

Green Initiatives in the Capitol Region

Capitol Region Council of Governments

CRCOG Foundation

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This white paper identifies public policy tools and strategies for municipalities seeking to promote environmental stewardship. The findings presented focus on policies, programs and products relating to: 1) greening municipal buildings; 2) implementing energy efficient technologies; 3) reducing greenhouse gas emissions and converting to renewable energy sources; 4) greening fleets-investing in alternate fuels and hybrid technologies; and 5) purchasing environmentally-preferred products and services. The paper provides a discussion of each of the five core areas listed above, as well as a section that highlights the experiences of two regional entities in this arena. A detailed listing of possible roles for CRCOG to consider, and recommended next steps, concludes the paper.

BACKGROUND

Armed with a broad array of policy goals, including improving operating efficiencies, controlling rising energy costs, promoting healthier work environments, mitigating climate change and committing to sustainable development, local governments have instated, to varying degrees, green policies and programs. While some localities have just begun to investigate options for greening their communities, others have committed to making sweeping changes in the way they conduct municipal business.

The **Town of Glastonbury**, for example, has made energy conservation an organizational/management priority, and has earmarked \$250,000 for the coming fiscal year to support energy efficiency and alternate energy projects (up from a \$75,000 appropriation for each of the last two fiscal years). Moreover, the community has realized over \$880,000 in rebates since 2000 as a result of its participation in various CL&P programs. See Attachment A for a detailed listing of the town's utility and communication-based efficiency efforts (past, present and planned).

Mansfield too has emerged as a leading environmentally-conscious municipality. Its community-wide strategic planning effort included a vision statement on sustainability. In that spirit, the town continues to maintain a full-time recycling position, has been aggressive on the renewable energy front (earning free solar panels that now generate 1/3 of the power required by its community center, with plans to implement photovoltaic systems during future renovation work at several elementary and middle schools), is in the process of installing cogeneration systems, and is making the switch to all green products.

West Hartford's recent engagement of two consulting firms to help it cut energy costs and navigate through an increasingly complex marketplace further demonstrates the town's longstanding commitment to going green. Two separate RFPs were issued in 2007: one covering utility invoice payments and energy management information system services, the other comprehensive energy management services.

The former ensures that more than 2,000 utility bills annually will be sent directly to the hired contractor for review and verification before payment is authorized. Though only in effect for a few months, the contract has already put some money back into the town's coffers. Consultant services secured via the latter process guarantee that the town has ready access to expertise for verifying utility billing charges, estimating energy costs, reviewing energy procurement options and reducing energy consumption. Note too that another RFP is in the works—this time focusing on renewable energy generation.

The Town can credit its successes in part to a supportive resident base. Citizens, working through an active Clean Energy Taskforce, have been benchmarking activities for over a year and a half, and others are working through an organization called Sustainable West Hartford to push for a greener community.

Yet while these towns, and many like them across the country, are aggressively pursuing a greener way of life, a surprising number of others have made little progress to date towards reducing their community's carbon footprint. Consider participation rates in the SmartPower 20% by 2010 Clean Energy Campaign. The Campaign, which is a Connecticut not-for-profit initiative, challenges municipal governments, businesses and institutions to obtain 20% of their electricity supply from clean, renewable energy sources by the year 2010. So far,

about a third of CRCOG's twenty-nine members have not yet joined this program—and the region's smallest towns are clearly underrepresented on the program's participant roster.

As even the greenest of Connecticut's towns continue to phase in environmentally-preferable policies and practices, there remains a broad range of conservation and sustainability ideas that may be worthy of additional consideration by our membership (and CRCOG as well).

GREEN BUILDINGS

As municipalities continue to build schools, upgrade existing facilities and maintain their entire building stock, they are doing so with an eye towards controlling spiraling energy costs and limiting their reliance on global energy sources. At the center of policy discussions are additional concerns for promoting healthier environments for people to live and work. Such efforts have been facilitated by the emergence and acceptance of rigorous third-party building certification programs that have raised the bar on the design, construction and operation of buildings--and created national benchmarks for attaining the coveted "high performance green building" status. According to the U.S. Green Building Council, green buildings are defined as "those that use less energy, consume less potable water, generate fewer air pollutants, produce less solid waste and provide healthier indoor environments."

