

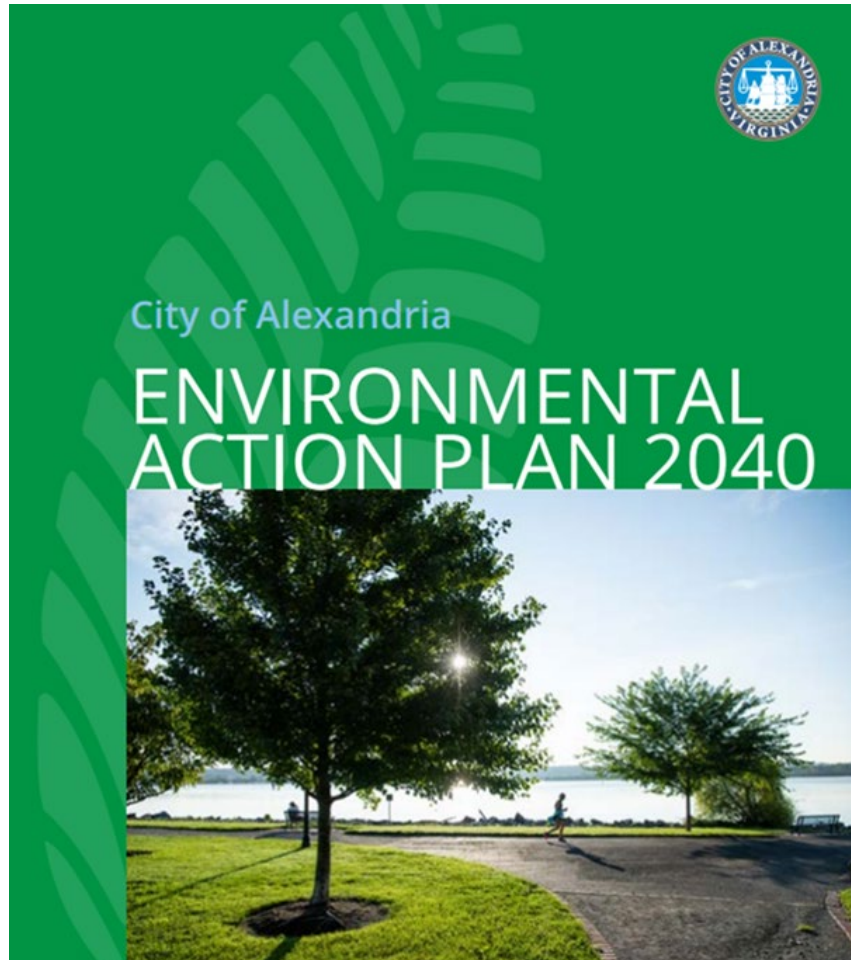


# Energy and Climate Change Action Plan

## Discussion and Feedback

Environmental Policy Commission  
November 21, 2022

# Environmental Action Plan 2040



## 1 Climate Change

### GOAL

Increase the City's preparedness to respond to the impacts of climate change and environmental emergencies

### TARGET

Reduce community-wide GHG emissions by 50 percent by FY2030 and 80–100 percent by FY2050 (base year 2005) supported by significant contributions at the state and federal level toward renewable energy and energy efficiency mandates



# Overview & Timeline: Environmental/Climate Action History

- 2007 Eco-City Alexandria Charter
- 2009 Environmental Action Plan 2030
- 2009 Green Building Policy
- **2011 *Energy and Climate Change Action Plan***
- 2005, 2012, 2015, 2018 Greenhouse Gas Inventories
- 2019 updated Environmental Action Plan 2040
- 2019 updated Green Building Policy
- 2019 City Council Climate Emergency Resolution
- 2021 Energy and Climate Change Task Force and ECCAP update process
- 2022 Office of Climate Action



# Energy and Climate Change Task Force

- Environmental Action Plan 2040 1.1.1

“by FY 2021, establish a multidisciplinary task force to guide an update of the Energy and Climate Change Action Plan”

- 13 members appointed by the City Manager
  - general community members (3)
  - environmental advocates (1)
  - energy, climate, and related technical experts (1)
  - representatives from Alexandria’s youth (2)
  - representatives of equity issues (2)
  - Representative representing engagement with Alexandria’s businesses and institutional partners (2)
  - Environmental Policy Commission (EPC) representative (1)



# Energy and Climate Change Action Plan (ECCAP) Workstreams

1. Energy & Climate Change Task Force
2. Climate Mitigation Planning (\*)
3. Heat Vulnerability Assessment (\*)
4. Climate Adaptation/Resiliency Guidance (\*)
5. Climate Equity Assessment (\*)
6. Community Engagement
7. ECCAP Report (\*)

\* Includes technical consultant support

City Staffing: 0.25 FTE

- Planning & Process Facilitation
- Staff & Task Force Coordination
- Technical consultant coordination
- Community engagement

