

Outreach and Education

Tackling Climate Action is a community effort! Residents, businesses, nonprofit organizations and community groups all have critical roles to play. Many of you are already thoughtfully improving quality of life and supporting a thriving economy. Outreach and Education will keep the momentum going!

Part of our Climate Action Plan includes communication strategies to strengthen connections with community partners; provide opportunities for individual action; and create tools for businesses to engage so that we collectively achieve our emission reductions goal!

STRATEGIES & ACTIONS: methods and steps to achieve the goals

Goal 1: Motivate County residents and businesses to change their behavior in ways that reduce carbon emissions.

- 1) Create a Community Climate Action Committee
- 2) Identify and seek resources to support community-based initiatives, especially from low-income areas and communities of color, that align with climate change priorities
- 3) Improve clarity of County climate website and County produced materials related to climate initiatives
- 4) Explore providing free technical assistance and resources to businesses and developers
- 5) Provide information on individual actions community members may take

Goal 2: Engage communities in the development and implementation of climate change-related policies and programs.

- 1) Partner with Group(s) to create climate education campaign
- 2) Expand climate-related community engagement by providing individuals and community networks with quality information and how-to resources
- 3) Develop engagement campaigns that may include competition, feedback and recognition for community members.
- 4) Identify partners to assist in providing climate action information in languages other than English



Emission Sector:

Natural Resources

— removing carbon from the atmosphere through soils and vegetation management practices on a variety of landscapes throughout the County

The Natural Resources sector is different than others – it is not so much a source of GHG emissions that will be reduced but a sink for carbon that will be boosted. Carbon sequestration is the term for capturing and storing carbon that would otherwise be trapping heat in the atmosphere. Scientists have concluded that carbon sequestration in the landscape can contribute significantly to greenhouse gas reduction. The recommendations prioritize actions that provide additional benefits that have long been important to the County, such as rural landscape protection, habitat improvement, and water quality protection.

Goals:

1. maximize forest cover where practicable.
2. promote best carbon management practices:
 - a. on agricultural land
 - b. in wetlands, outcrops, and other special ecosystems
 - c. on residential and commercial properties

co-benefits – benefits to the community of achieving goal that go beyond reducing GHG emissions

- improved health of residents
- improved air quality
- improved water quality
- preservation of rural character
- promotion of agricultural and rural tourism economy
- promotion of biodiversity

opportunities – things that could make implementation easier

- existing State and Federal programs to encourage sustainable farming
- longstanding commitment from County government and residents to manage growth responsibly and limit sprawl into Rural Areas

challenges – things that could make implementation difficult

- identifying funding for local incentive programs
- legislative authority



STRATEGIES & ACTIONS: methods and steps to achieve the goals

Goal 1: Maximize forest cover wherever practicable

- 1) Protect existing forest cover and other vegetated carbon sinks
 - a) Provide educational & technical resources for landowners
 - i. Provide landowner involvement & education appropriate to different scales (urban vs rural, small vs large)
 - b) Connect landowners with existing funding and assistance programs
- 2) Increase forest cover
- 3) Restore riparian forests and riparian herbaceous cover, as well as wetlands and meadows
 - a) Develop programs and or ordinance provisions for reforesting degraded stream buffers
- 4) More strongly encourage/incentivize best management practices for silviculture and forest management
 - a) Encourage/incentivize/facilitate innovative agroforestry measures
- 5) Support policies and practices that reinforce the County's growth management goal of guiding development to designated Development Areas to help prevent/reduce conversion of farmland, forests, wetlands, and open space
- 6) Bolster County's conservation land acquisition program and related efforts, including parkland acquisition
 - a) More strongly or explicitly incentivize purchase of significant carbon sinks in County's ACE ranking methodology
- 7) Use tax programs & incentives to increase vegetation/sequestration
- 8) Consistently monitor land cover/land use patterns in County to assess progress towards carbon sequestration goals
 - a) Develop goals for forest cover
 - b) Estimate existing and potential carbon sequestration

Goal 2a: Promote best carbon management practices on agricultural land

- 1) Encourage/incentivize and inform property owners about rotational grazing methods to promote carbon sequestration
- 2) Encourage/incentivize and inform property owners about cropland management to promote carbon sequestration



STRATEGIES & ACTIONS: methods and steps to achieve the goals

Goal 2b: Promote best carbon management practices in wetlands, outcrops, and other special ecosystems

- 1) Manage invasive species
- 2) Enhance quality of existing vegetated carbon sinks
- 3) Establish wetland mitigation banks and nutrient credit banks

