS).

- Promote best management practices (BMPs) for stormwater through workshops (e.g., rain barrels, rain gardens, proper application of fertilizers and pesticides) and demonstrations (e.g., "water wise" garden tours, increased access to green roofs).*

*Denotes actions already underway

Mid-Term & Long-Term Actions (2012-2030)

- Continue to work in cooperation with neighboring jurisdictions to achieve and maintain water quality standards in our streams.
- Restore and stabilize stream banks of all urban streams to promote healthy habitat, biotic integrity, and to minimize erosion.
- Engage citizens to assist in the improvement of riparian buffers through continued efforts toward invasive species eradication and enhanced planting programs.
- Preserve, protect, and enhance existing wetlands in the city.
- Fund and complete implementation of Four Mile Run Master Plan and demonstration project.
- Implement the Cameron Run/Holmes Run feasibility study to improve biotic integrity and water quality.
- Continue and expand water quality education of citizens by providing information via the City's website, radio, television, and signage at park entrances where visitors are anticipated to have direct contact with Alexandria waterways.

Goal 2:

Maintain and enhance stormwater and sanitary infrastructure and stream systems to minimize environmental degradation.

Short Term Actions (2009 – 2011)

- Continue identifying sewer separation opportunities through the Area Reduction Plan.*
- Support and provide information to the Stormwater Working Group in seeking mechanisms to finance infrastructure improvements.*
- Continue stream stabilization and restoration efforts (Cameron Run/Holmes Run Watershed Feasibility Study, Four Mile Run Master Plan and Demonstration Project, Strawberry Run Stream Restoration) and complete programs to improve water quality (e.g., bioretention area retrofits) and quantity reduction capabilities (e.g., Cora Kelly Green Roof).*

*Denotes actions already underway

Mid-Term and Long-Term Actions (2012-2030)

- Establish long-term dedicated funding mechanisms such as storm water utility fees or other taxes to improve and maintain stormwater infrastructure.[4]
- Update the flood management program to take into account anticipated rises in Potomac River levels and the increased intensity of storm-related flooding due to climate change impacts.[4]
- Develop and fund city-wide efforts for floatable controls, including education, outreach, and infrastructure controls.
- Retrofit all City facilities with stormwater BMPs.
- Fund and implement the Four Mile Run Master Plan and demonstration project and continue implementation of Cameron Run/Holmes Run feasibility study to maintain flood protection infrastructure.
- Reduce the amount of sewage discharged into the Potomac River by a public awareness campaign to encourage recreational boat owners to use the sewage pump-outs located at the marinas in the city and through inspection by the Health Department.

Goal 3:

Promote, require, and invest in water conservation infrastructure by updating residential, commercial and industrial water infrastructure and improving public outreach to promote efficient use of available water resources.

Short Term Actions (2009-2011)

- Focus water conservation outreach and homeowner incentives in areas served by combined sewer systems.
- Explore a reclaimed water reuse partnership between the City and Alexandria Sanitation Authority.*

[4] Also see Implementation Goal 3.
[5] Also see Climate Change Goal 4.

*Denotes actions already underway

Mid-Term Actions (2012-2020)

- Explore requiring water conservation measures beyond those required by the current code.
- Identify and remove barriers to policy formation and code revisions to facilitate installation and approval of water reclamation techniques as part of development, redevelopment, and retrofit projects.
- Identify candidate City buildings for a gray water demonstration project. Begin incorporating rain harvesting and gray water use into future development, redevelopment, and retrofit projects.
- Educate businesses that have intensive water use about retrofit opportunities and require upgrades to water recycling or other conservation technologies through the SUP process.
- Collect statistics and track per capita water use and develop long-term conservation targets.
- Promote individual water conservation opportunities through incentives, disincentives (i.e., rebates and taxes), and outreach to the general public (e.g., EPA's Water-Sense Program).
- By 2012, the Alexandria Health Department and the Office of Building and Fire Code Administration should work together to produce a guidance document for architects and engineers on what requirements must be met in order to construct a building employing water recycling technologies.

Long-Term Actions (2021-2030)

- Retrofit at least five City-owned buildings with a gray water recycling system or another recycling system.
- Explore, with the Alexandria Sanitation Authority, the technical and economic feasibility of using reclaimed wastewater from Alexandria's sewage treatment plant for irrigation of some of the larger open spaces in the city.

Goal 4:

Eliminate the harmful impact of the combined sewer systems in the long-term, and minimize them in the short term.

Short-Term Actions (2009-2011)

- Continue to comply with Virginia Pollutant Discharge Elimination Permit (VPDES) for CSO discharges.
- Continue to be proactive in enhancing efforts to continue to implement the Area Reduction Plan.

Mid-Term & Long-Term Actions (2012-2030)

- As development occurs in areas served by combined sewers, require developers of new buildings to build separate sanitary sewer and stormwater infrastructure as a condition of development approval.
- Study the effectiveness of overflow storage, low-impact development, and sewer separation to achieve federal CSO requirements and incorporate any of these methods into the City's CSO eliminations strategy determined to be cost-effective.
- Study funding options for the City's CSO elimination strategy, including State revolving funds.
- Optimize waterfront development opportunities and address the need for adaptation to global climate change.

*Denotes actions already underway

principle

Chapter 5: Environment and Health

Sustainability is not just about the health of the earth; it is also about human health. Indoor and outdoor air quality, water quality, land use planning, transportation, toxic chemical exposure, noise and light pollution, food safety and accessibility, vector control, and the safety and habitability of buildings directly impact human health and the natural environment.

Targets

By 2012:

- 95% of the restaurants in Alexandria will be totally smoke-free.

By 2020:

- 80% of the workplaces in Alexandria employing more than 25 persons will be totally smoke-free.

By 2025:

- 50% of the restaurants and grocery stores in Alexandria will qualify for designation as eco-friendly restaurants or grocery stores.
- 50% of commercial buildings where more than 25 persons are employed will participate in the Healthy Work Places program.

By 2030:

- 25% of Alexandria children will walk or cycle to school
- Increase the number of non-single occupant vehicle (SOV) commuting trips to 50%.
- Reduce the percentage of Alexandria children and adults that are overweight or obese to less than 29%.
- Reduce the incidence of asthma in Alexandria by 50%.

Goal 1:

Promote respiratory health and improve indoor air quality in both new and existing residences by improving ventilation and reducing exposure to air contaminants including secondhand smoke, radon, lead, mold, and other contaminants.

Short-Term Actions (2009 – 2011)

- Further develop the Health Department's Respiratory Health Complaint Investigation Program by reassigning a portion of existing Environmental Health Division staff resources by September 2009, and including a budget supplement to meet the costs of FY 2010.*

- Educate citizens about potential threats of asbestos, mold, radon, second-hand smoke, lead and other indoor air contaminants. Include publications, and programs designed for non-English speakers. By December 2009, produce a handout aimed at individuals renovating their properties which advise them of these hazards.*

- By September 2010, gather better data on the incidence of respiratory illness in the city. The hospital and a local university's Masters of Public Health (MPH) program might help to gather this data. This data will be needed for the next Community Environmental Health Assessment, as part of the planned larger community health assessment that will end by 2011.

*Denotes actions already underway

Mid-Term Actions (2012-2020)

- Increase the Health Department's outreach efforts on respiratory health issues through:
  - o An improved respiratory health website;
  - o Outreach at community events; and
  - o Distribution of information on respiratory health issues through school nurses, child care providers, pediatricians, physicians, and hospital emergency department nurses.

- Create a network of school nurses, child care providers, pediatricians, physicians, and hospital emergency department nurses that will refer adult asthmatics and the parents of asthmatic children to the Health Department for assistance in identifying asthma triggers in their homes.

- Improve the coordination of agencies dealing with respiratory health and housing issues through the City's Code Compliance Committee.

- Obtain grant funding to hire a respiratory health specialist and expand the Health Department's Respiratory Health Complaint Investigation Program into a proactive Healthy Homes program that can conduct environmental health assessments and provide small grants to low income residents for interventions to remove triggers for respiratory illness.

Long-Term Actions (2021-2030)

- Develop permanent, stable funding for the Healthy Homes Program to assure long-term progress on asthma and other respiratory illnesses.

Goal 2

Improve indoor air quality health, in both new and existing work places by improving ventilation and reducing exposure to air contaminants including organic solvents, secondhand smoke, lead, radon and mold to promote respiratory health.

Short-Term Actions (2009-2011)

- By FY 2010, , revise the Health Department regulations governing nail salons to put more emphasis on indoor air quality, including ventilation and reducing exposure to volatile organic compounds (VOCs).*

- By 2010, create a Smoke-Free Alexandria program through the Health Department and the Partnership for a Healthier Alexandria's Environmental Health Work Group that encourages restaurants and work places in the city to go completely smoke-free and recognizes those that do.*

- By 2011, reinstitute a smoke-free restaurant program (now called "Smoke-Free Alexandria") and increase the number of participating restaurants by 20 % over the number participating under the previous plan.*

- Continue to support state legislation to allow localities to completely ban smoking in bars, restaurants, and other public places.

*Denotes actions already underway

Mid-Term Actions (2012-2020)

- Adopt a policy requiring the City to contract for meeting space, food, or catering services only from hotels and restaurants that are completely smoke-free.
- Promote the concept of smoke-free buildings at the DSUP/SUP stages of development or alteration of buildings.
- Discourage the use of building materials that that often contribute to indoor air quality problems such as the offgassing of volatile organic compounds (VOCs) that often contribute to indoor air quality problems.
    - o By 2012, transform the Smoke-Free Alexandria program into a voluntary Healthy Work Places program for employers in the city to promote respiratory health in the work place. This program would recognize workplaces that maintain a healthy work environment by adopting procedures that minimize indoor air pollutants and promote a healthy lifestyle for employees.

Long-Term Actions (2021-2030)

- Develop permanent, stable funding for the Healthy Work Places Program to assure long-term progress on asthma and other respiratory illnesses.

Goal 3:

In both ACPS and private schools and daycare facilities, promote respiratory health and improve indoor air quality by implementing EPA's Indoor Air Quality Tools for Schools or similar program.

Mid-Term Actions (2012-2020)

- By 2012, pilot the Indoor Air Quality Tools for Schools, or a similar program, in one school in the city.
- By 2020, implement the Indoor Air Quality Tools for Schools, or a similar program, in 50 % of the city's public schools.
- Conduct respiratory health outreach and indoor air quality assessments for private schools and daycare facilities.

Goal 4:

Encourage active, healthy lifestyles by providing safe opportunities to walk and cycle in order to reduce obesity and chronic diseases such as diabetes, heart disease, stroke, and respiratory disease.

Short-Term Actions (2009-2011)

- Implement the Bike and Pedestrian Mobility Plan, focusing on Safe Routes to School, improving pedestrian and bicycle infrastructure, and increasing the number of cyclists and pedestrians.*
- Work across City departments to develop a Pedestrian Design Guide to be issued by the City engineer in 2009.*

*Denotes actions already underway

Mid-Term Actions (2012-2020)

- Build community partnerships that promote regular outdoor physical activity such as walking or bicycling.

  - o The City and its community partners should continue to apply for grant monies to work on marketing and educational programs that promote regular outdoor physical activity like walking and bicycling, including Safe Routes to School.
  - o The Environmental Health Work Group of the Partnership for a Healthier Alexandria will coordinate with the Pedestrian Bicycle Coordinator to target bicycle and pedestrian education and safety promotion efforts.

- Encourage community access to open spaces and other recreational areas by:

  - o Enhancing web-based and printed materials that include park, playground, bike and walking routes, and recreation center information.
  - o Creating walking guides to Alexandria showcasing the city's flora and fauna, geology, green initiatives, history, etc.

- Improve community pedestrian and bike infrastructure to support increased recreational and transportation walking and biking by completing the implementation of the Bike and Pedestrian Mobility Plan.

- Create a "No Child Left Inside" program among ACPS, RPCA, and possibly even private Alexandria schools, to encourage and promote healthy lifestyles for Alexandria's youth and to foster lasting connections to the natural environment.

