ATTACHMENT 2

EPC RECOMMENDATIONS

ENVIRONMENTAL ACTION PLAN UPDATE PHASE ONE

2018

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UPDATE: PHASE 1

LEGISTAR

Environmental Action Plan

FY 2009-2030

City of Alexandria, Virginia

COMPILED BY:

Environmental Policy Commission
City of Alexandria

SUBMITTED TO:

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1. Energy

Renewable Energy

Goal Transition Alexandria City Government Facilities to 100% clean energy to mitigate Alexandria's contribution toward climate change.

Target By FY2023[1], supply all City-operated buildings and facilities with 100 percent renewable energy.

Accountable General Services; Transportation & Environmental Services

Short Term Actions

1. By FY2019, increase Renewable Energy Certificate (REC) purchases to offset 100% of City government facilities electricity use. This is meant to be a temporary measure that is phased down or phased out as direct purchasing[2] and onsite generation represent an increasing share of City electricity supply over time with RECs offsetting the balance.

2. By FY2019, agree to pursue joint procurement of renewable energy with other regional entities with sufficient combined electricity use to procure an offsite renewable energy Power Purchase Agreement.

3. By FY2023, ensure that onsite renewable electricity generation[3] combined with direct purchasing of offsite renewable electricity account for at least 80% of electricity use at all City-operated buildings and facilities. REC purchases will make up the remainder to achieve 100% renewable energy supply.

[1] Unless otherwise indicated, all targets and actions are intended to be completed no later than the end of the fiscal year identified.
[2] Direct purchasing includes wholesale transactions such as an offsite PPA, voluntary purchases via a utility-run green tariff program, or other methods which are able to demonstrate regional additionality.
[3] Within the technical potential of onsite renewable electricity generation.

Energy Efficiency

Goal Accelerate implementation of all feasible energy efficiency and emission reduction measures for City-owned buildings and infrastructure, and City-affiliated transportation.

Target By FY2023, City-owned buildings and infrastructure should use 22% less energy on average (per square foot or relevant normalized metric) as compared to 2018 levels of energy use.

Accountable General Services; Transportation & Environmental Services

Short Term Actions

1. By FY2019, establish an energy efficiency policy and evaluation cycle for City-owned buildings and infrastructure that specifies when energy capital (lights, boilers, etc.) or building features should be evaluated for energy efficiency improvements.[4]

2. By FY2021, initiate electric vehicle pilot programs for DASH, ACPS, and the City vehicle fleet in order to evaluate costs, benefits, technical feasibility, and implementation opportunities to transition City fleet vehicles to electric vehicle technology, and vehicle charging infrastructure at City facilities.[5]

3. By FY2021, complete retrofits of all City facilities' conventional lighting with LED lighting and by FY2023 retrofit 100% of streetlights and outdoor lighting to LED technology subject to the availability of a suitable, safe LED solution and zoning constraints.[6]

[4] See Chula Vista, California (pop. ~260k) – City Operations Sustainability Plan, which identifies energy efficiency goals for municipal buildings. http://www.chulavistaca.gov/home/showdocument?id=9725.
[5] Pilot programs for DASH and ACPS would be subject to approval by the applicable boards.
[6] Staff should consider the use of Energy Savings Performance Contracts or other financing mechanisms that can allow the blending of lighting projects with long-term energy efficiency measures.

Community Energy Use

Goal Reduce greenhouse gas emissions associated with community energy consumption in support of the City's global greenhouse gas emissions reduction goals.

Target By FY2023, reduce the greenhouse gas emissions per capita associated with community energy use in Alexandria by 30% below 2005 levels.

Accountable General Services; Transportation & Environmental Services; Planning & Zoning

Short Term Actions

1. By FY2019, expand participation in state-level policy and regulatory activities relevant to identifying and creating opportunities to reduce greenhouse gas emissions associated with community energy use. This should include lobbying for bills that would expand renewable energy purchasing by the community or utility, advocating for the state of Virginia to join the Regional Greenhouse Gas Initiative (RGGI), setting a Renewable Portfolio Standard for electricity generation, and granting Alexandria authority to undertake energy and transportation initiatives to reduce greenhouse gas emissions that are currently prohibited by state law. This should also include intervening in regulatory dockets related to the composition of the utility generation supply mix, utility energy efficiency programs, or utility rates.