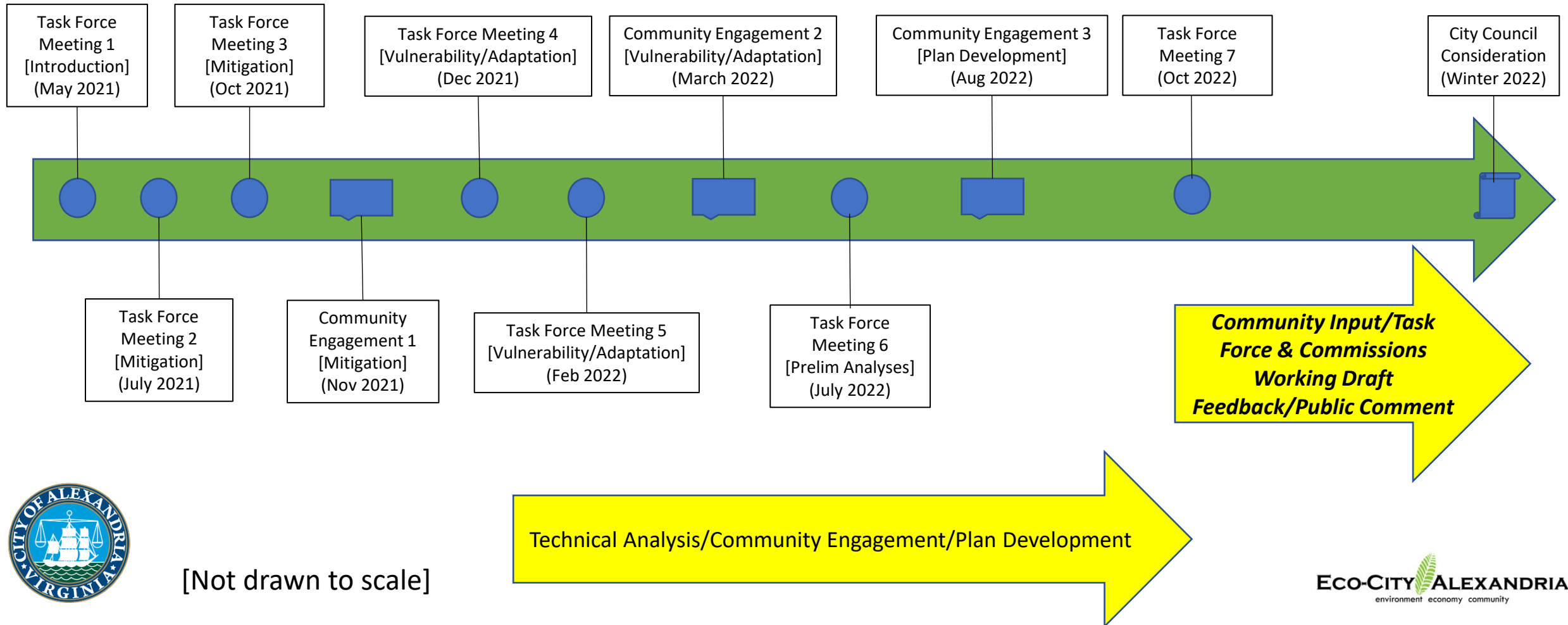
Budget:

- \$100K for technical consultant

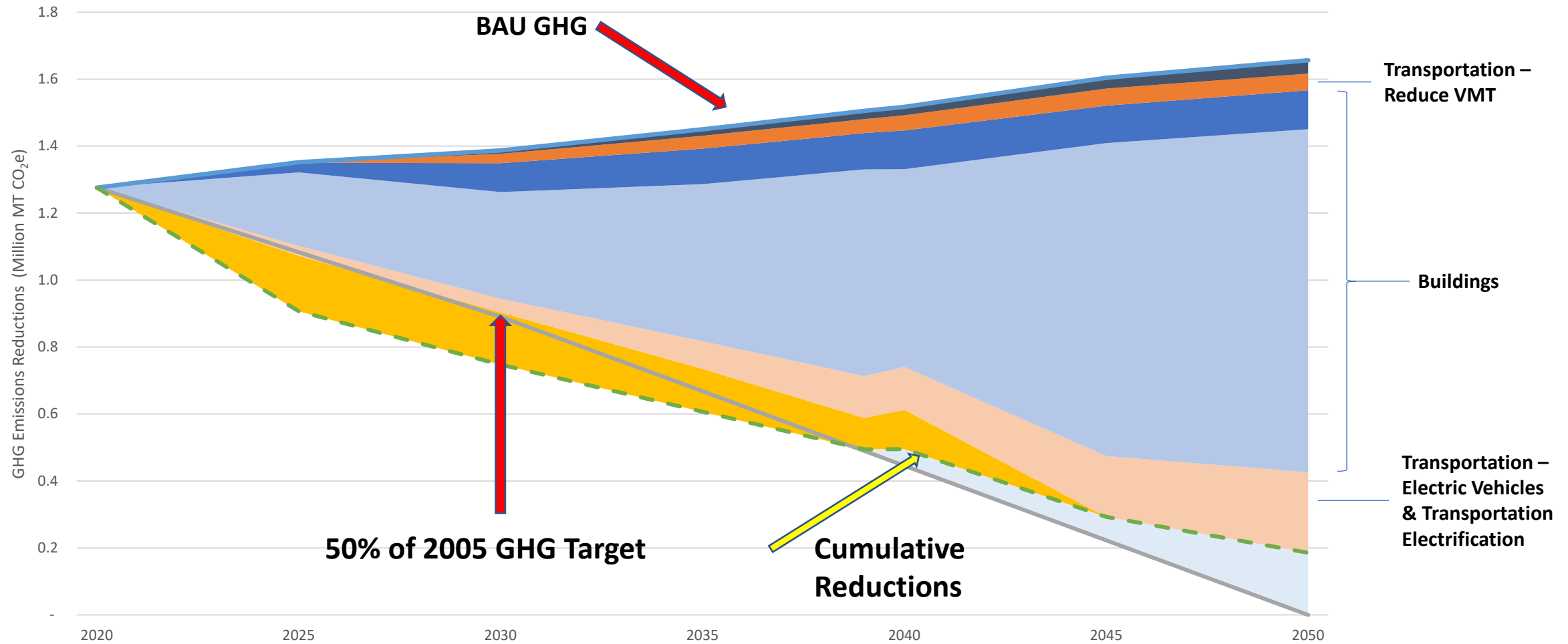
Technical Consultant:



