



Joint Work Session
Planning Commission
and
Environmental Policy Commission

Meeting Materials

March 22, 2018
7-9 P.M.
Sister Cities Conference Room, #1101

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Agenda

Planning Commission & Environmental Policy Commission
Joint Work Session

7:00 – 7:05 PM	Welcome & Introductions
7:05 – 7:10 PM	Introductory Remarks by EPC and PC Chairs
7:10 – 7:15 PM	Overview of EAP Update Process – TES Staff
7:15 – 7:25 PM	Current City process for integrating Sustainability Principles into SUP/DSUP/SAP Land Use Development Process – P&Z Staff
7:25 – 7:50 PM	Overview of Proposed Short-term Actions on Land Use & Open Space and Green Building <ul style="list-style-type: none">• EPC Recommendations: EPC• Staff recommendations: P&Z• Input Received at the Eco-City Café
7:50 – 8:50 PM	Facilitated Discussion
8:50 – 9:00 PM	Concluding Remarks by EPC and PC Chairs



Overview of the Environmental Action Plan Process

The existing 2009 Environmental Action Plan 2030 (EAP) is a road map for implementing the vision of 2008 Eco-City Charter. It is a policy plan that provides strategic guidance to City Council and the City Manager as they move through regular fiscal planning and annual budget processes.

The 2018 EAP update is staged in two phases. Phase 1 is focused on updates to the goals and short-term actions (actions with a five-year implementation goal) of the five EPC topic areas:

- Energy
- Climate Change
- Solid Waste
- Green Building
- Land Use and Open Space

Additionally, staff has begun a preliminary review of the progress made and updates to the goals and short-term actions of the Transportation and Water chapters given their overall significance and connection of these topic areas to the five EPC focus areas above.

The Environmental Policy Commission will present the City Council with its recommended Phase 1 goals and short-term actions at a joint work session in May 2018.

Phase 2 is scheduled to kick-off in the beginning of FY2019 and will focus on the remaining topic areas (Air Quality, Environmental Health, and Implementation) and the mid- and long-term actions for all topic areas.



City's Process for Integrating Sustainability Principles into DSUP/DSP, SAP, Land Use, and Development Projects

- I. *The following sustainability strategies are integrated as part of the City's Development Special Use Permit (DSUP) and Development Site Plan (DSP) processes:*
- Concept Phase¹:
 - Inter-Departmental Review (IDR) of plans
 - Weekly meeting
 - Representation from all relevant departments present at meeting
 - Ensure compliance with other City policies/plans such as the EAP, Landscape Guidelines, Complete Streets, Open Space Master Plan, etc.
 - Encourage maximum use of open space above minimums
 - Direct applicants to plan for green infrastructure in early phases of design
 - Narrative describing environmentally sensitive site design, green building, and/or LID techniques considered with proposal
 - Identification of existing steep slopes and areas of Marine Clay
 - Existing tree survey
 - Encourage preservation of significant trees
 - Identification of RPAs, wetlands, surface waters, and floodplains
 - Stormwater quality narrative statement
 - Stormwater facility best management practice (BMP) layout
 - Completeness/Preliminary Plan Phase¹ (in preparation for public hearing):
 - Ensure compliance with other City policies/plans such as the EAP, Landscape Guidelines, Complete Streets, Open Space Master Plan, etc.
 - Standard development conditions include:
 - The Green Building Policy
 - Reuse of building/construction materials
 - Minimum percent of EV charging stations
 - Energy Star and EPA WaterSense appliance requirements
 - Environmental Site Assessments and Reports
 - Green Infrastructure requirements³

¹ Each department provides comments on the submitted plans which must be addressed by the applicant prior to advancement to the next stage. Comments are coordinated between departments continuously throughout the process via in-person meetings, emails, and phone conversations.

² Staff generates a punch list of incomplete/incorrect items that the applicant must address prior to the request for the next inspection.

³ Per Memo to Industry 01-18, effective April 1, 2018

- Stormwater facility BMP management to meet state phosphorous reduction requirements
 - BMP tree wells (continuous soil panels for areas where these are infeasible)
 - Soil volume exhibit for trees
 - Pre-landscape installation meeting
 - Certification of tree well installation by Licensed Landscape Architect
 - Alexandria Water Quality Volume Default requirements
 - Floodplain Management
 - Minimum requirements for number of recycling and trash receptacles
 - Limitations and mitigation measures for disturbance in wetlands, buffers & RPAs
 - Noise study and commitment letter
 - Air pollution limitations
- City Code requirements:
 - Construction methods to reduce disturbance within drip lines of trees
 - 1-year Performance Bond and 3-year Maintenance Bond inspections of landscape elements
 - Adequate outfall analysis
 - Recycling Implementation Plan for commercial properties
 - Noise Control
 - Sediment and Erosion Control
 - Stormwater Management Plan
 - Stormwater Pollution Prevention Plan requirements (if applicable)
- Final Site Plan Phase¹ (after public hearing):
 - Ensure compliance with other City policies/plans such as the EAP, Landscape Guidelines, Complete Streets, Open Space Master Plan, etc.
 - Check plans for compliance with conditions
 - Review plant lists for invasive species
 - Confirm tree canopy requirements are met
 - Ensure adequate tree protection and preservation measures are planned for
 - Verify registration with a 3rd party green building certification program per the Green Building Policy
 - Check BMP details for compliance with Green Streets BMP Guidelines
 - Review BMP design for compliance with VA Stormwater BMP Clearinghouse design standards
 - Review planting details for all plant material
 - Review environmental investigations and reports, as applicable

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³ Per Memo to Industry 01-18, effective April 1, 2018

- Review Water Quality Impact Assessment (WQIA), as applicable
- Project Close-Out Phase¹ (after construction):
 - Prior to Certificate of Occupancy: As-built plans submitted; site inspection performed to ensure compliance with approved plan²
 - Following stabilization: Erosion and sedimentation control final inspection and Stormwater CGP permit closure (if applicable)
 - Request for Bond Release: As-built plans submitted; site inspection performed to ensure compliance with the approved plan²
 - Performance Bond Inspection: Site inspection performed 1 year after the initial request for bond release²
 - Maintenance Bond Inspection: Site inspection performed 3 years after the initial request for bond release²
 - Follow-up on Green Building Policy:
 - Evidence of submission of materials for Design Phase credits to the U.S. Green Building Council (USGBC) (or equivalent) prior to issuance of a certificate of occupancy.
 - Evidence of submission of materials for Construction Phase credits to USGBC (or equivalent) within six months of obtaining a final certificate of occupancy.
 - Documentation of certification within two (2) years of obtaining a final certificate of occupancy.

II. *The following sustainability strategies are integrated as part of the City's **Small Area Planning** processes, led by the Department of Planning and Zoning with collaboration from the Department of Transportation and Environmental Services, Department of Recreation, Parks and Cultural Activities, and the Office of Housing.*

- Land Use Planning:
 - Promote walking, cycling, and taking public transportation by planning for a mix of land uses and increased density in proximity to Metro stations and other transportation hubs;
 - Create neighborhoods that encourage walking with enhanced streetscapes and walkable destinations such as neighborhood serving retail, neighborhood parks, and community amenities;
 - Ensure a balance of jobs and housing to enable residents to live near their workplace as well as to facilitate a vibrant and active public realm day and night
 - Identify locations for future open space and parks, community gathering places, trail connections and trail extensions;

¹ Each department provides comments on the submitted plans which must be addressed by the applicant prior to advancement to the next stage. Comments are coordinated between departments continuously throughout the process via in-person meetings, emails, and phone conversations.

²Staff generates a punch list of incomplete/incorrect items that the applicant must address prior to the request for the next inspection.

³ Per Memo to Industry 01-18, effective April 1, 2018

- Identify opportunities for affordable and mixed income housing;
- Environmental Sustainability:
 - All recent Small Area Plans include a sustainability chapter requiring consistency with the vision and principles of the Eco-City Charter and Environmental Action Plan, addressing topics such as energy, increased density, car-free forms of transport, green buildings, resource conservation, stormwater, and local power generation.
 - Large scale projects, such as North Potomac Yard and NRG, are required to develop environmental sustainability master plans that identify large scale opportunities for energy, stormwater and other sustainability.