- Decrease the proportion of pedestrian and cyclist injuries and fatalities due to motor vehicles by:

  - o Collaborating with ACPS to review the feasibility of adding a program to their driver's education curriculum that targets pedestrian and bicycle education efforts (such as Mobility Education - http://www.mobilityeducation.org/);
  - o Installing more automated red light cameras to ticket motorists who are speeding or running red lights; and
  - o Implementing aggressive and sustained enforcement of traffic laws and increasing public education efforts on bicycle and pedestrian safety.

- Increase the City's role as an advocate for public health by:

  - o Including more health considerations and health specific language in planning documents;
  - o Providing financial incentives to City employees that walk or bike to work;
  - o Hiring a part-time employee to work on healthy lifestyle/built environment issues in the Health Department and in collaboration with the Department of Planning & Zoning by 2012.
  - o Explore the potential for developing a simple environmental health impact assessment process which will assure that the relevant and potential human health issues related to vector control, water quality, air quality, food supply, toxic exposures, and the built environment are addressed in review of area development plans and special use permits.

*Denotes actions already underway

Goal 5:

Educate citizens about and increase equitable access to safe, healthy, and organic food, particularly for children and pregnant women, and encourage local and regional food production.

Short-Term Actions (2009-2011)

- By FY 2010, create a food system resource map using a Geographic Information System to include existing stores, markets, restaurants, and other food related programs to direct future efforts to increase access to accessible food.*
- Explore opportunities to expand and promote farmers' markets, especially in low-income neighborhoods.

Mid-Term Actions (2012-2020)

- Continue to encourage the development of additional farmers' markets in the city on different days of the week and at different locations, especially near transit stops and with vendors offering safe organic products.
- Encourage farmers' markets to establish a system to accept WIC and food stamps to further the access of local, fresh produce to low-income residents.
- Create an outreach program to low-income residents that advertises the availability of fruits and vegetables, provides cost comparisons, and offers healthy recipes with in-season vegetables.
- Encourage the Cooperative Extension Service to hire a new extension agent for Alexandria who could:
  - o Teach residents about organic gardening and cooking with in-season vegetables;
  - o Teach residents about rooftop, raised bed, and container gardening;
  - o Increase participation in the Master Gardeners Program;
  - o Increase participation in the 4-H Club;
  - o Work with the schools to help develop "edible schoolyards"; and
  - o Work with preschools and childcare providers to develop "container gardens" or small-scale "edible school yards."
- Encourage ACPS to use locally or regionally grown fruit and vegetables, whenever possible.
- Encourage local feeding programs (Meals On Wheels, ALIVE, Christ House, Salvation Army, Carpenter's Shelter, etc.) to use locally or regionally grown fruit and vegetables whenever possible, and encourage local farmers to donate foods to these programs.

Long-Term Actions (2021-2030)

- Increase the number of garden plots available in the city so that no one who applies for a garden plot is denied. These plots could be located on either City or private property and should be targeted for low-income areas.

*Denotes actions already underway

principle
Chapter 6: Energy

The quantity and sources of energy used by Alexandria's government, businesses and residents impact our environment and quality of life—whether it be through pollutants added to the air, negative effects on water quality or local contributions to climate change. Recognizing this, Alexandria commits to managing its energy—both the electricity that powers our buildings and homes and the fuel that powers our vehicles and other equipment.

Targets

By 2010:
- The City will purchase 5% of electricity needs through green certificates.

By 2015:
- Reduce the per capita energy use in Alexandria by 15%.
- Track energy use of 30% of multi-family residence units.

By 2020:
- 25% of the City's energy portfolio will consist of clean, renewable energy sources.

By 2025:
- Track energy use of 60% of multi-family residence units.

By 2030:
- 50% of the City's energy portfolio will consist of clean, renewable energy sources.
- Track energy use of 100% of multi-family residence units.

By 2050:
- 80% of the City's energy portfolio will consist of clean, renewable energy sources.

*Denotes actions already underway

Goal 1:

Initiate an energy planning process to evaluate energy use needs and impacts within the city, and the effectiveness and return-on-investment of steps to reduce energy use and mitigate greenhouse gas emissions.

Short-Term Actions (2009 – 2011)

- In FY 2010 EPC, City staff, and other interested parties will convene workshops to identify issues and develop questions for a feasibility study on the potential for renewable power generation within the city. Speakers will include experts in engineering, law, and economics with experience in the potential and feasibility of renewable-powered local electricity generation networks.
- Determine the amount of energy that can be produced locally and sustainably by 2020 and 2030.
- The City government will initiate a process for establishing a City Energy Master Plan by 2010. City staff will conduct a scoping exercise that outlines and identifies boundaries of the plan focusing on household, business, and government energy use in the city, and is mindful of the targets adopted in the Commonwealth of Virginia 2007 Energy Plan and the 2008 Metropolitan Washington Council of Governments - National Capital Area (MWCOG-NCA) Climate Change Report.
- Identify energy reduction strategies through maximizing energy efficiency and conservation by 2020 and 2030.

Mid-Term Actions (2012-2020)

- Create and utilize an energy efficiency metric to ensure the City maximizes its return-on-investment with respect to measures designed to reduce energy consumption and greenhouse gas emissions.

Goal 2:

Reduce energy consumption through conservation and the adoption of more energy efficient technologies and practices by the City, its residents, and businesses.

Short-Term Actions (2009-2011)

- Direct City employees to regularly shut down their computers and other office equipment at the end of each workday.*
- Develop a checklist and other resources for homeowners and businesses to perform their own energy audits, aimed at quick and easy modifications that could yield significant reductions in energy usage.
- Limit the projected growth in all sectors of citywide energy use to 4% by 2011, and consider adopting the goals of Virginia's 2007 Energy Plan. Evaluate consistency with MWCOG Energy Strategic Plan.
- Lengthen the allowable payback period for the City's energy efficiency investments from 7 years to 15 years to be more consistent with the City's cost of capital, and increase funds for those investments for FY 2010 by $50,000.
- The sedans or hybrids purchased by the city in 2009 will have an average city fuel economy 20% greater than Corporate Average Fuel Economy (CAFE) requirements.
- The City will partner with local vendors, experts, and others to promote the use of products and services that reduce energy use, such as drying racks, cold-water laundry detergent, and power strips. The City will seek to implement this objective by sponsoring awareness campaigns and reducing cost of adoption.

*Denotes actions already underway

Mid-Term Actions (2012-2020)

- Require that all property owners provide full energy audits at time of sale or legal transfer of the property.
- Establish tax incentives and financial support mechanisms to promote energy efficiency improvements and modifications for residential units and businesses.
- Conduct a feasibility study to establish a carbon tax designed to reduce energy consumption and greenhouse gas emissions.
- Require multi-family residential buildings to track and report monthly energy use in individual units.
- Build or retrofit at least one City office building to passive housing energy use standards.
- Create a City Fleet Management Plan (FMP) to minimize the emission of greenhouse gases and other pollutants from City-owned and operated vehicles, as well as construction and landscape care equipment. The FMP shall consider all emissions generated over the expected life of a vehicle.
- Coordinate with utility companies to provide customers with information comparing their consumption with average use across Alexandria by category (e.g., residences, offices, restaurants, etc).

Long-Term Actions (2021-2030)

- Update the Transportation Master Plan to achieve the goal of having 50% of all personal trips be by walking, bicycling, or public transport by 2030.

Goal 3:

The City's energy portfolio will be renewable and clean by 2050.

Short-Term Actions (2009-2011)

- In FY 2009 and 2010, the City will purchase 5% of its electricity needs through green certificates, which promote the use of renewable power.
- Purchase renewable energy credits generated for compliance with state-level renewable portfolio standard requirements equivalent to 6.5% of the City's operational needs in 2010 rising steadily to 20% in 2020.
- Use sustainable biodiesel for all of the City diesel fleet operations.

Mid - Long Term Actions (2012-2030)

- At least 50% of the City's energy portfolio will come from renewable and clean energy sources by 2020, and raise that percentage to at least 80% by 2030.

*Denotes actions already underway

Goal 4:

Encourage the use of clean renewable energy resources, such as wind, geo-thermal, and solar, to reduce the City's carbon footprint.

Short-Term Actions (2009-2011)

- Develop information to be published on the Health Department's website about geothermal closed-loop heat pump wells by 2011.
- Provide information to the public regarding renewable energy resources through the City's website, flyers, etc.

Mid-Term Actions (2012-2020)

- Conduct a feasibility study for facilitating the establishment of infrastructure necessary for city distribution and use of clean renewable technology (e.g., smart grids, solar/wind-powered street lights, plug-in stations for electric cars, etc.).
- Establish building codes and property tax incentives to promote and regulate the development of green roofs, including use of roof space for reducing run-off, energy generation, energy efficiency, and gardening.[6]

Mid- and Long-Term Actions (2012-2030)

- Work with the Metropolitan Washington Council of Governments to develop and adopt plan to upgrade the region's electrical grid to support micro-generation.

[6] See also Building Green Goal 1.

*Denotes actions already underway

Goal 5:

Support interdepartmental planning and prioritization of energy management and investment activities.

Short-Term Actions (2009-2011)

- EPC will endorse the creation of the City's recently empanelled Energy Conservation Committee (ECC) as a model for promoting and instilling the principles of the Eco-City Charter, including the objective of interdepartmental cooperation and planning, in the pursuit of sustainability.*
- Through the City Manager's Office, make City Department participation and representation in the ECC mandatory in order to assure attainment of the energy goals of the Action Plan and the reduction of government expenditures on energy services.
- In FY2009 and FY2010, ECC will propose goals and activities for itself for the next 5 years and present these to the City Council. The goals should include plans for promoting energy conservation awareness and education of residents and business owners.
- In 2009, the City will conduct its plan for energy audits of a number of major City facilities across a variety building types (recreational, managerial, public safety).
- ECC will conduct outreach to City staff to increase awareness of energy conservation strategies by educating building operators and occupants. All media forms will be used to ensure that all City staff are reached.*
- The City will use its website and other multimedia tools to advertise and describe the purpose of the ECC and its activities.

Mid-Term Actions (2012-2020)

- Conduct annual energy audits of major City buildings.

*Denotes actions already underway

principle

Chapter 7: Land Use and Open Space

The City's land use and open space policies must harmonize its built and natural environments to ensure that growth does not jeopardize environmental sustainability and preserves Alexandria's character. The City's land use policies will accommodate increases in people and jobs through green development.

Targets

By 2015:

- Preserve and/or acquire the remaining 35 acres of open space to complete 100-acre goal of the Open Space Master Plan.
- Ensure that all plantings on City property are non-invasive and incorporate native Plants.
- Design and install a pedestrian bridge to link Arlington and Alexandria sides of Four Mile Run.

By 2020:

- Achieve 40% tree canopy coverage.

By 2030:

- Ensure that 25% percent of all Alexandria school children get to and from school by walking or riding bicycles.
- Ensure that 50% percent of Alexandrians commute to work by non-SOV means.
- Reuse the site of the coal-fired power plant.

Goal 1:

Continue to coordinate land use and site design decisions among City departments to ensure compatibility with existing City plans that promote walking, cycling, and taking public transportation.*

Short-Term Actions (2009-2011)

- Ensure that land use decisions incorporate smart growth principles that provide incentives and disincentives to reduce vehicle use and vehicle ownership.
- Incorporate, where feasible and appropriate, improvements to bike and pedestrian facilities into ongoing Small Area Plans to ensure compatibility with the Bike and Pedestrian Plan.*
- Continue to develop and approve Small Area Plans that increase density in and around Metro stations and other transportation hubs.*
- Promote more pedestrian, bike, and transit usage during land use planning of Alexandria's major thoroughfares, including Van Dorn Street and Beauregard Street.*
- Continue to incorporate retail streets and/or small-scale retail uses into neighborhood plans, where appropriate and feasible, to increase walking destinations and opportunities for small businesses.*

*Denotes actions already underway

Mid-Term Actions (2012-2020)

- Create self-sufficient neighborhoods by locating public, small-scale retail, and community facilities near the populations they serve and near public transit and other amenities to make their use more energy efficient.
- Develop incentives to encourage residents to live near their workplace.
- Promote more pedestrian and bike transportation features (e.g., underground parking, street front retail, and parking access behind buildings) in the land use planning for Alexandria's major thoroughfares, including Van Dorn, Duke, and Beauregard Streets, Eisenhower Avenue, and Route 1 planning efforts.
- Increase bike storage and bike parking in areas designated by the Transportation Master Plan as Bicycle Parking Priority Zones (e.g., near Metro stations, schools, high-density residential, and retail locations) and at special events.
- Complete City's current City Bikeway and Trail network through development review, grants, and CIP.
- Rethink ways to incorporate green economy/industry into planning process as a way to enhance economic sustainability and promote green jobs.
- Create benchmarks to measure achievement as to both qualitative and quantitative metrics, in the following areas:
    - o Creation of and enhancement of walkable streets, sidewalks, and non-SOV bicycle and pedestrian amenities and connections;
    - o Open space acquisition, preservation, and enhancement, including parks, community gathering places, privately owned open space, natural areas, trail connections and extensions, and crown coverage and habitat protection; and
    - o Amount of floor area planned for that is connected to walkable destinations, transportation, and community amenities.