# ECCAP Development Process & Timeline



# Community-wide GHG Emission Reductions



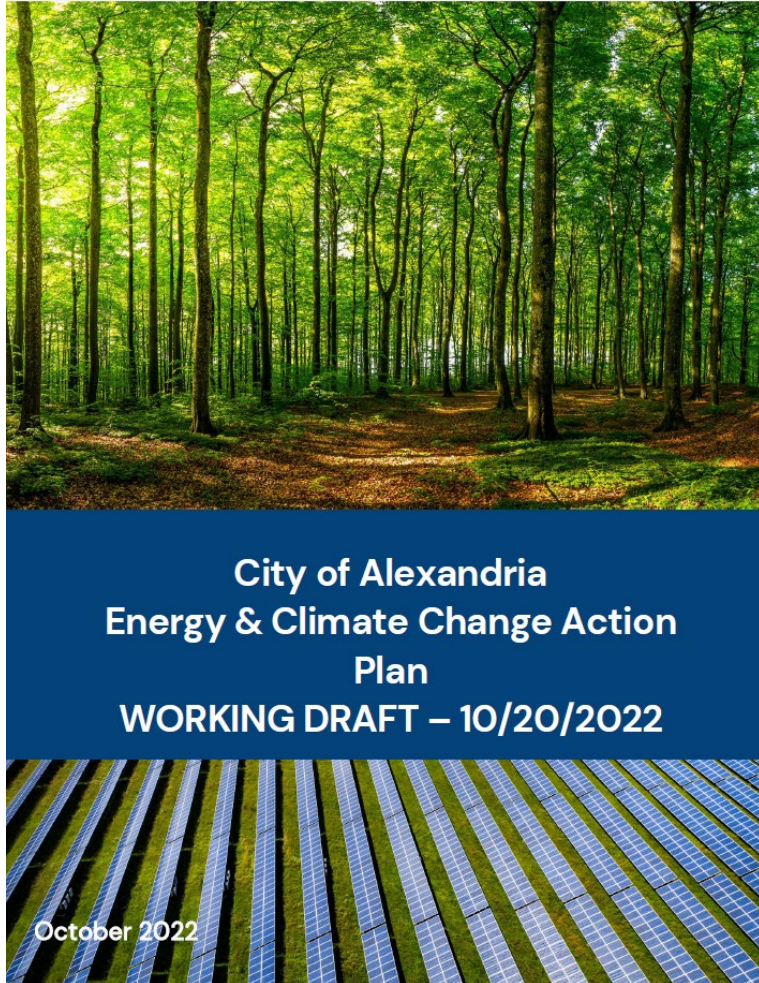
# Community-wide GHG Emission Reductions

Sectors	2005	2030	2050	2030 (% Reduction 2005)	2050 (% Reduction 2005)
<b>Buildings</b>	1.17	0.64	0.13	46%	89%
<b>Transportation</b>	0.38	0.24	0.05	36%	87%
<b>Waste</b>	0.03	0.03	0.01	23%	85%
<b>Misc* (HFCs, RNG, Aviation, etc)</b>	0.20	0.21	0.04	-9%	78%
<b>Total Emissions</b>	1.78	1.12	0.23	37%	87%
<b>Future Technologies / Advanced Policies**</b>		-0.25	-0.23		
<b>Total Emissions with Future Technologies</b>	1.78	0.87	0.00	51%	100%





# Working Draft Feedback



## Prompting Questions:

- What does the ECCAP report succeed in providing to the City and community regarding reducing GHG emissions?
- What is missing from the ECCAP report?



# Buildings (Draft Actions)



Strategy	Action	EAP/City Plan
<b>Building Energy -</b>		
<b>B-1: Support decarbonizing existing buildings through financial opportunities</b>	B-1.A: Support opportunities for a City or regional green bank	
	B-1.B: Increase Marketing and Promotion of Alexandria CPACE Program	EAP
	B-1.C: Establish an Incentive Program(s) that Encourages Green Building Renovations of Existing Buildings	EAP
<b>B-2. Educate and Drive Implementation of the City's Green Building Policy</b>	B-2.A: Support Compliance with the City's Green Building Policy	EAP (includes 3.1.*)
	B-2.B: Design and implement a program to support residential and commercial energy efficiency and beneficial electrification	EAP (includes 3.1.*)
	B-2.C: Implement regulatory and policy opportunities to enhance Green Building Policy implementation	EAP (includes 3.1.*)
	B-2.D: Support energy performance requirements of building codes.	EAP
<b>B-3: Increase decarbonized fuel supply in buildings (as necessary)</b>	B-3.A: Increase energy supply from Resource Recovered Gas and Hydrogen	
<b>B-4: Accelerate implementation of all feasible decarbonization measures for City-owned buildings</b>	B-4.A: Implement the energy efficiency and electrification actions defined in the EAP	EAP