A number of competing systems can be employed to certify a green building, including, but not limited to, Leadership in Energy and Environmental Design (LEED), Green Globes, EarthCraft, Green Communities and ENERGY STAR. Currently, LEED has the endorsement of the General Services Administration as the most appropriate green building rating system for *public* projects. Its rating system focuses on a whole building approach to sustainability and recognizes performance in five key areas: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. Levels of certification are, in ascending order, Certified, Silver, Gold and Platinum.

Not surprisingly, LEED has been embraced by public and private projects alike and has been incorporated as a key element of sustainable building policies nationwide. For example, the Metropolitan Washington Council of Government's regional green building policy identifies LEED as that region's preferred rating system, and the City of Seattle's Sustainable Building Policy prescribes that all buildings over 5,000 gross square feet of occupied space meet, at a minimum, the LEED Silver standard. Closer to home, communities like **Mansfield**, **Berlin** and **Hamden** have passed resolutions surrounding the use of LEED. An excerpt from **Mansfield's** policy reads:

"...Town staff and its architects and building committees are hereby directed to use the most recent version of LEED certification standards as a benchmark to achieve maximum energy efficiency and environmental sustainability relevant to the scope of the new construction or major renovation, unless this cannot be accomplished on a cost-effective basis, considering construction and operating costs over the life cycle of the building being constructed, expanded or renovated. All facilities and buildings are encouraged to use higher LEED rating levels, if feasible."

Another widely accepted leader in the green arena is ENERGY STAR, a joint initiative of the U.S. EPA and the U.S. Department of Energy. ENERGY STAR boasts a number of programs that municipalities can easily access to support their green building programs. First, municipalities are adopting the ENERGY STAR designation as a benchmark to guide the procurement of appliances, office equipment, heating and cooling system, lighting, etc.

These energy efficient products meet stringent performance-based specifications developed cooperatively by EPA and DOE.

In addition, communities can log on to ENERGY STAR's Portfolio Manager, a free, web-based, energy management tool that allows users to track and assess energy and water consumption. Advertised uses of the program include: identifying under-performing buildings, verifying efficiency improvements and helping entities gain recognition for superior energy performance—for a single building or for an entire portfolio of facilities.

Finally, sixteen towns statewide, including two from the Capitol Region (**Canton and West Hartford**), have "pledged to assess energy use, improve energy efficiency by 10 percent or more, save money, and work to expand renewable energy choices" by participating in EPA's New England Community Energy Challenge. According to an April 2008 press release, this regional program of the ENERGY STAR Challenge "is part of a nationwide campaign to improve energy efficiency in commercial and industrial buildings by 10 percent or more. Municipalities that join the New England Community Energy Challenge enroll to be an ENERGY STAR partner, and pledge to support energy efficiency measures."

ENERGY EFFICIENCY

Beyond participating in the nationally-recognized programs cited above, numerous towns within the region have taken some basic, critical steps, towards improving operating efficiencies within their facilities. Many have gone the route of commissioning third-party energy audits, sometimes more than once, to identify potential savings measures. Collectively, such audit work has yielded a laundry list of common "fixes" or upgrades that communities have implemented to varying degrees. For some, these strategic improvements have been adopted on a pilot basis only; for others, all major facilities have been targeted. And for still others, town-wide improvements have been phased in.

A listing of the most common action steps taken by communities is presented below:

- Installing Energy Management Systems
- Installing energy-efficient lighting (e.g., T8 fluorescent, compact fluorescent lamps, metal halide lamps)
- Using programmable thermostats
- Installing occupancy sensors
- Installing energy-efficient HVAC systems
- Investing in premium-efficiency motors
- Replacing incandescent lights with LED lights (EXIT signs, traffic signals, crosswalks)
- Maximizing the use of daylighting
- Installing "smart system" technologies (paper towel dispensers, soap dispensers, faucets, toilets, lighting)

Tim Simmonds, a representative of Northeast Utilities who recently presented to the Municipal Services Committee, advised communities to focus their attention on addressing the "low hanging fruit" of energy efficiency upgrades first. He suggested that by doing so, towns could significantly reduce their usage profiles, and potentially rely on smaller (and presumably less expensive) renewable energy systems to meet their future energy needs. In addition to conservation techniques, he also stressed the importance of employing demand management strategies to control costs.