Long-Term Actions (2021-2030)

- By 2030, reuse the site of the coal-fired power plant, imagining such possibilities as a renewable, clean energy generation facility, regional transit center for river-based transportation, open space, arts center, or other community-based function.

*Denotes actions already underway

GOAL 2:

Ensure that all City development or redevelopment projects and all plans, policies, and ordinances regarding land use reflect the sustainability vision and principles of the Eco-City Charter.

Short-Term Actions (2009-2011)

- Devise a sustainability checklist based on criteria and principles from the Eco-City Charter that Planning & Zoning can use in determining the compatibility of Small Area Plans and new development and redevelopment projects.
- Prepare GIS maps to identify safest routes for children to walk to their schools, supporting the Walking School Bus Concept.
- Incorporate open and green space and sustainability standards, where appropriate (e.g., LEED, Sustainable Sites criteria, Low Impact Development principles) into Small Area Plans and the City's Green Building Policies.

Mid-Term Actions (2012-2020)

- Revise City's Strategic Plan and any future revision of City's Master Plan to incorporate sustainability principles of Eco-City Charter and Environmental Action Plan as requirements for all land use decisions.
- Implement the recommendations of adopted plans:
    - o Small Area Plans
    - o Transportation Master Plan
    - o Open Space Master Plan
    - o Urban Forestry Plan (proposed for adoption June 2009)
    - o Economic Sustainability Report
- Ensure that newly adopted and revised Small Area Plans, and new development and redevelopment projects are consistent with the vision and principles of the Eco-City Charter and Environmental Action Plan.
- Review existing City policies, guidance, ordinances, and codes, including parking regulations, to eliminate conflicts and enhance opportunities to further the goals of sustainability.

*Denotes actions already underway

GOAL 3:

Protect and enhance Alexandria's open space and green infrastructure including wildlife habitat, parks, trails, tree canopy, and watersheds. Incorporate the natural environment into the built environment.

Short-Term Actions (2009-2011)

- Finalize and release the Urban Forestry Master Plan. Develop a multi-year action and funding plan to implement Plan recommendations.*
- Explore a policy that expands and supplements current tree canopy coverage standards through a combination of incentives, regulations, and in-lieu fees.
- The City will lead by example by utilizing low impact landscape practices where possible, such as perennial and native plant species, rain gardens, reduced fertilizer and pesticide usage, and encouraging the removal of invasive species.*
- Continue work on completing a GIS inventory of trees located in public rights of way and other public lands, and identify locations for new trees.*
- Promote and expand Living Landscape Fund to include "Adopt-a-Tree," "Celebration Tree," and/or other similar program activities, where individuals or organizations can purchase trees through the City and have them planted and maintained throughout the city.
- Continue to design and develop shaded parking lots through existing Special Use Permit/Development Special Use Permit process; expand to include the retrofitting of existing parking lots.*
- Identify potential locations to establish new school and community gardens.
- Set minimum standards for open space and green space in Small Area Plans and other City plans that can be met in part through green roofs, green decks over underground parking, or green surface lots.*
- Continue progress on protecting the 35 remaining acres, through acquisitions, easements, and dedications, to achieve the City's 100-acre open space goal.*
- Continue the Open Space Pocket Park program with the design and implementation of pocket parks on East Del Ray Avenue and South Early Street.*
- Continue progress on Four Mile Run Restoration Master Plan by completing the design competition for the Four Mile run pedestrian Bridge, finalizing the design guidelines and redeveloping the recently-acquired Four Mile Run open space properties in accordance with relevant area plans.*

*Denotes actions already underway

Mid-Term Actions (2012-2020)

- Continue implementing the Urban Forestry Plan.
- Achieve 40% crown coverage in the city by 2020.
- Seek authority to require all new developments, including single family homes, to provide 40% crown coverage on site. Require no less than 40% crown cover when sites are developed or redeveloped, within these parameters:
  - o When trees are cleared from a site, increase replacement requirement for removal of large caliper trees.
  - o Change crown coverage assumptions in City requirements to reduce the credit allocated for younger, smaller trees.
  - o Set a minimum amount of the total crown coverage to be achieved through on-site trees and require payment to Living Landscape Fund for failure to achieve full requirement.
- Work with community partners to add 500 street trees a year throughout the city to achieve full street tree stocking levels by 2020.
- Develop an appropriate standard, planting program, and areas for street trees, as with an underground trench; and replace existing street trees as needed to ensure their long-term viability throughout the city.
- Expand urban forestry training to residents and designate more "Tree Stewards" to maintain street trees.
- Expand the Living Landscape Fund to provide for maintenance, infrastructure, shrubs, and other landscaping.
- Update the City's trails map, identifying existing trails and proposing additional trail connections and extensions.
- Research, develop, and implement green infrastructure policies, guidelines, and regulations. Fund green infrastructure as part of City's capital expenditures.
- Complete a survey of native vegetation within city ("Alexandria Flora Project") and promote project and results on City's web site.
- Design and install a pedestrian bridge linking Arlington and Alexandria sides of Four Mile Run by 2015.
- Complete the implementation of the City's current Open Space Master Plan, including protecting the 35 remaining acres, through acquisitions, easements, and dedications, to achieve the City's 100-acre open space goal by 2013.
- Develop a goal for acquiring and/or protecting additional green space (after achieving the first 100 acres), consistent with the Open Space Master Plan and with guidance from the Open Space Advisory Group.
- By 2015, ensure that all plantings by Recreation, Parks, and Cultural Activities Department (RPCA) are non-invasive, flood- and drought-tolerant, 80% perennial plants, and that native plants are used wherever possible.
- Work with Alexandria schools and RPCA to design and implement expansion of community-and school-based gardens by maximizing conversion of unused open space on public property to habitat enhancement and increase in availability of edible gardens.

*Denotes actions already underway

Long-Term Actions (2021-2030)

- Conduct an analysis of the city's resource-carrying capacity.
- Ban the sale of invasive plants within the city based on the Virginia Department of Conservation and Recreation list of invasive species.

Goal 4:

Ensure that future land use and open space planning and project decisions will not create or perpetuate social injustice, nor compromise the City's historic character.

Short-Term Actions (2009-2011)

- Continue to ensure representation and participation by affected groups in the Master Plan and Small Area Planning processes. Continue outreach efforts to engage low income and minority residents in land development project decisions within their neighborhood.*
- Continue to identify opportunities for affordable housing and mixed income housing in Small Area Plans throughout the city.*
- Ensure that mixed income development incorporates spaces for on- or near-site community support services (e.g., child care), where feasible and appropriate.*
- Continue to consider the importance of location of open space and public transportation to potential mixed income sites when preparing Small Area Plans or reviewing development projects.*
- Incorporate sensitivity for the city's historical character, properties, landmarks, and archeological endeavors in planning decisions.*

Mid-Term Actions (2012-2020)

- Encourage universal design standards for buildings and homes to accommodate persons with disabilities and facilitate aging in place.[7]

Goal 5:

Conduct outreach and education on sustainable land use practices, policies, and programs.

Short-Term Actions (2009-2011)

- Provide ongoing training, seminars, and workshops for City staff and residents about sustainable land use practices, policies, and programs, and identify and publicize existing learning opportunities available through local colleges, universities, and other sources.

Mid-Term Actions (2012-2020)

- Support public outreach and education on Smart Growth, especially the benefits of increased density, car-free forms of transport, green buildings, resource conservation, and local power generation. The outreach plan should include citywide strategies and neighborhood-scale activities.

[7] Also see Building Green Goal 1.

*Denotes actions already underway

principle
Chapter 8: Solid Waste

Recognizing that managing waste is a public health issue as well as a quality of life issue, Alexandria will maintain its well-preserved public image by managing, handling, and disposing of solid waste in an environmentally sustainable manner. Alexandria will manage waste as a hierarchy of uses....

-PRIORITY ONE: REDUCE
-PRIORITY TWO: REUSE
-PRIORITY THREE: RECYCLE
-PRIORITY FOUR: RESOURCE RECOVERY (E.G., CONVERT TO ENERGY, COMPOSTING, ETC.)
-PRIORITY FIVE: PROPER DISPOSAL

Targets

By 2020:

- Exceed the goal of 35% diversion through increased waste reduction and reuse.
- Increase the recycling rate to achieve a goal of 50%.

Goal 1:

Exceed the City's goal of 35% diversion through increased waste reduction and reuse by 2020.

Short-Term Actions (2009-2011)

- Discourage the use of bottled water in City facilities and at City functions.
- Encourage the Chamber of Commerce to work with local businesses to discourage the use of plastic or "one-use" bags and encourage the use of reusable bags as part of the "Proud to be a Green Business" initiative.
- Promote and educate the building industry about the need to recycle material recovered from construction and demolition sites by including information on how and where to recycle materials in all permit applications by 2010.

Mid-Term Actions (2012-2020)

- Conduct a feasibility study to implement a pilot "bag-n-tag" program or similar "pay as you throw" program to incentivize waste stream reduction, recycling and diversion.
- Provide citizens with a contract template or other materials to help citizens choose contractors or private businesses that reduce the amount of building and construction material waste and maximize the reuse of the materials.

Long-Term Actions (2021-2030)

- Develop a program to require the recycling of construction and demolition (C&D) debris.

*Denotes actions already underway

Goal 2:

Increase the recycling rate to achieve a goal of 50% by 2020.

Short-Term Actions (2009-2011)

- Expand the number and type of materials collected in the recycling curbside program (e.g. plastic tubs, aluminum foil/trays, empty aerosol cans, and rigid plastics).
- Expand the multi-family (including condominiums and rental apartment complexes) recycling program by mandating recycling at commercial and multi-family developments. Change the enforcement ordinance/ code to give the City the authority to fine property owners and managers for noncompliance with existing and new recycling requirements, as recommended by the Solid Waste Management Plan.
- Increase recycling in City-run facilities and educate City employees about this effort. Require compliance of all City-run facilities with new and existing recycling requirements. A pilot program in City Hall will be initiated and retrofit containers will be used as recycling bins in the parking facility. When the recycling contract is renegotiated in 2009, all City-run facilities will be covered.

Mid-Term Actions (2012-2020)

- Develop an Adopt-a-Building recycling program for commercial and multi-family buildings.
- Require recycling at publicly and privately sponsored community events as a condition of Special Events permit.
- Establish penalties for businesses and multi-family dwellings that fail to meet recycling requirements.

Long-Term Actions (2021-2030)

- Mandate, through permitting or code enforcement, that all Alexandria businesses implement a recycling program and report their progress to the City.
- Work with "Green Business" initiative to recognize those businesses with highest recycling rates with awards. Promote "Green Businesses" on the City website or other promotional materials.
- Study the feasibility of requiring all city events requiring a Special Events permit to be zero-waste events.

Goal 3:

Increase the diversion of compostable solid waste from disposal by improving and expanding the City's existing compostable waste recycling program.

Short-Term Actions (2009-2011)

- Promote residential composting and grass-cycling through a partnership with Community Gardens, Master Gardeners, Virginia Cooperative Extension, expansion of composting workshops, and hosting a video on composting on the City's Solid Waste web page.
- Support and promote initiatives, such as "Proud to be Green Businesses," to encourage composting of food waste by commercial entities.