# Transportation (Draft Actions)



Strategy	Action	EAP/City Plan
<b>Transportation</b>		
<b>T-1. Reduce vehicle miles</b>	T-1.A: Improve, expand and integrate access to public transit systems and bicycle/pedestrian access through enacting actions within the EAP 2040, Alexandria Transit Vision and Mobility Plan	EAP, AMP, ATV
	T-1.B: Land use changes focused on redistribution of future growth to activity centers and areas better served by transit across jurisdictions	AMP, ATV
	T-1.C: Advocate for reduced Metro transit fares and increased parking pricing at workplaces	AMP, ATV
	T-1.D: Support telework policies	
	T-1.E: Promote a job/housing balance by focusing on-site affordable housing units near transit access	AHMP
<b>T-2: Accelerate the deployment of electric and alternative fuel vehicles</b>	T-2.A: Implement recommendations supporting expanding EV charging infrastructure access in line with the EVSE, including addressing gaps in meeting charging demand (e.g., opportunity charging, residents without driveways/garages, multifamily dwelling residents); enhancing communication and awareness; strengthen zoning, building codes, and permitting; advocating in state government or with Dominion Energy; building successful business models for chargers; and working to secure funding (e.g., federal).	EAP, EVRS
	T-2.B: Provide education and outreach to the community about EVs and available state and national incentives	EVRS
	T-2.C: Advocate with Dominion and regulators for fee-based EV charging; educate the community about these options	EVRS
	T-2.D: Transition DASH bus transit fleet to electric	EAP, EVRS
	T-2.E: Connect private fleets with partners and opportunities to educate and incentivize electrification	EVRS

# Renewable & Clean Energy (Draft Actions)

Strategy	Action	EAP/City Plan
<b>Renewable Energy</b>		
<b>RE-1: Support implementation/acceleration of the VCEA by increasing solar deployment within the City</b>	RE-1. A: Increase on-site renewable deployment within the City through Solarize Alexandria, Solar Equipment Tax Exemption, Green Building Policy (new construction), and low- and moderate-income programs	EAP
	RE-1.B: Support deployment of battery storage through promoting community ownership, incentives, and pairing with onsite renewables RE-1.C: Explore Community Choice Aggregation with City as anchor RE-1.D: Encourage large-scale offsite renewable energy through working with businesses and other organizations within the City to procure through PPAs	EAP
<b>RE-2 Transition all applicable Alexandria government facilities to 100% renewable energy</b>	Implement government operational renewable electricity actions from EAP 2040	EAP



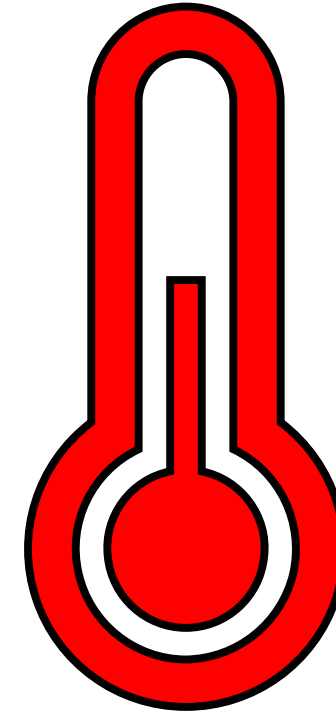
# Waste (Draft Actions)

Strategy	Action	EAP/City Plan
<b>Waste</b>		
<b>W-1: Recover resources and reduce GHG emissions and other forms of pollution by optimizing and safely handling the collection and processing of solid waste</b>	W-1.A: Implement actions defined in the EAP 2040 (refer to 5.1 of the EAP) addressing resource recovery and GHG emissions	EAP, WS
<b>W-2: Reduce total solid waste collected from City-served residential customers</b>	W-2.A: Implement actions defined in the EAP 2040 that reduce solid waste from City-served residents	EAP, WS



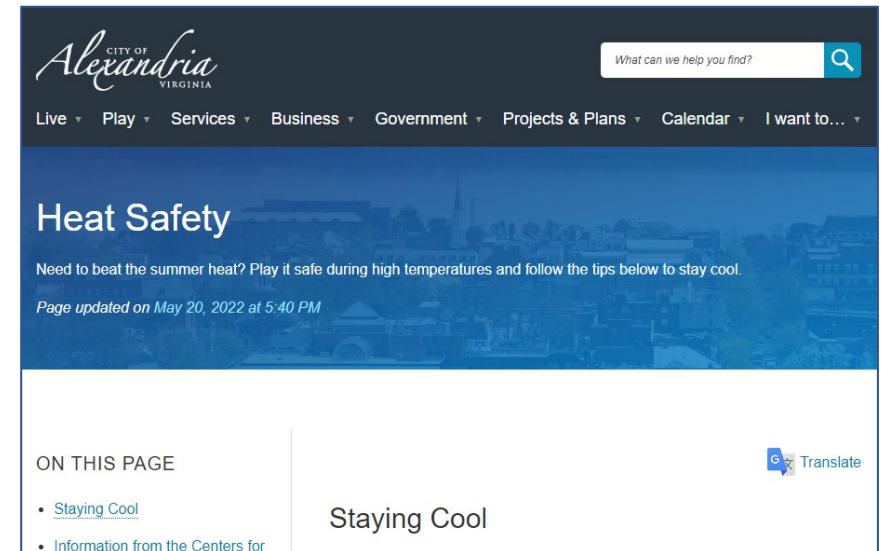
# Climate Vulnerability & Adaptation/Resiliency