2. By FY2020, adopt an ordinance implementing a Commercial Property Assessed Clean Energy (C-PACE) program to support sustainable economic development opportunities.[7]

3. By FY2020, develop a community electric vehicle charging infrastructure strategy.[8]

[7] Arlington adopted a C-PACE program in late 2017. https://newsroom.arlingtonva.us/release/arlington-first-in-virginia-with-new-financing-tool-for-sustainable-buildings/. Ann Arbor, MI adopted a C-PACE program in 2010. https://www.a2gov.org/a2energy/commercial/Pages/default.aspx.

[8] Sacramento approved Electric Vehicle (EV) Strategy in 2017, which seeks to spur the use of zero emission vehicles by establishing outreach programs, expanded charging infrastructure, and new incentives to increase adoption. https://www.cityofsacramento.org/Public-Works/Electric-Vehicle-Initiatives/EV-Strategy

2. Climate Change

Adaptation

Goal Make Alexandria resilient and sustainable to climate change impacts.

Target By FY2023, Alexandria will have agreed-upon metrics for measuring its residents' exposure to climate risks.

Accountable Transportation & Environmental Services; Health, Planning & Zoning

Short Term Actions

1. Through at least FY2021, provide budget support for an ongoing study[9] by the Metropolitan Washington Council of Governments (MWCOG) and the U.S. Army Corps of Engineers (USACE) on ways to address coastal flooding and storm damage, taking into account projected rise in sea level. The study is scheduled to be completed by 2021 and Alexandria committed approximately $300,000 over the duration of the study.

2. By FY2023, Alexandria will develop a plan, either independently or in cooperation with regional partners, on strategies for addressing the public health impacts of climate change, including extreme heat events, air quality impacts, vector-borne illnesses, and other potential threats.[10][11]

3. By FY2023, maintain class 6 Community Rating System (CRS) rating for flood insurance as FEMA's criteria are updated.[12]

[9] The 2017 announcement of the MWCOG/USACE study: https://goo.gl/jF2ynb
[10] See *The Impacts of Climate Change and Human Health in the United States: A Scientific Assessment*: https://health2016.globalchange.gov
[11] See NRDC, *Climate Change and Health in Virginia*: https://assets.nrdc.org/sites/default/files/climate-change-health-impacts-virginia-ib.pdf
[12] See https://www.fema.gov/national-flood-insurance-program-community-rating-system

Mitigation

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

Target By FY2022, reduce per capita greenhouse gas (GHG) emissions in Alexandria to 10 metric tons per year. After FY2022, achieve annual emissions reductions of at least 5% per year in order to meet the City's longstanding goal of reducing emissions 80% below 2005 levels by 2050.

Accountable City Manager, Transportation & Environmental Services; Planning & Zoning; Office of Management and Budget

Short Term Actions

1. By FY2019, the City will establish a Joint Climate Change Task Force, including but not limited to city staff and representatives of the Environmental Policy Commission, the Transportation Commission, the Planning Commission, the Budget and Fiscal Affairs Advisory Committee, and the Public Health Advisory Commission. The Task Force's primary charge will be to recommend actions that can meet the city's targets for community-wide GHG emissions reduction, evaluate the effectiveness of these actions through comparison to emissions inventories, and monitor climate change science, health, and policy developments of potential interest to the city and its residents. The Task Force will advise City Council, carry out the necessary analysis, and provide community engagement.

2. By FY2020, the City, with input from the Joint Climate Change Task Force, will begin an ongoing marketing campaign to spread the adoption of strategies and practices among Alexandria residents and businesses to reduce community GHG emissions. The campaign should be launched with a retreat, open to city residents and stakeholders, to boost community engagement, solicit recommendations, and communicate the City's commitment to addressing climate change.

3. By FY2020, the City Manager's office, with advice from the Task Force, will determine appropriate policies and guidelines for estimating projected GHG impacts of capital improvement projects and city programs likely to have a

significant impact on community-wide greenhouse gas emissions and the long-term costs associated with those emissions.