III. *The following list is a summary of how sustainable practices are integrated into the **Special Use Permit (SUP) and other non-development** review processes:*

- SUP requests are routed to departments for comments that are integrated as conditions (Transportation & Environmental Services, Code, Health, Police, and Fire)
- Standard conditions are included in all SUPs that reduce stormwater run-off contamination; support patron and employee use of public transportation; require environmentally-sound practices for the disposal of solvents and cleaners; ensure noise and odor control; and mandate the regular removal of litter.
- For redevelopment proposals eligible for SUP review, primarily new single-family dwellings on substandard lots, conditions for the maximization of open space; the preservation of existing, mature trees when applicable; and a tree canopy coverage of 40% are standard.
- Subdivision requests commonly include conditions for the preservation of trees and a tree canopy coverage that exceeds 25%.
- All SUPs must comply with Small Area Plan goals which include sustainability and Smart Growth principles.
- Recommend support for small businesses that contribute to the walkability of neighborhoods and are located near public transit amenities and the location of child-care establishments in or near mixed-use developments.
- Resident purchases for City Council-approved vacations of the public right-of-way are dedicated for future purchases of public open space.



Overview of Proposed Short-Term Actions on Land Use & Open Space and Green Building

EPC Recommendations

I. **Topic:** Land Use & Open Space – EAP Usage in City Decisions and Actions

Accountable Departments: Planning & Zoning; Transportation & Environmental Services; Recreation, Parks and Cultural Activities; Department of Project Implementation, et al as applicable

Goal: EAP goals will be understood and integrated across City departments, Commissions, Boards and other body's to guide policy, decision making processes and public and private development applications and project reviews.

Target: By 2020, ensure that City staff consistently apply EAP goals and principles into projects and plans, including achieving environmental sustainability, natural environment preservation and restoration during development review processes and other activities that may have environmental impacts.

Short Term Actions:

1. By 2019, review and revise current P&Z, T&ES, RPCA, DPI, and other applicable City department's plans, policies, practices, and performance measures to assess how to better incorporate EAP principles and actions to ensure that requirements and goals¹ are consistently implemented in a manner that maximizes environmental benefits and minimizes negative environmental impacts.
2. By 2019, City staff incorporates environmental best practices into each CIP project and development project review; provides a summary in each report (i.e. similar to zoning

¹ Such issues include, but are not limited to, open space provided at or above required amounts; preserving natural areas, existing grades and existing native trees plantings to the extent practicable; provides minimum 40% native tree canopy coverage on site to the extent practicable and/or at increased ratios off-site as a means of mitigation; requires sufficiently wide curbside landscape strip to facilitate planting large, native shade trees; requires native plantings and promotes pollinator protection; requires that new sidewalks and vehicular drives be constructed of permeable pavers and/or stone; requires vegetative green roofs and solar energy generation to the extent practicable; minimizes light pollution through shielded, low-temperature color lighting and incorporates Lights Out conditions and/or regulations; maximizes density in appropriate locations within short walking distance to Metrorail Stations; etc.

requirement tables) that details how the project will meet or exceed EAP goals and measures; and submits summaries annually to Council that are published on the City website.

3. By 2019, ensure that:
 - a. EAP goals are incorporated into all department strategic and business plans, and work programs; and
 - b. All relevant city commissions, boards and bodies designate a representative who will ensure that the EAP is used as a tool to guide decisions.
4. By 2019, the City will annually publish an EAP scorecard (i.e. to replace the current annual list of indicators) that will highlight progress against achieving the EAP goals.

Implementation and Assessment: High. The city already enforces many aspects of the EAP, but does not require achievement at the levels prescribed in the EAP or what is possible implementing best practices in the industry. Providing summary reports related to projects and annual summations should be relatively straightforward to show yearly progress towards EAP goals, and is already partially being conducted, but not consistently in project and “Greenventory” reports.

Justification:

1. The original EAP was designed as a tool to be used to guide all city departments towards being more eco-friendly and sustainable.
2. Private development and City projects are being constructed that do not capitalize on opportunities to maximize environmental benefits and/or harm the environment unnecessarily.
3. Designating one member per commission would help to ensure that decision-making bodies are knowledgeable of the EAP and use it to guide decisions, recommendations, and approvals.

Market Context:

1. Making Alexandria as green, eco-friendly and environmentally sustainable as possible will enhance the City’s desirability and residents’ Quality of Life, health and welfare.
2. The District of Columbia publishes a yearly update to Sustainable DC highlighting goals met and progress towards larger goals. This keeps residents up to date on what the District is doing. In addition Sustainable DC sends out a monthly newsletter highlighting activities and ways that citizens can be involved. It is a very successful program with volunteers in all eight wards.

II. Topic/s: Land Use & Open Space

Accountable City Departments: Planning & Zoning; RPCA; OHA; TES; Others, City Commissions and Boards including Parks & Recreation, Beautification, etc.

Goal: Increase open space quantity and improve the environmental quality of open space by increasing native biodiversity, reducing impervious surfaces and incorporating innovative design strategies.

Target: Alexandria will maintain a high-quality publicly accessible open space ratio of at least 7.3 acres per 1000 residents² and require consistent and meaningful open space on private development.

Short Term Actions:

1. Protect and add open space through acquisition, preservation and conservation as prescribed in the Open Space Master Plan adopted in 2017 and, by 2023, evaluate increasing the target to 7.5 per 1000 residents.
2. Enforce existing open space acreage commitments in Small Area Plans (apprx. 293 acres) and require consistent and meaningful open space on private development in at least the amount required within basic zoning regulations; at ground level, vegetated with native plants including large shade trees, with no more than 20% impervious surfaces, implementing a framework for developer contributions to off-site open space, and providing open space within commercial zones. (P&Z, RPCA)
3. By 2023, increase by 50 percent to 450 acres the amount of natural lands actively managed, including invasive species control and restoration; and assemble and publicize a list of additional public lands in need of invasive species removal, and work with public and private partners to facilitate additional projects for removal and restoration. (RPCA)
4. By 2020, City Council will reinstate the Open Space Fund and reestablish the Open Space Steering Committee to assemble a list of potential open space sites, to evaluate and prioritize vacant lots, forested and natural areas, and portions of sites, including stream valleys, as well as publicly owned land, for open space preservation or restoration through purchase, easements, or repurposing land as funds can be made available, development occurs or partnerships can facilitate. (CC)

Implementation Assessment: The City’s ability to implement these actions is HIGH since the City has full budgetary and policy control. Securing viable partnerships from third-party funding and organizational sources such as the Northern Virginia Conservation Trust will be paramount to meeting open space targets in tight budget years. In addition to maintaining a strong ratio of open space per population, the City should continually assess and report appropriate metrics that continue to provide high-quality open space across all categories of use.³

² The ratio, set in the 2002 Open Space Plan and re-committed to in the 2017 Open Space Plan Update, was based on 9322 acres of public open space and a population of 128,283 persons divided by 1,000.

³ See, [2017 Open Space Plan Update](#), pg. 9: “Adding several hundred acres of new protected open space every decade is not sustainable. At some point, and likely sooner than later, the City’s growing population and the City’s fixed geographic boundaries will collide, making it impossible to continue to meet this singular metric. In anticipation of that time, the City must consider a different metric to measure its success in protecting and enhancing its open space resources. As the City’s population grows, it is worth revisiting the use of a straight ratio to measure

Re-instating the Open Space Fund and Steering Committee is a viable and, based on its previous success, popular action. First initiated in 2003, the Fund was created through a set aside that allocated \$.01 from every \$100 of the City’s real estate assessment for the purchase of open-space land and conservation easements (realizing approximately \$2 million annually). Highly successful, the set-aside ended once the 2012 open space target was met. However, the need for quality open space has only continued to grow and the City must not only set new targets, but reinstate a Fund to support growing demand.