*Denotes actions already underway

Mid-Term Actions (2012-2020)

- Coordinate with neighboring jurisdictions to study the feasibility of waste facilities closer than Hagerstown, MD with the goal of implementing a curbside compostable waste recycling program.[8]

Long-Term Actions (2021-2030)

- Expand residential curbside collection of compostable landscaping waste to eliminate bagged landscaping waste.

Goal 4:

Develop an outreach strategy to educate the public on new and existing recycling mandates through multiple communication and education strategies.

Short-Term Actions (2009-2011)

- Develop and launch a recycling education poster campaign at Metro stations and DASH buses and bus stops.
- Hire a full-time recycling coordinator to manage the commercial and multi-family recycling program, and to assist property owners and managers with implementation.
- Expand the City's Solid Waste webpage and provide printable materials to educate residents on recycling programs.
- Utilize the Volunteer Bureau and other resources to solicit volunteers to help with waste reduction outreach at Alexandria City Public Schools (ACPS) and businesses.

Mid-Term Actions (2012-2020)

- Promote the hierarchy of reduce, reuse, and recycle to residential and business sectors.
- Expand outreach to schools and multi-family dwellings regarding the implementation of reduce, reuse, recycling programs, and proper disposal of household hazardous waste.

Goal 5:

Maintain programs for ensuring that solid wastes are managed in accordance with federal and state laws and regulations in a manner that protects health, safety and the environment.

Short-Term Actions (2009-2011)

- Expand the drop-off hours for electronic and household hazardous waste to reduce the materials contributing to the toxicity of the waste stream, and produce educational materials (with an emphasis on modern light sources that contain mercury) that stress the importance of using this facility and other methods of hazardous waste disposal.
- Utilize mapping (e.g., Geographic Information Systems (GIS)) technology to optimize trash truck routing, thereby reducing fuel costs without impacting the level of service.

[8] See also Implementation Goal 6.

*Denotes actions already underway

Mid- and Long-Term Actions (2012-2030)

- Examine the feasibility of collecting household hazardous waste and electronic waste as part of curb-side collection.
- Conduct outreach to citizens on ways to reduce the use of hazardous products and provide information on proper disposal of household hazardous waste and electronic waste.
- Evaluate alternatives for long-term options for the disposal of solid waste.

*Denotes actions already underway

principle

Chapter 9: Global Climate Change and Other Emerging Threats

Alexandria must be adaptive and responsive to emerging or unforeseen environmental threats – such as climate change – that could strain infrastructure, deplete natural resources, disrupt the economy, or threaten public health. Failure to respond quickly and appropriately to such threats will likely have severe consequences for the health and economy of Alexandria and its citizens.

Targets

By 2012:
- Reduce Business As Usual (BAU)[9] emissions by 10% below 2012 level.

By 2020:
- Reduce emissions by 20% below 2005 levels.
- 60% of all currently existing buildings will achieve a 20% energy consumption reduction.
- 25% of the City's energy portfolio will consist of clean, renewable energy sources.

By 2025:
- All new buildings will achieve LEED Platinum standards.

By 2030
- By 2030, all new buildings will be carbon neutral

By 2050:
- 80% of the City's energy portfolio will consist of clean, renewable energy sources.
- Reduce emissions by 80% below 2005 levels

Goal 1:

Adopt targets and establish implementation framework for reducing greenhouse gas emission reductions for 2012, 2020 and 2050.

Short-Term Actions (2009-2011)

- Adopt the proposed greenhouse gas emission reduction targets outlined in the Metropolitan Washington Council of Governments' July 2008 draft Climate Change Report.*
- Continue to inventory greenhouse gas emissions within the city using the International Council for Local Environmental Initiatives (ICLEI) computer program and finalize the emission reduction targets.*
- Assign the Environmental Coordinating Group (ECG) to propose methods to achieve the emission reduction targets and to begin drafting a Climate Action Plan that will include exploring methods for making the targets binding.
- Establish City Climate Action Plan.

*Denotes actions already underway

Mid-Term Actions (2012-2020)

- Support and work with local legislators for adoption of California's Greenhouse Gas Vehicle Program.
- Implement Climate Action Plan.
- Integrate climate change planning into the local air quality planning efforts.
- Replace all publically-owned street lights in the city with energy-efficient (such as light emitting diodes (LED)) or renewable-energy lights.
- Update the GHG Emission Inventory every three years and the Climate Action Plan on an as-needed basis.
- Examine the carbon sequestration potential of the tree canopy in the City and opportunities for carbon banking on a regional basis.
- Identify the economic opportunities associated with climate change planning such as recruiting high tech, green firms, the creation of green jobs, etc.

Goal 2:
Institutionalize the consideration of the effects of possible climate changes into long-term planning.

Short-Term Actions (2009-2011)

- Conduct a risk analysis of the effects of global climate change on Alexandria.
- Empower the City's Environmental Coordinating Group (ECG) to develop adaptation planning strategies for the city.

Mid-Term Actions (2012-2020)

- City management, staff, Environmental Policy Commission (EPC) members, and others will begin to regularly participate in long-term (i.e., 5, 20, and 50 years) climate adaptation planning activities such as scenario exercises and retreats.
- Convene a diverse group of stakeholders (perhaps as an EPC subcommittee) including City staff, civic groups, scientists, and businesses to monitor climate change data and information and to provide policy guidance and strategies for the city on climate change and adaptation.
- Continue to monitor data and factual information on climate change and modify the Climate Action Plan and climate adaptation plans accordingly.

*Denotes actions already underway

Goal 3:

Prepare and educate city residents and business owners for a carbon-constrained economy and other climate change impacts.

Short-Term Actions (2009-2011)

- The City will disseminate educational materials and establish a website on the causes and effects of climate change, how people can reduce their climate impact, and how greenhouse gas reduction policies may affect the availability and prices of energy and other goods.
- The City will emphasize the benefit of increasing development density as a method for reducing greenhouse gas emissions in its discussions with citizens and business.[10]

Mid-Term Actions (2012-2020)

- Gather and publish environmental performance metrics to identify trends in water quality, average sea level, air quality metrics, energy use, and temperature.
- Establish a voluntary program for city residents, schools, and businesses to report their efforts in reducing their environmental impact and create an awards program to incentivize participation.

Goal 4:

Increase the City's preparedness to respond to the possible effects of climate change and environmental emergencies.

Mid-Term Actions (2012-2020)

- Update the flood management program to take into account anticipated rises in Potomac River levels and increased intensity of storm-related flooding.
- Continue to support the work of City and Health Department emergency planners in developing plans that take into account climate change-related emergencies such as water and food supply disruptions caused by severe drought, loss of electricity, damage to or contamination of the water distribution system, and climate change-related outbreaks of diseases.
- Maintain a strong Mosquito Control Program in the city by continuing to eliminate breeding habitats for mosquitoes due to the increased risk of mosquito-borne illnesses.

Goal 5:

Examine and address the environmental hazards imposed by pharmaceutical disposal in waterways and drinking water supply.

Mid-Tem Actions (2012-2020)

- Partner with MWCOG, Alexandria Sanitation Authority, the Alexandria Health Department and the Drinking Water Suppliers of Alexandria to monitor the hazards of pharmaceutical disposal. Provide annual feedback on the state of the science to inform EPC when actionable activities are warranted.
- Inform residents about how to properly dispose of pharmaceuticals.

[10] Also see Land Use and Open Space Goal 1.

*Denotes actions already underway

Long-Term Actions (2021-2030)

- When science-based solutions have been identified, the City should take appropriate actions to address the hazards of pharmaceutical disposal.

Goal 6:

Anticipate and plan for potential emerging environmental threats, such as nanotechnology, nitrogen loading, and acidification of waterways.

Mid-Term Actions (2012-2020)

- Ensure that City Staff, EPC, and other climate change groups examine studies, data, and other information on emerging potential environmental threats and provide policy guidance to the City and its residents.

*Denotes actions already underway

principle

Chapter10: EAP Implementation by Sustainability Sector

Improving environmental quality, conservation and the public welfare requires a harmonized approach to implementation, as well as collaboration both within and around Alexandria. The primary responsibility of environmental stewardship shall be equally shared by all Alexandrians.

CHARTER PRINCIPLE: ECO-CITY CHARTER ROLES AND RESPONSIBILITIES

The Eco-City Charter serves as a guide for moving the city towards a sustainable future. Fulfilling this Charter requires coordinated participation and commitment by the EPC, City government, and the community. The Charter's success depends on each of these parties taking an active and innovative role as stewards and guardians of this Charter's principles and vision.

While each of the previous EAP chapters contain specific implementation ideas and action steps, the Implementation Chapter focuses its activities on the following six sustainability sectors:

1. Civic Sustainability—developing outreach and education programs and resources for citizens, school, etc. and building the necessary nonprofit and community infrastructure to share implementation responsibility with city leaders and staff

2. Business Sustainability—cultivating and organizing a new Eco-City business sector for Alexandria that could provide green businesses and green collar jobs

3. Financing Sustainability—identifying new sources of revenue and adapting existing public and nonprofit resources to finance and fund Eco-City activities

4. City as Sustainability Leader—ensuring that City operations, facilities and programs also follow the sustainability visions and principles of the Charter

5. EPC roles and responsibilities—identifying activities for EPC and refining its structure and approaches towards implementation of the EAP.

6. Regional Sustainability—developing partnerships with adjacent communities that share the same water, air, and commute sheds, etc.

*Denotes actions already underway

Goal 1:

Provide education and outreach to citizens and local schools and increase community participation to help achieve environmental goals and objectives.

Short-Term Actions (2009-2011)

- Hire an additional staff person to work on environmental education and outreach on Eco-City objectives.
- Establish Internet education and participation resources and tools, including an Eco-City blog.
- Draft an Eco-City Outreach Plan for EPC and City staff.
- The City and EPC will conduct face-to-face meetings with major community and neighborhood groups to raise awareness about and support for Eco-City Alexandria.
- The City and EPC will conduct an Open House on Eco-City Alexandria.
- Engage a broad range of stakeholders – citizens, schools, nonprofit organizations, civic associations, religious organizations, and private partners – to become volunteers in activities to protect, restore, and educate citizens about the city's natural resources such as water monitoring, stream and park clean-ups, restoration projects, inner-city outings, and removal of invasive species and planting trees.
- Develop GIS "green" maps for outreach and education purposes, such as environmentally-related City projects, services, alternative transportation, restoration projects, and air quality.*
- Develop and implement a plan to target volunteer support for implementing Environmental Action Plan projects.*
- Increase collaboration and participation with other City boards and commissions.
- Coordinate Eco-City volunteering with other city events, such as Spring for Alexandria, and other activities beyond Earth Day.*

*Denotes actions already underway

Mid-Term Actions (2012-2020)

- Design and develop an Eco-City Alexandria Outreach and Education Center where Eco-City activities could be held for EPC, City staff, and local schools; the Eco-City Center could also house demonstration activities and workshops for home and business owners to learn how they can make their properties and operations more sustainable.
- Identify 2-3 Alexandria civic/home owner associations to work with each year as Eco-City Adopt a Neighborhood that could pilot test innovative elements/aspects of the Environmental Action Plan.
- Explore possible partnership with Arlingtonians for a Clean Environment (ACE) to expand into Alexandria or charter separate entity.
- Create an inventory of existing partnership organizations and nonprofits and their sustainability/green activities and programs that could become potential partners for a citywide Eco-City nonprofit network.
- Implement an Eco-City outreach strategy for the EPC, City staff and other partners and adopt an annual list of collaborative and separate activities.
- Work with ACPS and private schools in Alexandria to focus on the greening of school facilities and operations, and to help provide resources for curriculum development, awards, and extracurricular activities about sustainability.
- Expand an asset map of all existing green/sustainability places and activities (City, civic, and business) using GIS and make it accessible to the general public via the web and other vehicles.
- Create a formal group of citizen volunteers to work with EPC and City staff through various working groups and task forces (e.g., Eco-City Ambassadors or Stewards).
- The Partnership for a Healthier Alexandria will work with EPC to continue connecting environment and health efforts and developing initiatives related to the Eco-City recommendations.