Goal 2c: Promote best carbon management practices on residential and commercial properties

- 1) Promote small forests (“Victory Forests”) instead of lawns on large lot subdivision parcels
 - a) Provide education, resources, & assistance to landowners
- 2) Increase urban tree cover, particularly along streets and parking areas
 - a) Promote more use of trees and shrubs (vs. grass) in landscape design; encourage native species for additional benefits
 - b) Provide education, resources, & assistance to landowners
 - c) Encourage native-meadow growth zones in landscape or convert to tree/shrub plantings
 - d) Encourage meadow growth along and in highway corridors.
- 3) Promote greater use of green roofs
- 4) Reduced paved/impervious surfaces to mitigate heat islands
- 5) Encourage conversion to low-carbon-output or electric landscaping & land-maintenance equipment



Emission Sector:

Sustainable Materials Management

Goals:

1. Have the best informed & motivated solid waste consumers in the region.
2. Improve Waste & Recycling Metrics.
3. Reduce landfill by 50% per Capita by 2030.
4. Reduce organics to landfill by 80% by 2030.

co-benefits – benefits to the community of achieving goal that go beyond reducing GHG emissions

- Increase revenue stream for recyclers.
- Reduce organic contamination of waste stream.
- Reduce dumping and litter.
- Encourage County residents to adopt an integrated view of waste and their connection to it.
- Boost the local thrift, repair and reuse economy.
- Composting encourages the production of local food which can improve public health.
- Compost can enhance ecosystem health by reducing the need for fertilizer.
- Reduce uptake of hazardous material at collection centers.
- Reduce volume of exported toxic material (such as consumer electronics).

opportunities – things that could make implementation easier

- Support of regional market for waste material as industrial feedstock.
- Virginia commercial recycling equipment tax credit.
- Study urban and rural strategies to encourage the public to collect and sort their own waste.
- Explore commercial compost facilities as a revenue stream for organics.
- Explore potential for creating local jobs, career ladders, business enterprise, investment growth from thrift, repair and reuse economy.

challenges – things that could make implementation difficult

- Difficulty transitioning to centralized waste management.
- Coordination/competition between waste haulers.
- Accuracy of reported waste metrics.
- Coordination and equity between waste collection for rural and urban residents.
- Ensuring equitable access and affordability of waste collection may be challenging.



STRATEGIES & ACTIONS: methods and steps to achieve the goals

Goal 1: Have the best informed & motivated solid waste consumers in the region.

- 1) Use media outreach and public information campaigns and/or school programs to encourage behavioral changes towards waste.
 - a) Provide information about composting to improve carbon sequestration in soil.
- 2) Public Engagement:
 - a) Develop survey to gauge public support for waste management initiatives or service changes.
 - i. After pilot, study the locating of residential trash and recycling centers within ten minutes' drive of population centers.

Goal 2: Improve Waste & Recycling Metrics.

- 1) Use regulatory tools to require waste reporting.
 - a) Edit Chapter 18-13 of the County Ordinance to require: Weight/Volume of Trash & Recycling, and Vehicle Miles Traveled, greater than XX tons per year (examples of no tonnage minimum: Boulder CO, Alexandria, VA, Austin TX).
- 2) Route optimization for waste haulers (Transportation Sub-Sector).
 - a) Recommend study to assess potential reduction of Vehicle Miles Traveled.

Goal 3: Reduce landfill by 50% per Capita by 2030.

1. Make trash/recycling available near population centers.
 - a) Locate Model Trash and Recycling Center at Ivy Material Utilization Center.
 - b) Locate a pilot Residential Trash & Recycling center in Scottsville.
 - c) Study Pay-as-You-Throw method and public engagement.
 - d) Consider operating arrangements with RSWA.
2. Recommend County Ordinance to require Curbside Recycling.
 - a) Recommend that the County hire a consultant to determine if curbside recycling should be a municipal function.



STRATEGIES & ACTIONS: methods and steps to achieve the goals

Goal 3 (Cont.): Reduce landfill by 50% per Capita by 2030.

3. Recommend County Ordinance to Require Recycling in Multifamily Properties.
 - a) Require single-stream recycling at every multi-family complex larger than five units (the threshold of five is used by Austin TX, Sacramento, Alameda County, Agoura Hills, Fresno, and Santa Monica CA, whereas only three is used by San Antonio TX).
4. Recommend County Ordinance to Require Recycling in Commercial and Industrial Properties.
 - a) Assess recycling rates for existing properties.
5. Recommend County Ordinance to Require areas for trash/recycling in all new site plans.