A number of programs are available to municipalities to support these types of energy efficiency initiatives, both in terms of direct financial support and technical assistance services. A sampling includes:

TABLE I

Program Name	Description
Energy Conscious Blueprint Program	Encourages the installation of energy-efficient systems at the time of construction. Financial incentives allow customers to purchase energy-efficient equipment at essentially the same cost as standard-efficiency products.
Connecticut Cool Choice Program	Provides rebates ranging from \$70-200 per ton for customers replacing rooftop or packaged air conditioning systems or heat pump systems.
Energy Opportunities Program	Focuses on retrofit projects (defined as those where the customer voluntarily replaces or modifies poor performing, inefficient equipment with high performing alternatives). Financial incentives for <i>non-lighting</i> electric energy saving opportunities can be secured covering up to 50% of the installed cost; <i>lighting</i> upgrades/replacement projects, designed to exceed code by 15%, can be subsidized by up to 30% of the installed cost.

CLIMATE PROTECTION AND CLEAN ENERGY

Local government jurisdictions may be uniquely positioned to champion efforts to reduce greenhouse gas emissions and improve air quality. By investing in clean and renewable energy sources, like solar, wind, biomass, geothermal and fuel cell technologies, cities and towns not only work to improve the health and sustainability of their own communities, but can make a significant impact on a more global scale.

To these ends, organizations like ICLEI-Local Governments for Sustainability are helping cities worldwide to integrate climate change mitigation into their management strategies and to measure the results of their efforts. The organization's flagship program, Cities for Climate Protection (CCP), relies on a five-milestone methodology that allows participating communities to: 1) calculate baseline emissions; 2) establish targets for reducing said emissions; 3) develop a prescriptive local action plan to achieve desired results (which often specifies project timelines, financing options, department/staff assignments and educational outreach activities); 4) implement the policies and measures outlined in the local action plan; and 5) monitor results on an on-going basis. To date, more than 800 governments have joined CCP and have pledged to reduce greenhouse emissions through the passage of a local resolution. ICLEI staff provides technical assistance to each community to undertake the five-step process. Locally, the **Town of Windsor** became a CCP community in 2004.

Similarly, the U.S. Conference of Mayors' Climate Protection Agreement represents an additional vehicle for localities to formally codify their intentions to champion the goal of

reducing greenhouse emissions. Through this program, mayors nationwide commit to reducing emissions in their cities to seven percent below 1990 levels by the year 2012. The mayors of Bloomfield, Hartford and West Hartford are signatories to this Agreement.

Note too that the U.S. Conference of Mayors has established a Climate Protection Center, and published a comprehensive Climate Protection Strategies and Best Practices Guide (<http://www.usmayors.org/climateprotection/documents/2007bestpractices-mcps.pdf>). This impressive compendium of case studies includes examples of just about everything green—model ordinances covering water conservation and green buildings, tree planting programs, green affordable housing projects, master sustainability plans and more. A copy of the City of Stamford's submission on its "Cool and Green 2020" initiative is included as Attachment B.

Within Connecticut, communities have demonstrated their commitment to the use of clean and renewable energy sources with the help of the Connecticut Clean Energy Fund (CCEF). Created by the CT General Assembly, the CCEF "promotes the development and commercialization of clean energy technologies and stimulates markets for electricity from clean, renewable sources". A listing of core Fund program offerings follows, and where available, the number of participating CROG towns has been noted. A statewide program status spreadsheet, available on-line and dated April 2008, is included herein as Attachment C.

Table II

Program Name	Description
SmartPower 20% by 2010 Campaign	Challenges communities to buy 20% of their energy from clean sources—solar, wind, fuel cell, hydro, etc.—by 2010. Seventeen CROG towns have signed on to participate in this program.
Clean Energy Options Program	Permits any UI or CL&P customer the opportunity to support the use of clean energy from renewable sources. A small surcharge is added to the customer's bill, and for every 100 sign-ups in a community, the city or town earns a free 1 kW clean energy system (\$10,000 minimum value).
Connecticut Clean Energy Communities Program	A partnership between the Connecticut Clean Energy Fund, SmartPower and participants in the CTCleanEnergyOptions program. Canton, Glastonbury, Hartford, Manchester, West Hartford, Wethersfield and Windsor have all earned designations as Clean Energy Communities by committing to the SmartPower campaign, having enough residents sign up for CTCleanEnergyOptions, and making a municipal clean energy purchase.
Community Innovations Grant	Provides \$5,000 grants to towns that are interested in increasing awareness about clean energy options. Bloomfield, Canton,

	Newington, West Hartford and Wethersfield round out the Capitol Region's list of recipients.
On-site Renewable DG Program	Offers financial support to buy down the cost of renewable energy generating equipment and low interest construction financing.