4. By FY2021, the Task Force will work with City staff to produce an updated Climate Change Action plan to achieve community-wide GHG emissions reductions of at least 35% below 2005 levels by 2026, and that are consistent with the city's goal of reducing emissions 80% below 2005 levels by 2050. The plan will include recommendations for specific policies and programs to achieve emissions reductions through: improvements in energy efficiency in both new and existing buildings transportation system changes to reduce vehicle miles traveled and speed the transition to zero-emissions vehicles, increase renewable energy production and availability for city residents, work with the commercial sector to curtail consumption of fossil fuels, and engage Alexandria residents in reducing emissions. The plan will also recommend financial incentives, financing mechanisms, and City budgets required to achieve designated goals.

3. Green Buildings

Public Buildings

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

Target By FY2023, all new or renovated City-owned buildings shall be at least 50% more energy efficient than code; new or renovated school buildings shall seek to meet a *net zero energy* standard; and the City will seek credible third party certification for all new construction, major renovation and half of the existing building portfolio.

Accountable Planning & Zoning; Transportation & Environmental Services; Department of Code Administration

Short Term Actions

1. All publicly funded new non-school buildings, including all new construction and *major renovations*[13] shall optimize energy demand so that any project initiated between FY2019 and FY2023 is at least 50% more efficient than code[14].

2. All publicly funded school building projects initiated during or after FY2020 shall seek to meet a *net zero energy* standard.

3. By FY2020, projects initiated for all new publicly funded buildings, including all new construction and major renovations, shall manage onsite rainwater from the 98th percentile rainfall[15] event and shall reduce whole building (indoor and outdoor) water consumption by at least 50%[16]

[13] 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.
[14] building code being enforced at time of project initiation
[15] 85th percentile rainfall event for zero-lot line projects
[16] 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. By FY2023, the City shall develop and implement a plan to track, disclose and optimize operational performance for 95%[17] of City-owned buildings and achieve minimum level of certification under a nationally recognized third party certification program for 50% of eligible publicly owned buildings.

[17] All percentages based on building area

Private Buildings

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

Target By FY2020, the City's Green Building Policy will apply to all new construction and major renovation of private residential, non-residential, historic and mixed-use buildings projects, and will include quantifiable targets for the reduction of Greenhouse Gas Emissions (GHGs), whole building water use, and storm-water flows.

Accountable Planning & Zoning; Transportation & Environmental Services; Department of Code Administration

Short Term Actions

1. In updating the Green Building in FY2019, Staff shall study and strongly consider incorporating the following recommendations for all new construction and major renovation of private residential, non-residential, historic and mixed-use buildings projects initiated between FY2020 and FY2023:
    a. Install *Advanced Energy Monitoring/Sub-metering* [18]
    b. Designed at least 40% more energy efficiently than code.
    c. Meet the 'renewable ready' provisions of the International Green Construction Code
    d. Implement low impact development or green infrastructure so that rainwater from the 95th percentile rainfall19 event is managed on-site
    e. Implement strategies that reduce whole building (indoor and outdoor) water consumption by at least 25%20

2. By FY2020, designate one or more Green Development Zones[21] to incentivize private developers to meet and/or exceed the City's Green Building Policy and to

[18] In accordance with LEED v4 EA Credit: Advanced Energy Metering
[19] 85th percentile rainfall event for zero-lot line projects
[20] 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
21 https://law.lis.virginia.gov/vacode/title58.1/chapter38/section58.1-3854/

recruit green businesses to Alexandria. Staff shall consider Green Development Zone incentive strategies 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

3. By FY2023, the City's Green Building Policy shall be reviewed and updated to apply to the next five year period of FY2024-2029.

4. Land Use and Open Space

Open Space

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 Through FY2023, Alexandria's open space ratio of 7.3 per 1000 residents[22] is maintained or increased, the quality and characteristics of shared open space is ecologically and environmentally diverse and beneficial, publicly accessible, and open space requirements are consistently applied and inclusive of innovative and sustainable design.

Accountable Planning & Zoning; Recreation, Parks and Cultural Affairs; Office of Historic Alexandria; Transportation & Environmental Services; City Boards and Commissions including Parks and Recreation Commission and Beautification Commission

Short Term Actions

1. Protect and add high quality open space through acquisition, preservation and conservation as prescribed in the 2017 Open Space Master Plan and, by FY2023, evaluate increasing the target to 7.5 per 1000 residents.

2. Enforce existing open space acreage commitments in Small Area Plans (approximately 293 acres) and require consistent and meaningful open space on private development in at least the amount required within basic zoning regulations. Meaningful includes at ground level; vegetated with native plants including large shade trees; no more than 20% impervious surfaces; implementing a framework for developer contributions to off-site open space, and; providing open space within commercial zones.