Goal 4: Reduce organics to landfill by 80% by 2030.

- 1) Reduce Volume of Food Scraps to Landfill.
 - a) Make composting available in all ACPS schools.
 - b) Develop food waste reduction goals and incentivize compost in restaurants and other large generators.
 - c) Make Food Scrap composting available at residential trash and Recycling Centers.
- 2) Reduce Volume of Yard Waste to Landfill.
 - a) Make Yard Waste composting available at residential trash and Recycling Centers.
 - b) Study Residential Curbside Yard Waste & Food Scraps Composting with a consultant.
 - c) Expand Residential Yard Waste Collection inside and outside the Urban Ring.
 - d) Research: Can/should an HOA be able to restrict backyard composting?
- 3) Reduce Volume of Paper/Cardboard to Landfill.
 - a) See above actions for Goals 3 and 4.
 - b) Identify if there is a need for additional balers in Albemarle County.
- 4) Reduce Fabric to Landfill.
 - a) Encourage donation/reuse of unneeded clothing.
 - b) See Public Education.



Emission Sector:

Community Buildings and Renewable Energy

Reducing energy use by buildings throughout the community and increasing energy generation

Residential and commercial buildings account for a significant portion of all energy used – about 39% of total US energy consumption in 2017. Reductions in the amount of energy used, and the local production of renewable energy, will greatly contribute to lowering GHG emissions.

Goals

- 1) Reduce overall energy use in buildings
 - a. Decrease energy consumption through conservation efforts
 - b. Increase energy efficiency of buildings, equipment, and appliances
 - c. Increase on-site renewable energy production (at buildings)
- 2) Increase utility renewable energy production

Co-benefits are benefits to the community that go beyond reducing GHG emissions

- Investment in building infrastructure and neighborhoods
- Lower utility bills for owners and renters
- Strengthened local economy / new jobs
- Better indoor air quality and comfort
- Improved grid resilience through energy demand management
- Water conservation is linked to energy use reduction

Opportunities – factors that could make implementation easier

- Savings from utility costs could be reinvested in the community
- Growth of these industries
- Local industry growth and jobs created
- Local market conditions are adapting quickly
- Strong economy / real estate market
- High quality infrastructure; future investments in infrastructure

Challenges – factors that could make implementation difficult

- Legislative authority may be lacking
- Identifying funding for local incentive programs
- Downturn in economy
- Lack of detailed data
- Limited transparency between energy providers and energy consumers
- Limited local government role



Community Buildings and Renewable Energy

STRATEGIES & ACTIONS: methods and steps to achieve the goals

- 1. Enable, encourage, and facilitate energy efficiency and renewable energy projects in County Code and during the permitting process**
 - a) Establish a County policy affirming this goal
 - b) Review Building, Zoning, Subdivision, Land-Use, and Tax Codes; and explore opportunities to improve Permit Review Processes
 - c) Consider planning initiatives that increase density and connectivity of housing for energy performance
- 2. Explore financial mechanisms to promote and facilitate investment in energy efficiency and renewable energy by the private sector**
 - a) Commercial – Property Assessed Clean Energy (C-PACE) program
 - b) Community Energy Loan Fund program
 - c) Private financing programs for energy savings
 - d) Tax credit and rebate programs
- 3. Increase energy efficiency and renewable energy in existing buildings**
 - a) Support organizations / programs like LEAP¹ that provide incentives for investments into community buildings
 - b) Integrate energy efficiency and renewable energy into funding for affordable housing projects
 - c) Partner with and support organizations working in energy efficiency and renewable energy
 - d) Encourage building owners to implement energy efficiency and renewable energy actions
 - e) Lead by example with County operations; disseminate resources, case studies, and other information
 - f) Promote building rating systems and Green Building Certificates
 - g) Provide information and outreach to the community
- 4. Increase energy performance of new buildings**
 - a) Encourage a “better-than-code” design or renewable investments during County plan review

¹ LEAP (Local Energy Alliance Program) empowers home and business owners with energy efficiency and solar solutions.



