



Environmental Action Plan EPC DRAFT April 25th, 2009

The Alexandria Environmental Policy Commission (EPC) and City staff are currently completing a draft Environmental Action Plan (EAP) that explains how Alexandria can address climate change, lead the new green economy, and continue its high quality of life while decreasing the City's carbon and ecological footprints. The EAP will serve as the road map for City leaders, staff, and citizens to implement Alexandria's [Eco-City Charter](#) (adopted by City Council on June 14, 2008) and move Alexandria further down the path of becoming a true Eco City.

Environmental Action Plan Process—Phase I (2008) and Phase II (2009).

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 more than 40 goals and 133 action steps to guide sustainability efforts through fiscal year 2011 (June, 30th 2011). Given the limits on the City's current budget, many of these programs and policies will leverage existing resources and staff. The City Council unanimously approved this preliminary Phase One plan in February 2009.

For *Phase Two* the EPC is designing an action plan based on the trends that Alexandria will likely face in the year 2030. The challenges of 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 recognizes the importance of retaining the historic charm and character of the city.

EPC members formed internal working teams that devised *Phase Two* EAP goals for each of the 10 Charter Principles. In collaboration with City staff, each team reviewed existing City plans, devised a menu of specific action steps, and set general targets. On March 19th, 2009, more than 75 citizens participated in the second annual Eco City Café offering suggestions and ideas on how to expand the *Phase Two* plan. On April 17th and 18th the EPC held a two-day retreat at Virginia Tech to refine these goals, compile the

mid- and long-range actions, and merge them together with the *Phase One* plan.

Public Feedback on the Draft EAP (April 25th-May 15th).

The City and EPC need your help in reviewing the draft EAP. Is anything missing? Do you support the proposed goals and action items? Are the targets reasonable? Does the EAP go far enough in moving Alexandria to its vision of becoming an Eco City by 2030? What are you willing to do to ensure that Alexandria reaches these important goals? Make sure you first review the Eco City Charter and draft action plan on <http://ecocity.ncr.vt.edu>

You can share your thoughts in person by attending the **EPC Open House, Monday evening, May 11th, from 6:00 to 9:00 pm at the new Charles Houston Recreation Center.** City staff, EPC members, and Virginia Tech students and faculty will be on hand at each event to get your comments and ideas. Members of the public can also provide feedback on the draft action plan by: 1) sending e-mails to ecocity@alexandriava.gov or a fax to 703-519-5941; 2) posting comments on the new Eco City Alexandria blog at <http://ecocityalexandria.wordpress.com>.

Tentative Environmental Action Plan Legislative Timeline.

4-25-09	Draft EAP released at the Alexandria Earth Day (public comment period opens)
5-15-09	Public comment ends
5-18-09	EPC finalizes all public comments and sends final draft to City Council
6-09-09	City Council to receive EAP at Saturday legislative session
6-13-09	City Council public hearing on EAP
6-23-09	Council adopts EAP at next legislative session

What is the Environmental Action Plan (EAP)?

The EAP is organized into two major sections: 1) Cross Cutting Strategies; and 2) Goals and Actions according to the Eco City Charter's 10 principles. It will eventually include a special cover report (*The Greenprint*), a glossary of sustainability terms, and three appendices: 1) Tracking Matrix of EAP Phase I Goals and Actions 2) Community Engagement Timeline and Matrix of Comments; 3) Matrix of Existing City Plans. The Action Plan also has a series of footnotes that explain the Environmental Policy Commission's rationale and discussions in setting these goals and actions along with cross references to cross cutting strategies and other relevant reports.

