Environmental Action Plan 2030
Phase 1 Update

DRAFT

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Work Session

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1. Energy

Renewable Energy

Goal Transition Alexandria City government facilities to 100 percent clean energy to mitigate Alexandria's contribution to climate change.

Target By FY2023[1], offset electrical energy use by City-operated facilities with 100 percent renewable energy.

Short Term Actions

1. By FY2023, increase Renewable Energy Certificate (REC) purchases to offset 100 percent of electrical energy use by City government facilities. This temporary measure is phased down as direct purchasing[2] and onsite generation represent an increasing share of the City's electrical energy supply over time.

   Cost Estimate: $100,000 per year

   Cost Breakdown: Approximately $58,500 has been committed in FY2019 to achieve approximately 60 percent offset of electricity use. Costs will vary slightly year over year to accommodate net changes in electrical energy use from energy efficiency implementation, weather influences, and operational changes.

2. By FY2021, develop a renewable energy supply strategy to evaluate the risks, benefits, feasibility, optimal mix and timing of potential renewable energy supply implementation pathways considering the City's current and future energy use demand. Should beneficial direct purchase opportunities or other become available before the strategy is complete, the City should conduct appropriate due diligence to prudently evaluate and consider implementation.

   Cost Estimate: $100,000

   Cost Breakdown: $50,000 - $100,000, depending on the quality and rigor of analysis.

[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 that can demonstrate regional additionality.

3. By FY2023, ensure that direct purchasing of offsite renewable electrical energy accounts for at least 50 percent of electrical energy use at all City-operated facilities. REC purchases and onsite renewable electrical energy generation will make up the remainder to achieve 100 percent renewable energy supply.

   Cost Estimate: $7.5 million

   Cost Breakdown: First cost (capital, consulting, acquisition, etc.) is approximately $7.5 million for implementation of 50 percent electrical energy offset from a direct purchasing opportunity, 5-10 percent implementation of feasible on-site renewable energy installation opportunities, and the balance through RECs. Optimal mix and purchasing strategies will be identified from Short Term Action #2.

Legislative Priorities

N/A

Justification

Pending

Accountable Parties

General Services (primary); Transportation and Environmental Services

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 15 percent less energy on average (per square foot or relevant normalized metric) energy use.

Short Term Actions

1. Major City renovations that are more than 25 percent of the building space or 25 percent of the value of a building and affect building components and equipment and have an impact to the energy performance of a building or building system should be replaced with better than code options where practicable. Update facility asset condition auditing process and Facility Condition Index (FCI) rating (or similar) methodology and process to reflect facility energy and sustainability performance. In addition, as opposed to external process, include energy audits, portfolio energy optimization, and similar evaluation processes into the facility asset condition auditing process.

   Cost Estimate: $200,000 per year
   Cost Breakdown: Estimated $150,000 - $200,000 per year funding plus staff resources to development a portfolio-wide energy optimization investment plan independent or as part of a broader energy supply transition planning effort as recommended in the Renewable Energy section.

2. By FY2021, initiate electric vehicle pilot programs for DASH, Alexandria City Public Schools, and the City vehicle fleet 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.[3]

   Cost Estimate: $150,000 per year
   Cost Breakdown: Considering only City passenger vehicles, a small-scale pilot of passenger vehicles may be able to be accomplished with $100,000 - $150,000 for vehicle acquisition.

[3] Pilot programs for DASH and ACPS would be subject to approval by the applicable boards.

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

   Cost Estimate: Retrofit of all remaining practicable City facilities' conventional lighting roughly estimated to be about $6,000,000 - $8,000,000. Retrofitting 100 percent of practicable streetlights is estimated to be about $2.5 million ($1.5 million for conventional basic roadway and traditional streetlighting, and about $1,000,000 for Gadsby streetlighting). Total estimated cost is to retrofit practicable lighting is about $8.5 million - $10.5 million.

   Cost Breakdown: Lighting retrofits for all City facilities will be dependent on future City Capital Improvement Project (CIP) funding and staffing allocated to lighting retrofits. Not all existing lighting is amenable for retrofit, either financially or technically. Funding to retrofit parks and outdoor lighting is limited or not currently specified in the City's CIP. The current City CIP only specifies funding to support converting approximately 16 percent of streetlights by FY2023. There are not enough staff or resources to meet these aggressive targets. City will need to either significantly increase staff and resources or move target dates. FY2023 recommendation of 100 percent is not coordinated with the practicable considerations of negotiation.