Community Buildings and Renewable Energy

STRATEGIES & ACTIONS: methods and steps to achieve the goals

5. Increase community awareness about energy conservation and renewable energy

- a) Support community efforts to inform community about conservation, energy efficiency and renewable energy topics
- b) Increase outreach programs within County Local Government
- c) Promote efforts to recognize building ratings for community buildings

6. Support legislative actions to increase energy efficiency and renewable energy actions state-wide

- a) Align legislative priorities with existing organizations working in energy efficiency and renewable energy (for example: Virginia Association of Counties, Virginia Municipal League, Charlottesville Renewable Energy Alliance, Virginia Energy Efficiency Council, TJPDC, and other localities)

7. Partner with utility companies to take action toward climate goals (Dominion, APCO, CVEC, REC, Charlottesville Gas)

- a) Support “on-bill”¹ financing
- b) Promote Dominion Demand Response Management Program²
- c) Support solar utility projects
- d) Support power purchase agreements³
- e) Improve energy use data collection

¹ on-bill means your investments in energy conservation and renewable energy are financed by utility companies and paid back on your monthly bills

² demand response is an effort by energy utilities to balance supply and demand by assisting customers in shifting their energy usage

³ power purchase agreement is an arrangement by which a third party could own and operate an alternative energy system, such as solar, on another party’s property



Emission Sector:

Municipal Buildings

Reducing energy use in local government buildings

This emissions sector includes local government buildings occupied by the County of Albemarle and Albemarle County Public Schools. Emissions in this sector are primarily generated by heating and cooling, lighting, and the operation of essential equipment. Energy sources include electricity, natural gas, fuel oil and propane – as well as on-site renewable energy infrastructure.

Goals

1. Reduce the emissions resulting from the operation of local government buildings
2. Maximize utilization of on-site renewable energy
3. Ensure all staff and students are well-informed of the impacts of climate change and the means by which they can effect change in their homes, businesses, and the larger community

co-benefits are benefits to the community of achieving goal that go beyond reducing GHG emissions

- Investment in building infrastructure
- Lower utility bills
- Better air quality and comfort
- Improved grid resilience due to energy demand management

opportunities – things that could make implementation easier

- Savings from reduced utility costs
- Inherent educational and informational opportunities
- Local government directly controls investment choices

challenges – things that could make implementation difficult

- Growth of community population requires growth in number and size of facilities needed to meet community needs
- Competing demands for community service and infrastructure investments



Municipal Buildings

STRATEGIES & ACTIONS: methods and steps to achieve the goals

- 1. Make targeted investments in energy efficiency (EE) projects in existing local government buildings**
 - a) Assess EE project opportunities at County buildings and invest in those projects with the best return on investment
 - b) Replace equipment at/beyond its expected useful life with high efficiency alternatives; consider alternatives such as geothermal heating/cooling systems
 - c) Reinvest operational savings in further energy EE Projects (e.g. Green Energy Fund)
- 2. Make targeted investments in renewable energy (RE) projects in existing local government buildings**
 - a) Analyze existing building portfolio for opportunities to add on-site renewable energy to County buildings
 - b) When replacing roofs, perform necessary roof load analysis to determine whether those roofs have sufficient load capacity to safely bear the weight of solar arrays; if so, as part of roof projects, include any penetrations necessary to accommodate those arrays
 - c) Consider other renewable energy alternatives (solar thermal, wind) as appropriate
- 3. Adopt a green building construction policy for all new facilities, facility additions, and major renovations**
 - a) Consistently exploring emerging EE/RE strategies and technologies to ensure that the policy is a living document
 - b) Strive for net-zero¹ facilities
- 4. Utilize employer/educator platform to inform staff and students of the impacts of climate change and the means by which they can effect change in their homes, businesses, and the larger community**
 - a) Incorporate climate change education into applicable school lesson plans and promote student engagement in climate change initiatives
 - b) Adopt/update energy use and environmental internal policies
 - c) Include energy use and environmental policies introduction in new employee orientation procedures

¹ net-zero means that a building, on average, generates as much energy as it consumes



Emission Sector:

Community Transportation

Reduce the amount of GHG emissions generated by the use of personal and commercial vehicles

Transportation by people moving about the county accounts for just over half of our GHG emissions, based on past County emission inventories. Single occupancy vehicles (SOVs) are the largest contributor to this sector. Inefficient trip patterns and single-occupancy trips contribute towards the amount of emissions.