- Heat Vulnerability Assessment
- FloodAction Alexandria
- Actions/Strategies



# Climate Adaptation/Resiliency Strategies/Actions

- Continue Existing Adaption and Resilience Activities
- Enhance Equity in Climate Adaptation and Resilience Planning and Actions
  - Incorporate and center equity into ongoing climate adaptation and resilience planning
  - Proactively address systemic inequalities in climate adaptation and resilience planning
- Integrate Climate Change in Municipal Decisions and Activities
  - City plans, budget and capital improvement program, workplans
  - Internal working group for climate impacts
  - Identify innovative financing mechanisms
  - Integrate into capital planning
  - Lead by example with infrastructure resilience
- Implement Strategies to Adapt to Extreme Heat
  - Reduce Impact of Extreme Heat and Heat Island Effects
  - Enhance Heat Management Programs
  - Heat Response Coordination
- Implement Flooding Hazard Adaptation Strategies
  - Flood Reduction
  - Flood Management
  - Flood Coordination



# Contact

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# Background Slides



# State and Federal Climate Action Priorities

- Virginia Clean Economy Act
- Bipartisan Infrastructure Law / Infrastructure Investment and Jobs Act
- Inflation Reduction Act



# Builds on Existing Actions

**Alexandria Mobility Plan**  
October 2021

Van Dorn Street Station

Alexandria Mobility Plan

**ALEXANDRIA**  
Transit Vision  
Your City. Your Transit Network.

**Electric Vehicle Charging Infrastructure Readiness Strategy**  
City of Alexandria, Virginia  
May 2021

**CITY OF ALEXANDRIA 2019 Green Building Policy**

**POLICY STATEMENT:**  
Green building is a practice that brings environmental and economic benefits to present and future generations. A green building ensures that sustainable standards are addressed to throughout the design and construction processes to lessen the impacts of the building on the local and global environment, resulting in lower operational costs and a healthy indoor environment for building occupants. The standards of the 2019 City of Alexandria Green Building Policy provided herein establish minimum green building practices for new private development and furthers the City's commitment to lead by example through new development and renovation of its own public buildings. In addition to instituting standards to achieve an overall improvement in building performance, this Green Building Policy includes a cutting-edge, directed-use approach that targets the reduction of energy use and mitigating greenhouse gas emissions, increased water efficiency and improved indoor environmental quality in both new private and public buildings. As a result, implementation of this Green Building Policy will contribute to reduced greenhouse gas emissions, conservation of potable water and improved human health in the City of Alexandria.

**PERFORMANCE POINTS:**  
Performance Points are defined as specific minimum credit points each project must achieve within the minimum level of certification for the selected green building rating system. Performance Points are identified within the areas of energy use reduction and greenhouse gas emission reductions, water efficiency, and indoor environmental quality. Projects that use LEED should refer to the LEED Credit Library for the specific criteria of each point. Those who utilize Green Globes, EarthCraft, or National Green Building Standard must comply with the Performance Point overlay criteria in Appendix A, B, and C of this Policy, respectively. To maintain alignment with the intent of this Policy, Performance Points may be adjusted over time to correspond with updates to the rating systems, revisions to the building code, and/or updates to state, federal, or other City policies.

**DEVELOPMENT STANDARDS:**  
New private development, new public development (City-owned buildings, including Alexandria City Public Schools) and major renovations that require a Development Site Plan (DSP) or a Development Special Use Permit (DSUP) are subject to comply with the Green Building Policy. The Green Building Policy is in effect as of March 2, 2020 for DSP and DSUP applications submitted on or after this date.

The 2019 Green Building Policy identifies: 1) the pathways to achieve the City's green building performance standards, including certification through four nationally recognized green building rating systems; 2) a minimum level of green building certification for both private and public developments; and 3) priority "Performance Points" within each rating system that a project is expected to achieve.

**RATING SYSTEMS & MINIMUM LEVEL OF CERTIFICATION:**  
LEED, Green Globes, EarthCraft, and National Green Building Standard are the standard third-party green building rating systems accepted under the Green Building Policy. The minimum level of certification for each rating system is provided on the following pages for both public and private development. The latest version of each rating system at the time of the first Final Site Plan submission shall apply.

In addition to the LEED, Green Globes, EarthCraft, or National Green Building Standard green building rating systems, projects may choose an alternative path for certification through an independent, third-party certifier. The independent, third-party certifier must verify that the performance standards of the Green Building Policy are met.

<b>STORMWATER</b>	100% of the required stormwater treatment through green infrastructure.
<b>NET ZERO ENERGY</b>	An energy-efficient building where, on a source energy basis, the actual annual delivered energy is less than or equal to the on-site renewable exported energy.

**PUBLIC BUILDING RENOVATIONS:**  
For renovations of City-owned buildings that do not require a DSP or DSUP, the City will apply LEED Interior Design and Construction (ID+C) and LEED Operations and Maintenance (O&M) rating systems as a guideline for interior design and construction projects and targeted renovations of individual building systems (e.g., HVAC, roof, windows, plumbing, etc.). Actual third-party certification may be used when technically and financially feasible.

