Local Climate Action Planning Process Report

August 2011

Presented to:

Planning and Coordination Council Technical Committee (PACC Tech) – August 4, 2011

Planning and Coordination Council (PACC) – August 18, 2011

Charlottesville City Council – September 6, 2011

Albemarle County Board of Supervisors – September 7, 2011

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Report layout by Susan Elliott

August 2011

Dear Elected Officials and the Community at Large,

We, the members of the Local Climate Action Planning Process (LCAPP) Steering Committee, are very pleased with the outcome of this year and a half long process. The Steering Committee itself was balanced in terms of its members, including full participation by the University of Virginia. The Working Groups were made up of local subject matter experts, whose understanding of barriers and opportunities also helped inform this report.

When viewed through the climate change lens, the Charlottesville-Albemarle community is a community to be celebrated for:

- its many efforts to build and develop sustainably
- its passionate residents whose commitment to living sustainably supports many local businesses and farms
- improving the quality of life for its residents through trails, parks and the protection of open space
- providing safe and inexpensive public transportation
- following through on its Cool Counties and Mayor's Climate Agreement commitments by forming LCAPP in the first place and doing so cooperatively

If we learned anything during this process, we learned that we want to take a positive approach to suggesting ways for lowering our community's energy consumption and thus greenhouse gas emissions. Ultimately, who will disagree with the following?

- saving money and creating jobs by making our buildings more energy efficient is a good thing
- all of us would like to spend less time in our cars and more time with our friends and families
- new technologies that can help us create energy with less pollution are important to support
- in general, the old adage of 'waste not, want not' is probably true when it comes to the things we buy, use and potentially throw away
- wise conservation of our natural infrastructure is necessary to ensure desired environmental services and benefits continue to be provided

Our community is moving towards a positive vision, and we deliberately steered clear of governmental regulatory mandates or demands that it get there this way and by this time. We do believe the recommendations made in this report should be incorporated into the respective comprehensive plans of the City and the County – if we agree on the outline of this vision, it will take effort and coordination over time to get there.

Still, get there we must. While there was clearly a continuum of opinion in terms of the severity of climate change impacts from Committee member to Committee member, in the end the community vision engendered by the practical solutions for mitigating climate change was one we all felt would benefit our citizens and businesses. It underscores what is special about our area and the people who live here: we are smart, caring and committed to improving our community now and into the future.

With hope and support,

The LCAPP Steering Committee

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Local Energy Alliance Program (LEAP)

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Virginia Department of Forestry

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Executive Summary

Energy use in all aspects of our lives—how we travel, how we live, how we care for our urban and rural landscapes and how we produce the energy we use—is directly related to greenhouse gas emissions. With unstable energy costs foreseen well into the future, communities and businesses that are pro-active in reducing their reliance on fossil fuels will be poised to capture the significant competitive advantage of being innovators. Sustained economic development and resiliency for all members of our community will be well-served by investments and actions that increase energy efficiency and reduce emissions; the related cost savings will help keep financial resources in the local community.

Motivated by the prospective benefits of taking action on these issues, senior executives from the City of Charlottesville and the County of Albemarle extended an invitation in May 2009 to local community representatives to serve on a multidisciplinary Steering Committee leading a *Local Climate Action Planning Process* (LCAPP). Over an 18-month period the LCAPP Steering Committee, supported by a network of more than 50 local subject matter experts, local business representatives and other interested parties, examined best practices to assess their appropriateness and effectiveness for our community. Through this process, a *Five-Part Framework for Our Community Energy Profile* was crafted identifying guidelines to inform planning and programs. Further detailed recommendations were formulated into a set of *Framework Action Strategies*, which represent opportunities for win-win efforts that can contribute to community well-being in economic, health and environmental terms. The Steering Committee purposefully embraced a voluntary approach and offers this report as a guide to the City, County and UVa in considering a broad range of options. The potential benefits of each of the recommended *Action Strategies* can be evaluated in creating a vision that best meets the needs of their respective communities.

The wrap-up of the LCAPP in August 2011 marks an important milestone in an evolving process. The City, the County and the University of Virginia have each demonstrated leadership in reducing emissions related to their own facilities, vehicles and activities. However, regional City/County baseline emissions data indicate that, together, local government entities contribute only about 4% to overall community greenhouse gas emissions. The recommended *Action Strategies* therefore can serve as guidelines not only for City, County and UVa but also for the wider community regarding options to reduce energy use in buildings, transportation, materials use and energy generation. These recommendations can help individuals, businesses, nonprofit organizations, educational institutions, medical facilities, public sector entities—indeed all members of our combined region—to make informed choices as we continue, along with other leading communities around the nation, to adopt practices that will contribute to reducing our community's emissions.

The recommended *Action Strategies* can serve as guidelines not only for City, County and UVa but also for the wider community regarding options to reduce energy use in buildings, transportation, materials use and energy generation.

The following report documents the LCAPP process and provides examples of existing efforts by the City, County and University to reduce energy use and emissions. A report such as this cannot do justice to the enthusiastic and creative implementation of related projects by institutions, businesses and individuals throughout our community. While existing efforts are inspiring and illustrative of how effective many of the *Action Strategies* can be, our communities will nevertheless need to continue their concerted efforts in promoting adoption of these principles and practices on a broader scale.

The LCAPP Steering Committee encourages the City, County and UVa to take tangible and measureable action consistent with the following *Recommended Principles* and *Recommended Next Steps*:

Recommended Principles

- To continue to demonstrate leadership in energy and carbon reductions at the local level;
- To build on existing synergies by continued collaboration of City, County, University of Virginia and community partners;
- To integrate the role of energy and carbon emissions in projects and planning;
- To equip the community at all levels to make informed decisions about the impacts of carbon emissions and energy; and
- To identify and promote actions that enable the community to reap the health, economic and environmental benefits that accompany sound energy-based decisions.

Recommended Next Steps

1. Act on existing commitments to further address carbon and energy considerations in planning and operations of the City, County and University of Virginia.
   a. Use the *Five-Part Framework for Our Community Energy Profile* to inform Comprehensive and other planning efforts;
   b. Utilize the *Framework Action Strategies* to develop an *Action Plan* for each entity to enhance planning for and knowledge about emissions reduction opportunities and identify near-term reduction goals;
   c. Provide regular public updates on progress toward reducing emissions and energy use in internal programs and operations as well as on the results of periodic tracking of community baseline emissions.
2. Build on stakeholder involvement developed through the *Local Climate Action Planning Process* to expand information exchange on carbon and energy-related issues.
   a. Provide learning and engagement opportunities for the wider community including celebration of local successes in the private sector;
   b. Adapt the *Framework Action Strategies* into a *Community Toolkit* containing local guidance and case studies aimed at community members wishing to save energy and reduce their individual emissions;
   c. Facilitate continual improvement of all participants by bringing senior management and project leaders together annually to share and learn from each other's projects and experiences in reducing carbon emissions and energy use in operations and facilities; increase related training and outreach targeting employees;
   d. Invite community members to become actively engaged in efforts to develop tailored *Action Plans* for the City and the County.