South Windsor High School is now in its sixth year of running fuel cell technologies thanks to financial resources made available by the CCEF. This investment in alternative energy has allowed the town to reduce its carbon footprint, its reliance on the power grid, and on oil to preheat boilers in the wintertime. In addition, the fuel cell powers its emergency shelter operations, and has provided a unique learning tool for high school students who are able to view operating data for the fuel cell via the web. Despite these environmental and curricular benefits, the town admits that the extent of annual savings it expected to reap has likely been cut in half at best, due to exceedingly high, energy demand charges.

The **Town of Manchester** has opted not to pursue fuel cells as an alternative energy source at this time—based in large part on the costs associated therewith. Instead, it is looking to solar and wind energy to diversify its energy portfolio. For example, in the fall of 2007, the Town executed an agreement with Community Energy to provide 1,275MWh of wind-generated energy, and targeted funds have been included in the Town's Adopted FY 09 Budget to purchase additional wind energy credits as part of the community's commitment to the 20% renewable energy standard.

GREENING FLEET MANAGEMENT

At the national level, the Clean Cities Program, sponsored by the Department of Energy's Vehicles Technology (VT) Program, provides a comprehensive framework for communities looking to reduce reliance on petroleum imports, improve air quality and save tax dollars. The program's comprehensive approach centers on advocacy for: 1) the use of alternative fuels and vehicles (ethanol, biodiesel, nitrogen, electricity, liquified petroleum gas and natural gas); 2) idle reduction technologies; 3) hybrid electric vehicles; 4) fuel blends; and 5) fuel economy measures.

Under the umbrella of Clean Cities, local stakeholders form voluntary coalitions to advance the program's cornerstone goals and local coordinators provide technical support. Though it appears that the viability of Capitol Clean Cities, our region's "local chapter," has been compromised to some extent over the last year or so in the face of staffing and budgetary challenges, local governments continue to make some measurable progress in advancing an alternative fuel strategy. The State of Connecticut itself has augmented its fleet with the addition of biodiesel-powered heavy-duty trucks and the purchase of Honda Civic hybrids for use at various state agencies.

At the local level, the **Town of Glastonbury** has integrated a number of strategies into its fleet operations in support of town-wide energy efficiency and alternate energy goals. These include:

- Adding gas/electric hybrid and natural gas sedans and vans to its fleet
- Installing a natural gas fueling station
- Installing GPS systems to manage idle time and routing
- Using B5 and B20 biodiesel

- Purchasing a nitrogen fueling station to fill town tires
- Setting minimum fuel economy goals at 25 mpg (for non-public safety vehicles). On average, the Town has achieved 20 mpg to date.

Numerous member towns are now using biodiesel, thanks in part to its addition to the CRPC's annual fuel oil and diesel bid, and still others are diversifying their fleets with the addition of hybrid technology. Downstate, the **City of Stamford** has committed to converting one-fifth of its fleet to hybrids, alternate fuels or high fuel efficiency vehicles within five years.

Communities are also getting creative in order to maximize the number of ecological vehicles on their roadways. A range of incentives have been devised and rolled out across the country to incent residents and businesses to purchase hybrid cars. These have included free parking, lower registration fees, as well as local property tax breaks.

The pending availability of fuel cell powered vehicles as well as the development of plug-in hybrid models, will provide local governments with additional choices to green their fleets in the years ahead.

GREEN PURCHASING (EPP)

The EPA defines Environmentally Preferable Products (EPP) as "products and services that have a lesser or reduced effect on human health and the environment when compared to competing products and services that serve the same purpose. Such products or services may include, but are not limited to, those which contain recycled content, minimize waste, conserve energy or water, and reduce the amount of toxins disposed of or consumed."