**FLEXIBILITY:**  
Flexibility from the Green Building Policy will be considered on a case-by-case basis. If flexibility is requested, the Director of Planning and Zoning will consider the project size, proposed use and the alternate green building practices the applicant proposes to incorporate into the project to determine if the request is justified. The City will use the data collected from this process over time to establish consistent criteria and thresholds for alternatives to compliance with the Green Building Policy.

**WasteSmart**  
ALEXANDRIA'S 20-YEAR STRATEGIC PLAN TO SUSTAINABLY RECOVER RESOURCES

JANUARY 2019

**ZERO-EMISSION BUSES**  
CHARGING TOWARD SUSTAINABLE TRANSPORTATION

ALEXANDRIA TRANSIT COMPANY  
**DASH**  
Eco-CITY ALEXANDRIA

**GO Alex**

ALEXANDRIA LIBRARY  
BOOKS & MORE • EVENTS • SERVICES • KIDS • TEENS • LOCATIONS • HOW DO IT • LOG IN

**DUKE STREET IN MOTION**



**ENERGY MASTERS**

**SOLARIZE ALEXANDRIA**

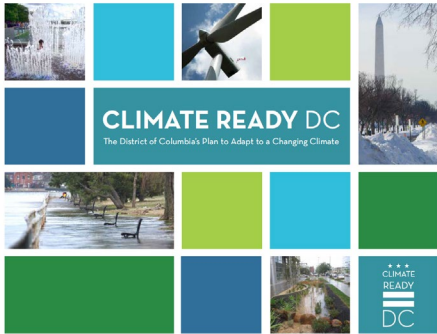
**CLIMATE RESILIENCE HUB**  
Climate Resilience Hubs are community institutions that help educate residents about extreme weather preparedness and other impacts of climate change. In 2020, Alexandria Library applied for and was awarded the Resilient Communities Libraries Respond to Climate Change grant, a pilot program of the American Library Association. Through the grant, Alexandria Library joined the CREW Hub Network.

**DOWN** THE BEST COMPANION FOR YOUR NEXT TRIP  
**ATTAINABLE** SUSTAINABLE LIVING  
**HUMANE GARDENING**  
**HOW TO LEAD A SUSTAINABLE LIFE**

**DATABASES**  
Agriculture Collection  
Provides a comprehensive view of and access to current and authoritative content that spans the

**CATALOG LINKS**  
Resilient Communities Collection  
Climate Change

**Eco-CITY ALEXANDRIA**  
environment economy community



## CLEAN ENERGY DC

THE PATHWAY TO CUT THE CARBON POLLUTION OF DISTRICT OF COLUMBIA

- ### CONFRONTING CLIMATE CHANGE

Climatic change poses a growing set of risks and challenges. In the global effort to combat climate change, cities have a critical role to play. We must proactively address climate impacts, decreasing the Greenhouse Gas (GHG) emissions that cause climate change, reducing overall energy consumption, and increasing the use of renewable energy.

**HOW WILL THE DISTRICT PLAY A CRITICAL ROLE?**

Clean Energy DC is the District's plan to cut GHG emissions in half by 2032. The District has committed to become Carbon Neutral by 2050.
- ### A COMPREHENSIVE ENERGY PLAN

Clean Energy DC is the District's strategic action plan to make the District's energy system more sustainable, resilient, and equitable.

**THE DISTRICT'S TARGETS FOR 2032:**

  - 50% Reduction in GHG emissions
  - 50% Increase in renewable energy generation
  - 50% OF all energy generated from renewable sources

Achieving these targets means transforming buildings, energy supply and distribution, and transportation.
- ### PATHWAYS TO CLEAN ENERGY

The District will cut three broad pathways to achieve deep GHG reductions:

  - EFFICIENT BUILDING DESIGN AND OPERATIONS
  - MODERNIZED AND DIVERSIFIED ENERGY SUPPLY
  - ELECTRIFICATION AND ZERO-EMISSIONS TRANSPORTATION
- ### TARGETED ACTION AREAS

**CONSTRUCTING GREEN BUILDINGS**  
Require highly efficient and zero-emission new buildings

**SAFARIING UP Bldgs**  
Expand and intensify energy use reductions in existing buildings

**SHIPPING TO CLEAN ENERGY**  
Move from coal fires to clean and renewable energy

**GROWING LOCAL SOLAR**  
Maximize local renewable energy generation

**ELECTRIFYING TRANSPORTATION**  
Specify bus transit, vehicle sharing, and personal vehicles

**NET-POSITIVE TRANSPORTATION**  
Increase the use of walking, biking, and mass transit

**INCREASING EQUITY AND CAPACITY**  
Equip people and organizations with the tools, knowledge, support, and partnerships they need

**EXPANDING THE TRANSPORTATION FUNDING**  
Increase funding and financing to equitable systems
- ### PROJECTED RESULTS

Clean Energy DC aims to exceed projected carbon emissions in order to exceed the District's GHG reduction target.