1.0 Introduction and Background

Climate change is understood to be a global phenomenon with serious local implications. Scientists from the U.S. Climate Change Science Program and the Intergovernmental Panel on Climate Change (IPCC) have reviewed robust scientific evidence indicating that human-induced climate change is occurring. Their findings present evidence that, although the effects of climate change are macro in scale, actions on a smaller, local scale will be essential to effectively address them. Numerous professional organizations from disciplines as diverse as the American Public Health Association (APHA), the American Public Works Association (APWA) and the American Society of Civil Engineers (ASCE) have likewise expressed concern about the related impacts of climate change on health, emergency preparedness, economic development, infrastructure, planning and community resiliency.

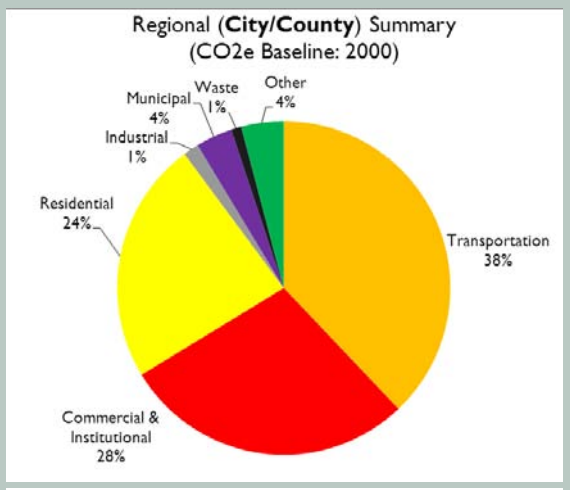
The City of Charlottesville, the County of Albemarle and the University of Virginia have demonstrated concern for greenhouse gas emissions and have begun to tackle the challenge as evidenced by public statements that target greenhouse gas reductions. The three entities have publically recognized the importance of environmental stewardship in improving our quality of life and have a history of planning and implementing programs and actions consistent with this philosophy. A significant step in addressing these commitments consisted of each entity establishing a baseline of its current greenhouse gas emissions. The baseline reports of the City, County and University can form the basis for each entity to undertake informed discussion toward setting goals related to significant emissions reductions.

On July 17, 2006, the Charlottesville City Council unanimously passed a Resolution endorsing the *U.S. Mayors Climate Protection Agreement*.

Following a July 11, 2007 presentation of the *U.S. Cool Counties Climate Stabilization Declaration*, the Albemarle County Board of Supervisors unanimously approved a Cool County Resolution on December 5, 2007.

On June 10, 2011, the University of Virginia Board of Visitors approved a sustainability commitment affirming the University's support for sustainability and specifically identifying a greenhouse gas emissions reduction target of 25% below 2009 levels by 2025.

Entity	Baseline Year	Total eCO2 Emissions (Metric Tons)
Charlottesville	2000	868,952
Albemarle	2000	1,503,163
UVa and UVa Health System	2009	330,900



The graph of combined City and County emissions data highlights the proportionally small contribution to the community's overall emissions - approximately 4% - that can be attributed to local government operations. Data related to the University's emissions are included in the "commercial" section.

Governor McDonnell's 2010 *Virginia Energy Plan* set a voluntary goal to reduce Virginia's electricity use by 2022 through conservation and efficiency by an amount equal to 10 percent of 2006 electricity use.

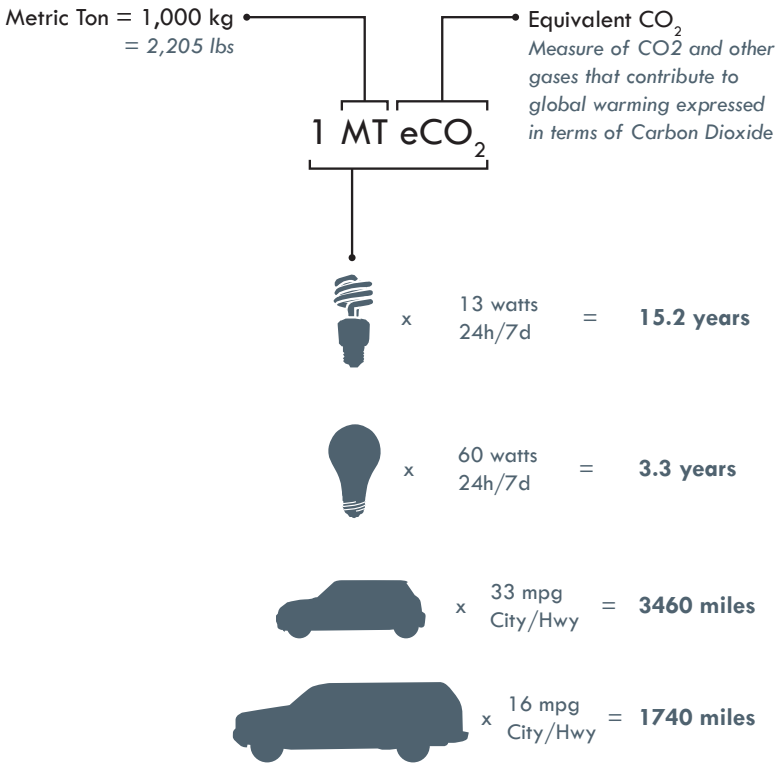
In recognition of the need for cooperation and collaboration among numerous stakeholders to work in concert to reduce emissions, in May 2009 senior executives from the City of Charlottesville and the County of Albemarle invited community representatives to serve on the Steering Committee for a *Local Climate Action Planning Process* (LCAPP). The Steering Committee was established to collect diverse input, to demonstrate local leadership and to recommend strategies for reducing our region's greenhouse gas emissions. The LCAPP Steering Committee was initially convened in August 2009, thereby officially launching the process.

At this time, the City, County and University are each at different points with respect to formally setting and adopting near-term and long-term reduction goals (e.g., 80% by 2050). The combined regional (City/County) emissions baseline data demonstrate, however, that City and County operations contribute only a small fraction—approximately 4%—to emissions for the community as a whole. Therefore, while the City and the County have demonstrated leadership in reducing emissions in their internal operations, this can have only a marginal impact on the community's overall greenhouse gas emissions profile. The University is also playing a leadership role as evidenced by the *Environmental Footprint Reduction Plans* and the 2011 Sustainabilty Resolution, which was endorsed by the Faculty Senate and Student Council and was approved by the Board of Visitors in June 2011.

The *Local Climate Action Planning Process* has identified *Action Strategies* that can help the wider community work toward creating specific targets and adopting concrete actions to attain emissions reduction goals. The recommendations of the LCAPP Steering Committee are a guide for the City, County and University of Virginia to utilize in pursuing their own *Action Plans* to establish the scope and scale at which each entity is committed to engage. Such *Action Plans* will enable each institution to set its own goals and determine the selection and implementation timeline for steps intended to pursue emissions reductions targets. Continued involvement of stakeholders in determining specific roles and responsibilities will remain necessary for adoption of actions with measurable impact.

The Steering Committee embraced a voluntary approach to guide the City, County and UVa in considering the range of opportunities and benefits of each of the recommended *Action Strategies* in creating a vision that best meets the needs of their respective communities. A report such as this cannot do justice to the enthusiastic and creative implementation of related strategies by institutions, businesses and individuals throughout our community. While these existing efforts are inspiring and illustrative of how effective many of the recommended strategies can be, our communities will nevertheless need to continue their concerted efforts to support businesses, individuals and government institutions in promoting adoption of these principles and practices on a broader scale.