Justification:

1. *The City has already publicly committed to 7.3 per 1,000 target.* Following the 2003 Open Space Plan, the City successfully achieved—and exceeded-- its target of 100 acres. However, once that target was met the City did not articulate a new acreage goal and is at risk of falling behind relative to population growth and increasing demand and the associated challenges to the high Quality of Life Alexandrians expect and that makes the City such an attractive location in which to live, work and visit.
2. *Current Small Area Plans provide for 7.3/1,000.* The City of Alexandria is currently very dependent on the public open space planned for and committed in its Small Area Plans—approximately 293 acres—if the 7.3 acres per 1,000 residents is to be maintained. Even with these additional acres, there will soon be a time where the goal of 7.3 acres is unattainable. Maintaining the acreage promised in the Small Area Plans is vital. If the City lets the promised acreage slip, the year that the 7.3/1,000 ratio becomes unattainable could be as soon as 2025.⁴
3. *Zoning Ordinance Open Space requirements:* The Alexandria zoning ordinance divides land use into more than a dozen zoning designations that generally require that multifamily uses set aside a minimum of 40% of the lot area as open space, and further specifies “...The purpose of open and usable space is to provide areas of trees, shrubs, lawns, pathways and other natural and man-made amenities which function for the use and enjoyment of residents, visitors and other persons.” Yet residential development projects are being approved and constructed with no or very little ground level open space that would meet the definition and intent of the zoning ordinance.⁵ Additionally, if solely commercial buildings are constructed, while not currently required by zoning, such projects should provide open space as has been

success in the provision of protected open space. Other jurisdictions break out types of use, some using the term ‘maintained’ for areas that accommodate more active uses such as athletic facilities or playgrounds versus more natural areas that include trails and undeveloped open space. Other jurisdictions are moving away from the use of a single ratio of acres of land per 1,000 residents. Instead, they are using tools such as GIS to measure metrics such as proximity of open space to residents throughout the jurisdiction, or identifying barriers that might prevent easy access to open space such as major highways or rail tracks. Other ways to evaluate include tracking the amount of active protected open space acres and the amount of passive protected open space or the amount of impervious surfaces.”

⁴ See, Open Space Plan Update 2017, pages 9-14.

<https://www.alexandriava.gov/uploadedFiles/recreation/parks/021017x%20Alex%20OS%202017%20Implem%20Stat%20Exec%20Sum%20Reduced%20Size.pdf>

⁵ <https://www.alexandriava.gov/uploadedFiles/council/info/AlexandriaZoningOrdinance.pdf>

done in numerous 1960s-1990s urban renewal projects including the City Courthouse, Tavern Square, The Atrium, Canal Center and the former Sheet Metal Workers Union site recently converted to the residential Oronoco. The City should examine and consider a zoning revision to require open space in commercial projects which would support current open space needs and environmental and community health while providing long-term flexibility including facilitating possible future conversions to residential and mixed uses that would meet residential open space requirements and needs.

Market Context:

- The City has long recognized the value of open space and detailed the benefits of open space in its 2003 Open Space Plan and subsequent updates.⁶ Professionals and practitioners are recognizing, however, that the quality of open space is as critical as the quantity. As the City's population grows, it will need to ensure that the quality of open space matches the needs of its citizens and Eco-City goals (e.g., sufficient passive recreation areas, high-quality wildlife and plant habitat, impervious surfaces, etc.)
- The City must maintain and create high quality open spaces and healthy natural environment in order to relieve the impact of dense development, maintain Alexandria's high quality of life for existing residents and workforce, and to attract new workers needed to grow our local economy.⁷
- As detailed in the Open Space Plan 2017 Update, Alexandria's combination of high-density in a finite and very compact area is somewhat unique. The 2017 Update Appendix 4 lists several comparables.⁸

III. Topic/s: Land Use & Open Space (Tree Canopy)

Accountable City Departments: RPCA; Planning & Zoning; TES; other City Commissions including Parks & Recreation, Beautification, etc.

Goal: Alexandria's Urban Forest Canopy Coverage is healthy, diverse and targeted to specific land uses and natural features thereby providing broad environmental and social benefits such as improved air quality, enhanced property values, public health benefits, and vibrant public spaces.

Target: By 2020, average overall tree canopy is a minimum of 40%.

Short Term Actions:

1. By 2019, update and coordinate Urban Forestry Master Plan, Environmental Sustainability and Management System, and Landscape Guidelines to support increased tree preservation, expansion, and native species. (RPCA (primary), TES, P&Z)
2. By 2019, develop a legislative proposal and include it in the annual budget priority package to Richmond that would enable the City to increase tree protection, preservation, and

⁶ <https://www.alexandriava.gov/uploadedFiles/recreation/parks/OpenSpacePlan.pdf>

⁷ <https://urbanland.uli.org/economy-markets-trends/uli-member-outlook-attracting-retaining-creative-class/>

⁸ https://www.alexandriava.gov/uploadedFiles/recreation/parks/OSPIS_Appendix_4.pdf

expansion. Consider partnering with neighboring jurisdictions to provide stronger lobbying presence on this issue in Richmond. (P&Z, RPCA)

3. Review the City's current tree canopy coverage and update strategies to achieve the target including: (RPCA, P&Z)
 - (a) By 2020, complete an analysis of tree preservation and increased tree canopy coverage opportunities in the Zoning Ordinance for private property.
 - (b) By 2020 complete an options paper, with recommendations for action, of potential incentives, policy opportunities, and potential funding sources to incentivize tree preservation on both city and private property.
 - (c) By 2022, the City will develop a program to conduct outreach and facilitate, via coordination, technical assistance, and incentives, and in collaboration with non-governmental organizations and other public and private partners as available, every property owner planting a least one tree.

Implementation Assessment: The City's ability to implement actions 1, 3 and 4 is HIGH since the City has full budgetary and policy control. The City's ability to implement 2 is MODERATE since it will require concurrence from the state legislature. However, the City maintains full control to prioritize this with the state legislature. The primary constraint for 4(b) would be budgetary (e.g. increasing the tree planting, tree maintenance budget) and securing viable partnerships from third-party funding and organizational sources.

Justification:

4. *The City has already publicly committed to a 40% target. While the 40% target has existed for at least a decade, current coverage has increased only to approximately 36%. New and improved short-term actions are necessary for the City to achieve this long-standing goal and once the target is achieved, to prevent backsliding.*
5. *An average 40% canopy is the absolute minimum target recommended based on latest research and science from the U.S. Forest Service, American Forests and hundreds of peer reviewed academic journals and NGOs, which recommend 40-60% tree canopy coverage in a naturally forested area such as Alexandria.⁹*
6. *A healthy, robust tree canopy is consistent with, complementary to, and will further the City's objectives related to addressing climate change; improving public health and reducing obesity, stormwater reductions; energy efficiency; livability indices and real estate values.*
7. *To achieve the committed targets, the City must encourage tree protection and preservation on private property to the maximum extent. The City has an important role to play in supporting education and providing technical guidance. As demonstrated by grassroots initiatives such as the NorthRidge Home Owner Association tree planting effort in 2017, there is grassroots appetite.*

Market Context:

⁹ See, e.g., <http://www.americanforests.org/blog/no-longer-recommend-40-percent-urban-tree-canopy-goal/>;

- Hundreds of cities across the country have recognized the importance of urban tree canopy and adopted aggressive coverage goals.¹⁰
- As a 34-year Arbor Day Foundation recognized Tree City¹¹ and an Eco-city, Alexandria must lead regionally. Locally, Arlington County’s tree canopy target of 40% has been achieved. Notably, just a few years ago it was at 43% which underscores the need to be vigilant. Washington, DC has achieved approximately 40%. Based on compiled data, Alexandria is within the median of other Virginia municipal targets, but as noted above, Alexandria should lead by example.¹²
- Investing in trees is fiscally prudent. Many studies demonstrate the value of healthy trees.¹³ As one example, the City of Pittsburgh’s award-winning tree preservation initiative demonstrated that for every \$1 invested, there was a return of \$2.94. In 2011, Pittsburgh achieved 40% tree canopy coverage and has set a 20 year goal of 60% by 2031.¹⁴

IV. Topic: Green Building (General)

Accountable City Departments: Planning and Zoning, Transportation & Environmental Services, Department of Code Administration.