Increasingly, community-wide commitments to environmental sustainability are creating the need to promulgate formal purchasing policies and procedures that both uphold the competitive spirit of public procurement and transmit agency goals for obtaining environmentally-friendly products and services from the marketplace. Accordingly, Environmentally Preferred Purchasing (EPP) policies are on the rise at the state, local and regional levels, and typically bring with them a new slate of evaluative criteria. Such favorable environmentally-based considerations include: post-consumer recycled content, reusability/reparability, reduction in packaging, energy efficiency, use of renewable energy sources, biobased products and biodegradability upon disposal. In addition, some jurisdictions have included a price preference of as much as 10% for environmental products to help make them more competitive until their markets mature.

Currently, environmentally preferred products can be purchased through a variety of media, including: CT State contracts (with 82 EPP contracts on file, covering custodial and janitorial supplies, carpet and flooring products, lighting waste recycling services, indoor air quality consulting services and EP disposal of electronic office equipment); and the U.S. Communities Green Initiative, which bills itself as a one stop source to access environmentally certified products like Energy Star, EcoLogo and Green Seal.

To date, CRCOG's Purchasing Council has not significantly altered its annual bidding schedule to include EPP products. Only the addition of a new recycling bin bid in 2006 to the schedule, as well as the inclusion of biodiesel and organic grass seeds to existing cooperative bids, has laid the foundation for the sponsorship of additional EPP bids moving forward.

A LOOK AT MODEL REGIONAL PROGRAMMING

The Virginia Municipal League (VML) and the Metropolitan Washington Council of Governments have both prioritized environmentally-responsible programming as part of their action plans, but have used distinctively different approaches to engender progress to date. Consider the Go Green Virginia initiative launched by the VML.

At the heart of this program, which encourages members to find innovative ways to reduce energy usage, promote sustainability, and save tax dollars, are three core components: 1) the Green Government Challenge—a friendly competition amongst members which can lead to certification as a Green Government by the VML. Points are earned for each local policy adopted and/or program implemented in eleven categories; 2) a series of regional forums designed to showcase trends in reducing energy consumption—including action steps taken by Challenge participants; and 3) the creation of a best practices guide, slated for publication later this year. A 21-member advisory committee, comprised of experts from the public, private and non-profit sectors, provides direction to the initiative. A copy of the program's score sheet is included as Attachment D.

The Metropolitan Washington Council of Governments has established itself as a regional leader on both climate protection and green buildings. Its related achievements to date include the production of two key documents, *Best Practices and Policies to Reduce Greenhouse Gases* and *Greening the Washington Metropolitan Region's Built Environment*. In addition, the COG completed a regional energy strategic plan entitled *Powered by Energy Efficiency-Fueled by Energy Conservation* in 2006 to expand the reach of its energy and environmental goals.

These examples serve to underscore the range of activities that a body like CRCOG could undertake to promote sustainable development practices here at home.

OPPORTUNITIES FOR CRCOG INVOLVEMENT

Based on feedback from town representatives, there appears to be much interest in having CRCOG play a role in facilitating the implementation and expansion of green initiatives at the municipal level. Tight budgets and limited staff capacities have made it a challenge for some towns to do more than recommend a short list of basic green program options, and a regional approach could help to leverage available resources and push the adoption of a more ambitious agenda.

Specific suggestions received to date, either via discussions at two separate CRCOG meetings, or as the result of phone interviews, have included:

1. Developing a municipal primer to help towns understand the technical nature of the green marketplace and the emerging technologies associated therewith (e.g. photovoltaic systems).
2. Providing a forum for communities to exchange ideas. Towns just starting out could get a flavor for the "low hanging fruit" they might tackle first, while more progressive communities could help each other identify additional opportunities for advancing their green footprint. A baseline review of programs already underway in CRCOG communities could be conducted, and successful relationships with various contractors/service providers could also be featured.

3. Hiring a regional energy manager. This arrangement could take the form of a direct hire through CRCOG, or be secured as contractual services via an RFP-process. Options for financing this type of position include: 1) a cost-sharing model, where interested communities would collectively underwrite the associated costs; 2) a savings-based model, through which payments for services would be calculated based on savings realized through the implementation of recommended measures; or 3) through grant awards.