Energy use in all aspects of our lives—how we travel, how we live, how we care for our urban and rural landscapes and how we produce the energy we use—is directly related to greenhouse gas emissions. The U.S. Energy Information Administration reports that 87% of U.S. greenhouse gas emissions are related to energy consumption. Examining these issues through a concerted and collaborative effort of local governments, business leaders, scientists, residents and environmental advocates has provided our community a unique chance to explore the benefits of actions that can result in cost-savings, health improvements, job creation, economic development and environmental protection through a common lens.



How Are Emissions Measured?

Emissions are typically measured in metric tons (MT) of equivalent Carbon Dioxide (eCO_2) emissions. One $MTeCO_2$ results from the following:

1 MT eCO2 = **On for 3.3 years** **On for 15.2 years** **112 Gallons of Gas** **$200 in Electricity**

2.0 The Local Climate Action Planning Process (LCAPP)

LCAPP grew out of a joint effort of the City, County and UVa, who have each taken stock of their overall energy use and established greenhouse gas emissions inventories and baselines. A proposal to collaborate on these issues was presented by the City and the County to the Planning and Coordination Council Technical Committee (PACC Tech) in January 2009 and received their endorsement. The three entities agreed to work together examining potential strategies by which overall emissions could be reduced and established a Steering Committee of local community representatives to provide leadership for this process.

The multidisciplinary LCAPP Steering Committee was supported by a network of over 50 local subject matter experts, local business representatives and other interested parties serving in advisory Working Groups. Underlying themes that emerged from the discussions emphasized: celebration of local successes; ongoing engagement with all community members to enable them to make informed choices that will collectively contribute to reduction of the community's emissions; and the need for clear goals and transparent tracking of progress, including continual examination of the most effective ways in which the challenge can be tackled.

Over an 18-month period, best practices from around the nation were collected and examined for their appropriateness and effectiveness for adoption in our community. The Working Groups were organized according to the following sectors: Energy Conservation in the Built Environment, Energy and Mobility, Energy Sourcing, Embodied Energy (materials use and waste), Carbon Sequestration (landscape and agriculture) and Public Education and Outreach. Within these categories, several high level strategies—the *Five Part Framework for Our Community Energy Profile*—were identified to guide future action planning. The *Five-Part Framework* developed through in-depth discussion and debate within the Steering Committee and the affiliated Working Groups carries with it enormous promise that can only be achieved by deliberate and substantive actions. These high-level strategies are accompanied by detailed recommendations in the *Framework Action Strategies*. The *Action Strategies* are intended to guide discussion related to public policies, planning and programs.

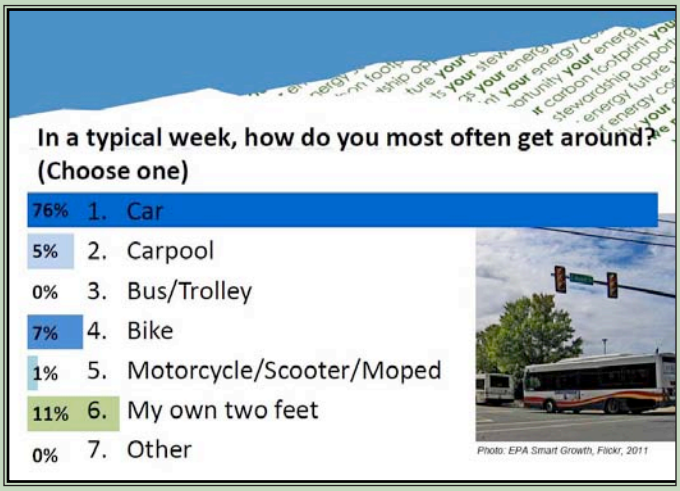
LCAPP Steering Committee in discussion with the Carbon Sequestration Working Group

A Community Workshop—*Carbon, Our Energy Future and You*—held in February 2011 drew solid attendance numbers. In preparing for the Workshop, Steering Committee members recognized the importance of translating the *Five-Part Framework* and the more detailed *Framework Action Strategies* into related benefits for the community. Display posters and factsheets illustrating relevant, everyday examples of energy efficiency options and benefits provided an opportunity for community discussion of these proposals.

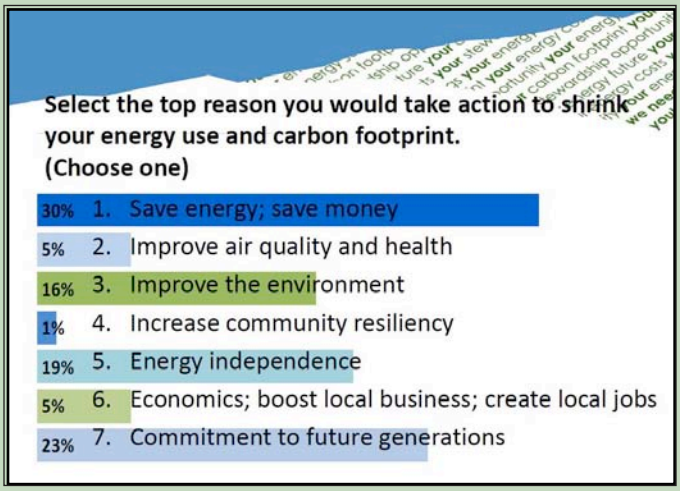
The community real-time survey indicated wide support for climate initiatives among those present at the workshop. It was also, however, noticeable that many of those in attendance were already actively engaged with environmental concerns, a valuable insight as we learned that this process has its work cut out for it in reaching the rest of the community. One theme that consequently runs through the LCAPP *Recommended Next Steps* is the importance of actively engaging community stakeholder groups via those groups' own channels (newsletters, events, meetings), recognizing that concerted community outreach efforts can create greater involvement of citizens of the City and County as well as UVa students/faculty/staff in consideration of future commitments and actions toward reducing the community's energy consumption.

Carbon, Our Energy Future and You Community Workshop
February 24, 2011

Attendees at the *Community Workshop*. Members of the Steering Committee and the Working Groups were on hand to answer questions.



Community Workshop presentations, COB McIntire Auditorium



Interactive Community Survey results

Adaptation

"Exploring Adaptation" was the focus of an LCAPP Workshop on March 15, 2010. Participants separated into four breakout sessions to discuss: community health and emergency preparedness; economic impacts on energy and business; natural resources; and infrastructure, including transportation and utilities. Each group was asked to consider adaptation options based on a careful assessment of efficacy, risks and costs.

In particular, changes in weather patterns, including hotter summers and winters with greater than average snowfall, will potentially impact all sectors of the community. Agriculture may be affected by drought conditions while stormwater infrastructure can become overwhelmed with unusually heavy rainfall. Severe storms can create vulnerabilities in the energy sector, threatening power supply to homes and businesses as well as to medical facilities.

Fuel and energy prices are foreseen to continue to increase, making investment in energy efficient building design and retrofits and transition to more fuel-efficient vehicles particularly advisable. Investments such as these are often considered "no regrets" decisions, because reduced fuel use and reduced costs for gasoline and utilities are a benefit no matter what fluctuations occur in the price of oil or natural gas.