Goal: Optimize the economic, environmental and social performance of buildings in the City of Alexandria.

Target: By 2019, expand City’s green building policies in City-owned buildings, incorporate major private renovations, and establish one or more Green Development Zones.

Short Term Actions:

1. City of Alexandria – lead by example
 - a. By the end of 2018 establish policy to develop and implement a plan to track, disclose and optimize operational performance of 95%¹⁵ of publicly owned buildings.
 - b. By the end of 2018 establish policy to achieve LEED Platinum for Alexandria City Hall before 2023.
 - c. By the end of 2019 establish policy to achieve minimum level of certification under a nationally recognized third party certification program for 50% of eligible publicly owned buildings by 2025.
2. By 2nd quarter 2019, expand the City of Alexandria Green Building Policy requirements to include *major renovation* of existing residential, non-residential, historic and mixed-use buildings.

¹⁰ <https://www.nationalgeographic.com/news-features/urban-tree-canopy/>

¹¹ <https://www.arborday.org/programs/treecityusa/directory.cfm>

¹² http://gcp.frec.vt.edu/va_utc.html

¹³ <https://www.treepittsburgh.org/resource/benefits-of-trees/>

¹⁴ http://www.itreetools.org/resources/content/Sustainable_Urban_Forest_Guide_14Nov2016.pdf

¹⁵ All percentages based on building area

3. By 2nd quarter 2019, designate one or more Green Development Zones¹⁶ to support achievement of EAP targets including, but not limited to:
 - a. FAR density increases
 - b. Real estate property tax abatement
 - c. Partial/total waiver of permitting fees
 - d. Establishment of green building revolving fund

Implementation Assessment of Short Term Actions:

- City's ability to implement is high:
 - Establishment of green building certification target policy for public buildings
 - Establishment of Green Development Zone incentives
- City's ability to implement is medium:
 - Expansion of Green Building Policy to include major renovations
- City's ability to implement is low:
 - Expansion of Green Building Policy to include all projects that require a building permit

Justification:

Buildings are responsible for an enormous amount of global energy use, resource consumption and greenhouse gas emissions. As the demand for more sustainable building options increases, green construction is becoming increasingly profitable and desirable within the international construction market.

In the United States alone, buildings account for almost 40 percent of national CO₂ emissions and out-consume both the industrial and transportation sectors, but certified green buildings have 34 percent lower CO₂ emissions, consume 25 percent less energy and 11 percent less water, and have diverted more than 80 million tons of waste from landfills.

Upfront investment in green building makes properties more valuable, with an average expected increase in value of 4 percent. By virtue of lowered maintenance and energy costs the return on investment from green building is rapid: green retrofit projects are generally expected to pay for itself in just seven years. Green buildings reduce day-to-day costs year-over-year.

Market Context:

The many benefits of healthier, more efficient, lower impact buildings have compelled governments across the country to formally and regularly pursue these outcomes through public policy. This policy brief highlights the variety of approaches that state and local governments have taken to inform and oversee green building policy, demonstrating the valuable role that state and local governments play in growing the green building marketplace¹⁷.

¹⁶ <https://law.lis.virginia.gov/vacode/title58.1/chapter38/section58.1-3854/>

¹⁷ [https://www.usgbc.org/sites/default/files/USGBC%20Policy%20Brief%20-%20Guiding%20Green%20Building%20Policy\[1\].pdf](https://www.usgbc.org/sites/default/files/USGBC%20Policy%20Brief%20-%20Guiding%20Green%20Building%20Policy[1].pdf)

As some programs and initiatives have matured, states and localities are beginning to integrate green building into the way that the state makes building-related decisions. This approach incorporates green building and sustainability as a critical perspective – like fire, life safety, accessibility and others – into the fabric of government decision-making.

V. Topic: Green Building (Carbon)

Accountable City Departments: Planning and Zoning, Transportation & Environmental Services, Department of Code Administration.

Goal: Optimize the economic, environmental and social performance of buildings in the City of Alexandria.

Target: Reduce the carbon emissions associated with the design, construction operations and maintenance of buildings 80% by 2050¹⁸.

Short Term Actions:

4. Zero Energy Buildings¹⁹
 - a. By the end of 2018 establish policy that requires all publicly funded non-school buildings to reduce energy use on the following timeline:
 - i. Projects delivered after 2018 - 50% more efficient than code
 - ii. Projects delivered after 2025 - 75% more efficient than code
 - iii. Projects delivered after 2030 – *net zero energy*²⁰
 - b. By the end of 2018 establish policy that requires all publicly funded school buildings to be completed in 2019 or later to achieve *net zero energy*

5. By 2nd quarter 2019, update Green Building Policy requirements for residential, non-residential and mixed-use private development that requires a Development Site Plan (DSP) or Development Special Use Permit (DSUP) to encourage certification under a nationally recognized third party green building certification program and demonstrate compliance with strategies that address carbon emissions. Specifically, encourage these projects to:
 - a. Install *Advanced Energy Monitoring/Sub-metering*²¹
 - b. Optimize energy use at least 40% below existing code
 - c. Meet the ‘renewable ready’ provisions of the International Green Construction Code

<https://www.usgbc.org/resources/2015-green-building-economic-impact-study>

<https://www.ashrae.org/technical-resources/aedgs/zero-energy-aedg-free-download>

¹⁸ 2017 baseline

¹⁹ This is a goal of the “Environmental Action Plan”, adopted June 23, 2009. See [https://www.alexandriava.gov/uploadedFiles/tes/eco-city/info/EAP%202030_Final_6-23-09_Scanned_Lower%20Resolution\(1\).pdf](https://www.alexandriava.gov/uploadedFiles/tes/eco-city/info/EAP%202030_Final_6-23-09_Scanned_Lower%20Resolution(1).pdf)

²⁰ https://www.energy.gov/sites/prod/files/2015/09/f26/bto_common_definition_zero_energy_buildings_093015.pdf

²¹ e.g. in accordance with LEED v4 EA Credit: Advanced Energy Metering

6. By 2nd quarter 2019, expand the Green Building Policy to encourage all projects that require a building permit to implement strategies to address carbon emissions. Specifically, encourage these projects to:
 - a. Utilize Energy Star compliant equipment for 95% (based on energy consumption) of all new equipment
 - b. Install *Advanced Energy Monitoring/Sub-metering*
7. As part of the annual update cycle, revise standard development conditions for Development Site Plans (DSP) and Development Special Use Permits (DSUP) to include requirements/strategies that address carbon emissions.

Implementation Assessment of Short Term Actions:

- City's ability to implement is high:
 - Revision of Green Building Policy for projects that require DSP/DSUP
 - Revision of DSP/DSUP requirements
 - Establishment of energy target policy for public buildings
- City's ability to implement is low:
 - Expansion of Green Building Policy to include all projects that require a building permit

Justification:

Buildings are responsible for an enormous amount of global energy use, resource consumption and greenhouse gas emissions. As the demand for more sustainable building options increases, green construction is becoming increasingly profitable and desirable within the international construction market.

In the United States alone, buildings account for almost 40 percent of national CO₂ emissions and out-consume both the industrial and transportation sectors, but certified green buildings have 34 percent lower CO₂ emissions, consume 25 percent less energy and 11 percent less water, and have diverted more than 80 million tons of waste from landfills.

Upfront investment in green building makes properties more valuable, with an average expected increase in value of 4 percent. By virtue of lowered maintenance and energy costs the return on investment from green building is rapid: green retrofit projects are generally expected to pay for itself in just seven years. Green buildings reduce day-to-day costs year-over-year.

Market Context:

The many benefits of healthier, more efficient, lower impact buildings have compelled governments across the country to formally and regularly pursue these outcomes through public policy. This policy brief highlights the variety of approaches that state and local governments

have taken to inform and oversee green building policy, demonstrating the valuable role that state and local governments play in growing the green building marketplace²².

As some programs and initiatives have matured, states and localities are beginning to integrate green building into the way that the state makes building-related decisions. This approach incorporates green building and sustainability as a critical perspective – like fire, life safety, accessibility and others – into the fabric of government decision-making.