*Denotes actions already underway

Goal 2 - Business Sustainability:

Provide education and outreach to local businesses and related organizations to help achieve environmental goals and promote the development of green jobs and businesses within the city.

Short-Term Actions (2009-2011)

- Establish a series of Open House events for businesses to showcase their application of green practices to other businesses and citizens, and to provide networking opportunities.
- Establish internet education and participation resources and tools for providing information on green business practices.*
- Establish a leadership group of business organizations, managers, and owners to lead business community efforts to help achieve the City's environmental goals and objectives..
- Examine the feasibility of establishing a Green Business certification program for one or more business sectors within the city.
- Examine the feasibility of leveraging the city's restaurant, hospitality, and tourism industries by combining green business practice standards and accomplishments with marketing initiatives.
- Create an Eco-City Award to recognize outstanding sustainability efforts by members of the city's business community.*
- Identify and support public-private partnerships in order to create the foundation for the development of a green workforce in the city.

Mid-Term Actions (2012-2020)

- Take inventory of existing businesses practicing sustainability, and develop a directory for consumers and other companies.
- Partner with the Alexandria Food Safety Advisory Council and other partners to develop an "Eco-Friendly Food Initiative" for restaurants and grocery stores and provide incentives for businesses to participate in the program.
- Establish a green business network through the Alexandria Economic Development Partnership (AEDP), Inc., Chamber of Commerce, and others, that is designed to market green businesses in Alexandria (especially the restaurant and tourism industry).
- Establish green business certification, standards, and awards programs.
- Develop a green zoning overlay to critically evaluate potential sites and industries and begin the process of green job incubation.
- Develop a green business attraction and development strategy that offers appropriate incentives and technical assistance to help establish a green economy in Alexandria.

*Denotes actions already underway

Goal 3 - Financing Eco-City/EAP Activities:

Identify and promote action steps for increasing financial investment in sustainability.

Short Term Actions (2009-2011)

- Estimate financial investments necessary to undertake major environmental action plan steps.
- Form a task force of stakeholders to examine the means and consequences of implementing economic measures such as tax incentives and disincentives, subsidies and fees to increase the City's resources that support sustainability initiatives and foster changes in citizens' behaviors.
- Meet with City Council, staff, and public to explore establishment of an Eco-City Fund that would provide money for citizens at below-market interest rates for sustainability projects such as green home improvements within the city.

Mid-Term Actions (2012-2020)

- Seek authority to establish a menu of sustainability financing mechanisms, such as carbon or utility taxes and user fees, such as "pay as you throw."
- Link traditional City taxes and fees (e.g., stormwater, parking permits, property taxes, etc.) to sustainability performance, with lower taxes and fees for more sustainable homes, vehicles, etc.
- Provide homeowners and businesses with incentives to install a variety of sustainability technology (from energy efficiency and generation to low impact development and green infrastructure).
- Issue Eco-City bonds to fund the implementation of EAP actions.
- Ensure CIP expenditures are consistent with Eco-City principles and help implement Environmental Action Plan.

Goal 4 - City as Sustainability Leader:

Continue steps to improve the City's own green culture as an example for all Alexandrians to follow.

Short-Term Actions (2009-2011)

- Continue institutional and funding support for the Eco-City process, including maintaining a collaborative relationship between the City, EPC, Virginia Tech, and the public to secure the advancement of the principles agreed to and adopted in the Eco-City Charter.
- Increase City staff knowledge of and coordination on environmental activities.
- Hold a retreat for City staff to discuss sustainability efforts.
- Establish a volunteer program to enlist City employees in helping meet environmental objectives in City operations.
- Develop a City "Green Purchasing Policy" that includes materials such as bio-based, recycled, and environmentally preferable products.

*Denotes actions already underway

Mid-Term Actions (2012-2020)

- Create an Eco-City Coordinator's position to help coordinate with all City departments in the implementation of Eco-City plan.
- Institute a green purchasing program for the city, and advocate the adoption of its standards to the private sector.
- Require special events in the city to be eco-friendly and set forth sustainability requirements in the City's Special Events Policy. [11]

Goal 5 - EPC Roles and Responsibilities:

The Environmental Policy Commission, in collaboration with the Office of Environmental Quality, monitor, measure, and report on the implementation of the Environmental Action Plan and refine it as circumstances and conditions change.

Short Term Actions (2009-2011)

- Re-examine EPC's composition and membership with respect to new Eco-City demands.
- Invite input and participation on Earth Day Committee by members of local high school environmental clubs.
- The City and EPC will prioritize and develop a process and structure for EPC input and participation in the activities of other volunteer committees, including, but not limited to, those working on Small Area Plans, budget and financial affairs, transportation, waterfront, planning and zoning, industrial development, parks and recreation, public health, and water quality.
- The City and EPC will establish an annual report card on key environmental quality and performance metrics, and on action steps accomplished by the City and will publish these results.
- The EPC will work with the City to provide prioritized EAP action items depending on available resources.

Mid-Term Actions (2012-2020)

- Update EAP every five years and the Eco-City Charter every ten years as per the Eco-City Charter and revise each as is necessary.

Goal 6 - Regional Relationships and Partnerships:

Establish policies and processes that foster regional collaboration on sustainability programs and projects with Alexandria's neighboring jurisdictions, the regional council of governments, and the federal government.

Short Term Actions (2009-2011)

- Review existing regional plans and programs to determine if they align with the Eco-City Action Plan and where they do, establish regular communications for information sharing and action with state, regional, and federal partners (e.g., Metropolitan Washington COG, Northern VA Transportation Authority, and Northern VA Regional Commission, U.S. agencies) and adjacent jurisdictions (e.g., Fairfax and Arlington County).

[11] See also Solid Waste Goal 2.

*Denotes actions already underway

Mid-Term Actions (2012-2020)

- Strive to meet the USCM Mayors Climate Protection Agreement goals and similar goals set by the MWCOG related to emission reductions.
- Coordinate with neighboring jurisdictions to explore the possibility of implementing a curbside organic waste recycling program.

*Denotes actions already underway

APPENDIX # 1: TARGETS BY DATE

The Environmental Policy Commission (EPC) also set "discussion" targets for each principle as a way to lay the groundwork about performance measures and eventual development of an EAP Score Card. Note the targets in the current draft include measures from existing plans or preliminary numbers to merely generate reactions and further discussion.

2010:

- By 2010, obtain a funded OEQ outreach position to manage MS4 and Eco-City outreach.
- By 2010, the City will purchase 5% of electricity needs through green certificates.

2011:

- Reduce fugitive emissions from the ash loading operations at Mirant Potomac River Generating Facility by 25% and coal yard operations by 20% by December 2011.

2012:

- By 2012, 95% of the restaurants in Alexandria will be totally smoke-free.
- Beginning in 2012, reduce the number of Daily Vehicle Miles Traveled (VMTs) on a per capita basis by 5% every five years.
- By 2012, reduce Business As Usual (BAU) emissions by 10% below 2012 level[1].

2013:

- Reduce stack PM emissions by a minimum of 20% by December 2013 at Mirant Power Generating Station.
- By 2013, establish mechanism for long-term dedicated funding for the purpose of maintaining and improving stormwater infrastructure.
- By 2013, preserve and/or acquire the remaining 35 acres of open space to complete 100-acre goal of the Open Space Master Plan[2].

2015:

- By 2015, complete Cameron Run Master Plan.
- By 2015, a 10% reduction in per-capita water consumption as estimated from wastewater volume conveyed from the city to treatment facilities.
- By 2015, reduce the per capita energy use in Alexandria by 15%.
- By 2015, track energy use of 30% of multi-family residence units.
- By 2015, ensure that all plantings on City property are non-invasive and incorporate native Plants.
- By 2015, design and install a pedestrian bridge to link Arlington and Alexandria sides of Four Mile Run.

[1] Business As Usual (BAU) targets in this section are based on targets set by Metropolitan of Washington Council of Governments (MWCOG).

[2] This target is in the Open Space Master Plan.

2020:

- By 2020, increase the number of commuters who use public transportation alternatives by 25% using 2000 Census data as the baseline.
- By 2020, all new buildings to achieve LEED Gold standards[3].
- By 2020, 60% of all existing buildings achieve a 20% energy consumption reduction.
- By 2020, complete 90% of the in-stream portion of the Four Mile Run Master Plan.
- Retrofit 70% of feasible City facilities with BMPs by 2020 and explore water reuse operations.
- By 2020, 80% of the workplaces in Alexandria employing more than 25 persons will be totally smoke-free.
- By 2020, 25% of the City's energy portfolio will consist of clean, renewable energy sources.
- By 2020, achieve 40% tree canopy coverage.
- By 2020, exceed the goal of 35% diversion through increased waste reduction and reuse.
- By 2020, increase the recycling rate to achieve a goal of 50%.
- By 2020, reduce emissions by 20% below 2005 level[4].

2025:

- By 2025, existing City buildings in the aggregate are 25% more energy efficient.
- By 2025, all new buildings will achieve LEED Platinum standards[5].
- By 2025, 50% of the restaurants and grocery stores in Alexandria will qualify for designation as eco-friendly restaurants or grocery stores.
- By 2025, 50% of commercial buildings where more than 25 persons are employed will be participating in the Healthy Work Places program.
- By 2025, track energy use of 60% of multi-family residence units.

2030:

- By 2030, create three high capacity transit corridors as set forth in the 2008 Transportation Master Plan.
- By 2030, increase the number of non-single occupant vehicle (SOV) commuting trips to 50%[6].
- By 2030, all new buildings will be carbon neutral[7].
- Retrofit 100% of feasible City facilities with BMPs by 2030.
- By 2030, 25% of Alexandria children will walk or cycle to school

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[3] Reformatted from EPC GB Work Team from a goal to target; date changes from 2018 to 2020 for consistency and moved from Platinum to Gold at the ECG meeting

[4] Business As Usual (BAU) targets in this section are based on targets set by Metropolitan of Washington Council of Governments (MWCOG).

[5] Proposed at ECG meeting to have a phase in period from LEED Gold to Platinum to Carbon Neutral

[6] Using 2009 Metropolitan Washington Council of Governments survey data as baseline

[7] Lack of consensus on 1) whether the building should be just carbon neutral or emission free; at ECG meeting the group consensus was to set target for 2030 and not 2020.

2030 (con't):

- By 2030, increase the number of non-single occupant vehicle (SOV) commuting trips to 50%[8].
- By 2030, the percentage of Alexandria children and adults that are overweight or obese will have been reduced to less than 29% (currently 58%).
- By 2030, the incidence of asthma in Alexandria will be reduced by 50%.
- By 2030, 50% of the City's energy portfolio will consist of clean, renewable energy sources.
- By 2030, track energy use of 100% of multi-family residence units.
- By 2030, ensure that 25% percent of all Alexandria school children get to and from school by walking or riding bicycles.
- By 2030, ensure that 50% percent of Alexandrians commute to work by non-SOV means.
- By 2030, reuse the site of the coal-fired power plant.

2050:

- By 2050, 80% of the City's energy portfolio will consist of clean, renewable energy sources.
- By 2050, reduce emissions by 80% below 2005 level[9].