The unknown outcomes of changes in weather as well as fluctuations in fuel costs and availability make planning and preparation especially important. Whether related to emergency preparedness or to less acute but widespread public health matters, such as responding to the needs of the young, ill or elderly in times of heat waves or during severe winter weather, communities around the country are spending greater effort on reviewing current plans and procedures to ensure they can be prepared.

Community Co-Benefits

Communities that address challenges related to reducing energy use place themselves at the cutting edge of innovation and preparedness to adapt to fluctuating costs and availability of fossil fuels. While the U.S. is endowed with an abundance of natural resources, including coal, natural gas and oil, it is the use of these as fuels to drive our economy that creates numerous environmental impacts: acid rain that threatens national parks around the country, including the Shenandoah National Park; ozone alerts in Virginia cities such as Richmond and Hampton Roads on days when extremely hot weather intensifies chemical reactions from auto exhaust to create noxious urban smog; asthma from particulates and chemicals in the air from tailpipes, furnaces and boilers fueled by oil, coal and gasoline; mercury and other pollutants that enter our soils and waterways, ending up in the foods we eat. These costs to human and environmental health are often not included in the ledger of economic impacts from continuing to utilize oil, natural gas and coal as energy sources for electrical generation and for fueling our transportation systems. The unknown costs of fluctuating fuel prices and future regulations designed to reduce polluting emissions only add to the uncertainties regarding the long term costs—both environmental and economic—of continued reliance on fossil fuels.

How will addressing energy use affect our daily lives?

Many changes in our daily behavior can contribute to reducing our community's overall carbon footprint while providing added benefits for our health and well-being. In the process we not only help the environment, we can help lower fuel costs, reduce time spent in traffic congestion, get our kids walking to schools and families out enjoying quiet walks and bike rides on safe bikeways and trails. All of these are amenities our community can pride itself on, and we can enjoy these benefits every day.

Integrating energy efficiency into our methods of constructing and retrofitting new and existing buildings will provide economic benefits to occupants well into the future. Efficient buildings harbor less moisture and leaky air passages that allow mold and allergens to infiltrate our living and working spaces. Building a workforce prepared to help us renovate and renew our communities can be a source of business and job creation for localities that take the long view and invest in training and business incentive programs to support green enterprises. Taking small steps in our everyday lives and large steps in how we design our communities can provide healthy and cost-effective solutions to many of our energy needs.

Business Benefits

Business owners can reap savings by taking basic energy efficiency steps, such as making sure all lights, computers and other office equipment are turned off at the end of the day and especially on weekends and longer holiday breaks. Restaurants, health clubs and beauty shops can benefit, for example, from better water management, as the cost to heat water is a significant percentage of the overall utility use of these establishments. Coffee shops and retail outlets can utilize day-lighting to create a more pleasant ambience. Pleasant, green working conditions are also known to attract and help in retaining a committed workforce. Most people spend nearly 90% of their time indoors, making air quality both a comfort and a health issue. For businesses, poor air quality or thermal comfort issues can increase employee absenteeism and reduce employee productivity. Ensuring that the building is energy efficient provides cost savings on utilities but also reduces related productivity losses.

Health Benefits

According to the Centers for Disease Control only 13% of children walk to school today compared with 66% in 1970. Some studies estimate that nearly 25% of morning traffic can be attributed to parents driving their children to school. With childhood respiratory and obesity problems on the rise, more kids walking to schools would help clear the air by reducing morning traffic congestion, would provide more exercise for youngsters (and their parents who walk with them to and from school) and would reduce our fuel costs. Similarly, carpooling to work or school reduces the costs of maintaining the family car, not to mention saving on gasoline. Transportation costs can amount to 20% of a family's monthly expenses; savings from reduced vehicle use become, in effect, additional income for local residents. This added expendable income will most likely be spent at local businesses, creating a virtuous circle of economic benefit for the whole community. www.saferoutestoschools.org/about.html; www.completestreets.org/webdocs/factsheets/cs-individuals.pdf; www.americawalks.org/resources/walking-facts/; www.ceosforcities.org/work/chicagos_green_dividend

School and University Benefits

Schools and universities can take advantage of longer breaks, for example, to reduce their annual utility bill. One university (in Kentucky) saved over $100,000 over winter break by having the Facilities Management Energy Management Team set back thermostats in buildings, turn off all lighting except for safety lights, unplug vending machines and water fountains, and turn off water heaters and all other unnecessary energy draws. Faculty and staff were asked to turn off computers, unplug electronics and appliances, and turn off office lights before leaving for the break, a protocol students in university housing have been following for years. www.wku.edu/news/releases09/january/shutdown.html

Fuel Savings Benefits

Businesses that regularly use vehicle fleets for their operations can realize significant savings by instituting no-idling policies, and managing delivery routes to minimize distance travelled, and especially to minimize time spent in rush hour traffic. An idling vehicle gets zero miles per gallon! The California Energy Commission Consumer Energy Center recommends turning off the engine if a vehicle will be parked for more than 30 seconds. Ten seconds of idling can use more fuel than turning off the engine and restarting it. www.consumerenergycenter.org/myths/idling.html

Creating Viable Futures: A Case Example from the Jefferson Area Board for Aging (JABA)

Charlottesville, Virginia

Urban agriculture projects and related local food initiatives can promote the development of community food centers, offer healthy, fresh produce options for low-income families, and support the *Buy Fresh, Buy Local* initiative by providing market opportunities for local farmers.

3.0 LCAPP Outcomes

The LCAPP provided an important reminder and recognition of the many initiatives currently underway such as those related to land use and transportation, those related to implementing comprehensive energy efficiency throughout the community [e.g., the Local Energy Alliance Program (LEAP)], those related to the integration of cleaner energy sourcing, and those related to proactive management of trees and forests. City, County and UVa energy management efforts addressing building performance, fleet efficiency, recycling and related programs demonstrate the benefits of integrating the role of energy into short-term and long-term planning processes. These existing policies, practices and projects can serve as leadership examples of choices that individuals and businesses in the community can also consider adopting.

- Energy efficiency in new construction as well as in retrofits of existing buildings owned and managed by each of the three institutions can serve as models for adoption in the private sector. This can include selection of energy efficient lighting and water fixtures, motion and daylight sensors for interior/exterior lighting requirements and adoption of renewable energy technology as feasible. These measures can demonstrate energy efficiency options and cost savings.

- Fleet procurement policies for City, County and UVa take into consideration selection of fuel efficient, hybrid and alternative fuel vehicles. Each entity can support educational efforts for staff to promote fuel efficient driving practices such as: anti-idling policies, routing deliveries by shortest distance, bundling of delivery and service trips and limiting, to the extent feasible, travel during peak traffic hours. These measures can serve to model behavior and demonstrate cost savings.

Alongside the planning process that is the primary focus of this report, several exciting initiatives were launched that are not only consistent with the intent of local climate action planning, but illustrate implementation strategies for some of the opportunities that were discussed and presented through the process. These initiatives are specifically focused on engaging and assisting the community's residential and commercial sectors in efforts related to energy management, which can provide cost savings as well as other quality of life benefits. Both LEAP and the Better Business Challenge involve many local partners and have benefited from the commitment and enthusiasm of many of LCAPP's Steering Committee and Working Group members.