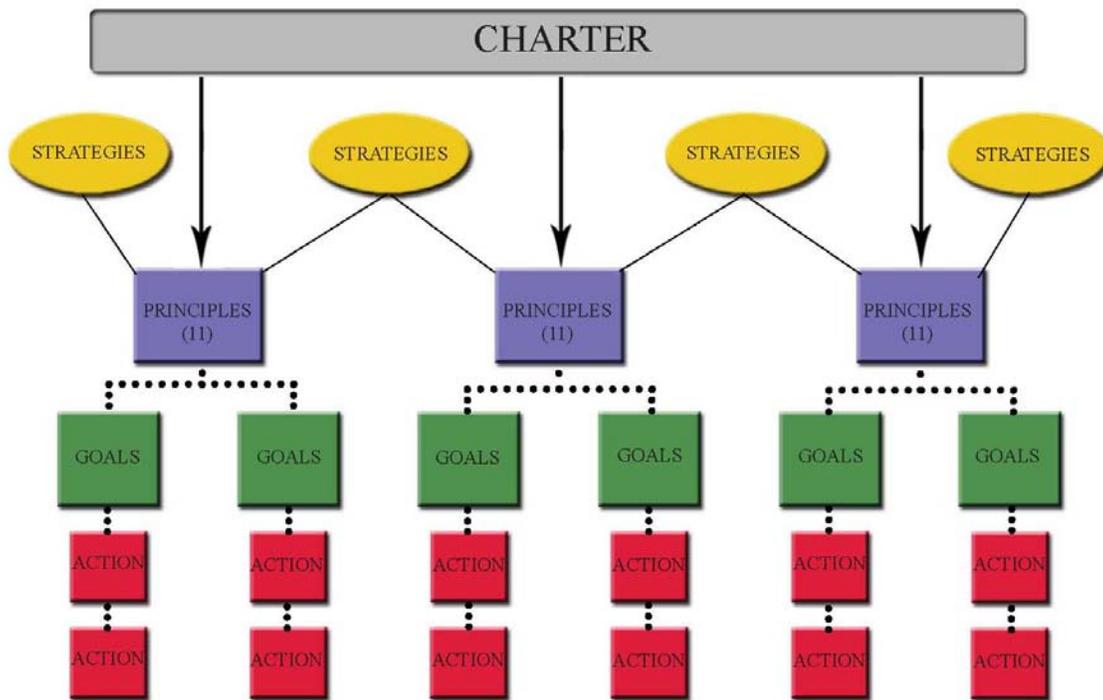
Cross Cutting Strategies and Targets

The EPC devoted its recent workshops and meetings to topics that involved multiple Charter principles and sustainability concepts: 1) environmental health; 2) land use/open space and transportation; 3) climate change; 4)

civic sustainability; and 5) business sustainability. They also convened special meetings with City staff through its Environmental Coordination Group that examined alternative approaches for financing Eco City activities and ways the City can green its own operations and facilities.

Based on these conversations, EPC identified seven broad strategies as a way to link the goals and actions across multiple principles and maximize the potential environmental benefits. These strategies also offer a unique focal point for implementation of the entire EAP. Moreover, City officials can use these cross cutting strategies to coordinate activities across City departments and infuse the city’s culture with sustainability’s premise of interdependence.

The diagram below further illustrates the relationship of the EAP’s cross cutting strategies, policy goals, specific action steps, and tentative timelines. EPC believes these strategies will build a bridge between the Charter’s sustainability vision and principles and the general policy and programmatic goals that may be undertaken.



Specific Goals and Actions

Under each principle the EAP sets a series of specific goals to guide implementation by the city, the business community and citizens. The 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 discussion.

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:

- Phase I: FY 2009 to FY 2011
- Phase II: FY 2012 and Beyond
 - Mid Term: FY 2012 to FY 2020
 - Long Range: FY 2021 to 2030

Preview of the Draft EAP

The following EPC "Earth Day" Draft EAP contains approximately 54 goals, 55 preliminary targets, and 354 actions that would span the course of 21 years. Curiously each of the 10 Charter Principles remained relatively constant with between 4-6 goals. Approximately 36 % of the actions are short term (they are already underway or will be completed by 2011), while the bulk of the actions (nearly 45%) are mid-term (designed to be launched between 2012 and 2020). The remaining 19% are a combination of mid-to-long range or long range goals that would be commenced sometime before 2030. Land use and open space contained the most total actions steps (61) followed by implementation (46).

**DRAFT CROSS CUTTING STRATEGIES FOR
THE ECO-CITY ENVIRONMENTAL ACTION PLAN**

1. Establish a city-wide network of high quality, affordable and accessible, *eco-sustainable*¹ neighborhoods/villages² with optimal densities to balance land use and transportation policies with open space, green infrastructure, and building policies that reduce the emission of carbon and other environmental contaminants, promotes energy conservation and clean energy generation, promotes a healthy living environment, and creates a sustainable and diverse local ecology by reducing the city's resource use footprint and harmonizing the built and natural environments.³
2. Develop a city transportation culture that puts the health, mobility, and accessibility of "people first" and encourages physical exercise by implementing development and transportation projects consistent with the following level of precedence: pedestrians, bicyclists, public transportation, shared motor vehicles and private motor vehicles.⁴
3. Advance energy-efficient green construction, sustainable building and site design, and technology in new development and the rehabilitation and retrofitting of existing places.⁵ Build a seamless and holistic network of *green infrastructure*⁶ that a) maintains and enhances existing green assets; b) mitigates stormwater runoff, flooding, disease, and urban heat islands from global climate change; c) facilitates physical activity and healthy lifestyles; d) supports alternative transport; e) increases access to healthy foods; and f) reduces carbon emissions.⁷
4. Work locally, regionally, and nationally to try to mitigate and hopefully reverse existing climate change-related impacts through greenhouse

¹ *Eco sustainable* neighborhoods and development projects would exhibit these essential characteristics: mixed use, walkable, bikeable, transit convenient, low impact development, green infrastructure, energy efficient, etc.

