

Environmental Policy Commission Proposed Environmental Action Plan Updates Café 2018

Topic: Green Building

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 2050.

Short Term Actions:

1. Zero Energy Buildings¹
 - a. By the end of 2018 establish City of Alexandria policy that requires all publicly funded non-school buildings to reduce energy use on the following timeline:
 - i. By 2019 - 50% more efficient than code
 - ii. By 2025 - 75% more efficient than code
 - iii. By 2030 – *net zero energy*²
 - b. By the end of 2018 establish City of Alexandria policy that requires all publicly funded school buildings to be completed in 2019 or later to achieve *net zero energy*
2. Green Building Policy Update
 - a. By 2nd quarter 2019, update City of Alexandria 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 nationally recognized third party green building certification program and demonstrate compliance with strategies that address carbon emissions. Specifically, encourage these projects to:
 - i. Install *Advanced Energy Monitoring/Sub-metering*³
 - ii. Optimize energy use at least 40% below existing code
 - iii. Meet the 'renewable ready' provisions of the International Green Construction Code
 - b. By 2nd quarter 2019, expand the City of Alexandria Green Building Policy requirements to include *major renovation*⁴ of existing residential, non-residential, historic and mixed-use buildings.
 - c. By 2nd quarter 2019, expand the City of Alexandria Green Building Policy to encourage all projects that require a building permit to implement strategies to address carbon emissions. Specifically, encourage these projects to:
 - i. Utilize Energy Star compliant equipment for 95% (based on energy consumption) of all new equipment
 - ii. Install *Advanced Energy Monitoring/Sub-metering*
3. 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.
4. By 2nd quarter 2019, implement Green Development Zone strategies/incentives to support achievement of targets including, but not limited to:
 - a. FAR density increases
 - b. Real estate property tax abatement
 - c. Partial/total waiver of permitting fees

¹ This is a goal of the 2009 Environmental Action Plan

² https://www.energy.gov/sites/prod/files/2015/09/f26/bto_common_definition_zero_energy_buildings_093015.pdf

³ e.g. in accordance with LEED v4 EA Credit: Advanced Energy Metering

⁴ 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.

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Implementation Assessment:

- 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
 - 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 marketplace⁵.

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.

⁵ <https://www.usgbc.org/sites/default/files/USGBC%20Policy%20Brief%20-%20Guiding%20Green%20Building%20Policy%2011.pdf>
<https://www.usgbc.org/resources/2015-green-building-economic-impact-study>
<https://www.ashrae.org/technical-resources/aedqs/zero-energy-aedg-free-download>

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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:

1. By 2019, establish City of Alexandria policy that requires all publicly funded new construction and *major renovation*¹ to implement:
 - a. low impact development or green infrastructure so that the rainwater from the 98th percentile rainfall² event is managed on-site.
 - b. strategies that reduce whole building (indoor and outdoor) water consumption by at least 50%³.
2. Green Building Policy Update
 - a. By 2nd quarter 2019, update City of Alexandria 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 nationally recognized third party green building certification program and demonstrate compliance with strategies that address water. Specifically, encourage these projects to implement:
 - i. low impact development or green infrastructure so that the rainwater from the 95th percentile rainfall⁴ event is managed on-site.
 - ii. strategies that reduce whole building (indoor and outdoor) water consumption by at least 25%⁵.
 - b. 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.
 - c. By 2nd quarter 2019, expand the City of Alexandria 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%⁶.
3. As part of 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.
4. By 2nd quarter 2019, implement Green Development Zone strategies/incentives to support achievement of targets including, but not limited to:
 - a. FAR density increases
 - b. Real estate property tax abatement
 - c. Partial/total waiver of permitting fees

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² 85th percentile rainfall event for zero-lot line projects

³ an example baseline and design calculation for the 50% reduction can be found here: <https://www.usgbc.org/node/10877754?return=/credits/new-construction/v4/pilot-credits>

⁴ 85th percentile rainfall event for zero-lot line projects

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