Goals

- 1) Reduce overall vehicle-miles traveled
 - a. Reduce single occupancy vehicles
 - b. Increase bicycle and pedestrian use for daily trips
- 2) Increase efficiency of vehicles on County roads
- 3) Increase use of electric and hybrid vehicles

Co-benefits are benefits to the community that go beyond reducing GHG emissions

- Improved health of residents
- Improved air quality
- More vibrant communities
- Increased access to low cost transportation
- Reduced parking and traffic congestion
- Increased travel options
- Economic development

Opportunities – factors that could make implementation easier

- Seeking increased funding support for transit and bike-ped facilities (private, state, federal)
- Pursuing enhanced local authority to promote electric vehicles
- Coordination with City and UVA on shared goals and projects
- Utilizing expertise of UVA and local organizations and professionals

Challenges – factors that could make implementation difficult

- Limited local, state, and federal funding for transit and bike-ped improvements
- Limitations on local authority to pursue certain strategies
- Limited data available for certain metrics
- Cultural resistance to shifting away from auto-centric development patterns in growth areas
- Legislative changes away from funding multimodal improvements
- Lack of urgency for implementation



Community Transportation

STRATEGIES & ACTIONS: methods and steps to achieve the goals

- 1) Increase bicycling and walking as an option for daily trips**
 - a) Improve *quality* of bicycle and pedestrian infrastructure in the development areas to make it safer and more comfortable for users
 - b) Increase *coverage* of bicycle and pedestrian network in the development area and eliminate existing gaps and barriers
 - c) Provide public information about bicycle and pedestrian safety
 - d) Improve data collection and reporting on bicycle and pedestrian facilities, usage, and deficiencies
- 2) Increase use of public transit as an option for daily trips**
 - a) Improve provision of inter-regional public transit service
 - b) Continue to improve coordination between public transit providers (JAUNT, CAT, UTS) through a Regional Transit Partnership
 - c) Explore increasing the frequency of service along key routes
 - d) Increase network coverage area for fixed route and flexible bus service
- 3) Work with the Rideshare program to provide additional options for daily trips and to promote use of all transportation options**
 - a) Improve marketing for the Rideshare program
 - b) Set targets to increase use of program
 - c) Explore/develop partnership and coordination of transit services with transportation networking companies (Uber and Lyft)
- 4) Partner with regional employers to encourage and incentivize reductions in single-occupancy vehicle commuting**
- 5) Incentivize purchase of more efficient private vehicles**
- 6) Land use form and infrastructure**
 - a) Reduce amount of land dedicated to parking
 - b) Increase availability of electric vehicle charging infrastructure available to public
 - c) Increase affordable housing options in areas served with a variety of transportation options
 - d) Improve coordination between land use and public transit systems



Emission Sector:

Municipal Transportation

Reduce the amount of GHG emissions generated by the use of County government vehicles

The County should lead the community in transitioning towards a vehicle fleet and policies / practices that will reduce emissions while maintaining the same level of service to the community and quality of life for employees.

Goals

- 1) Reduce petroleum fuel use in County operations
 - a. Increase the use of electric vehicles and other alternatives to traditional combustion-powered vehicles
 - b. Increase the fuel efficiency of County vehicles

Co-benefits are benefits to the community that go beyond reducing GHG emissions

- Reduced cost (maintenance/fuel)
- Vehicle-to-grid utility cost reduction
- Reduce demand for office space needs
- Positive image for Albemarle County as a climate leader
- Improved air quality

Opportunities – factors that could make implementation easier

- Grants (e.g., for school buses)
- Moving towards centralized fleet management (Local Government and Public Schools)
- Explore public/private partnerships for infrastructure or fleet
- Provide case study example

Challenges – factors that could make implementation difficult

- Higher cost of alternative fuel technology
- Market availability of alternative fuel vehicle types (service vehicles, dump trucks, emergency vehicles/apparatus)
- Range (miles per charge)
- Attitude (user confidence)
- Adequate/timely Infrastructure
- Adequate processes/infrastructure in place for lithium battery recycling



Municipal Transportation

STRATEGIES & ACTIONS: methods and steps to achieve the goals

1. Reduce fossil fuel consumption

- a) Increase fleet fuel efficiency
 - i. Utilize new technologies such as electric, hybrid, and alternative fuels
 - ii. Increase availability of EV infrastructure on government properties
- b) Maintain the “right-sized” fleet
 - i. Process to justify/verify need for vehicle
 - ii. Maximize annual use/vehicle
- c) Adjust replacement criteria
 - i. Add “current/potential” fuel efficiency ratio
 - ii. Consider total cost of ownership

2. Improve County policies and procedures pertaining to commuting and traveling

- a) To work
 - i. Encourage and support telecommuting, where applicable
 - ii. Provide incentives to employees to lower the carbon footprint of their commute to work:
 - Carpool, bike, walk
 - Use public transportation (including student use of school buses)
 - Provide access to charging stations for employees using personal electric vehicles
- b) At work
 - a) Encourage carpooling to meetings
 - b) Encourage and support tele-conferencing
 - c) Consider a non-idling policy for traditional vehicles