² Villages is a term used by the city council in its 2015 Strategic Plan

³ Reframing and elevation of goal #1 proposed by Planning and Zoning to a cross cutting strategy

⁴ Reframing and elevation of goal #1 as adopted in EAP Phase I under Transportation Principle to a cross cutting strategy

⁵ Reframing and elevation of goal #2 proposed by Planning and Zoning to a cross cutting strategy

⁶ open space, parks, tree canopy, green roofs and walls, urban gardens, living streets, etc. on public and private property

⁷ Compilation of goal #3 proposed by Planning and Zoning and cross cutting strategy proposed at EPC meeting on land use and open space—see agenda for March 2nd meeting.

- gas and other pollutant reductions while simultaneously working to adapt to anticipated climate change effects such as anticipated increases in flooding due to rising water levels and increased storm intensity as well as likely health and ecological effects such as increased outbreaks of tropical disease and changes in natural habitat.
5. Put systems in place that measure, monitor, and track the *ecological efficiency*⁸ of buildings, transportation, infrastructure, and operations throughout the entire city.⁹
 6. Develop a new *green economy* for Alexandria
 7. Create a city-wide civic sustainability strategy that a) builds new partnerships with nonprofit and community based organizations; b) facilitates eco-city/sustainability service learning and demonstration projects within Alexandria's schools; c) creates demonstration projects and programs to empower neighborhood groups; and d) educates residents and civic groups about 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.).

⁸ 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 the things have been traditionally viewed as negative outputs are re-envisioned as productive inputs to satisfy other urban needs, including energy. Peter Newman.. For example, 1) decrease the consumption of energy, manufactured products, and all natural resources (e.g., water, land, etc.) that act as inputs to the city; 2) decrease solid waste and harmful emissions that act as outputs from the city 3) recover, recycle and reuse relevant materials and outputs using the best available technology.

⁹ Based on idea generated at joint ECG-EPC meeting on Feb 10th; this version connects the tracking and data gathering idea with reduction of "ecological" footprints advocated by Newman and McDonough

PROGRAMMATIC/POLICY GOALS
CHAPTER 1: TRANSPORTATION



Principle:

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 2017, increase the number of commuters who use public transportation alternatives by 50 percent using 2008 as the baseline
- By 2017, create three rapid transit routes as set forth by in the Transportation Master Transportation Plan
- By 2017, reduce the number of Vehicle Miles Traveled (VMTs) by XX percent

Goal 1:¹⁰ 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.¹¹

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 Study, and treat these program 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*:
 - a) Adding 2 miles of bikeways annually and piloting innovative projects on an annual basis as outlined in the Transportation Master Plan;
 - b) Conducting a feasibility study for a bike sharing program; and
 - c) Increasing bike storage and bike parking as outlined in the Transportation Master Plan, and continuing to offer temporary bicycle parking at special events.

Mid-Term Actions (2012 – 2020)¹²

- Complete the capital projects contained in the Transportation Master Plan that refer to pedestrians and cyclists, such as:
 - Complete the Shared Path Network by 2020;
 - Complete the Bike Network by 2020; and

¹⁰ These are the original goals and actions found in EAP Phase I with the exception of Goal 1 which was rewritten slightly.

¹¹ Rephrased goal from EAP Phase I since the original goal has become a strategy. Peter choose this language

¹² Mid and Long Term Actions have been organized under the Phase I goals with the exception of 2 new goals (#3 and #4) for Parking and Alternative Transportation Systems

- Offer safety lessons for cycling and walking to all school age children by 2012.
- Continue to increase the number of commuters using alternative transportation modes and increase by 50 percent the number of commuters taking public transport in 2008 by 2017.
- Provide an efficient network of express bus routes that take commuters to their destinations in a travel time that does not exceed 125 percent of the time traveled in a SOV.
- The City will use Complete Street principles, including green infrastructure, when improving roads in the city, where practicable.

Long-Term Actions (2021 – 2030)

- Be ready 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 the current transportation and bike pedestrian education programs such as*:
 - Programs that encourage children to walk or cycle to school;
 - Cycling proficiency program with a test for all school age youth; and
 - 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.*

Goal 3: Improve and expand an integrated rapid transportation system that includes intercity passenger rail, heavy rail, trolleys, streetcar and buses.

Short-Term Actions (2009 – 2011)

- Continue to improve the experience of current and potential transit users by*:
 - 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.
 - Undertaking a study of rapid transit needs across the city; and
 - Improving access to transit by requiring all new buses added to the DASH Bus fleet to have bicycle racks.

Mid Term Actions (2012 – 2020)¹³

- Retrofit all existing DASH buses with bike racks.
- Implement the real time information system for buses.
- Study the design of circulator bus routes and interlinking local routes to maximize efficiency and reduce dwell wait times.
- Develop a DASH policy that states all new buses will be low emission/hybrid or CNG vehicles
- Explore the feasibility of constructing a street car line that would connect to Arlington and serve the Seminary Road 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 Yards development by the time occupancy of the development reaches 70%.
- Develop plans to have the Rapid Transit Routes converted to zero emission dedicated design vehicles by 2020.