The Local Energy Alliance Program (LEAP) is a community-based nonprofit serving Albemarle, Fluvanna, Greene, Louisa and Nelson Counties and the City of Charlottesville. Leveraging and bundling existing incentives from all levels of government and local utilities, LEAP provides local residents and property owners with a one-stop shop for information on options, energy service providers, financing and financial assistance for residential and commercial energy efficiency retrofits that create more comfortable, healthy and affordable homes and buildings.

Established in the fall of 2009, LEAP's mission is to lead the effort in our local community to conserve water and energy in buildings to promote cost savings, job creation, local economic development and environmental stewardship. The initial funding for the organization came from a $500,000 competitive grant awarded to the City of Charlottesville and the County of Albemarle from the Southeast Energy Efficiency Alliance (SEEA). LEAP has since been awarded a number of additional grants from the Department of Energy. These grants have allowed it to expand its program services to include commercial and low income multifamily residents by providing cash rebates to building owners to help lower the cost of the energy improvements. LEAP also works with the City of Charlottesville and County of Albemarle to implement their energy assessment rebate programs for residents.

LEAP's alliance model is central to its community service ethic. Partnerships with local government, utilities, financing institutions, other nonprofits and contractors inform its campaigns and outreach. One good example of how this team approach manifests is ecoREMOD, the location of LEAP's offices. A historic home that had fallen into serious disrepair, ecoREMOD was purchased by the City and restored in 2010 though a partnership effort of the City, the University of Virginia, LEAP and numerous private sponsors. At ecoREMOD, LEAP hosts school field trips, contractor trainings and residential seminars and workshops that bring to life in a relevant and interactive manner the smart, healthy and cost-saving investments of a home—no matter what the age or condition of the property. The design of ecoREMOD and the pursuit of EarthCraft and LEED certification involved a team of architecture and architectural history students from the UVa. A team of UVa engineering students designed and installed a monitoring system at ecoREMOD to track energy use, temperature, humidity and other environmental conditions.

As the area's Home Performance with ENERGY STAR sponsor, LEAP is especially pleased to offer residents the pre-qualified contractors, work guidelines and third party quality assurance that make this Certificate meaningful.

More information can be obtained at www.leap-va.org

leap local energy alliance program

The **Charlottesville Area Better Business Challenge**, launched in 2011, is a collaborative effort of City, County, UVa, local nonprofits LEAP and Better World Betty, along with other community partners. The project—a friendly competition—has the support of the Charlottesville Regional Chamber of Commerce as well as funding from a local community foundation.

CHARLOTTESVILLE AREA
BETTER BUSINESS CHALLENGE
SMART. SUSTAINABLE. SUCCESSFUL.

Partnerships such as this harness multiple streams of public and private funding to create outreach programs and trainings to engage the local business community in adopting processes and practices that can enhance their bottom line. This initiative is intended to serve as the entry point for the community's commercial sector to learn innovative ways to incorporate more efficient and sustainable practices, to set and achieve goals tailored to business needs and to gain recognition for these efforts.

An informational website provides numerous resources to help local businesses learn how other firms have made environmentally conscious business decisions. Challenge scoring categories include: energy use, water use, waste reduction, transportation options for both business and employee travel and procurement policies that give preference to local products and services. As currently designed, the Charlottesville Area Better Business Challenge provides opportunities for business owners to take a leadership role in helping fellow businesses through needs assessment and review of applicable options to reduce their environmental footprint while practicing corporate environmental stewardship.

More information can be obtained at www.cvillebetterbiz.org

THE BETTER BUSINESS CHALLENGE

SAMPLE SCORECARD FOR CERTIFICATION

GET STARTED NOW! CERTIFICATION TAKES JUST 40 POINTS. Below is a *sample* of actions you can take today. All actions on this scorecard earn 1 point toward certification. You can even include scorecard actions you have *already* taken!

ENERGY

Have you developed a list of energy conservation or efficiency action items?

Do you use natural lighting whenever possible?

Do you use task lighting to minimize overhead room lighting?

Have you replaced 50% of incandescent light bulbs with CFLs or LEDs?

Have you set company thermostats to recommended ENERGY STAR settings?

Have you set water heaters at 120 F and added an insulation blanket?

TRANSPORTATION

Have you met with staff to solicit ideas on reducing fuel costs or improving transportation options?

Does your company promote transportation options including public transportation, biking and walking?

Have you conducted an inventory of company vehicles to identify opportunities for replacing low MPG with more efficient ones?

Does your company regularly check fleet tire pressure for optimum fuel use?

Have you instituted a no-idling policy for company vehicles, delivery vehicles (i.e. vehicles delivering goods to your company) and/or customers?

Has your company participated in Clean Commute Day?

WASTE REDUCTION

Have you met with staff to solicit ideas on reducing waste?

Does your company recycle?

Do you regularly use double-sided printing and copying?

Do you have newsletters, reports, paycheck vouchers, etc. available online?

Have you converted from Styrofoam and single-use containers to reusable items?

Do you donate used electronics or use e-waste recycling options?

Do you minimize water bottle usages by providing a water cooler or filtered water pitcher?

Do you offer discounts or rebates for customers who bring their own packaging (e.g. bags or cups?)

WATER

Have you met with staff to solicit ideas on water saving options?

PURCHASING

Does your company prioritize selection of products and supplies that incorpo-

LEADERSHIP

Have you appointed an internal "green team" or green team leader to champion

Shown to the left is a "sample scorecard" from the Better Business Challenge. A sampling of items taken from the six scorecards (Energy, Transportation, Waste Reduction, Water, Purchasing, and Leadership), it pulls some of the easier action items from each category to provide an idea of what it might take for a business to achieve Certification. Actions were selected because businesses could begin taking action on them today.

All participating businesses could receive the Certified, Certified Plus, or Winner's Circle achievement award by earning points on the scorecard. Some businesses would receive additional honors with the Better Business Champion, KiloWatt Crackdown, Biggest Loser, Green Leader, and Top Innovator awards.

3.1 Five-Part Framework for Our Community Energy Profile

The *Local Climate Action Planning Process* has been an important step in an ongoing process. This report is not the end product; its primary value is in the numerous recommendations that can give direction toward further action. It is intended to inform and to set the foundational context for planning, decision-making and implementation. Community representatives and subject matter experts spent valuable time and effort reviewing practices from around the country and considering their appropriateness for the Charlottesville-Albemarle community.

Through a process of presentation, debate and discussion within the LCAPP Steering Committee, the range of actions and policies recommended by the Working Groups were aggregated into two formats:

- High-level organization of themes considered in the process. The *Five-Part Framework for Our Community Energy Profile* can inform each entity's development of its own *Action Plan* after consideration of community input.
- Recommended implementation strategies. The *Framework Action Strategies* compiled from the numerous recommendations brought forward by the Working Groups can serve to inform the next phase of implementation.

3.2 Framework Action Strategies

Communities and businesses being pro-active in reducing their energy use are poised to capture the competitive advantage of being on the innovative edge. The Charlottesville-Albemarle area is well established as a competitive region; to remain so will require commitment and support for businesses, individuals and government institutions to seize opportunities to reap benefits of taking the long view. Stable, sustained economic development and resiliency for all members of the community will be well-served by investments and actions that contribute to reducing reliance on fossil fuels and improving operational efficiencies.