VI. Topic: Green Building (Water)

Accountable City Departments: Planning and Zoning, Transportation & Environmental Services, Department of Code Administration.

Goal: Optimize the economic, environmental and social performance of buildings in the City of Alexandria.

Target: Reduce the impact of water, wastewater, and rainwater in the design, construction, operations and maintenance of buildings.

Short Term Actions:

8. By 2019, require all publicly funded new construction and *major renovation*²³ to implement low impact development or green infrastructure so that the rainwater from the 98th percentile rainfall²⁴ event is managed on-site, and strategies that reduce whole building (indoor and outdoor) water consumption by at least 50%²⁵.
9. By 2nd quarter 2019, update the Green Building Policy for residential, non-residential and mixed-use private development that requires a Development Site Plan (DSP) or Development Special Use Permit (DSUP) to encourage certification under nationally recognized third party green building certification program and demonstrate compliance with strategies that address water. Specifically, encourage these projects to implement:
 - a. low impact development or green infrastructure so that the rainwater from the 95th percentile rainfall²⁶ event is managed on-site,
 - b. strategies that reduce whole building (indoor and outdoor) water consumption by at least 25%²⁷.

²² [https://www.usgbc.org/sites/default/files/USGBC%20Policy%20Brief%20-%20Guiding%20Green%20Building%20Policy%20\[1\].pdf](https://www.usgbc.org/sites/default/files/USGBC%20Policy%20Brief%20-%20Guiding%20Green%20Building%20Policy%20[1].pdf)

<https://www.usgbc.org/resources/2015-green-building-economic-impact-study>

<https://www.ashrae.org/technical-resources/aedgs/zero-energy-aedg-free-download>

²³ Defined as: either (a) The total cost of the renovation relating to the building enclosure or the building systems is higher than 25% of the value of the building, excluding the value of the land upon which the building is situated; or (b) More than 25% of the square footage of the surface of the building enclosure and/or more than 25% of the energy using portions of the MEP systems undergo renovation.

²⁴ 85th percentile rainfall event for zero-lot line projects

²⁵ an example baseline and design calculation for the 50% reduction can be found here: <https://www.usgbc.org/node/1087754?return=/credits/new-construction/v4/pilot-credits>

²⁶ 85th percentile rainfall event for zero-lot line projects

²⁷ an example baseline and design calculation for the 50% reduction can be found here: <https://www.usgbc.org/node/1087754?return=/credits/new-construction/v4/pilot-credits>

10. By 2nd quarter 2019, expand the Green Building Policy to encourage all projects that require a building permit to implement strategies to address water consumption. Specifically, encourage these projects to implement strategies that reduce whole building (indoor and outdoor) water consumption by at least 25%²⁸.
11. As part of the annual update cycle, revise standard development conditions for Development Site Plans (DSP) and Development Special Use Permits (DSUP) to include requirements/strategies that address water conservation and rainwater management.

Implementation Assessment of Short Term Actions:

- City's ability to implement is high:
 - Revision of Green Building Policy for projects that require DSP/DSUP
 - Revision of DSP/DSUP requirements
 - Establishment of water targets for public buildings
- City's ability to implement is low:
 - Expansion of Green Building Policy to include all projects that require a building permit

Justification:

Buildings are responsible for an enormous amount of global energy use, resource consumption and greenhouse gas emissions. As the demand for more sustainable building options increases, green construction is becoming increasingly profitable and desirable within the international construction market.

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have taken to inform and oversee green building policy, demonstrating the valuable role that state and local governments play in growing the green building marketplace²⁹.

As some programs and initiatives have matured, states and localities are beginning to integrate green building into the way that the state makes building-related decisions. This approach incorporates green building and sustainability as a critical perspective – like fire, life safety, accessibility and others – into the fabric of government decision-making.

VII. Topic/s: Climate Change

Accountable City Departments: City Manager, T&ES, P&Z, OMB

Goal: Institutionalize procedures to facilitate meeting the City’s goals for mitigation of community greenhouse gas emissions

Target: By 2022, reduce per capita greenhouse gas emissions in Alexandria to 10 metric tons per year. After 2022, achieve annual emissions reductions of at least 4% in order to meet the City’s longstanding goal of reducing emissions 80% below 2005 levels by 2050.

Short Term Actions:

1. By 2019, City to establish a Climate Change Coordinating Commission (including but not necessarily limited to city staff and members of the Environmental Policy Commission, the Transportation Commission, the Planning Commission, the Budget and Fiscal Affairs Advisory Committee, and the Public Health Advisory Commission) to make recommendations specifically on community-wide greenhouse gas (GHG) emission reductions. The Commission will advise City Council, carry out policy analysis, and provide community engagement.
2. By 2020, the City Manager’s office, with advice from the Commission, will determine appropriate policies and guidelines for estimating the long-term costs associated with greenhouse gas emissions and for estimating projected GHG impacts of capital improvement projects and city programs likely to have a significant impact on community-wide greenhouse gas emissions.
3. By 2021, the Commission will recommend actions, including financing mechanisms, that will achieve community-wide GHG emissions reductions over the subsequent five years consistent with the city’s goal of reducing emissions 80% below 2005 levels by 2050.

Implementation Assessment: The City’s ability to implement the short-term actions is “HIGH”; the main constraint would be dedicating city staff time and resources. Although community-wide GHG emissions are affected by federal and state governments and private actors (e.g. Dominion Energy), Alexandria has substantial influence over transportation and building energy use, which are major sources of GHG emissions. Recommended policies from Action 3 could include items within full city authority as well as items requiring lobbying of state government.

²⁹ [https://www.usgbc.org/sites/default/files/USGBC%20Policy%20Brief%20-%20Guiding%20Green%20Building%20Policy\[1\].pdf](https://www.usgbc.org/sites/default/files/USGBC%20Policy%20Brief%20-%20Guiding%20Green%20Building%20Policy[1].pdf)

<https://www.usgbc.org/resources/2015-green-building-economic-impact-study>

<https://www.ashrae.org/technical-resources/aedgs/zero-energy-aedg-free-download>

Justification:

1. *80% GHG emissions reduction by 2050 is necessary to uphold our stated commitments³⁰ and live up to our identity as an environmental policy leader. GHG emissions must be rapidly reduced to avoid a greater than 2°C increase in global average temperatures.³¹*
2. *The Environmental Policy Commission does not have the capacity to study emissions reductions in necessary detail. Quantifying how city actions impact community emissions would necessitate ignoring water treatment, solid waste, air quality, and other vital issues. The District of Columbia, in order to meet its emissions reduction target, found it worthwhile to establish an initiative focused solely on GHG mitigation.³²*

³⁰ 382 US Climate Mayors commit to adopt, honor and uphold Paris Climate Agreement goals.
<http://climatemayors.org/actions/paris-climate-agreement/>

³¹ See climate change mitigation pathways in Chapter 14 of the Climate Science Special Report:
<https://science2017.globalchange.gov>

³² Climate Action Planning is an initiative under Sustainable DC: <https://doee.dc.gov/service/climate-change>



Overview of Proposed Short-Term Actions on Land Use & Open Space and Green Building

Staff Recommendations

I. Proposed Land Use and Open Space Goals for EAP 2018 Update

Goal 1: Evaluate opportunities and methods to increase tree canopy coverage, thereby providing broad environmental and social benefits such as improved air quality and vibrant public spaces.

- *List of Short-term Action Items:*
 4. Update and coordinate Urban Forestry Master Plan, Environmental Sustainability and Management System, and Landscape Guidelines in 2019 to support increased tree preservation, expansion, and native species. (RPCA) *(high probability of implementation)*
 5. Advocate for state legislation that would enable the City to expand tree protection, preservation, and expansion. (P&Z, RPCA) *(low probability of implementation as City is dependent on state legislation.)*
 6. The City will analyze the possibility of requiring five years of on-site maintenance for new plantings on development projects and update the contribution fee paid to the Living Landscape Fund for sites that are unable to meet the required amount of tree canopy cover. (P&Z, RPCA) *(moderate probability of implementation due to availability of staff resources.)*
 7. Review the City's current tree canopy coverage and update strategies to achieve a revised goal. (RPCA, P&Z) *(Includes research on possible opportunities for tree preservation that applicants could pursue through non-development reviews and an analysis of reasonable tree canopy expectations according to zone; moderate to high probability of implementation based on availability of staff resources.)*
 8. Enlist City partnerships to provide education and outreach that support technical assistance and opportunities for property owners to increase the native tree canopy on their property. (RPCA) *(high probability of implementation)*

Goal 2: Balance public and private open space needs.