¹³ These were drafted by the Transport team and include a mix of actions and targets/measures

- Develop benchmarks and baselines to achieve Transportation Master Plan goals, especially ways to assess VMTs, SOV usage and Commuter journey modes.
- Create a plan by 2012 with financial incentives and disincentives designed to deter single occupancy vehicle trips and monitor its effects.
- Review Transportation Master Plan every three years and revise as necessary in order to anticipate changing transportation needs and react in a timely manner.

Long-Term Actions (2021 – 2030)

- Plan and implement an intelligent mix of transport styles to encourage residents, work units and tourism. Develop regional control centers to monitor 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.¹⁴

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 the people who work in Alexandria to use of 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 parking plan.¹⁵

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.

¹⁴ This new goal with action was added by the Transport team and redrafted by VT

¹⁵ Cross reference Landuse and Green Building sections.

CHAPTER 2: GREEN BUILDING



Principle:

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:¹⁶

By 2020:

- All new buildings to achieve LEED Gold standards¹⁷
- Sixty percent of all existing buildings achieve a 20% energy consumption reduction
- ___% of City buildings are x% more energy efficient

By 2025:

- All new buildings to achieve LEED Platinum standards¹⁸

By 2030:

- All new buildings will be carbon neutral¹⁹

¹⁶ Proposed by Planning and Zoning and similar to goal proposed by EPC GB work team –we moved this to a target.

¹⁷ 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

¹⁸ Proposed at ECG meeting to have a phase in period from LEED Gold to Platinum to Carbon Neutral

¹⁹ 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.

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.²⁰

Short-Term Actions (2009-2011)²¹

- 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 agencies.
- Arrange for Plan Review Staff to receive LEED certification.

Mid-Term Actions (2012-2020)

- Develop a green building policy for retrofitting all existing buildings, including residences and buildings in historic districts.²²
- 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.²³
- 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 to Alexandria.²⁴
- Require that all properties be subject to full cost energy audits at time of sale or legal transfer.²⁵
- Develop incentives for energy conservation through tax policy, fees, and green funding²⁶.

²⁰ Revised language from Goal #1 from EAP Phase I and merged it with language proposed by Planning and Zoning

²¹ All short terms actions taken directly from EAP Phase I with no changes.

²² Both actions were carried over from Phase I so they were automatically placed in interim time frame.

²³ Both actions were carried over from Phase I so they were automatically placed in interim time frame.

²⁴ Both actions were carried over from Phase I so they were automatically placed in interim time frame.

²⁵ Reformatted at retreat according to recommendation by City staff.

²⁶ Reformatted at retreat according to EPC recommendation

- Require that all new structurally applicable rooftops either incorporate alternative energy systems (e.g., wind, solar) into the building, 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 x% more efficient by 20XX.
- Require that when seeking to replace existing roofs and retrofit surface parking lots, property owners either integrate alternative energy systems (e.g., wind, solar) into that space, consistent with the building design, or otherwise ensure that each rooftop/parking lot maximizes its productive space (e.g., green infrastructure, green roofs, or urban agriculture) by 2030.
- Encourage universal design standards for buildings and homes to accommodate persons with disabilities and facilitate aging in place.²⁷

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.²⁸

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 measures that may be added to the next Virginia State Amendments to the ICC Building Code.

Mid-Term Actions (2012-2020)

- Seek local authority to adopt additional green building regulations and to require energy efficient technologies such as smart metering technology and point of sale ordinances that require energy audits.

²⁷ Reformatted from goal to action item and further refined at ECG meeting; also add in Land Use and add reference to Land Use.

²⁸ Refined the Goal, but the Short-Term Action Steps are directly from EAP Phase I

Goal 3: Promote green building practices, share information and provide educational, technical, and financial assistance to the building industry, businesses, and residents.²⁹

Short-Term Actions (2009-2011)³⁰

- 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.³¹

Mid-Term Actions (2012-2020)

- Encourage the implementation of the latest smart metering technology by offering incentives and technical assistance.³²
- 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.³³
- Create a Green Building Clearinghouse that provides educational, financial, and technical assistance regarding green building practices.³⁴
- 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 all residents.

Goal 4: The City will lead by example in green building practices.³⁵

Short-Term Actions (2009-2011)

- All new construction and renovation of City buildings, where feasible, will meet a LEED Silver rating, as a minimum.
- Identify a potential demonstration project for the City to achieve LEED Platinum status.

²⁹ Revised Goal from EAP Phase I by merging it with goal that was carried over from Phase I.

³⁰ Action items were taken from EAP Phase I without changes

³¹ Action item was carried over from Phase I to Phase II for consideration

³² Reformatted from EPC Green Buildings Work Team from goal to new action item

³³ Reformatted from goal to new action item and then further refined by Planning and Zoning at ECG meeting

³⁴ Move from Long term action to midterm action

³⁵ Goal & Short-Term Action Steps directly from EAP Phase I

- Conduct 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.*

Mid-Term Actions (2012-2020)

- All new construction and renovation of City buildings, where feasible, meet a LEED Gold 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.³⁶

³⁶ Action item originally proposed by Planning and Zoning as part of their Goal

CHAPTER 3: AIR QUALITY



PRINCIPLE:

Alexandria faces significant challenges in improving air quality including those presented by emissions from vehicles, older industrial facilities, and the regional transport of air pollution. Given that one in eight 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.