Legislative Priorities

N/A

Justification

Pending

Accountable Parties

General Services (primary); Transportation and Environmental Services

Community Energy Use

Goal

Reuce greenhouse gas (GHG) emissions associated with community energy consumption in support of the City's global GHG emissions reduction goals.

Target

By FY2022, reduce the GHG emissions per capita associated with community energy use in Alexandria by up to 10 metric tons.

Short Term Actions

1. By FY2019, expand participation in state-level policy and regulatory activities relevant to identifying and creating opportunities to reduce GHG 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 GHG 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.

   Cost Estimate: One full-time employee (FTE) at $200,000 per year
   Cost Breakdown: Depending on the necessary expertise and level of involvement, may require external support including specialized legal counsel or technical experts. Based on past intervention efforts, these costs may range from an estimated $50,000 - $500,000 per year.

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

   Cost Estimate: One full-time equivalent (FTE) at $200,000 per year
   Cost Breakdown: Assuming operation by external administrator. Estimate 75 percent for program implementation and 25 percent ongoing program operation. The one FTE net time could be allocated accordingly to other programs. Additional one-time start-up costs estimated to be about $100,000 - 200,000 for legal counsel, engagement, systems implementation, etc. Recurring operation costs would largely be borne by administrator and fees charged to participants but estimate contingency of $25,000 - $50,000 for any necessary legal counsel or administrative consulting expenditures, etc. which could be included in remittances by external administrator. Do not include costs of recordation or similar costs

as the lending volume would not require significant impacts to existing recordation staffing.

3. By FY2020, develop a community electric vehicle charging infrastructure strategy.
   Cost Estimate: $100,000
   Cost Breakdown: Consultant engagement and strategy development are estimated to be about $75,000 - $100,000.

Legislative Priorities

N/A

Justification

Pending

Accountable Parties

General Services (primary); Transportation and Environmental Services

2. Climate Change

Goal

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

Target

By FY2022, reduce per capita GHG emissions in Alexandria to 10 metric tons per year to meet the City's longstanding goal of reducing emissions 80 percent below 2005 levels by 2050.

Short-Term Actions

1. By FY2023, update the Energy and Climate Change Action Plan consistent with the city's goal of reducing emissions 80 percent 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, increase renewable energy production and availability for city residents, work to curtail consumption of fossil fuels, and engage Alexandria residents and businesses in reducing emissions.

   Cost Estimate: $150,000
   Cost Breakdown: The funds will be used for consultant services to propose recommendations for policies and programs.

2. By FY2020, provide education and outreach to engage the community through a robust campaign for Alexandria residents and businesses to adopt emission reducing strategies and practices, solicit community recommendations, and provide opportunities to participate in the City's commitment to reduce GHG emissions and address climate change.

   Cost Estimate: $20,000 per year
   Cost Breakdown: This includes outreach events and a sustained marketing push.

3. By FY2022, determine appropriate policies and guidelines for estimating projected GHG impacts and costs of capital improvement projects and city programs likely to have a significant impact on community-wide GHG emissions. This will include guidelines for what types of projects and programs require GHG emissions assessments and policies for how GHG emissions impacts will be considered alongside other city priorities when evaluating options.

   Cost Estimate: Dependent on the number of projects per year that meet the guidelines to be developed.
   Cost Breakdown: One to three percent of project costs to estimate the GHG emissions.

Legislative Priorities

N/A

Justification

1. The goal, target and short-term actions are consistent with the City's commitments to addressing climate change as part of the MWCOG Regional Climate and Energy Action Plan[4], align with the Paris Agreement[5], and our stated commitments and live up to our identity as an environmental policy leader to achieve our target of 80 percent GHG emissions reduction by 2050. Engagement of the community is essential to reducing the 96 percent emissions generated by the community and the four percent by city operations.