The *Framework Action Strategies* set the stage for discussion within each of the three entities to decide upon the discrete actions each wishes to adopt. The *Action Strategies* should not be seen as limiting or all-inclusive. The Steering Committee and Working Groups set out to provide the wider community with a range of potential concrete steps toward reducing our carbon footprint. Many of the concepts and ideas listed in the *Action Strategies* are already being widely implemented in our community. The hope is that this menu of choices will inspire our community to engage in careful examination of the feasibility and benefits of each option, or others that may be brought forward in the course of these discussions.

Five-Part Framework for Our Community Energy Profile

Energy & the Built Environment

- Reduce Energy Demand in Existing Buildings
- Increase Energy Efficiency Performance of New Buildings
- Enable Building to Green Building Standards and Practices

Energy & Mobility

- Focus Land Use and Transportation Planning on Density and Infill
- Improve Travel Efficiency
- Encourage Alternatives to Single Occupancy Vehicle Use

Energy Sourcing

- Promote Adoption of Cleaner Sources of Electrical Energy
- Promote Adoption of Cleaner Sources of Energy for Heating and Cooling
- Promote Adoption of Hybrid Electric and Biodiesel Vehicles and Fuels

Energy & Materials

- Promote Zero Waste Principles of Waste Reduction and Minimization
- Consider Impacts of Purchasing Decisions; Prioritize Local Procurement
- Reuse and/or Repurpose Existing Buildings

Energy & the Landscape

- Maintain Existing Tree Canopy and Forestland Base
- Expand Forest Cover
- Manage Existing Tree Canopy and Forests to Promote Health and Diversity

Energy & the Built Environment

Reduce Energy Use and Demand in Existing Buildings

- Increase awareness and adoption of low and no cost measures to reduce energy use in buildings (target both property owners and tenants)
- Encourage and assist property owners to benchmark their buildings' energy use and/or to get a building energy label/score
- Implement a City- and/or County-owned water and gas utility on-bill repayment option for financing energy efficiency improvements in buildings

Increase Energy Efficiency Performance of New Buildings

- Review existing green building policies for commitment to LEED certification for new municipal/academic construction
- Incorporate 'green roofs' and 'cool roofs' into existing and new municipal/academic construction and promote their use in private projects
- Continually examine and adjust barriers to green building practices (e.g., zoning and other codes and ordinances)

Incentivize and Enable Building to Green Standards and Practices for New Construction, Remodeling and Retrofits

- Develop and implement incentives for builders and developers to pursue ENERGY STAR/LEED/EarthCraft certifications and for existing property owners to pursue similar certifications related to improved energy efficiency
- Support green building training and education for developers, builders, code officials and property owners
- Create a community goal for a voluntary energy efficiency standard; incentivize higher local standards for energy code




The Delta Force Team at the University of Virginia

In 2008, the University of Virginia launched the Delta Force, a cross-functional team-based approach to retrocommissioning existing buildings with a focus on energy and water conservation. Each building's Delta Force Team includes UVa staff members and external support professionals with expertise in commissioning and HVAC system testing and balancing. The Delta Force Team has prioritized energy-intensive facilities, starting with older research labs and dining halls. Retrocommissioning each building takes approximately 12-15 months. Through May 2011, the Delta Force Team has realized cumulative energy cost savings of over $2.3 million.

Charlottesville Area Transit Base

The City is increasingly incorporating energy efficiency into its new building projects such as the Charlottesville Area Transit Base, which opened in June 2010. Enhanced energy performance is achieved through the use of major systems such as ground source heat pumps as well as lighting levels that are controlled by occupancy and ambient light sensors, window glazing and fixed sun screens to reduce heat gain. The large windows in the building allow occupants to utilize natural daylight thereby limiting the amount of electrical energy needed for overhead lighting. In addition, the windows can be opened and closed to enable a cool breeze to pass through the workspace, thus eliminating the need for an air conditioning system.

Green Building and Sustainability in the Comprehensive Plan

In July 2007, the Albemarle County Board of Supervisors unanimously approved the Green Building and Sustainability amendment to the Natural Resources and Cultural Assets chapter of the Comprehensive Plan. The amendment includes strategies that target green building and energy efficiencies for the County's internal operations and management as well as advancing green building in the development community. At that time, the development community was already engaged in the green building industry through LEED, EarthCraft, and ENERGY STAR certification programs. The County's goal with this amendment was to support and encourage the efforts of its partners in the development community as well as to remove obstacles within the County's planning and zoning operations that would prohibit or minimize green building. Many major residential and commercial development projects have pursued, proffered and marketed components of green building designs, LEED certifications and EarthCraft homes in Albemarle County.

For internal operations, the County adopted an Energy Management and Conservation policy in February 2008 and set a reduction target of 30% from 2007 energy use levels by the end of 2012 for its two county office buildings (McIntire and 5th St.) and the Court Square building. The County also joined the ENERGY STAR program. Both office buildings have achieved ENERGY STAR program certification, which means the buildings perform better than at least 75% of similar buildings nationwide. As of June 2011, the County has reduced energy consumption in those three buildings by 23%.

Focus Land Use and Transportation Planning on Density and Infill

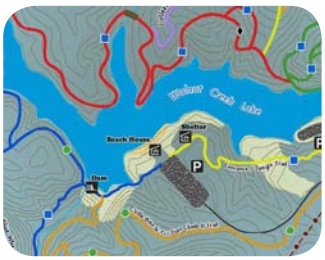
- Utilize infill and redevelopment to focus new growth within existing growth area boundaries
- Develop and apply mechanisms to regularly quantify emissions implications of planning decisions
- Promote mixed-use development to reduce travel distance/time to work, school, shopping and recreation

Improve Travel Efficiency by Combining Trips, Preferred Parking for Carpool Vehicles, Tele-Commuting Options

- Encourage employers to adopt and promote transportation demand management principles (e.g., high-visibility parking incentives for carpool and/or high-efficiency vehicles; tele-commuting options)
- Significantly increase carpooling and vanpooling, especially in areas of Albemarle County not served by other transportation alternatives
- Establish minimum fuel economy standards for fleet vehicles; expand use of car sharing for fleet vehicles

Encourage Alternatives to Single Occupancy Vehicle Use Including Public Transit, Biking, Walking

- Explore creation of long-distance transit service for remote population center commuters; establish transit priority routes
- Promote availability of employer-offered transit benefits; continue CAT/UTS fare reciprocity program
- Implement long-distance paved commuter multi-use trails; prioritize connected bicycle lanes above on-street parking



Incentives to Increase Travel Efficiency

Launched in August of 2008, the University of Virginia Cavpool program created an incentives package for UVa employees carpooling or vanpooling with other UVa employees that included a discount on the price of their parking permit based on the number of riders in the carpool, free Occasional Parking Permits, and enrollment in the region's Guaranteed Ride Home Program. Permit price discounts are 25% with two riders, 40% with three riders, and 100% for four or more riders. With the launch of the Zipcar program in late 2009, Cavpool members received an additional incentive in the form of a driving credit bonus for the Zipcar program.