Targets³⁷

- Work with regional air planning organizations to attain the 8-hour ozone standard of 0.075 ppm
- Successfully execute the Project Schedule and Agreement with Mirant PRGS by completing the evaluation and installation of the following at the PRGS site:
 - Improved fugitive PM emissions control equipment by December 2011
 - Enhanced stack PM emissions control equipment by December 2013
- By the end of the 2017, install air pollution control equipment that will reduce mercury emissions at the PRGS site by December 2017

³⁷ The implementation of the goals and actions outlined in the Land Use and Open Space, Transportation, and Energy chapters will help to improve air quality. Mobile sources also contribute.

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 National Ambient Air Quality Standards (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 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 PM_{2.5}.
- By 2015, provide real-time information to residents on ozone and PM on the City’s website, where feasible.

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.³⁸

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.

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 NAAQS and emissions.
- Expand the City biodiesel purchase program to include other alternative fuels.
- Provide incentives to residents who purchase zero emission vehicles.

³⁸ Also See Implementation Goal X.

- 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.³⁹

³⁹ Also see Transportation Goal X.

CHAPTER 4: WATER RESOURCES



Principle:

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 benefits of current and future generations.

Targets:

- Obtain a funded OEQ outreach position to manage MS4 and Eco-City outreach by 2010
- Establish mechanism for long-term dedicated funding for the purpose of maintaining and improving storm water infrastructure by 2013
- Complete the in-stream portion of the Four Mile Run Master Plan by 2020
- Complete Cameron Run Master Plan by 2015
- Retrofit all City facilities with BMPs by 2019 and explore water reuse operations

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).*

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

- The City should continue to work in cooperation with the neighboring jurisdictions to achieve and maintain water quality standards in our streams.
- Restore and stabilize stream banks of all urban streams to promote habitat, biotic integrity, and 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, and continue to work toward implementation of the ongoing 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 retrofit) and quantity reduction capabilities (e.g., Cora Kelly Green Roof).*

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.⁴⁰
- 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.⁴¹
- 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.
- Develop and fund city-wide efforts for floatable controls, including education, outreach, and infrastructure controls.
- Retrofit all City facilities with stormwater BMPs.
- 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-out.

⁴⁰ Also see Implementation Goal X.

⁴¹ Also see Climate Change Goal 5.

Goal 3: Promote, require, and invest in water conservation infrastructure by updating residential, commercial and industrial water infrastructure and improved 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.*

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 for gray water recycling system and other recycling systems.

- 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.

CHAPTER 5: ENVIRONMENT AND HEALTH



Principle:

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, toxic chemical exposure, noise and light pollution, and the safety and habitability of buildings directly impact human health and the natural environment.

Targets:

- By 2012, 95 percent of the restaurants in Alexandria will be totally smoke-free
- By 2020, 50 percent of the public schools in Alexandria will be implementing the IAQ Tools for Schools Program
- By 2020, 80 percent of the workplaces in Alexandria employing more than 25 persons will be totally smoke-free
- By 2020, all special events held in the city will be eco-friendly events
- By 2025, 50 percent of the restaurants and groceries in Alexandria will qualify for designation as eco-friendly restaurants or groceries
- By 2025, 50 percent of commercial buildings where more than 25 persons are employed will be participating in the Healthy Work Places program
- By 2030, the percentage of Alexandria children walking or cycling to school will have increased by 100 percent
- By 2030, the percentage of Alexandria adults that walk, bike, or use public transportation to get to work will have increased by XX percent
- By 2030, the percentage of Alexandria children and adults that are overweight or obese will have been reduced to less than 29 percent (currently 58 percent)
- By 2030, the incidence of asthma in Alexandria will be reduced by 50 percent

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 FY2010.*
- 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 advising 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.

Mid-Term Actions (2012-2020)

- Increase the Health Department's outreach efforts on respiratory health issues through:
 - An improved respiratory health website;
 - Outreach at community events; and
 - 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.⁴²

⁴² Code Compliance Committee includes the following members: Health Department's Environmental Health Division, Office of Environmental Quality, Office of Building and Fire Code Administration,

- 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.
- Create “No Child Left Inside” program among ACPS, RPCA, and possibly even private Alexandria schools, to encourage and promote healthy lifestyles to Alexandria’s youth and to foster lasting connections to the natural environment.⁴³

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)

- Reinstitute a smoke-free restaurant program (now called “Smoke-Free Alexandria”) and increase the number of participating restaurants by 20 percent over the number participating under the previous plan by 2011.*
- By October 2009, 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 April 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.*
- Continue to support state legislation to allow localities to completely ban smoking in bars, restaurants, and other public places.