Accountable Parties

General Services (primary); Transportation and Environmental Services (secondary); City Manager; Management and Budget; Planning and Zoning

4 MWCOG, Regional Climate and Energy Action Plan, p.24. goo.gl/GmDkzh
5 382 US Climate Mayors commit to adopt, honor and uphold Paris Climate Agreement goals. http://climatemayors.org/actions/paris-climate-agreement/

3. Green Building

Goal

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

Target

By FY2023, the Green Building Policy will enhance sustainable practices within new and existing buildings.

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. Through this process, with support of third-party consultant analysis, the update will consider topics such as:
    a. Increasing LEED or equivalent third-party green building certification standards for private development;
    b. Establishing a separate green building standard for new public development;
    c. Prioritizing specific green building elements;
    d. Incorporating incentives to promote green building to achieve the quantifiable goals for GHG emissions established in the EAP and water use and runoff reduction;
    e. Introducing green building practices for existing buildings (including historic) and for small buildings not subject to site plan review;
    f. Instituting a building performance monitoring program;
    g. The City's ability to be more ambitious than the private sector in meeting green building goals to serve as a sustainability leader, and
    h. Establishing a Green Zone in the City

    As part of this process, a Green Building Policy Update Task Force will be established by City Council. The Task Force, with critical input from the EPC, will determine the actual topics to be analyzed by the consultant.

    Cost Estimate: $75,000 (does not include staff time)
    Cost Breakdown: The funds will be used for consultant studies on policy analysis on a cost analysis.

2. By FY2020, evaluate additional sustainable features to incorporate into the "Building Section" of the standard development conditions for the Development Site Plans (DSP) and Development Special Use Permits (DSUP) that will contribute toward achieving targets across EAP principle areas.

    Cost Estimate: Existing staff resources are accounted for in current budget.
    Cost Breakdown: N/A

Legislative Priorities

N/A

Justification

1. Climate change presents an existential threat to the future livability of Alexandria and the rest of the planet. Climate science has confirmed that GHG emissions must be rapidly eliminated to avoid a greater than 2°C increase in global average temperatures. Green building is an important instrument in reducing GHG emissions, potable water consumption, raw materials use, and waste output. Green Building also contributes to increased air quality, reduced storm water pollution, reduced energy demands, and economic sustainability.

Accountable Parties

Planning and Zoning (primary); Code Administration; General Services; Transportation and Environmental Services

4. Land Use and Open Space

Tree Canopy

Goal Preserve and expand a healthy urban tree canopy.

Target By FY2023, average overall tree canopy is a minimum of 40 percent.[6]

Short Term Actions

1. Update and coordinate the Urban Forestry Master Plan, Environmental Sustainability and Management System, and Landscape Guidelines in FY2019 to support increased tree preservation, expansion, maintenance, native species, and a revised tree canopy coverage goal.

   Cost Estimate: $30,000 - $40,000 per year

   Cost Breakdown: $30,000 for the yearly tree inventory study plus $10,000 for the tree canopy survey scheduled for every three years. Existing staff resources are accounted for in current budget.

2. Enlist City partnerships (community groups) to provide education and outreach that support technical assistance and opportunities to increase native tree canopy coverage on private property.

   Cost Estimate: Existing staff resources are accounted for in current budget.

   Cost Breakdown: N/A

Legislative Priorities

1. Advocate for state legislation that would enable the City to expand tree protection and preservation and to increase tree canopy requirements.

Justification

1. A healthy and diverse urban forest canopy coverage in Alexandria provides a broad range of environmental and social benefits such as reduced GHG emissions, improved air quality, enhanced property values, stormwater and flood mitigation, public health benefits, and vibrant public spaces. The reduction of GHG emissions improves air quality and contributes to health and wellness.

6 City of Alexandria Urban Forestry Master Plan, approved 2009 and currently under revision

Accountable Parties

Recreation, Parks and Cultural Activities (primary); Planning and Zoning

Open Space

Goal

Improve the environmental quality and social benefits of open space.

Target

Maintain the ratio of 7.3 acres of publicly accessible open space per 1,000 residents[7]

Short Term Actions

1. Protect and add open space through acquisition, preservation, and conservation as prescribed in the Open Space Master Plan (updated 2017).

   Cost Estimate: Existing staff resources are accounted for in the current budget.
   Cost Breakdown: No additional cost implications; however, the action is dependent on the development envisioned in small area plans.