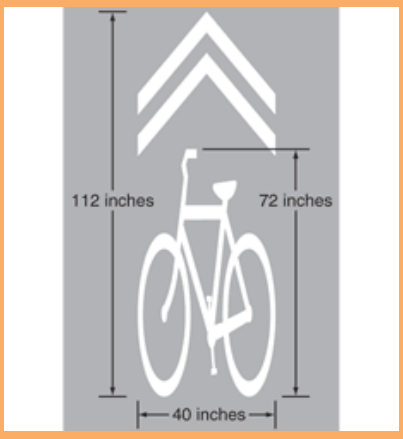
To further encourage use of transportation alternatives, UVa launched the NuRide online ride matching and commuter reward program in September 2010 to the entire Charlottesville Metropolitan Statistical Area (MSA) and made available at no cost to virtually all commuters in the MSA, not just UVa students and staff. NuRide allows users to sign up for free, create an online profile, set their commuting origin, destination and preferences, and post their desired commute trips to the NuRide database.

Neighborhood Model for Land Use

The Land Use Plan provides direction for physical development in Albemarle County and relies heavily on the Neighborhood Model that was appended to the Comprehensive Plan in 2001. The Land Use Plan provides guidance for development that will be harmonious with the natural and man-made environments and consistent with the County's Growth management goals, which are to channel development into designated Development Areas while conserving the balance of the County as rural areas. Some principles outlined in the Neighborhood Model include: pedestrian orientation, preserving open space, adapting to natural topography, emphasizing re-use of sites, varying density and mixtures of residential/non-residential uses. Since the 2001 approval, the County has now seen many successful projects designed and implemented using the Neighborhood Model.

Encouraging Safety and Bicycle Ridership

Bicycle infrastructure improvements along the East/West Corridor have been strengthened and slated for further improvements to increase safety and bicycle ridership. The Corridor stretches through the City of Charlottesville, several commercial centers, and connects to the County of Albemarle and University of Virginia. A variety of tools are being utilized: bicycle lanes, detection cameras at traffic signals, and sharrows. Sharrows (image to the right) mark the pavement to help drivers and cyclists understand how to share the road.



Energy Sourcing

Promote Wider Awareness and Adoption of Cleaner Sources of Electrical Energy (e.g., solar photovoltaic, co-generation, biomass, wind)

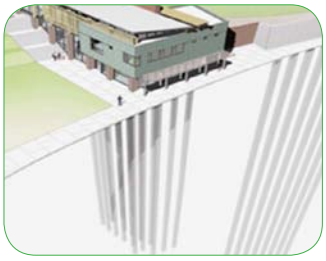
- Compile a best-practices guide and cost estimation tool for renewable distributed electricity generation users
- Promote creation of combined heat and power facilities
- Design marketing and recognition programs for businesses, institutions and residents using solar PV

Promote Wider Awareness and Adoption of Cleaner Sources of Energy for Heating/Cooling Systems (e.g., solar thermal, geothermal)

- Expand natural gas distribution to population centers not currently served
- Compile a best-practices guide and cost estimation tool for geothermal and/or solar thermal energy users
- Explore creation of district geothermal systems in areas of dense demand

Promote Wider Awareness and Adoption of Hybrid, Electric and Biodiesel Vehicles and Fuels

- Increase availability and use of renewable fuels in vehicles
- Expand use of biodiesel and other alternative fuels in municipal vehicles and other fleets
- Develop municipal and private sector guidelines for electric vehicle charging, parking and incentives



RideForward

Converting Conventional to Electric

RideForward is an interdisciplinary research project at UVa focusing on sustainable transportation. The project focuses on the conversion of conventional vehicles to electric drive, the installation of solar panel systems to offset the electricity usage of the vehicles, the construction of charging stations, and educational awareness initiatives in the community. Converted vehicles are used by the University and local government in place of standard internal combustion vehicles. In February 2010, RideForward installed a 1.2 kW solar panel charging system on the bus shelter at the Emmet/Ivy Garage.

Geothermal Technology for Heating and Cooling

Three recently constructed facilities in Charlottesville incorporate the use of ground source (geothermal) technology. This type of heating and cooling system takes advantage of the relatively constant temperature of the Earth's surface and reduces the energy needed to heat or cool a building. The Downtown Transit Station has 18 closed-loop ground source geothermal wells (12 wells are 300 feet deep; 6 wells are 600 feet deep) that contribute to the energy efficiency of the building as well as eliminate the noise and visual impacts of a traditional roof-mounted cooling tower. The payback period for this system is estimated to be about 9.4 years and, along with other energy efficiency measures that were incorporated in this project, the building was designed to achieve a 33% energy cost reduction compared to a standard building. Both Smith Aquatic Center and the Charlottesville Area Transit Base also incorporate geothermal systems, using alternative approaches that offered further cost savings due to the increased effectiveness and reduced numbers of wells required.

Hybrid and Biodiesel Vehicles and Fuels

The purchase and use of hybrid gas-electric vehicles in both the City of Charlottesville and the Albemarle County fleets have increased over the last several years. Currently the County has 10 gas-electric hybrid vehicles in its fleet. The County has also experimented with the use of biodiesel fuel in school buses and Fire and Rescue vehicles. Charlottesville has been incorporating hybrid vehicles into its fleet since 2002 and they now comprise nearly 18% of the City's passenger fleet. The University of Virginia has created Zipcar memberships for departments, allowing employees to use Zipcars for University-related travel. All UVa Zipcars are EPA SmartWay or SmartWay Elite Certified and half are hybrids.

Energy & Materials

Promote and Pursue Zero Waste Principles of Waste Reduction and Minimization

- Establish additional drop-off recycling centers where curbside pickup is unavailable or limited
- Develop, implement and promote organics composting and vegetative waste management programs (target schools, residential, institutional and commercial sectors)
- Increase e-waste recycling capabilities

Consider Environmental Impacts of Purchasing Decisions; Preference Local Procurement

- Integrate source reduction strategies in home, school and business to eliminate waste (minimize packaging; reduce use of disposable products; reuse materials; support reuse programs and services)
- Adopt environmentally preferable purchasing policies (e.g., recycled content; ENERGY STAR appliances/electronics; safer cleaning products; water efficient fixtures, low/no VOC materials)
- Select local goods and services to reduce transport-related emissions and enhance the local economy (e.g., *Buy Fresh, Buy Local*; *Shop Charlottesville*)

Reuse and/or Repurpose Existing Buildings

- Assess current space usage of municipal/academic buildings; identify underutilized space that can be shared across departments
- Increase awareness of cost savings opportunities associated with renovation and rehabilitation of existing buildings versus new construction
- Promote incentives for building owners to invest in existing building improvements (e.g., City's tax abatement program for housing improvements)

Environmentally Preferable Purchasing Practices

The City of Charlottesville has implemented several Environmentally Preferable Purchasing practices. These practices include specifying products that have high-recycled content (e.g, 35% recycled content paper) or are made of materials that can be recycled, are durable and long-lasting, conserve energy and resources during their manufacture and operation and have the fewest toxic compounds used in their production. For those major building projects pursing LEED certification, specifying regional sources for materials has been a consistently manageable element to incorporate and demonstrate.