⁴³ Also see Land Use and Open Space Goal 1.

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.
- 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:
 - Commit to being a completely smoke-free work place;
 - Conduct an environmental health assessment of their work place;
 - Abate any lead paint hazards;
 - Abate any moisture problems and remediate any areas with mold growth;
 - Proactively maintain HVAC systems for air quality and energy efficiency;
 - Develop a cleaning protocol that controls dust and allergens;
 - Reduce the use of toxic chemicals for cleaning and other uses;
 - Implement integrated pest management (IPM) practices to control insect and rodent populations and reduce the use of pesticides; and
 - Encourage the use of stairs in lieu of elevators.

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 percent of the city's public schools.⁴⁴

⁴⁴ EPC should consult with ACPS personnel about this action and the timing. City staff are endorsing this action.

- 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, and 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.*

Mid-Term Actions (2012-2020)

- Build community partnerships that promote regular outdoor physical activity such as walking or bicycling.
 - 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.
 - 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:
 - Enhancing web-based and printed materials that include park, playground, bike and walking routes, and recreation center information.
 - 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.

- Decrease the proportion of pedestrian and cyclist injuries and fatalities due to motor vehicles by:
 - 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/>);
 - Installing more automated red light cameras to ticket motorists who are speeding or running red lights; and
 - Implementing aggressive and sustained enforcement of traffic laws and increase public education efforts on bicycle and pedestrian safety.
- Increase the City's role as an advocate for public health by:
 - Include more health considerations and health specific language in planning documents;
 - Providing financial incentives to City employees that walk or bike to work;
 - By 2012, the Health Department will hire a part-time employee to work on healthy lifestyle/built environment issues in collaboration with the Department of Planning & Zoning.

Goal 5: Educate citizens about and increase equitable access to safe, healthy, and organic food, particularly for children and adolescents, and encourage local and regional food production.

Short-Term Actions (2009-2011)

- By September 2009, the Health Department will 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 access of local, fresh produce to low-income residents.

- Create an outreach program to low-income residents that advertises the availability of the program, 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:
 - Teach residents about organic gardening and cooking with in-season vegetables;
 - Teach residents about rooftop and container gardening;
 - Increase participation in the Master Gardeners Program;
 - Increase participation in the 4-H Club;
 - Work with the schools to help develop “edible schoolyards”; and
 - Work with preschools and childcare providers to develop “container gardens” or small-scale “edible school yards” in coordination with the *Partnership for a Healthier Alexandria’s* Healthy Lifestyles Work Group.
- Encourage the Alexandria Public Schools 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.

CHAPTER 6: ENERGY



Principle:

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:⁴⁵

- By 2010 purchase 5% of electricity needs through green certificates
- By 2015 reduce per capita energy use by ____%
- By 2015 track energy use of 30% of multi-family residence units
- By 2020 purchase 25% of City’s energy portfolio from renewable energy sources
- By 2025 track energy use of 60% of multi-family residence units
- By 2030 purchase 35% of City’s energy portfolio from renewable energy sources
- By 2030 track energy use of 100% of multi-family residence units
- By 2050 purchase 50% of City’s energy portfolio from renewable energy sources

⁴⁵ EPC: are any of these targets derived from existing state, federal or regional targets. If not, should this section include references to these targets to ensure some level of consistency?

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)⁴⁶

- In late 2009 EPC, City Staff, and other interested parties will convene workshops to identify issues and charge 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 2009. 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 emissions⁴⁷.

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)⁴⁸

- The City will direct its employees to regularly shut down their computers and other office equipment at the end of each workday.*

⁴⁶ Note: Short-Term Action Steps directly from EAP Phase I

⁴⁷ Edited by D. Boxer after EPC Drafting Retreat

⁴⁸ Edited by city staff after drafted by EPC members

- The City will develop a checklist for home owners and businesses to perform their own energy audits, aimed at quick and easy modifications that could yield significant reductions in energy usage.
- Support interdepartmental planning and prioritization of energy management and investment activities.
- The City and the community will commit to limiting the projected growth in citywide energy use to 4% by 2011, and will consider adopting the goals of Virginia's 2007 Energy Plan. Evaluate consistency with MWCOG Energy Strategic Plan⁴⁹
- 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.

Mid-Term Actions (2012-2020)

- Require property sales to include building/unit energy use and efficiency information.
- 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.
- Change the City's building code to require multi-family residential buildings to track and report monthly energy use in individual units.⁵⁰
- Build or retrofit at least one City office building to passive housing energy use standards.

⁴⁹ Action not included in EAP Phase I. Moved to Phase II in Matrix document for consideration

⁵⁰ See also Building Green principle actions. (Goal ?)

- 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.⁵¹
- 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)⁵²

- 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)

- Purchase at least 25% of City's energy portfolio from renewable and clean energy sources by 2020 and raise that percentage to at least 50% by 2030.