[22] 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. By FY2020, City Council will:
    a. reinstate the Open Space Fund; and
    b. reestablish the Open Space Steering Committee to evaluate, prioritize, and publish a list of potential open space sites on both public and private property (vacant lots, forested and natural areas, stream valleys). Tools to be considered for open space preservation or restoration will include purchase, easements, or repurposing land as funds can be made available, development occurs, or partnerships can facilitate.

4. By FY2023, increase by 50% to 450 acres the amount of natural lands actively managed, including invasive species control and restoration; 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.

Tree Canopy

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, stormwater and flood mitigation, public health benefits, and vibrant public spaces.

Target By FY2023, average overall tree canopy is a minimum of 40%.

Accountable Recreation, Parks and Cultural Affairs; Planning & Zoning; Transportation & Environmental Services; City Boards and Commissions including Parks and Recreation Commission and Beautification Commission

Short Term Actions

1. By FY2019, develop a legislative proposal in consultation with neighboring jurisdictions and interested stakeholder groups that would give the City additional authority or support to increase tree protection, preservation, and tree canopy expansion. Include the proposal in the annual budget priority package to Richmond and advocate jointly with other jurisdictions to secure legislator sponsorship and support.

2. Review the City's current tree canopy coverage and update strategies to achieve the target including:
   (a) By FY2020, complete an analysis of increasing tree preservation and increased tree canopy coverage opportunities in the Zoning Ordinance for private property.
   (b) By FY2020 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 FY2022, 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 native tree.

5. Solid Waste

Recycling

Goal Reduce greenhouse gas emissions and other forms of pollution by optimizing the collection and processing of solid waste and improving the quality of collected recyclables in response to more restrictive global recycling markets.

Target Establish a Greenhouse Gas Emissions baseline for the collection and processing of solid waste by FY2019, measure emissions at least annually through a waste characterization study, and reduce the emissions rate by at least 12% by FY2023.

Accountable Transportation & Environmental Services

Short Term Actions

1. By FY2019, eliminate glass from single stream recycling and install special containers for only glass at all recycling drop-off centers to improve the recyclability of glass; and temporarily lower the City's recycling goal to 42% to account for the removal of glass from single stream recycling and reset the goal back to 50% no later than FY2023.

2. By FY2019 launch a "Recycle Right" education campaign to promote and define recycling best practices with a focus on reducing recyclables contamination, discouraging the disposal of recyclables inside plastic bags, and maximizing the reduction in greenhouse gas (GHG) emissions.

3. By FY2019, coordinate with ACPS to establish an agreed protocol for weighing recyclables and establishing recycling rate goals at all ACPS schools. Support school recycling though outreach by training educators in solid waste best practices, hosting rich online materials and inviting outreach from local solid-waste disposal providers and environmental groups.

4. By FY2020, update the City's recycling ordinance to reflect changes in the global recycling market and to prioritize recycling practices that maximize the reduction in greenhouse gas emissions (GHG) by ensuring that the most resource and energy intensive materials such as aluminum and plastics are being properly recycled. Considerations for the updated ordinance shall include convenience, signage, education, and an annual diversion plan for all multi-family and commercial properties.

Reduce

Goal Reduce total solid waste collected from City-served residential customers.

Target By FY2023, reduce the total solid waste collected from City-served residential customers by 5% compared with 2017 as the baseline.

Accountable Transportation & Environmental Services; Recreation, Parks and Cultural Affairs

Short Term Actions

1. By FY2019, develop a legislative proposal in consultation with neighboring jurisdictions and include it in the annual budget priority package to Richmond that would authorize the City to enact a deposit program for glass containers (i.e., a “bottle bill”) and to control the sale of disposable plastic bags (i.e., “bag law” or “plastic bag tax”).

2. By FY2020, the City’s composting programs result in a net reduction in Greenhouse Gas (GHG) emissions.

3. By FY2021, evaluate and make a recommendation to Council on whether to initiate variable-rate pricing for solid waste collection services to reduce waste and provide greater economic equity for residents.

4. By FY2023, reduce convenience packaging (i.e. plastic bags and plastic water bottles) in the City’s waste stream by 50%.