**ESTIMATED GHG SAVINGS**

56% GHG emissions reduction by 2032

Learn more and get involved at [CleanEnergyDC.org](http://CleanEnergyDC.org)

## MONTGOMERY COUNTY CLIMATE ACTION PLAN

Building a Healthy, Equitable, Resilient Community

JUNE 2021

# Leverages Regional Climate Action Efforts

Community Energy Plan

An element of Arlington County's Comprehensive Plan  
Update Adopted September 2019

Arlington Initiative to Rethink Energy

CARBON 20-50 NEUTRAL

Fairfax County Community-wide Energy and Climate Action Plan

A Fairfax County, Va., publication  
September 2021

METROPOLITAN WASHINGTON 2030 CLIMATE AND ENERGY ACTION PLAN

November 2020

TPB Climate Change Mitigation Study of 2021  
Scenario Analysis Findings  
Final Report

January 7, 2022

Proposed by:  
ICF

Proposed by:  
National Capital Region Transportation Planning Board



# ALL Alexandria Race & Social Equity

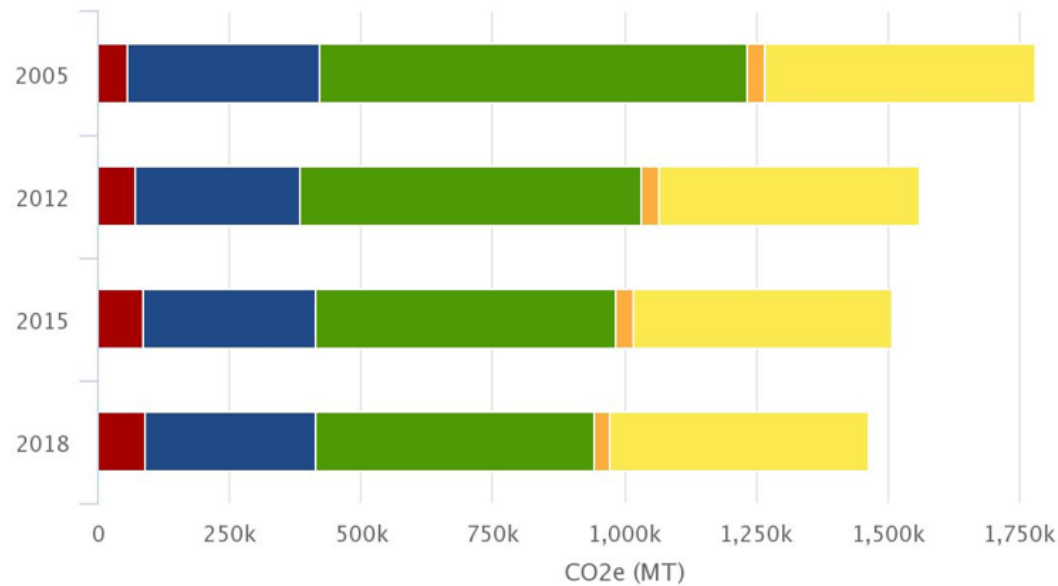
- Identifying and Highlighting ECCAP Actions Support of ALL Alexandria Race and Social Equity Outcomes, including:
  - Actions supporting social and other quality-of-life benefits, such as improved health, reduced traffic congestion, and increased opportunities for socioeconomic mobility.
  - Actions that support economic benefits (e.g., poverty reduction, lower energy costs) to reduce economic disparities.
- Additional Focus:
  - Energy Burden
  - Extreme Heat Vulnerability
  - Communications/Outreach/Education/Collaborations



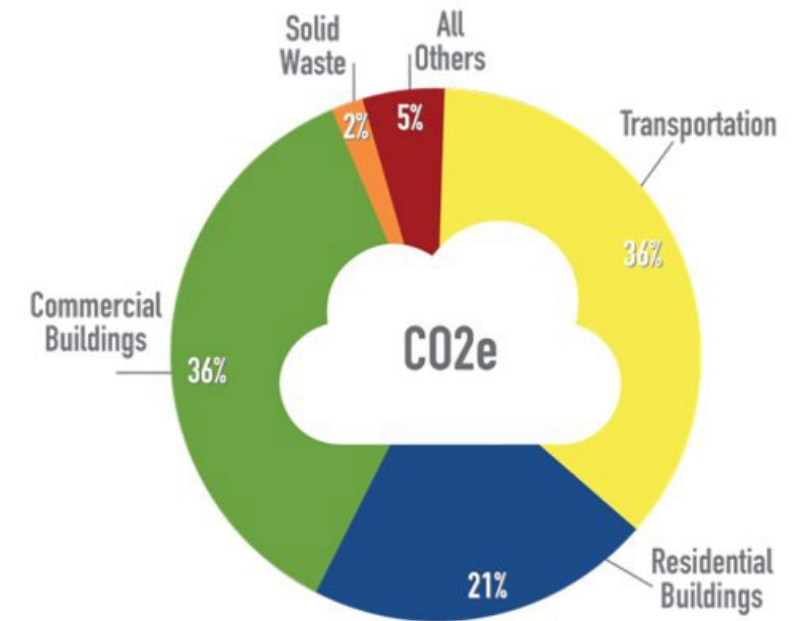
# Community-wide Greenhouse Gas Emissions

## GREENHOUSE GAS TRENDS CHART - CITY OF ALEXANDRIA

Alexandria greenhouse gas emissions decreased by 18% from 2005 to 2018.