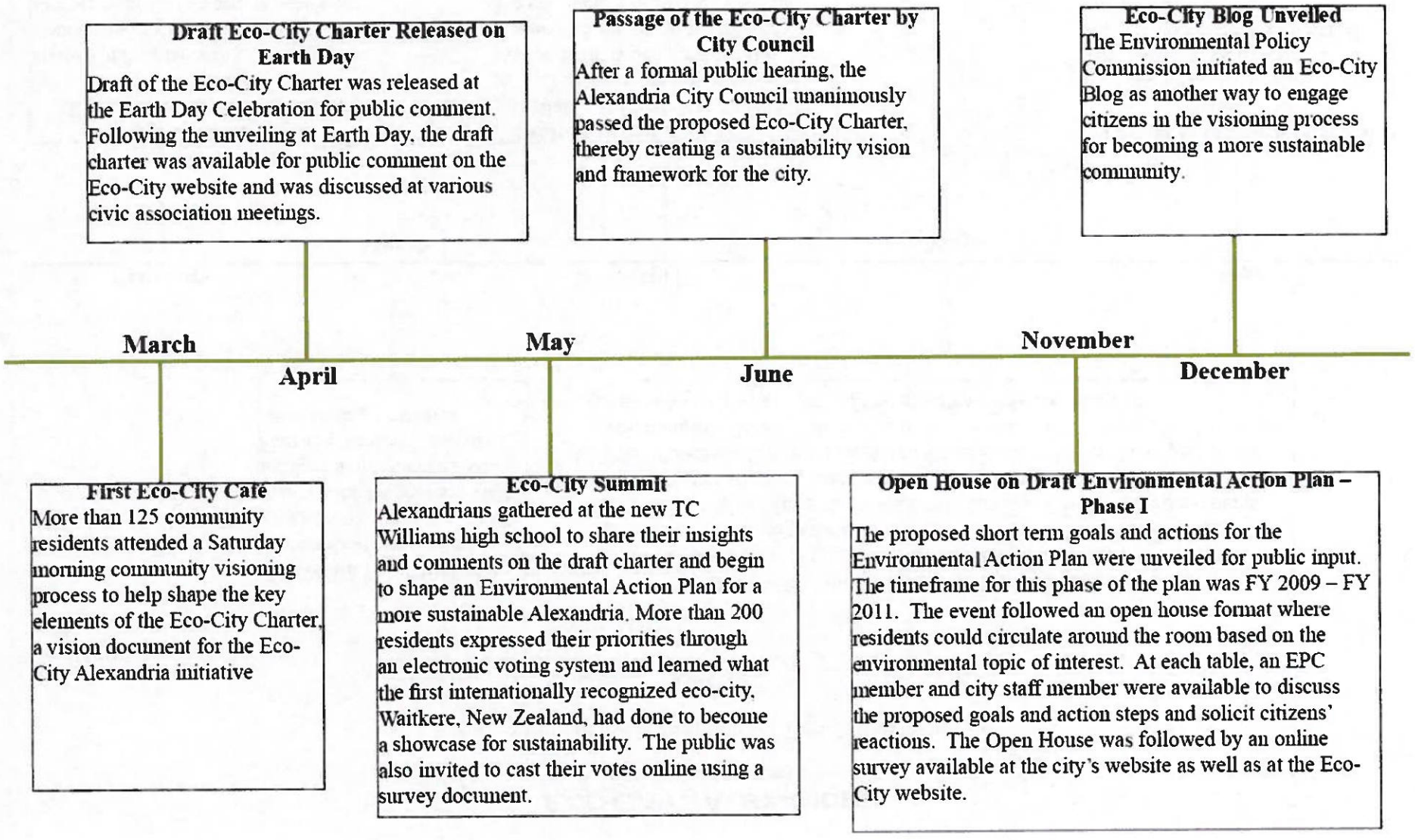
[8] Using 2009 Metropolitan Washington Council of Governments survey data as baseline

[9] Business As Usual (BAU) targets in this section are based on targets set by Metropolitan of Washington Council of Governments (MWCOG).

ECO-CITY ALEXANDRIA
environment | economy | community

Public Engagement Timeline for Eco-City Alexandria

2008



ECO-CITY ALEXANDRIA
environment | economy | community

Public Engagement Timeline for Eco-City Alexandria

2009

February

Passage of Phase I of the Environmental Action Plan by City Council
Phase I of the plan was passed by City Council and focused exclusively on the short-term goals and actions which are slated to be completed by the end of FY 2011.

March

Second Eco-City Café
A second café was held one year later to obtain community input on the longer term vision for the Environmental Action Plan and the development of cross-cutting strategies.

April

Draft Environmental Action Plan Available at Earth Day Celebration
A draft of the entire Environmental Action Plan, which included the Phase I goals and actions, was presented to the community at the city's annual Earth Day celebration. Citizens were encouraged to submit their comments or attend the May Open House event to voice their opinions.

May

Open House on the Draft Environmental Action Plan
The last public event for the Eco-City initiative prior to finalization of the plan and submission to the City Council was a second Open House which was held on May 11th at the new Charles Houston Center. Dr. Sfier-Younis, an internationally recognized environmental economist, discussed the critical role of elected officials and individual citizens in reducing the impact on the environment. As a former representative to the United Nations, he also offered his views on how to successfully create a world-class Eco-City.

June

Passage of the Environmental Action Plan 2030 by City Council
The Alexandria City Council will consider the Environmental Action Plan 2030 at their June 13th meeting and if adopted, it will become a guiding document for environmental action and sustainability for the next 21 years.

This matrix is a compilation of existing and adopted city plans that address related issues to those of the Environmental Action Plan, such as water quality, land use planning, and transportation. In order to maintain consistency and clarity, the plans have been organized according to the diagram of Constellation of Plans.

Constellation of Plans
City of Alexandria

Document Name	City Department	Adoption Date	Document Link	PDF
2004-2015 Strategic Plan	**City Council**	**14-Sep-04**	http://alexandriava.gov/council/info/default.aspx?id=4538	http://alexandriava.gov/uploadedFiles/council/info/strategicplan.pdf
Goals	Quality development and redevelopment that is well planned and consistent with Alexandria's vision.			
	A city that respects, protects and enhances the natural environment.			
	An integrated, multi modal transportation system that gets people from point "a" to point "b" efficiently and effectively.			
	A strong city economy that is growing in varied small businesses and job opportunities.			
	A caring community that is diverse and affordable.			
	The city government is financially sustainable, efficient and community oriented.			
	In partnership with the Alexandria City Public Schools that are among the best in Northern Virginia.			
Alexandria Open Space Plan	**P&Z and RPCA**	**25-Jun-05**	http://www.alexandriava.gov/planning/info/default.aspx?id=7806	http://www.alexandriava.gov/uploadedfiles/recreation/info/OpenSpacePlan.pdf
Goals	Goal 1. Protect and enrich existing parks			
	Goal 2. Develop innovative opportunities for creating additional open space			
	Goal 3. Review and complete implementation of the Potomac River Waterfront Plan and include additional parkland where appropriate			
	Goal 4. Protect, expand, and connect stream valleys and other environmentally sensitive areas			
	Goal 5. Create an open space network in new development areas			
	Goal 6. Protect and preserve institutional open space			
	Goal 7. Maximize use of public school open space areas			
	Goal 8. Preserve and protect cemeteries			
	Goal 9. Create public open space from vacant land			
	Goal 10. Link and expand pedestrian, bicycle and trail system			
	Goal 11. Enhance streetscapes and gateways			
	Goal 12. Expand citywide street tree program and protect existing trees and woodland areas			
	Goal 13. Encourage the creation of Civic Parks at and adjacent to Metro stations			
	Goal 14. Beautify interchanges and highway corridors			
	Goal 15. Protect privately owned open space			
Strategic Master Plan for Parks, Open Space & Recreation	**RP&CA**	**NA**	http://alexandriava.gov/recreation/info/default.aspx?id=12966	http://alexandriava.gov/uploadedFiles/recreation/info/StrategicMasterPlan.pdf
Goals	Open Space	1. Assist in the development of an Alexandria Open Space Public/Private Advocacy Group. An additional 100 acres of open space should be acquired in the next ten years to ensure the current 7.5 acres per 1,000 residents is maintained.		

	2. Connect the community through an effective trails system by developing fifteen miles of new trails in the next ten years.
	3. Establish equal opportunity/proximity to parks, recreation facilities and programs, citywide. Parks and a recreation facility are needed in the far west end of the city.
	4. Assist in developing innovative opportunities for creating additional open space with other city departments and citizens.
	5. Protect and enhance the urban forest and beautification of the city.
	6. Protect and enrich existing parks.
	7. Provide the highest level of safety in parks and recreation facilities.
	8. Assist in the implementation and completion of the Potomac River Waterfront Plan as it relates to public park land.
	9. Assist in protecting and expanding stream valleys and other environmentally sensitive areas.
	10. Assist in maximizing use of public school open space areas to satisfy local needs.
	11. Assist in enhancing streetscapes and gateways.
	12. Continue to explore funding options for acquisitions and protection of properties.
Parks	1. Provide the highest level of safety in parks by creating maintenance standards for all assets within the parks and recreation system.
	2. Develop design standards and guidelines for renovation and the development of new parks and facilities based on actual and emerging user demands.
	3. Acquire more land for game fields for both adults and youth.
	4. Manage existing capacity of fields.
	5. Seek more user investment to offset maintenance costs of fields when user groups want higher levels of maintenance above what the city is currently providing.
	6. Acquire land for parks in under served areas of the city for neighborhood parks, especially in the west end of the city.
	7. Encourage private sector acknowledgment of their role in providing more parks in high-density areas.
	8. Enhance open space requirements for new developments.
	9. Curtail granting of encroachments in RPA's and adjacent areas.
	10. Increase partnership teams with schools, private institutions and the city to design solutions for new and renovated properties.
	11. Improve infrastructure of some parks by investing $10,000 per acre for lighting, drainage, parking, irrigation and fencing.
	12. Enhance existing park maintenance partnerships.
	13. Create a dedicated funding source for capital improvements, and land acquisition.
Recreation Facilities	1. Explore the feasibility of enlarging Chinquapin Recreation Center to become the multigenerational center the residents desire.
	2. Begin planning for the renovation of Patrick Henry and Charles Houston Recreation Center.
	3. Explore the feasibility of acquiring property and constructing a new neighborhood recreation center on the city's west side to support its population density.
	4. Develop feasibility studies and business plans for each new or renovated recreation facility. This will achieve the maximum usage and productivity of each center. These studies will match program needs of the neighborhoods served by the facility.
	5. Create design standards for indoor and outdoor recreation facilities to maximize its resources used by the greatest number of users.
	6. Through effective partnerships with schools and other public and private agencies, the city could increase recreation space both indoor and outdoor to support the recreation needs of youth and adults. This will require all partners be involved in the planning process of new or renovated indoor and outdoor recreation space.
	7. Where appropriate, develop a free or subsidized recreation rider program to support user access to all recreation centers in the city to support greater access and usage.

	Recreation Programming	1. Establish Core and Non-Core programs. The staff must set consistent standards for how programs are delivered and define methods they will use for evaluating user satisfaction for the services provided.		
		2. Create a pricing philosophy and standards for all departmental programs and services, city wide. To accomplish this, staff needs to review the true costs of services in terms of benefits received. This will require the city to update its pricing policy as well as to seek new earned income opportunities to offset operation costs. This may require the city to partner with the private or not-for-profit sector to assist in delivering programs while maintaining low user fees. A grant writer would assist the department in additional funding opportunities.		
		3. Establish customer service standards for all operations.		
		4. Establish citywide communication standards to encourage participation in programs and events for all age groups.		
		5. Enhance evaluation methods and maintain statistical records to support programming opportunities.		
		6. Enhance partnership opportunities to assist in offering recreation opportunities to a broader range of citizens.		
	Administrative	1. Review and update all department policies every five years to support the goals of the department and to maximize public access to services.		
		2. Develop technology standards that provide for efficiency of operations and service delivery.		
		3. Provide volunteer opportunities in the department that provide lifetime experiences for members of the community when they volunteer their services. A dedicated staff person should oversee the volunteer opportunities.		
		4. Enhance human resource standards through licensing, accreditation, certification and training of personnel.		
		5. Enhance private or not-for-profit partnerships that provide services beyond the city's capability and/or for efficiency purposes.		
		6. Enhance and support the role of commissions, committees and advisory groups to maintain a constant flow of information both into and out of the Department.		
Land Use	**P&Z**	**24-Jun-92**	http://alexandriava.gov/planning/info/default.aspx?id=7518	http://alexandriava.gov/WorkArea/showcontent.aspx?id=7448
Goals	To have a harmonious set of land uses that preserves the predominant character of Alexandria as a city of residential neighborhoods with a lively and attractive mix of commercial, institutional and community facilities, and recreational activity, and maintains an appropriate economic base.			
	To preserve and enhance residential neighborhoods.			
	To preserve and enhance the historic aspect of the city.			
	To preserve the residential and commercial diversity which has historically characterized Alexandria.			
	To preserve and increase parkland (for both active and passive uses) and open space throughout the city.			
Four Mile Run Master Plan	**NVRC**	**Mar-06**	http://www.novaregion.org/index.asp?NID=215	http://www.novaregion.org/DocumentView.asp?DID=116
Guiding Principles	Flood Protection	Provide a minimum 100-year event flood protection.		
		Examine the current extent of the 100-year flood-prone area.		
		Consider flood protection for areas not currently protected.		
	Environment	Create a "dynamically stable stream channel" using natural stream channel design techniques.		
		Improve corridor habitat and ecology to support native terrestrial and aquatic plant and animal species.		
		Develop upstream strategies to improve water quality in the stream and the environmental quality and long-term viability of a restored levee corridor.		
	Aesthetics & Design	Improve overall corridor aesthetics and viewshed opportunities.		
		Encourage urban design that develops the corridor's aesthetics and reflects the excitement of the watershed citizenry for this resource.		
		Incorporate "green design" principles for all design and development activities within and adjacent to the corridor.		
		Incorporate innovative and creative urban design and watershed solutions.		
	Recreation and Urban Life	Enhance existing recreational opportunities.		
		Create new recreational opportunities that afford interaction with the waters of Four Mile run.		
		Develop urban life opportunities along the Four Mile run corridor.		