While the above ideas represent a few viable "assignments" for CRCOG to consider taking on, the reality is that this fast-growing sector affords the agency an incredibly vast array of options and opportunities to contribute to a more sustainable tomorrow. To this end, the Foundation Board will need to determine whether it is prepared to embrace "greening the region" as a policy priority and therefore take the lead in crafting specific region-wide goals and objectives, or if it is more comfortable committing to support, and perhaps encourage, individual town efforts. To aid the Board in assessing its desired level of engagement--current and future--I have compiled a broad range of activities for it to consider and have aligned each with one of three distinct roles: supporting, coordinating and agenda-setting.

For CRCOG, a **supporting** role would likely entail the following potential tasks/responsibilities:

- *Serving as an information clearinghouse.* In this capacity, CRCOG would be responsible for maintaining and providing ready access to information on best practices, toolkits/resource guides, available funding sources, model policies, draft ordinances, upcoming webinars, local initiatives, etc. A dedicated page on the CRCOG website could be added to cover green programming and link members directly to available resources.
- *Coordinating regional information-sharing venues.* This would include hosting regional forums and vendor fairs, as well as arranging for roundtable discussions at relevant CRCOG standing committee meetings.

A more involved, **coordinating** approach, could give rise to:

- *Encouraging individual town efforts.* By creating an incentive program in the spirit of the Virginia Municipal League's Go Green Virginia initiative, member towns would be challenged to champion sustainable and environmentally-friendly practices, and individual community achievements could be featured as part of CRCOG's monthly newsletter.
- *Commissioning a regional inventory of green policies and practices.* This formal "state of the region" survey would document individual town progress on the going green front, and could be used as a tool for setting town and regional performance targets.
- *Expanding Purchasing Council activities.* Tasks would include the addition of Environmentally-Preferred Products (EPP) to the annual bidding schedule, providing technical assistance on drafting local EPP policies, hosting vendor fairs to showcase competing products, and soliciting alternate bids from vendors for greener goods.
- *Hiring a regional energy manager.* Smith, Amherst and Mount Holyoke Colleges all share a single energy manager who is responsible for identifying and implementing cost effective ways to reduce fossil fuels and electrical energy consumption.

Though initially funded via a grant from the Mellon Foundation, the position is now paid for with savings generated by successful conservation measures. Amherst College alone boasts some \$300,000 in annual savings and greenhouse gas offsets totaling 3,500 tons per year. CRCOG could consider establishing a similar position. See Attachment E for a copy of the College's energy tracking spreadsheet.

- *Encouraging shared service arrangements.* CRCOG staff would be responsible for identifying opportunities for inter-town cooperation in support of environmentally-friendly practices. Examples might include coordinating the joint construction and maintenance of a nitrogen filling station on behalf of a number of contiguous towns.

Finally, an **agenda-setting** role might entail:

- *Assembling a steering committee.* This stakeholder group would provide direction for a coordinated regional approach towards reducing greenhouse gas emissions, promoting energy efficiencies and energy conservation and sustainability work.
- *Setting regional environmental policy.* Much like the approach taken by the Metropolitan Washington Council of Governments, CRCOG could set regional standards concerning green building practices, for example, and/or commission the creation of a comprehensive climate action plan.

RECOMMENDED NEXT STEPS

Based on a recent conversation with the State's Director of Energy Research and Policy Development, Ray Wilson, it appears that this research inquiry may have been well-timed to allow CRCOG to appropriately respond to a wave of new State initiatives dealing with sustainable growth. For example, with the passage and signing of PA 08-98 into law recently, new environmental regulations concerning greenhouse gas emissions will come into play for the state, its localities and businesses alike. OPM's Energy Unit is already gearing up to make significant enhancements to its database to track energy usage in all of its facilities, as well as corresponding greenhouse gas emissions.

In addition, legislation passed by the CT General Assembly two years ago will soon require school building projects, funded in part by State dollars, to comply with the LEED Silver standard. And on the energy procurement front, the State plans to go out to bid again for third-party electricity supply contracts this fall (current contracts include a 25% green component) and is gearing up for a bid covering bioheat for State buildings next year. Lastly, OPM's Energy Unit is in the process of pulling together a listing of programs and incentives that are generally available to all market sectors (residential, commercial, etc.), although it is unclear if that listing will cover all things green (climate control, energy efficiencies, green buildings, green fleets, etc.). All of these state efforts should be monitored closely, both from an information-gathering perspective and to explore possible opportunities for collaboration.