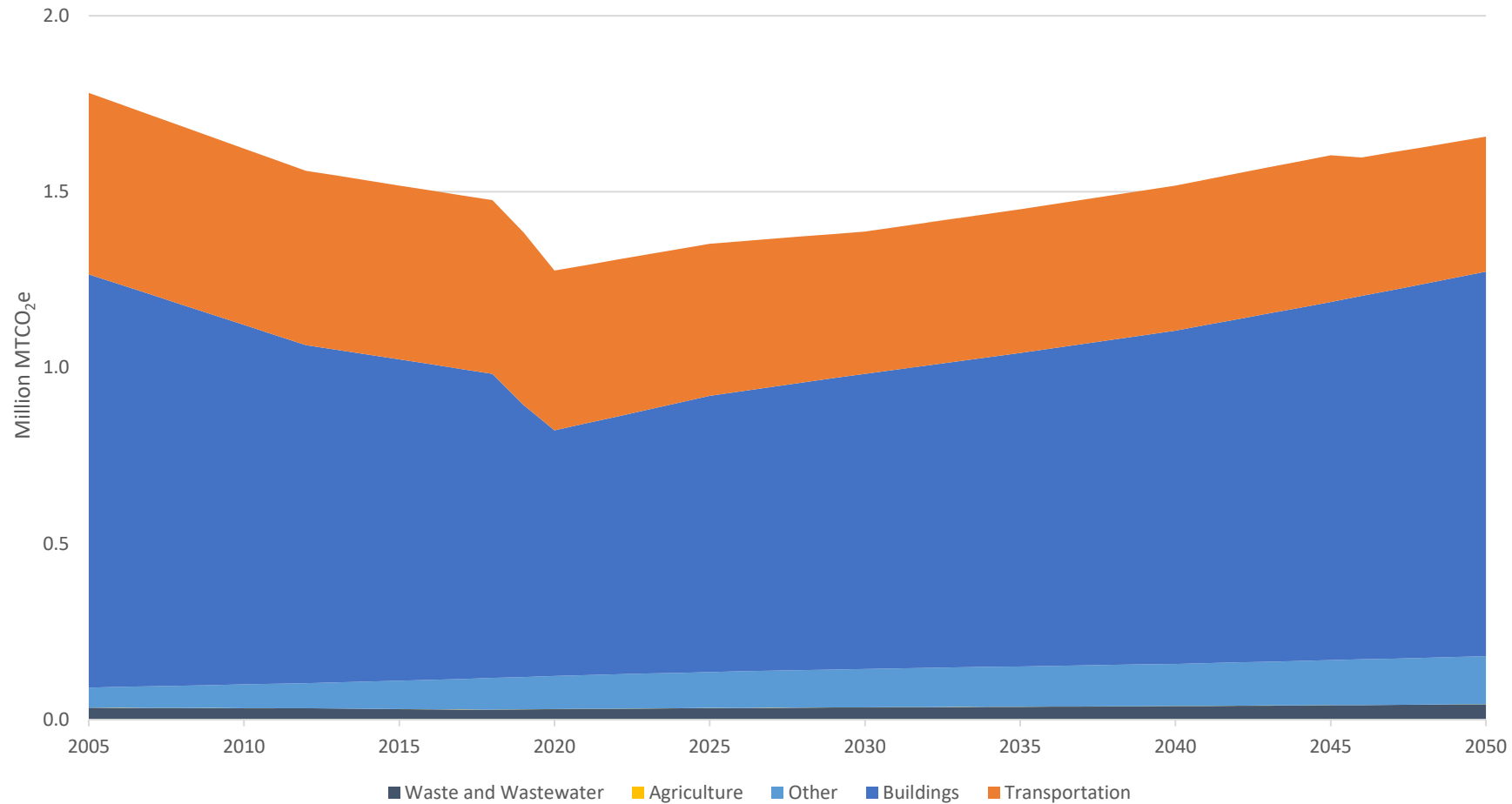
- Process & Fugitive Emissions
- Residential Energy
- Commercial Energy
- Water & Wastewater
- Solid Waste
- Transportation & Mobile Sources



The contribution of City emissions from various sectors of the community show that the majority emissions are from the built environment, followed by transportation.



# Business-as-Usual Community-wide Greenhouse Gas Emission Projections



# Business-as-Usual Community-wide Greenhouse Gas Emission Projections

- In 2018, buildings account for approximately 57% of emissions and transportation accounts for approximately 36%.
- Population and job growth projected to continue increasing.
- Absent action, new and existing building [commercial (mixed use & multi-family) & residential] sector emissions increase.
- Transportation emissions remain relatively consistent.





# FY23 Climate Change Budget Priorities



FISCAL YEAR  
**2023**

APPROVED BUDGET HIGHLIGHTS

**CLIMATE CHANGE**



## Sustainability Solutions

**\$2.0**  
MILLION

To establish an Office of Climate Change to support climate change initiatives and programs that prioritize sustainability solutions in the City's Environmental Action Plan (EAP).



## DASH Fleet

**\$29.2**  
MILLION

DASH Fleet Expansion & Electrification (FY24 –FY26: \$29.1M)  
Includes funding for at least 20 100% electric expansion buses and supporting chargers over the next five years.



## Electric Vehicle Charging Stations

**\$9.5**  
MILLION

Citywide Electric Vehicle Charging Stations  
(FY23 -\$500K; 10-yr -\$9.5M)  
New project to provide charging for City fleet and some public access points.



## Electric Vehicle Charging Station Navigator position.



## Waterfront Infrastructure

**\$35.0**  
MILLION

To begin work on implementing infrastructure recommended in the City Council approved Waterfront Small Area Plan, including flood mitigation.