2. By FY2023, increase percentage of acres of public natural lands that are actively managed, including restoration and invasive species removal, by 50 percent (450 acres).

   Cost Estimate: Existing staff resources are accounted for in the current budget.
   Cost Breakdown: N/A

3. Evaluate and update 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.

   Cost Estimate: Existing staff resources are accounted for in the current budget.
   Cost Breakdown: N/A

Legislative Priorities

N/A

Justification

1. Open space, natural spaces and tree canopy provide physical, mental and community benefits, while offering opportunities for social interaction and the

[7] City of Alexandria Open Space Master Plan, approved 2003 and updated 2017

conservation of natural resources and biodiversity. Public open space equitably encourages healthy choices and active lifestyles for the City's diverse population.

2. Reduces GHG emissions and improves air quality by encouraging development density around mass transit centers as mandated in the City Master Plan.

Accountable Parties

Recreation, Parks and Cultural Activities (primary); Planning and Zoning

5. Solid Waste

Recycle

Goal

Recover resources and reduce GHG emissions and other forms of pollution by optimizing and safely handling the collection and processing of solid waste.

Target

Establish a GHG emissions baseline for the collection and processing of solid waste in FY2019, measure emissions at least annually, and reduce the emissions rate by at least 12 percent by FY2023.

Short Term Actions

1. In FY2020, install special containers for only glass at all recycling drop-off centers to improve the recyclability of glass. In FY2021, upon evaluating the state of the recycling market, develop a plan to potentially eliminate glass from single stream recycling.

   Cost Estimate: $70,000 per year
   Cost Breakdown: Estimate includes containers, plus labor for collection, processing, and administrative fees.

2. In 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 GHG emissions.

   Cost Estimate: $80,000 per year
   Cost Breakdown: Will be built on the existing recycling campaign. Annual fee will be for program administration.

3. By FY2020, conduct a Route Optimization Study to perform a review of the current truck routing, mileage, staffing levels, homes served per route and tonnages of trash collected. Ensure that routes are performed in the most efficient, economical manner, and maximize the reduction in GHG emissions.

   Cost Estimate: One-time expenditure of $100,000
   Cost Breakdown: Maximum of $100,000

4. By FY2021, review and update the City's recycling ordinance to reflect changes in the global recycling market and to prioritize recycling practices that maximize the reduction in GHG emissions.

    Cost Estimate: One-time expenditure of $14,400

    Cost Breakdown: Includes staff time (320 hours over a two-month period)

Legislative Priorities

N/A.

Justification

1. Improve the quality of collected recyclables in response to more restrictive global recycling markets.

2. The Recycle Right campaign will include outreach and education program in ACPS facilities.

3. These recommendations go a long way to meeting GHG emission reductions.

Accountable Parties

Transportation and Environmental Services (primary)

Reduce

Goal

Reduce total solid waste collected City-served residential customers.

Target

By FY2023, reduce the total solid waste per capita collected city-served residential customers by five percent as compared with a baseline of CY2018.

Short Term Actions

1. In FY2019, develop a reuse (consign), donate, repair online directory including the District of Columbia, Maryland, and Virginia to encourage residents and businesses to prevent waste and reuse existing materials.
   Cost Estimate: $1,350 per year
   Cost Breakdown: Includes 20 hours staff time in development and 10 hours staff time for integrating the directory online.

2. 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.
   Cost Estimate: $8,100 per year
   Cost Breakdown: 180 hours staff time includes 20 hours community outreach.

3. By FY2020, pilot a Share-A-Bag program to encourage residents to use reusable bags over disposable plastic bags.
   Cost Estimate: $3,000 per year
   Cost Breakdown: 20 hours in staff time in program development, materials, and community outreach.

Legislative Priorities

1. In FY2019, support the development of 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”).

Justification

1. Reducing waste and reusing is the most effective way to save natural resources, protect the environment, and reduce costs. Reducing waste also supports the goal of reducing greenhouse gas emissions as it reduces the amount of waste that needs to be sent to disposal facilities as well as preventing the need to harvest new raw resources. These actions provide opportunities for reuse prior to entering the waste stream andleverage regional resources and expand relationships with regional parters, agencies, and improve outreach to residents and local businesses.

Accountable Parties

Transportation and Environmental Services (primary); Parks, Recreation, and Cultural Activities