- *List of short-term actions:*
 1. Protect and add open space through acquisition, preservation, and conservation, as prescribed in the Open Space Master Plan as updated in 2017. (RPCA) *(moderate probability of implementation as it is dependent on available opportunities)*
 2. Increase percentage of acres of public natural lands that are actively managed, including restoration and invasive species removal, by 50% (450 acres) by 2023 over FY2017 levels (RPCA) *(high probability of implementation, although dependent on City budget)*
 3. Evaluate the requirements of open space on private development. Issues include rooftop/ground floor open space, framework for developer contributions to off-site open space, and consistency of open space requirements across similar zones. (P&Z) *(high probability of implementation)*

- Potential benefits/impacts of achieving these goals include:
 1. Reduce greenhouse gas emissions
 2. Improve air quality
 3. Contributes to community health and wellness

II. Proposed Green Building Goals for EAP 2018 Update

Goal 1: Optimize the economic, environmental, and social performance of new and existing buildings in the City of Alexandria.

- *List of short term actions:*
 1. Review the effectiveness of the current Green Building Policy and update the Policy in FY2019 with a focus on sustainable strategies that have the greatest impact toward achieving targets across EAP principle areas. *(high ability to implement)*¹
 2. Evaluate additional sustainable features to incorporate into the “Building Section” of the standard development conditions for Development Site Plans (DSP) and Development Special Use Permits (DSUP) that will contribute toward achieving targets across EAP principle areas. *(high ability to implement)*²
 3. Evaluate the effects of implementing the State’s Green Building Zone option, and the feasibility of expanding the Green Building Policy, or creation of a separate policy, to improve the sustainability of the existing buildings. *(medium/low ability to implement)*³
- Potential benefits/impacts of achieving this goal include:
 1. Reduce GHGs potable water consumption, raw materials use, and waste output
 2. Improve air quality
 3. Economic sustainability

¹ Staff support for this project is budgeted for and incorporated into the Department of Planning & Zoning’s FY2019 workplan. An additional \$75,000 has been requested for consultant support for analysis of proposed changes to augment Staff analysis if needed.

² Currently, the standard development conditions include requirement for electronic vehicle (EV) charging stations, EPA Watersense and EnergyStar Appliances, and reuse/recycling of building materials. The standard development conditions are updated annually which is an opportunity to consider and incorporate additional sustainable features.



Overview of Short-Term Actions on Land Use & Open Space and Green Building

Eco-City Café Input

I. Eco-City Café Public Feedback: Land Use and Open Space

Tree Canopy

Follow recommendations of Urban Forestry Master Plan.

Plant more trees west of Quaker Lane and at Fort Ward.

Plant new trees and maintain them; ensure maintenance through DSUP conditions.

Replace one tree for every tree lost.

Quantify number of trees lost.

Protect existing tree canopy on private property; offer tax breaks or incentives for stormwater credit program.

Widen landscape strips as streets and sidewalks are repaved.

Assess correlation between higher temperatures and tree loss.

Open Space

Reopen Open Space Fund to fund future land purchases; City Council should prioritize

Land near Tarleton Park could be purchased.

Encourage construction of smaller houses or micro units through zoning ordinance and state code.

Erosion control, protect streams and forests.

Specific to public open space/parks:

- Retrofit Potomac Yard Park
- Emphasize river restoration
- Holmes Run stream maintenance
- Connect open space through trails

New Development

Staff is unaware of goals in existing environmental plans.

Change interpretation of the blockface and setbacks to achieve environmental goals.

Ensure environmental impacts are minimized.

Codify plan goals.

How is tree canopy prioritized in development projects?

Small Area Plans

Environmental goals to serve as example.

Education and Outreach

Tree planting programs.

Enlist volunteers to maintain public open space.

General

Dillon Rule:

- Staff falling back on Dillon Rule to explain why environmental actions cannot be implemented.
- Need for a less conservative interpretation of Dillon Rule.

Hire an Environmental “Czar” to elevate coordination of existing plans with new development proposals.

Provide quarterly report cards on environmental successes or real time updates on a website dashboard.

Certification of city by outside organizations regarding environmental achievements.

Coordinate land use planning with Hazard Mitigation Plan.

Use science for decision-making.

II. Eco-City Café Public Feedback: Green Building

Green Building Policy

Use the Green Building Policy as a tool for achieving other EAP goals and targets.

Explore options other than 3rd party certifications.

Attract businesses with progressive policies.

Integration of historic buildings with green building principles.

Blend historic architecture and modern environmental and energy design.

Health and green buildings.

Balance incentive programs with other City goals.

- Ex. Affordable housing incentives

City Facilities

Balance cost of green building with school funding.

Demonstrate return-on-investment and cost savings.

Measure operations and maintenance of City buildings.

The City should set example with City Hall.

- Next rehab of City Hall should achieve LEED Platinum

Education and Outreach

Education and outreach for residents and development community

Permitting process is still a touch-point for educational outreach when DSUP or green policy doesn't apply.

Educate public onsite where EV and solar stations exist:

- Specific example: signs identifying EV stations on the side of a building and identifying the source of the power to the EV station.
- Ex. EV stations at Giant in Potomac Yard.

Education campaign

- Simplify and make video accessible info.
- Explain relationship between private apartments, commercial buildings and municipal policies online.

Existing Buildings

Upfront costs for improving existing programs and facilities.

General

- All actions should be transparent and have accountability
- It should be clear with each action.
 - Where we started
 - Where we are now
 - Where our next goal is and how long to get there
- Set actions that the City can accomplish.
- Put cost-to-achieve on goals.
- Evaluate cost effectiveness.
- Determine if goals are feasible within dates provided .
- Identify actions that get the “biggest bang for the buck.”
- Incorporate the life/safety component of climate change into building design.
- Set a cyclical review schedule for EAP goals/actions.
- Inform feasibility of reaching targets.
- Evaluate ability to establish working capital funds.
- Lay groundwork now in short term for long-term goals.
- Enhanced connectivity to and from metro.
- Safe and secure amenities, such as indoor accommodations for bikes.
- Add commitment to 100% renewable energy in climate change section. It is an aspirational goal but sets objective to direct planning for city and private businesses and individuals toward 0% CO2 emissions.
- Incorporate green infrastructure and low impact development into the City’s hazard mitigation plan.
- Put this in the plan now. Don’t wait
- Cross-walk the stormwater plans with the other plan ‘LU’(?) etc.
- FEMA now funds efforts on natural hazard mitigation but it needs to be in the plans



Overview of Short-Term Actions on Land Use & Open Space and Green Building

Land Use & Open Space and Green Building Accomplishments

I. Ongoing Green Building actions from the 2030 EAP which have become standard departmental practices or have been completed.

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.

SAB1.1: 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.

Status: Complete; PZ is currently reviewing the Green Building Policy for potential updates and improvements.

SAB1.2: Pursue conformance with green building standards as part of the Development Special Use Permit process.

Status: Complete; The number of projects meeting or exceeding the Green Building Policy continues to grow. To-date, approximately 95% of the square footage of new development approved since 2010 has meet the Policy.

SAB1.3: Provide green building and site design education and training to development staff in appropriate City agencies.

Status: Ongoing; Green building education and training are on-going.

SAB1.4: Arrange for Plan Review Staff to receive LEED certification.

Status: Ongoing; The number of Planning & Zoning Staff with LEED accreditation continues to grow. Additionally, LEED accreditation is a preferred qualification for several Planning & Zoning positions.

MAB1.2: 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.