⁵¹ edited by city staff after drafted by EPC members. Edited by D. Boxer April 19, 2009.

⁵² ⁵² Note: Short-Term Action Steps directly from EAP Phase I

Goal 4: Encourage the use of clean renewable energy resources, such as wind, geo-thermal, and solar, to reduce the city's carbon footprint.⁵³

Short-Term Actions (2009-2011)

- The Alexandria Health Department will develop information to be published on its website about geothermal closed-loop heat pump wells.
- 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, 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.⁵⁴

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.

Goal 5: Support interdepartmental planning and prioritization of energy management and investment activities.

Short-Term Actions (2009-2011)⁵⁵

- 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.

⁵³ Previous Environmental Health chapter

⁵⁴ See also Building Green Goal X.

⁵⁵ Note: Short-Term Action Steps directly from EAP Phase I

- 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.

CHAPTER 7: LAND USE AND OPEN SPACE



Principle: 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 2013 protect remaining 35 acres of open space to complete 100-acre goal of the Open Space Master Plan⁵⁶
- By 2015:
 - Ensure that all plantings are non-invasive and incorporate non-invasive plants
 - Design and install a pedestrian bridge to link Arlington and Alexandria sides of Four Mile Run
- By 2020:
 - Achieve 40 percent tree canopy coverage; by 2030 achieve 50 percent canopy coverage
- By 2030:
 - Ensure that XX percent of all Alexandria school children get to and from school by walking or riding bicycles
 - Ensure that XX percent of Alexandrians commute to work by non-SOV means
 - Reuse the site of the coal-fired power plant

⁵⁶ This target is in the Open Space Master Plan.

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)⁵⁷

- 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.*

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.⁵⁸
- 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.⁵⁹

⁵⁷ All Short-Term Action steps in Land Use & Open Space come directly from EAP I.

⁵⁸ This is a long-term action from Farroll's March draft.

⁵⁹ This and the next 4 actions are Phase I actions moved to Phase II.

- 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.
- Create "No Child Left Inside" program among ACPS, RPCA, and private schools, to encourage and promote healthy lifestyles to Alexandria's youth and to foster lasting connections to the natural environment.⁶⁰
- Rethink ways to incorporate green economy/industry into planning process as 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:⁶¹
 - Creation of and enhancement of walkable streets, sidewalks, and non-SOV bicycle and pedestrian amenities and connections;
 - Open space acquisition, preservation, and enhancement, including parks, community gathering places, privately owned open space, natural areas, trail connections and extensions, and tree coverage and habitat protection; and
 - 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, or other community-based function.

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.

⁶⁰ Also see Environment and Health Goal X.

⁶¹ This is a long-term action from Farroll's March draft.

- 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)⁶²

- 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:
 - Small Area Plans
 - Transportation Master Plan
 - Open Space Master Plan
 - Urban Forestry Plan (proposed for adoption June 2009)
 - 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.

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.

⁶² All mid-term actions of Goal 2 are long-term actions from Farroll's March draft.

- 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.*

Mid-Term Actions (2012-2020)⁶³

- Seek authority to require all new developments, including single family homes, to provide 40 percent crown coverage on site.
- Continue implementing the Urban Forestry Plan.

⁶³ Danielle also included this action step: Incorporate more art into public and open space by including public art projects as part of the planning process.

- Achieve 40 percent tree canopy coverage in the city by 2020.
- Require no less than 40 percent crown cover when sites are developed or redeveloped, within these parameters:
- When trees are cleared from a site, increase replacement requirement for removal of large caliper trees.
- Change tree canopy assumptions in City requirements to reduce for the credit allocated for younger, smaller trees.
- Set a minimum amount of the total canopy 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 XX street trees a year to streets distributed throughout the city; develop an appropriate standard, planting program, and areas for such trees, as with an underground trench; and replace existing street trees to ensure their long-term viability throughout the city.
- Expand the Living Landscape Fund to include payment for maintenance, infrastructure, shrubs, and other landscaping.
- Update the City's trails map, identifying existing trails and proposing additional trail connections and extensions.
- Expand urban forestry training to residents and designate more "urban foresters" to maintain street trees.
- Research, develop, and implement Green Infrastructure policies, guidelines, and regulations. Fund green infrastructure as part of City's capital expenditures.
- Complete survey of native vegetation within city ("Alexandria Flora Project") and promote project and results on City's web site.
- Design and install pedestrian bridge for 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 are non-invasive, flood- and drought-tolerant, 80 percent perennial plants, and that native plants are used wherever possible.
- Work with Alexandria schools and RCPA 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.

Long-Term Actions (2021-2030)

- Achieve 50 percent tree canopy coverage distributed throughout the city by 2030.⁶⁴
- Conduct an analysis of the city's resource carrying capacity.
- Ban the sale of invasive plants within the city.

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.*

⁶⁴ This and the next action step are from Faroll's March draft.