		Encourage appropriate siting of recreational facilities in the context of the overall project goals.		
	Integration & Balance	Connect the project to the efforts underway in the watershed to improve the water quality of Four Mile run.		
		Entegrate the corridor with surrounding communities and proposed adjacent urban development efforts.		
		Create a balance between the natural elements of a restored corridor and urban activity areas in order to generate a lively, safe and well-used public resource.		
		Coordinate with other ongoing planning activities. such activities include the Four Mile run tMdl/implementation Plan, the local Chesapeake Bay Preservation Act programs, the Potomac tributary strategies, affordable housing initiatives, master planning efforts such as the Arlandria and Shirlington planning efforts, and other planning and economic development Initiatives.		
	Access & Connectivity	Create a place for people to reconnect with water and nature within an urban context.		
		Increase pedestrian and bicycle access and amenities.		
		Increase connectivity between the two communities.		
		Enhance the corridor's effectiveness as a non-motorized and mass transit corridor.		
	Education & Interaction	Provide interpretive opportunities to educate and inform the public about the stream corridor.		
		Stress the Interrelatedness of positive individual, institutional, and political actions and behavior changes with improved water quality and habitat in the corridor.		
	Planning Horizon	Think big—create a plan that provides the parameters for change over time as opportunities become available.		
		Provide a mix of short-term discrete improvements blended with long-term large-scale corridor changes.		
Urban Forestry Master Plan				
Goals	Develop an integrated, coordinated approach to the management of the urban forest that is supported by all concerned organizations, City departments, businesses, developers, community and civic groups, and citizens.			
	Ensure that the protection and management of the urban forest are citywide priorities.			
	Achieve the goals and carry out the implementation strategies of the Open Space Plan, the Recreation, Parks, and Cultural Activities Strategic Plan, and the 1992 Master Plan related to landscape trees and urban forest ecosystems on major transportation corridors, boulevards and parkways, other City streets, parks, plazas, natural open spaces, and school properties.			
	Secure sufficient funding and management resources to maintain and enhance the urban forest.			
	Assure that the urban forest is sustainable by maximizing and expanding the urban tree canopy through tree planting to produce a multi-aged and diverse tree community.			
	Enact the Plan's recommendations using education as the primary means of implementation, incentives as the next, and regulations as the last resort			
	Develop a plan that is adaptable and responsive to change, providing recommended benchmarks and schedules for implementation.			
Water Quality Management Supplement	**T&ES**	**13-Jan-01**	http://www.alexandriava.gov/tes/info/default.aspx?id=3876	http://www.alexandriava.gov/uploadedFiles/tes/info/Alexandria_Water_Quality_Master_Plan.pdf
No goals specified in plan.				
Environmental Management Ordinance (Article XIII)	**P&Z**	**11-Apr-06**	http://alexandriava.gov/tes/info/default.aspx?id=3844	http://alexandriava.gov/uploadedFiles/tes/info/Article_XIII_2006.pdf
Purpose	(A) It is the policy of the City of Alexandria, Virginia to protect the quality of water in the Chesapeake Bay and its tributaries and, to that end, to require all land uses and land development in the City to:			
	(1) Safeguard the waters of the Commonwealth from pollution;			
	(2) Prevent any increase in pollution of state waters;			
	(3) Reduce existing pollution of state waters; and,			
	(4) Promote water resource conservation.			
Holmes & Cameron Run Restoration Plans				
Plan does not exist.				

Plan to Improve Air Quality in the Washington DC-MD-VA Region	MWCOG (Air Quality Committee)	7-Mar-08	http://www.mwcog.org/environment/air/	http://sharepoint.mwcog.org/airquality/Shared%20Documents/Forms/AllItems.aspx
Goals/Benchmarks	Total reductions by 2009 of 599 tons/year of PM2.5-Direct.			
	Total reductions by 2009 of 77,330 tons/ year of nitrogen oxides (NOx).			
	Total reductions by 2009 of 23,615 tons/year of sulfur dioxide.			
15 Small Area Plans	P&Z		http://alexandriava.gov/planning/info/default.aspx?id=7518	
Description	Alexandria West; Braddock Road Metro Station; Eisenhower East; Fairlington/Bradlee; Hunting Creek; King Street/Eisenhower Ave; Landmark/Van Dorn; Northeast; Northridge/Rosemont; Old Town; Old Town North; Potomac West; Potomac Yard/Potomac Greens; Seminary Hill/Strawberry Hill; SW Quadrant; Taylor Run/Duke St			
Alexandria Master Plan (Small Area Plans and City Element Chapters)	P&Z	24-Jun-92	http://alexandriava.gov/planning/info/default.aspx?id=7518	http://alexandriava.gov/WorkArea/showcontent.aspx?id=7444 (goals & objectives)
	Element Chapters: Demographics; Goals & Objectives; Historic Preservation; King St Retail Strategy; Land Use; Old Town North Urban Design Guidelines; Open Space Plan; Ped/Bike Mobility Plan; Strategic Master Plan for Recreation, Parks & Cultural Activities; Transportation; Urban Design; Waterfront Plan			
Historic Preservation	P&Z	24-Jun-92	http://alexandriava.gov/planning/info/default.aspx?id=7518	http://alexandriava.gov/WorkArea/showcontent.aspx?id=7446
Goals	To identify historic resources throughout Alexandria.			
	To protect and preserve historic resources through sensitive management that prevents their destruction, damage and neglect.			
	To guide development in a manner that is compatible with the historic character and resources of the site and surrounding neighborhood.			
	To promote public awareness and appreciation of historic resources and Alexandria's heritage.			
Urban Design	P&Z	24-Jun-92	http://alexandriava.gov/planning/info/default.aspx?id=7518	http://alexandriava.gov/WorkArea/showcontent.aspx?id=7442
Alexandria Waterfront Plan (Master Plan Amendment)	P&Z	16-Oct-82	http://alexandriava.gov/planning/info/default.aspx?id=7518	http://alexandriava.gov/WorkArea/showcontent.aspx?id=7456
King Street Retail Strategy	P&Z	1-Jun-07	http://alexandriava.gov/planning/info/default.aspx?id=7518	http://alexandriava.gov/WorkArea/showcontent.aspx?id=6978
Goals				
Old Town North Urban Design Guidelines	P&Z	17-Sep-94	http://alexandriava.gov/planning/info/default.aspx?id=7518	http://alexandriava.gov/WorkArea/showcontent.aspx?id=7438
Goals				

Healthy Lifestyle Strategies Recommendations		NA (Oct-06 Recommendations)	http://www.alexhealth.org/partnership/key_documents.html	http://www.alexhealth.org/partnership/hl_potential_strategies.pdf
Recommendations	Community (Nutrition/Physical Activity)	A1. Provide "point-of-decision" prompts to encourage stair use at worksites or in public places with stairs (could also include improvements with paint, carpeting, motivational signs, artwork and music in stairwells).		
		A2. Implement social support interventions by creating or working within existing social networks in a social setting outside the family.		
		A3. Implement large-scale, community-wide campaign to promote physical activity and healthy food choices.		
		A4. Implement urban design and land use policies and practices to increase physical activity.		
		A5. Create enhanced community access to places for physical activity and conduct outreach to make community residents aware these are available for public use (e.g., school gyms and fields for after school and weekend activities for persons of all ages; before-hours shopping malls or other stores open for walking; increased access to community recreation centers or walking trails).		
	School (Nutrition/Physical Activity)	A6. Increase daily physical education for grades K-12, including students with disabilities, special health-care needs, and in alternative educational settings.		
	Community (Tobacco)	A7. Continue *Proud To Be Smoke Free* Program with Alexandria restaurants, to promote adoption of smoke-free restaurant policies.		
		A8. Conduct mass media "social norm" campaign to reduce initiation of tobacco use and increase cessation and send the message that smoking is not an acceptable or normative behavior of among youth.		
	Health Care (Tobacco)			
	Community	B1. Create an inventory of the existing physical activity, nutrition and tobacco related programs and activities.		
		B2. Provide "point-of-decision" prompts or nutrition labeling on menus / menu boards at restaurants to encourage purchase of healthy food items.		
		B3. City government and private businesses develop and implement policies to provide healthy foods and beverages for meetings, conferences and other events.		
		B4. Develop community gardening programs.		
	Worksite	B5. Provide Health Risk Assessments through wellness programs for employees at worksites.		
		B6. Improve access to fruits and vegetables by encouraging the establishment of community and worksite locations for produce stands and sales.		
		B7. Provide multi-component worksite interventions combining nutrition, physical activity and cognitive change.		
	School	B8. Reduce or eliminate foods with low nutritional value in cafeterias, food/drink vending machines, and snack bars on school campuses.		
		B9. Implement school-based physical activity programs and informational outreach activities, such as International Walk to School Day, Safe Routes to School programs, organized walking and biking clubs, etc.		
		B10. Encourage schools to lower the price of fruits, vegetables and other healthy foods/snacks to help promote their purchase.		
		B11. Provide health promotion opportunities for schoolteachers and staff to improve their health status through activities such as health assessments and education to serve as role models for students, encouraging a healthy and fit lifestyle.		
	Community (Tobacco)	B12. Educate parents on dangers of second hand smoke to children in homes and cars; provide information to youth sports teams/leagues.		
	Worksite (Tobacco)	B13. City government establishes and implements policy to only contract with restaurants for meetings, conferences and other events that have adopted voluntary smoke-free policy.		