Status: Ongoing; During the application process, the BAR staff always encourages energy upgrades related to thermal insulation, air infiltration, water conservation and mechanical systems, even though these are not within the BAR's purview and there are numerous installations of solar collectors and ground source heat pumps in the historic districts today. There is nothing in the BAR's guidelines that would prevent the construction of a Passive House or LEED Platinum building in the districts but there is no authority in the zoning ordinance for the BAR to require their construction at the present time.

MAB1.3: 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.*

Status: Complete; Low impact development guidelines are implemented through the Green Sidewalks BMP Design Guidelines where appropriate.

MAB1.6: Require all new buildings to incorporate alternative energy systems (e.g., wind, solar) on the roof, consistent with the building design, or otherwise ensure that each rooftop maximizes its productive space (e.g., green infrastructure, green roofs, and urban agriculture) by 2020.

Status: Ongoing; A higher percentage of rooftops are being used for open space and/or green infrastructure than in the past. Staff encourages use of these spaces consistent with the building design.

LAB1.4: Require that when property owners are retrofitting surface parking lots, they maximize its productive space (e.g., green infrastructure) by 2030.

Status: Ongoing; The Landscape Guideline's requirement for a landscaped parking island for each 10 spaces is implemented with the review process of grading plans and site plans associated with retrofits. Additionally, porous paving may be required in parking lots dependent upon the amount of disturbance and stormwater treatment requirements.

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.

SAB2.1: Request the Commonwealth of Virginia to adopt the latest International Code Council (ICC) building code amendments (which include elements to increase energy conservation measures) by 2011.

Status: Complete; City actively participated in the adoption of new Building Codes aimed at 30% energy reduction.

SAB2.2: Identify and encourage enhanced green measures that may be added to the next Virginia State Amendments to the ICC Building Code.

Status: Complete; Part of the EECBG funding is being used to fund Phase II of the Green Building program.

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

SAB3.1: Identify a local non-profit that can provide green building information and technical assistance to citizens.

Status: Complete; Worked with consultant as part of the Green Building Phase II activities to develop a Green Building Resource Center on the web and provide workshops to the community.

MAB3.2: 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.

Status: Ongoing; Design teams frequently include LEED accredited professionals.

MAB3.4: Create a fund for residents and businesses to provide low-interest loans for green renovations.

Status: Ongoing; As part of the EECBG projects, City is developing a revolving loan program for renewable energy installations.

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

SAB4.1: All new construction and renovation of City buildings, where feasible, will meet a LEED Silver rating, as a minimum.

Status: Complete; All current projects are meeting this requirement. Submission for the Alexandria Police Department's LEED Gold rating is being conducted. FS210 design will meet at-minimum LEED Silver-level certification with goals for LEED Gold rating.

SAB4.3: Conduct feasibility study to install, in phases, a green roof on City Hall.

Status: Complete; Feasibility study is complete. Using EECBG to fund. A vegetative green roof has been installed on East and West Courtyard roofing structures using EECBG funding.

SAB4.4: 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.

Status: Complete; PZ Historic Preservation division stresses the repair and retention of historic buildings that contribute to neighborhood character. A historic preservation workgroup developed Modern and Sustainability Materials Policies in support of energy efficiency for historic structures. The Board of Architectural Reviews encourage the use of solar panels in the historic districts. The Del Ray Pattern Book provides guidelines for rehabilitations and renovations in support of existing building preservation in the Del Ray neighborhood.

II. Ongoing Land Use and Open Space actions from the 2030 EAP which have become standard departmental practices or have been completed.

Goal 1: Continue to coordinate land use and site design decisions among City departments (Planning & Zoning, Transportation & Environmental Services, and Recreation, Parks, & Cultural Activities) to ensure compatibility with existing City plans that promote walking, cycling, and taking public transportation.

SAL1.1: Ensure that land use decisions incorporate smart growth principles that provide incentives and disincentives to reduce vehicle use and vehicle ownership.

Status: Ongoing; Continuously addressed through small area planning processes, Transportation Management Special Use Permits, Development reviews, SUP conditions provided by TES.

SAL1.2: 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.

Status: Ongoing; Continuously addressed through small area plans processes, BikeShare contributions in DSUPs.

SAL1.3: Continue to develop and approve Small Area Plans that increase density in and around Metro stations and other transportation hubs.

Status: Ongoing; actions continually addressed through small area planning processes.

SAL1.4: Promote more pedestrian, bike, and transit usage during land use planning of Alexandria's major thoroughfares, including Van Dorn Street and Beauregard Street.
Status: Ongoing; Implementation through SUP and DSUP conditions, West End Transitway development, BikeShare contributions.

SAL1.5: 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.
Status: Ongoing; actions continually addressed through small area planning processes.

MAL1.1: 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.
Status: Ongoing; These are principles of all Small Area Plans and small business zoning.

MAL1.2: Develop incentives to enable residents to live near their workplace.
Status: Ongoing; The Small Area Planning process enables residents to live near their workplace through a balance of jobs and housing.

MAL1.3: 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.
Status: Ongoing; Small Area Plans support this principle. Several bike racks were installed at Metro stations using CMAQ funding. The City joined the Capital Bikeshare network in 2011.

MAL1.4: 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.
Status: Ongoing; This initiative is provided through the development review (DSP/DSUP) process. Several bike racks were installed at Metro stations using CMAQ funding. The City joined the Capital Bikeshare network in 2011.

MAL1.5: Complete City's current City Bikeway and Trail network through development review, grants, and CIP.
Status: Ongoing; Trails are required through development review where appropriate.

MAL1.6: Rethink ways to incorporate green economy/industry into planning process as a way to enhance economic sustainability and promote green jobs.
Status: Complete; Flexibility is provided on maker spaces and low impact industrial uses.

MAL1.7: Create benchmarks to measure achievement as to both qualitative and quantitative metrics, in the following areas (i) creation of and enhancement of walkable streets, sidewalks, and non-SOV bicycle and pedestrian amenities and connections; (ii) open space acquisition, preservation, and enhancement, including parks, community gathering places, privately owned open space, natural areas, trail connections and extensions, and crown coverage and habitat protection; and (iii) amount of floor area planned for that is connected to walkable destinations, transportation, and community amenities.

Status: Ongoing; A parking requirement credit is provided for a Walkability Index Score above 80 points for multifamily residential developments. High density is concentrated near metro stations; consideration for a mix of uses to promote walkable destinations and community amenities is an ongoing consideration in Small Area Plans.

LAL1.1: By 2030, reuse the site of the coal-fired power plant, imagining such possibilities as a renewable, clean energy generation facility, regional transit center for river-based transportation, open space, arts center, or other community-based function.

Status: Complete; Per the agreement between the City and NRG/GenOn, the PRGS power plant permanently ceased its operations as of October 1, 2012. The plant is going through deactivation phase and will be going through demolition/ remediation before re-development of the site can proceed., The Old Town North Small Area Plan addresses reuse of the site.

Goal 2: Ensure that Small Area Plans, as well as new development and redevelopment projects, are consistent with the vision and principles of the Eco-City Charter.

SAL2.1: 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.

Status: Ongoing; Sustainability considerations are included in all Small Area Plans and new development project reviews. A sustainability checklist is incorporated in Green Building evaluations and is duplicative in this category.

SAL2.2: Prepare GIS maps to identify safest routes for children to walk to their schools, supporting the Walking School Bus Concept.

Status: Ongoing; Underway with participation from City's Office of Environmental Quality.

SAL2.3: 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.

Status: Complete; Small Area Plans include a sustainability chapter.

MAL2.1: 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.

Status: Complete; Sustainability principles have been incorporated in all Small Area Plans and Special Use Plans in addition to the updated City Council Strategic Plan.

MAL2.2: Implement the recommendations of adopted plans:

- o Small Area Plans
- o Transportation Master Plan
- o Open Space Master Plan
- o Urban Forestry Plan
- o Economic Sustainability Report,

Status: Ongoing; Open Space Acquisition FY18-FY27: \$11,930,000. The City adopted an Open Space Plan in 2003 addressing the City's short and longer-term open space needs. In 2013, the City achieved its 100-acre goal for acquiring, dedicating or placing land in conservation easements in order to maintain a 7.3 acre per 1,000-person ratio. Additionally, implementation of the adopted plans is on-going through the development process and CIP.