- 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.⁶⁵

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.

⁶⁵ Also see Building Green Goal 1.

CHAPTER 8: SOLID WASTE



Principle:

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 percent diversion through increased waste reduction
- By 2020, increase the recycling rate to achieve a goal of 50 percent

Goal 1: Exceed the City's goal of 35 percent diversion through increased waste reduction and reuse by 2020.

Short-Term Actions (2009-2011)⁶⁶

- The City will 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.

⁶⁶ Note: All Short-Term Action Steps in Solid Waste come directly from EAP Phase I.

- 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.

Goal 2: Increase the recycling rate to achieve a goal of 50 percent 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, VA 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.

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.⁶⁷

Long-Term Actions (2021-2030)

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

⁶⁷ See implementation chapter-regional cooperation.

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.

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

- Examine the feasibility of collecting household hazardous waste and electronic waste as part of curbside 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.

CHAPTER 9: GLOBAL CLIMATE CHANGE AND OTHER EMERGING THREATS

PRINCIPLE:

Alexandria must be adaptive and responsive to emerging and unforeseen environmental threats – such as climate change – that could strain infrastructure, deplete natural resources, disrupt the economy, and 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:

- Reference MWCOG targets:
 - Reduce Business As Usual (BAU) emissions by 10% below 2012 level by 2012
 - 20% reduction below 2005 level by 2020
 - 80% reduction below 2005 level by 2050
- All new buildings will be carbon neutral by 2030 (target under Green Building)
- 60% of all existing buildings achieve a 20% energy consumption reduction by 2020
- All new buildings to achieve LEED Platinum standards by 2025
- By 2020, purchase 25% of City's energy portfolio from renewable energy resources
- By 2050 purchase 50% of City's energy portfolio from renewable energy resources

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.

Mid-Term Actions (2012-2020)⁶⁸

- 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.

⁶⁸ All Mid Term Actions were proposed by OEQ; it appears that these new action items address some of the Phase I action steps that were carried forward to Phase II: 1) Ensure that City responses to federal and state greenhouse gas reduction policies account for planned density increases. 2) Develop an outline and structure for a report to be issued at a minimum of every 3 years on the City's progress toward attaining the emissions reduction targets. As part of this process, identify metrics for evaluating the attainment of these emission reduction goals.

- 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)

- The City shall carry out a risk analysis of the effects of global climate change on Alexandria.
- Empower the ECG to develop adaptation planning strategies for the city.

Mid-Term Actions (2012-2020)⁶⁹

- 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 *Climate Action Plan* and climate adaptation plans accordingly.

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.⁷⁰

⁶⁹ Actions proposed by OEQ, some may be duplicative of Phase I action items.

Mid-Term Actions (2012-2020)⁷¹

- 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.⁷²

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 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 such as malaria.
- 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.⁷³

Mid-Term Actions (2012-2020)

- Partner with MWCOG, Alexandria Sanitation Authority, the Alexandria Health Department and the Drinking Water Suppliers of Alexandria to monitor the extent of the problem. Provide annual feedback on the state of the science to inform EPC when actionable activities are warranted.

⁷⁰ Also see Land Use and Open Space Goal X.

⁷¹ All Mid Term Actions were proposed by OEQ; it is likely some of these actions might be long term, but that is open for discussion at Friday's conference call.

⁷² Review with cross cutting strategy for consistency and cross reference with implementation

⁷³ Proposed goal and action step from Phase I and carried forward to Phase II.

- Inform residents about how to properly dispose of pharmaceuticals.

Long-Term Actions (2021-2030)

- When science-based solutions have been identified, the City should take appropriate actions to address this problem.

Goal 7: 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.

CHAPTER 10 EAP IMPLEMENTATION BY SUSTAINABILITY SECTORS

CHARTER PRINCIPLE: IMPLEMENTATION

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.

Targets: The following targets are key indicators and milestones of the activities and programs designed to implement the Charter's principles and the Environmental Action Plan's goals:

- # of Eco City community meetings, workshops etc. and number of participants
- Increase the number of e-News participants by 20% each year for 5 years
- Dedicate 1% of City general funds to Eco City Activities by 2020

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.

Goal 1 (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.
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- 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".⁷⁴
- 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.

⁷⁴ See also [cross reference all relevant principles/goals]

Goal 2 (Civic Sustainability): 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, and private partners – to become volunteers in activities to protect and restore the city’s natural resources such as water monitoring, stream and park clean-ups, restoration projects, 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.*

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 Cleaner 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 public 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.

Goal 4 (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 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.

Goal 6 (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.

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.⁷⁵

Goal 8 (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 to new Eco City demands.
- Invite input and participation on Earth Day Committee by members of local high school environmental clubs.

⁷⁵ Also see Solid Waste Goal X.

- 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 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 will revise each as is necessary.

Goal 9 (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).

Mid-Term Actions (2012-2020)

- Strive to meet the 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.