"Green" Dining Materials

In an initial move to reduce the negative environmental effects of disposable products, UVa replaced styrofoam and plastic materials with compostable cups and other "green" materials. Given the lack of compost collection outside of dining halls, this initiative provided only a partial solution. Compostable products end up either in landfill trash or improperly in recycling bins, which threatens contamination of the recycling stream. To address these issues, UVa Dining returned to using #1 plastics, a high-value plastic that is recyclable in all UVa and City recycling streams, for beverage and other appropriate containers. Compostable containers remain where a recyclable alternative is not available. To further address disposable products, UVa Dining introduced a reusable to-go container program in fall 2009, one of the first large institutions to do so. After use, participants return their dirty containers to a residential or participating retail location in exchange for a token.

Repurpose Existing Buildings and Invest in Building Improvements

Albemarle County has utilized existing buildings to meet the needs of County operations. Two examples of this strategy can be seen in the County Office Buildings (McInitre and 5th Street). The "original" Lane High School built in 1939 has been the main County Office Building since 1981. Albemarle purchased the building and property from Charlottesville and renovated it to house County operations that were spread across different locations.

Albemarle County also purchased the Wachovia Operation Facility on 5th Street Extended in 2002 to address space needed for current and long term operations. The $7 million purchase provided 100,000 square feet of space that had been identified in the ongoing 3-year space needs analysis. The purchase and renovation costs were estimated to be at least $10 million less than new construction alternatives to address the needs over the next 25 years.

The City and County have jointly pursued similiar building reuse projects such as the J&DR Courthouse, the Jessup Building and the Levy Building.

Maintain Existing Forest Base and Urban Tree Canopy

- Establish permanent conservation easements on forested landscapes
- Protect large areas of forests to support their health and production
- Incentivize retention of existing forested lands (e.g., assess impacts of land use tax structure)

Expand Forest Cover to Increase Carbon Storage

- Promote and expand existing programs that link funding sources to landowners to enhance forest protection, afforestation and reforestation opportunities
- Generate funding sources (including voluntary contributions) for forest protection and expansion
- Conduct stream restoration and water quality improvements with forest components (e.g., vegetated buffers)

Manage Existing Tree Canopy and Forests in City, County and University Grounds to Promote Health and Diversity

- Continue funding urban forest management programs to provide habitat, shade, urban heat island reduction and urban forest resiliency
- Eliminate and manage invasive species and implement other strategies that promote forest health and diversity
- Expand the use of sustainable forestry management and stewardship practices




Urban Tree Canopy Management

In the last 3 years, over 500 trees have been planted in parks and along roadways making travel more pleasant, adding shaded places to areas where citizens and visitors walk and recreate and replacing trees lost through storm damage. A strategic Urban Forest Management Plan was adopted by Charlottesville in 2009 to provide a framework for ensuring that the trees and forests of the City are appropriately cared for according to community goals. The 2009 canopy coverage was calculated to be nearly 47% with the most extensive forest areas being found in McIntire and Pen Parks. The two top goals of the Plan are Preservation and Protection of existing forested areas and trees and Enhancement and Restoration of forest quality.

Acquisition of Conservation Easements (ACE) Program

In 2000 Albemarle County initiated the Acquisition of Conservation Easements (ACE) program to provide a financial incentive for landowners in Albemarle County to protect valuable farms and forests. The landowner is provided a fair market value determined by the difference between highest yields of land development versus no development due to the conservation easement. The County recognizes the benefits to all citizens in protecting farms and forest lands with co-benefits of cleaner air and water, more diverse wildlife habitats, a stronger community and protection of rural character. As of 2009 the program acquired 37 conservation easements and protected 7,224 acres through approximately $10.5 million in appropriations.

Albemarle County also has a tax deferment program that allows land owners to take advantage of reduced property taxes on agricultural, horticultural, forested and open space land uses. The Land Use Program currently has 4919 parcels registered with 252,000 acres. The current enrollment represents $17 million in taxes deferred and $2.3 billion in value deferred.

4.0 LCAPP Recommendations

The wrap-up of the LCAPP in 2011 marks an important milestone in a process that will continue to evolve and will depend on engaged participation of the community. The Steering Committee encourages the City, County and UVa to take tangible and measureable action consistent with the following *Recommended Principles* and *Recommended Next Steps*:

Recommended Principles

- To continue to demonstrate leadership in energy and carbon reductions at the local level;
- To build on existing synergies by continued collaboration of City, County, University of Virginia and community partners;
- To integrate the role of energy and carbon emissions in projects and planning;
- To equip the community at all levels to make informed decisions about the impacts of carbon emissions and energy; and
- To identify and promote actions that enable the community to reap the health, economic and environmental benefits that accompany sound energy-based decisions.

Recommended Next Steps

1. Act on existing commitments to further address carbon and energy considerations in planning and operations of the City, County and University of Virginia.

    a. Use the *Five-Part Framework for Our Community Energy Profile* to inform Comprehensive and other planning efforts;

    b. Utilize the *Framework Action Strategies* to develop an *Action Plan* for each entity to enhance planning for and knowledge about emissions reduction opportunities and identify near-term reduction goals;

    c. Provide regular public updates on progress toward reducing emissions and energy use in internal programs and operations as well as on the results of periodic tracking of community baseline emissions.

2. Build on stakeholder involvement developed through the *Local Climate Action Planning Process* to expand information exchange on carbon and energy-related issues.

    a. Provide learning and engagement opportunities for the wider community including celebration of local successes in the private sector;

    b. Adapt the *Framework Action Strategies* into a *Community Toolkit* containing local guidance and case studies aimed at community members wishing to save energy and reduce their individual emissions;

    c. Facilitate continual improvement of all participants by bringing senior management and project leaders together annually to share and learn from each other's projects and experiences in reducing carbon emissions and energy use in operations and facilities; increase related training and outreach targeting employees;

    d. Invite community members to become actively engaged in efforts to develop tailored *Action Plans* for the City and the County.

Steering Committee for Local Climate Action Planning Process (LCAPP)

- Cynthia Adams, Local Energy Alliance Program (LEAP)
- David Brown, Charlottesville City Council
- John Cruickshank, Sierra Club, Piedmont Group
- Bill Edgerton, The Oak Hill Fund; formerly with the County of Albemarle Planning Commission
- Tom Frederick, Rivanna Water and Sewer and Solid Waste Authorities
- Bill Greenleaf, Richmond Regional Energy Alliance; formerly with William McDonough + Partners
- Tim Hulbert, Charlottesville Regional Chamber of Commerce
- Buck Kline, Virginia Department of Forestry
- Chris Lee, Piedmont Virginia Companies, Inc.
- Ann Mallek, County of Albemarle Board of Supervisors
- David Neuman, University of Virginia, Office of the Architect
- Mike Osteen, City of Charlottesville Planning Commission
- Hank Shugart, University of Virginia, Deptartment of Environmental Sciences
- Jay Willer, formerly with Blue Ridge Home Builders Association

Ex Officio Members

Susan Elliott (County of Albemarle)
Andrew Greene (University of Virginia)
Andy Lowe (County of Albemarle)
Nancy Quirk (City of Charlottesville)
Kristel Riddervold (City of Charlottesville)
Sarah Temple (formerly with County of Albemarle)

City of Charlottesville Emissions Baseline Report (2008)

http://www.agreencity.org
http://www.charlottesville.org/Index.aspx?page=2142

County of Albemarle Baseline Emissions Report (2009; 2011 revision)

http://www.albemarle.org/department.asp?department=envmgt&relpage=3018

Sustainability at the University of Virginia

http://www.virginia.edu/sustainability/