MAL2.3: 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.

Status: Ongoing; New development and redevelopment projects comply with the City's Green Building Policy and sustainable goals.

MAL2.4: Review existing City policies, guidance, ordinances, and codes, including parking regulations, to eliminate conflicts and enhance opportunities to further the goals of sustainability.

Status: Ongoing; The commercial parking standards have been revised and are scheduled for City Council adoption in February 2018.

Goal 3: Protect and enhance Alexandria's open space and green infrastructure including wildlife habitat, parks, trails, tree canopy, and watersheds.

SAL3.1: Finalize and release the Urban Forestry Master Plan. Develop a multi-year action and funding plan to implement Plan recommendations.

Status: Complete. Urban Forestry Plan adopted June 2009. Council Worksession held in January 2010 to present funding and implementation priorities.

SAL3.2: Explore a policy that expands and supplements current tree canopy coverage standards through a combination of incentives, regulations, and in-lieu fees.

Status: Complete; SUP and subdivision conditions expand tree canopy coverage requirement beyond required 25% in relevant neighborhoods. Development conditions require more than required tree canopy coverage when feasible, although is often inapplicable in urban contexts. An in-lieu contribution fee is in place when requirements cannot be met.

SAL3.3: 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.

Status: Ongoing; The City hosted a "Green Garage" workshop on June 27, 2009 on sustainable solutions for the landscape. Perennial and native plants are proposed in S. Early St. and E. Del Ray pocket parks. Invasive removals conducted in various areas by volunteers.

SAL3.4: 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.

Status: Ongoing; a 5-year inventory of street trees is ongoing (this year will be year 4 of 5). Of the 20,000 estimated street trees in the City, 12,000 have been inventoried and placed in GIS.

SAL3.5: Promote and expand Living Landscape Program 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.

Status: Ongoing; 550 trees were planted in 2016 and 779 trees were planted in 2017, across the City

SAL3.6: 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.

Status: Ongoing; Development reviews when applicable. Redevelopment projects are subject to Landscape Guidelines. Goal is not applicable to SUP proposals.

SAL3.7: Identify potential locations to establish new school and community gardens.

Status: Ongoing; Additional garden plots at Chinquapin Park gardens are being considered for 2010. A new garden is being designed in the Arlandria neighborhood in partnership with Rebuilding Together Alexandria. It is set to open in November 2018.

SAL3.8: 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.

Status: Ongoing; Included in all small area planning processes. Open Space and New Development study scheduled in FY2018.

SAL3.9: Continue progress on protecting the 36 remaining acres, through acquisitions, easements, and dedications, to achieve the City's 100 acre open space goal.

Status: Ongoing; A 2016 update to the Open Space Plan revealed that if all of the open space promised through small area plans, as they are currently written, come to fruition, the City can maintain the ratio until 2040. Without the open space, as planned, and the expected increase in population, the City will only be able to maintain the ratio until 2025. Achieved 100 acre goal..

SAL3.10: Continue the Open Space Pocket Park program with the design and implementation of pocket parks on East Del Ray Avenue and South Early Street.

Status: Ongoing; Improvements at South Early Park solicited December, 2009; construction commencing early Spring, 2010.

SAL3.11: 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.

Status: Completed; The Four Mile Run Wetlands Restoration Project restored an historic 2-acre tidal wetland along Four Mile Run. This wetland plays a prominent role in regional efforts to protect the Potomac River and the endangered Chesapeake Bay by restoring the diverse habitat and natural cycles that support life in and along these waterways. The wetlands restoration project integrates flood protection, environmental restoration, community aesthetics, community access and connectivity, recreation, and education. Bridge competition awarded and adaptive re-use plan completed.

MAL3.1: Continue implementing the Urban Forestry Plan.

Status: Ongoing; Principles of the Urban Forestry Master Plan are implemented through the development process.

MAL3.2: Achieve 40% crown coverage in the city by 2020.*Status: Ongoing; Tree canopy coverage is a major element of all development plans; however the current requirement of the Zoning Ordinance is 25%. In-lieu fees are paid to the Living Landscape Fund by development applicants who cannot meet the 25% minimum requirement. Non-development cases require a tree canopy that are compatible with the surrounding neighborhood and often exceed the 25% minimum requirement. The upcoming Urban Forestry Master Plan revision will be evaluating the canopy coverage and will be making recommendations to update this goal.*

MAL3.3: Seek authority to require all new developments, including single family homes, to provide 40% crown coverage on site. Require no less than 40% crown cover when sites are developed or redeveloped, within these parameters: (i) when trees are cleared from a site, increase replacement requirement for removal of large caliper trees; (ii) change crown coverage assumptions in City requirements to reduce the credit allocated for younger, smaller trees; and (iii) set a minimum amount of the total crown coverage to be achieved through on-site trees and require payment to Living Landscape Fund for failure to achieve full requirement.

Status: Ongoing; Crown cover credit allowances are under review with the Landscape Guidelines update. Additionally, a minimum amount of on-site crown coverage equal to 25% of the site area is implemented through the development process and payment to the Living Landscape Fund is required for failure to achieve the full requirement. 40% crown cover is a typical requirement of SUPs for single family lots when applicable.

MAL3.7: Expand the Living Landscape Fund to provide for maintenance, infrastructure, shrubs, and other landscaping.

Status: Ongoing; In 2016, RPCA develop the PARKnership Program to proactively work with volunteers and partners to provide additional funds for landscape and park improvement projects. Also in 2016, RPCA establish the Community Matching fund in the CIP to provide 1:1 matching dollars for organizations fundraising for park improvements.

MAL3.8: Update the City's trails map, identifying existing trails and proposing additional trail connections and extensions.

Status: Complete; RPCA worked with TES on their Bicycle and Pedestrian Master Plan to identify new trail locations and also look at trail connections in the Citywide Park and Neighborhood Parks Improvement Plan (2013 and 2016).

MAL3.9: Research, develop, and implement green infrastructure policies, guidelines, and regulations. Fund green infrastructure as part of City's capital expenditures.

Status: Ongoing; The Green Sidewalks BMP Design Guidelines were issued in 2014 and are implemented through the development process.

MAL3.12: 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.

Status: Ongoing

MAL3.15: Work with Alexandria schools and RPCA to design and implement expansion of community- and school-based gardens by maximizing conversion of unused open space on public property to habitat enhancement and increase in availability of edible gardens.

Status: Ongoing; A new garden is being designed in the Arlandria neighborhood, new Cora Kelly, in partnership with Rebuilding Together Alexandria. It is set to open in November 2018.

Goal 4: Ensure that future land use and open space planning and project decisions will neither create or perpetuate social injustice, nor compromise the city's historic character.

SAL4.1: 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.
Status: Ongoing; Continually addressed through small area planning processes.

SAL4.2: Continue to identify opportunities for affordable housing and mixed income housing in Small Area Plans throughout the city.
Status: Ongoing; Continually addressed through small area planning process.

SAL4.3: Ensure that mixed income development incorporates spaces for on- or near-site community support services (e.g., child care), where feasible and appropriate.
Status: Ongoing; Continually addressed through small area planning process.

SAL4.4: 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
Status: Ongoing; Continually addressed through small area planning process.

SAL4.5: Incorporate sensitivity for the city's historical character, properties, landmarks, and archeological endeavors in planning decisions.
Status: Ongoing; Historic Preservation Department of PZ maintains the city's historical character, properties, and landmarks through BAR review in historic districts and through involvement in new development processes.

MAL4.1: Encourage universal design standards for buildings and homes to accommodate persons with disabilities and facilitate aging in place.
Status: Ongoing; Universal design standards are implemented through current building code standards. Aging in place principles are addressed with the Housing Master Plan.

Goal 5: Conduct outreach and education on sustainable land use practices, policies and programs.

SAL5.1: 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.
Status: Ongoing; RPCA is working with Northern Virginia Conversation Trust to conduct sessions on Land Conservation Easements for residents. PZ provides internal seminars and off-site training for staff.

MAL5.1: 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.
Status: Ongoing; Public outreach and education are done through the Small Area Planning process.