	School (Tobacco)	B14. Implement strong parental component to complement existing youth prevention education programs (to increase level of involvement, encourage to participate in community efforts to prevent tobacco use and encourage/teach to discuss smoking with their kids).		
Comprehensive Transportation Master Plan	**T&ES**	**12-Apr-08**	**http://alexandriava.gov/tes/info/default.aspx?id=3088**	**http://alexandriava.gov/uploadedfiles/tes/info/tes_tmp_complete.pdf**
Guiding Principles	1. Alexandria will develop innovative local and regional transit options.			
	2. Alexandria will provide quality pedestrian and bicycle accommodations.			
	3. Alexandria will provide all its citizens, regardless of age or ability, with accessibility and mobility.			
	4. Alexandria will increase the use of communications technology in transportation systems.			
	5. Alexandria will further transportation policies that enhance quality of life, support livable, urban land use and encourage neighborhood preservation, in accordance with the City Council Strategic Plan.			
	6. Alexandria will lead the region in promoting environmentally friendly transportation policies.			
	7. Alexandria will ensure accessible, reliable and safe transportation for older and disabled citizens.			
Transportation Management Plans	**P&Z**	**16-May-87**	**http://www.alexandriava.gov/tes/info/default.aspx?id=6556&terms=transportation+management+plan**	
(Article XI, Division B, Development Approvals, Section 11-700 - Transportation Management Special Use Permits) Electronic plan not available.				
Pedestrian & Bike Mobility Plan	**T&ES**	**NA (20-Nov-07 DRAFT)**	**http://www.alexandriava.gov/localmotion/info/default.aspx?id=11418**	**http://alexandriava.gov/uploadedFiles/localmotion/info/BikepedMobilityPlan112007.pdf**
Goals	Overall Goal	Walking will be the safest, most convenient and enjoyable way to get around in Alexandria.		
	Concept Goal 1	Engineering: The City will provide a continuous, connected and accessible network that enables pedestrians—particularly children and those with mobility impairments—to move safely and comfortably between places and destinations.		
	Concept Goal 2	Encouragement: The City will encourage mobility for all pedestrians by removing barriers to accessibility and promoting walking as a means of improving health and active lifestyles.		
	Concept Goal 3	Education: The City will develop Safe Routes to School Programs and awareness initiatives that address pedestrian safety, rights and responsibilities.		
	Concept Goal 4	Enforcement and Safety: The City will create a safe pedestrian environment through effective law enforcement, detailed crash analysis and implementation of safety countermeasures.		
Solid Waste Management Plan	**T&ES**	**1-Jul-04**	**http://alexandriava.gov/tes/info/default.aspx?id=2824**	**http://alexandriava.gov/uploadedfiles/tes/info/solidwastemgmtplan.pdf**
Goals	Goal 1: Establish a planning process and document that meets Virginia statutory and regulatory requirements, that fosters public participation, and that ensures that the City's solid waste management needs will be			
	Goal 2: Identify and/or maintain mechanisms to ensure that needed solid waste collection services are available throughout the City.			
	Goal 3: Identify and provide for the availability of facilities to ensure that options for solid waste disposal are available throughout the City.			
	Goal 4. Identify, implement, and/or maintain programs for ensuring that solid wastes are managed in accordance with federal and State laws and regulations in a manner that protects public health, safety, and the environment.			
	Goal 5: Maximize diversion of recyclable solid waste from disposal by using techniques that provide and promote recycling programs and that encourage private sector recycling.			
	Goal 6: Ensure that those providing solid waste services meet standards of customer service excellence policies.			
Landscape Guidelines	**RP&CA**	**Apr-07**	**http://www.alexandriava.gov/recreation/info/default.aspx?id=12342&terms=dog+park+master+plan#LandscapeGuidlines**	**http://www.alexandriava.gov/uploadedFiles/recreation/info/040907_land_guidelines.pdf**
No purpose or goals clearly specified.				

Erosion & Sediment Control Ordinance	P&Z	16-Jun-07	http://www.alexandriava.gov/tes/info/default.aspx?id=3876	http://www.alexandriava.gov/uploadedFiles/tes/info/ESOrdinance.pdf
No purpose or goals clearly specified in the ordinance.				

APPENDIX # 4
GLOSSARY TERMS

Note: This glossary includes terms that appear in the Environmental Action Plan that may not be familiar to the average reader, as well as the names of relevant programs and initiatives (with hyperlinks included). This glossary offers brief, simple definitions of the terms. The names of specific plans (e.g., City of Alexandria's Open Space Plan) are not included.

GENERAL TERMS

Alternative transportation modes – transportation mediums that create a lower carbon footprint, including but not limited to public transportation, bicycles, and walking.

Best Management Practices (BMPs) – innovative and improved environmental protection practices that apply a systems management approach by evaluating the effectiveness of how individual practices, taken as a whole, improve environmental protection; BMPs are common to stormwater management and water quality, but can apply to other aspects of environmental management.

Board of Architectural Review (BAR) – a citizen panel that reviews applications in a historic district to alter, renovate, or demolish buildings; BARs enforce the architectural design guidelines of historic districts.

Bus Rapid Transit (BRT) – a permanent or semi-permanent public transportation system wherein buses run on roadways in lanes dedicated for their exclusive use. BRT systems can be free-standing, but are often integrated into a regional or statewide transportation plan

Capital Improvement Program (CIP) – a medium-range plan for developing, replacing, and managing public infrastructure.

Circulator Bus Routes – a bus route serving specific, well-known area(s) or neighborhood(s) with buses arriving at regular intervals.

Combined Sewer Overflow (CSO) – CSO results from heavy rainfall affecting combined sewer systems that collect rainwater runoff, domestic sewage, and industrial wastewater in the same pipe. Combined sewer systems transport all wastewater to a sewage treatment plant, where it is treated and discharged to a water body. During heavy rainfall, wastewater volume in such a system can exceed its capacity or that of the treatment plant, which results in the release of untreated water into the city's streams and waterways. CSOs are a major water pollution concern.

Complete Streets – roadways that are designed and managed to provide safe, attractive, and comfortable transportation options for all users. The use of the Complete Streets principles encourages streets to be redesigned to accommodate different streetscapes and transportation modes.

Compressed Natural Gas (CNG) – a fossil fuel substitute for gasoline or diesel. CNG is environmentally cleaner and safer than other fuels.

Community Garden – public or quasi-public space that citizens can lease to grow fruits and vegetables.

Congestion Mitigation – strategies to relieve automobile congestion at choke points or during rush hours; examples include tolls, High-Occupancy Vehicle (HOV) lanes, and High-Occupancy Toll (HOT) lanes.

Container Gardens – planters that are used to grow vegetables and fruits.

Crown Cover – usually expressed as a percentage, it defines the degree to which the full leafage of trees covers the area of the ground beneath it. American Forests recommends 40-percent minimum crown coverage for urban areas.

Eco-Sustainable Villages or Neighborhoods - communities with development patterns that exhibit the essential characteristics of mixed use, walkability, bikeability, transit convenience, low impact development, green infrastructure, and energy efficiency.

Edible Schoolyard – an organic gardening and landscaping program at schools that is wholly integrated into its curriculum, culture, and food program. By introducing students, teachers, and volunteers to the facets of farming, the program aims to stimulate participants to recognize the links between sowing, preparing, serving, and eating food and community and environmental sustainability.

Geographic Information System (GIS) – a collection of computer hardware, software, and data to capture, store, analyze, and display geographically based information.

Geothermal Closed-Loop Heat Pump Wells – wells that pump heat from the Earth to power a system of central heat or air conditioning for buildings.

Green Building – a system of techniques used to build structures that are environmentally friendly, such as green roofs, water-saving devices, and natural materials.

Greenhouse Gases (GHG) – gases that absorb and subsequently emit the heat reradiated back from the Earth toward space, causing the Earth to warm as if in a greenhouse. Common greenhouse gases in the Earth's atmosphere include water vapor, carbon dioxide, methane, nitrous oxide, ozone, and chlorofluorocarbons.

Green Infrastructure – a versatile term that describes a variety of products, technologies, and practices that use natural systems to enhance a community's environmental quality. Examples include an interconnected network of protected land and water resources, which support native species, maintain ecological processes, and contribute to the health and quality of life of community residents.

Green Roof – a roof system that features a high-quality waterproofing membrane and vegetation four to six inches deep. Green roofs absorb rainwater, insulate and cool buildings, and lower the ambient air temperature in the vicinity.

Green Taxi – a taxicab powered exclusively by clean special fuel. The types of fuels include: compressed natural gas, electricity, ethane, hybrid gasoline/electric, hydrogen, hythane, liquefied natural gas, liquefied petroleum gas, methane, solar, human powered, or a combination of two types of clean special fuels.

Historic Districts – areas of a city that have been designated historic by applicable laws and ordinances, to which special architectural guidelines and regulations concerning development apply.

Indoor Air Quality (IAQ) – the measurement of pollutants and particles inside buildings. Common sources of indoor air pollution include building materials, fossil fuels, tobacco, and mold.

Light Emitting Diodes (LED) – an electronic llight source that provides lower energy consumption, a longer lifetime, smaller size, and faster switching.

Low Impact Development (LID) – a planning and design approach to managing stormwater runoff, emphasizing conservation and natural features to protect water quality. The approach uses small-scale hydrologic controls of filtering, detaining, and storing water to replicate the pre-development hydrology of a watershed.

Municipal Separate Storm Sewer System (MS4) – systems that carry polluted stormwater runoff into local waterways. The Environmental Protection Agency has set water quality standards for treatment of urban stormwater before discharge.

Nitrogen Loading – the process by which nitrogen pollutes surface water and groundwater through agricultural and lawn runoff, fossil fuel burning, and other anthropogenic sources.

Non-invasive Plants – vegetation that is native to a given area.

Offgassing – the evaporation of volatile chemicals from such materials as paints, stains, carpets, insulation, flooring, and cabinets that can adversely affect indoor air quality.

Particulate Matter (PM) – a complex mixture of very small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles.

Pay as You Throw – a program that charges users for disposed trash by weight, volume, or number of bags/containers; such a program provides an incentive to reduce consumption and increase recycling and reuse.

Ppm (parts per million) – a common way to measure pollutant concentrations in air and water.

Pocket Park – a small park, sometimes less than ½ acre in size, that provides open space within an urban neighborhood.

Rain Barrels – barrels installed alongside buildings to capture rainwater runoff from roofs and gutters that would normally become stormwater runoff; water probably saved and maintained in the barrel can be used later for watering lawns and gardens.

Rain Gardens (also known as bio-retention cells) – a natural or artificial shallow depression containing water-absorbing soils and deep-rooted native plants and other similar types of vegetation to capture stormwater runoff. The garden and immediate areas are engineered to maximize collection of runoff from hard surfaces, like roofs, sidewalks, and driveways, and hold the water for a short period before allowing it to infiltrate naturally into the ground. It is a part of a community's green infrastructure.

Shared Parking – a parking area used by different customers during different times of the day or week, such as by office workers during the day and residents during the evening.

Smart Growth –an urban planning and transportation philosophy that concentrates growth in designated centers to avoid sprawl and maximize open space and critical environmental areas; it actively promotes compact, transit-oriented, walkable, bicycle-friendly land use, including neighborhood schools, complete streets, mixed-use development with a range of housing choices, to create distinctive, vibrant, and diverse communities.

Special Use Permit (SUP) – a permit that must be obtained to build in a community when any variation from the zoning ordinance is involved.

Stormwater Management – techniques for controlling runoff from weather events; in addition to drainage channels and storage, such techniques include rain gardens, high-efficiency irrigation, and permeable surfaces.

Tree Canopy – the aboveground cover of foliage that trees provide.

Tree Steward – volunteers dedicated to improving the health of trees in a community by providing educational programs, tree planting, and tree maintenance assistance.

Universal Design – the design of products and the physical environment so that they are accessible to everyone, not just persons with disabilities. The seven principles of the concept are: equitable use, flexibility in use, simplicity and intuitiveness, perceptible information, tolerance for error, low physical effort, size and space for approach and use.

Vehicle Miles Traveled (VMT) – the number of total miles traveled by all motor vehicles over a given time period in a given area. It is the most all-encompassing indicator of travel consumption.

Volatile organic compound (VOC) – indoor or outdoor organic chemical compounds that can vaporize and enter the atmosphere; methane is a common VOC.

ORGANIZATIONS, INITIATIVES, AND PROGRAMS

Air Quality Action Day

Alexandria Economic Development Partnership (AEDP)

Alexandria Flora Project

Alexandria Food Safety Advisory Council

Alexandria Public School System (ACPS)

Arlingtonians for a Clean Environment (ACE)

Congestion Mitigation and Air Quality Improvement Program

Corporate Average Fuel Economy (CAFE)

Earth Day Committee

Eco-City Charter

Environmental Health Work Group

EPA's Clean Cities Program

EPA's Water Sense Program

Healthy Work Places Program

International Code Council (ICC)

International Council for Local Environmental Initiatives (ICLEI)

Leadership in Energy and Environmental Design (LEED)

Living Landscape Fund

Local Motion

Master Gardeners Program

Mayors Climate Protection Agreement (USCM)

Metropolitan Washington Council of Governments

Mirant Potomac River Generating Station (PRGS)

National Ambient Air Quality Standard (NAAQS)

No Child Left Inside

Northern Virginia Transportation Authority

Northern Virginia Regional Commission

Regional Surface Transportation Program

Safe Routes to School

Stormwater Working Group

Tools 4 Schools

Virginia Pollutant Discharge Elimination Permit (VPDES)

This environmental action plan is the result of a collaborative effort between the City of Alexandria, its Environmental Policy Commission, and Virginia Tech's Urban Affairs & Planning Program in Alexandria.

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