As a logical next step, I would strongly recommend that CRCOG consider establishing an interdisciplinary working committee to more formally evaluate the wide range of green programming options that have been outlined in the previous section and to coordinate an appropriate regional response to the various State level initiatives highlighted above. Such a group could draw from the public, private and non-profit sectors, and include State representatives as well as experts from ECSU's Institute for Sustainable Energy.

Attachments:

- A: Glastonbury Energy Initiatives
- B: Stamford's Cool and Green Initiative
- C: Town Participation
- D: Green Government Challenge
- E: Amherst College Energy Savings Tracking Spreadsheet

Utilities and Communications Management and Control Initiatives and Practices

Past and On-going Practices

- Installed Energy Management System in large user buildings (TH, PD, WTL)
- Replaced constant velocity ventilating fans with variable frequency drive fans (TH, PD) *
- Replaced ventilating fan motors with high efficiency motors (TH, PD)
- Installed occupancy sensor light switches in Town buildings and schools *
- Retrofit manual faucets and flushometers with automatic valves
- Replaced incandescent "EXIT" lights with LED lights
- Performed lease vs. buy analysis for street lighting
- Replaced incandescent traffic signal lights with LED lights
- Collectively purchase natural gas through CRCOG
- Replace failed thermal windows as seal failures reach 50%
- Applied for fuel cell grant through Connecticut Clean Energy Fund (Jan 03)
- Reduced telephone service cost by approximately 20% through execution of seven year agreement (2003)
- Performed telephone billing audit through CRCOG consultant (Rand Corp. – 2004)
- Perform 100% local review of utilities and communications bills
- Retrofit lighting (Academy, VMG, P&R)
- Evaluate feasibility/cost of renewable energy usage
- Reduce normal heating temperatures in Town buildings
- Performed energy audit of Town facilities
- Competitively purchase generated electricity
- Participate in ISO-NE "Demand Response" program for emergency generators *
- Participate in Connecticut Clean Energy Fund "20% by 2010" program
- Qualified for and installed 4 KW photovoltaic system on GHS roof
- Purchase Renewable Energy Certificates (1180 MWH in 2008)
- Participated in CL&P "Summer Saver" program *
- Installed and are evaluating Energy Miser in Town Hall
- Installing Vending Misers on refrigerated vending machines *
- Building Superintendent credentialed as Certified Energy Manager by Association of Energy Engineers
- Participate in US EPA Energy Star Portfolio Management benchmarking system
- Awarded US EPA Energy Star Award for Town Hall
- Install computer power management system
- Town and BoE staff participating in Building Operator Certification training sponsored by State of CT OPM

New Construction

- Installed occupancy sensor light switches (SMS, RCC, WTL, GHS, Elem. School) *
- Installed Energy Management System (SMS, RCC, GHS, WTL, Elem. School)
- Installed high efficiency ventilating fan motors (RCC, WTL, GHS Gym) *

Attachment A

- Installed variable frequency drive motors in ventilating systems (SMS, RCC, GHS, Elem. School) *
- Installed high efficiency lighting (SMS, RCC, WTL) *
- Install variable frequency drive motors on blowers and pumps (WWTF) *
- Upgrade coarse bubbler air system to fine bubbler system (WWTF) *
- Participating in CL&P "Energy Conscious Construction" program (Elem. School)
- Maximize use of daylighting (Elem. School)
- Exterior lighting controllable through Energy Management System (RCC, GHS, Elem. School)
- Installed automatic faucet and flushometers (SMS, RCC, WTL)

Planned/Programmed

- Perform retro-commissioning of Smith MS and GHS HVAC systems through CL&P funded program
- Replace Town Hall condensing units with higher efficiency units
- Replace spot heaters with IR radiant systems in fire department apparatus bays
- Expand Energy Management System
- Install variable frequency drives on large water circulating pumps
- Install premium efficiency motors
- Conduct staff outreach program to educate end users on how they can contribute to demand reduction

* Resulted in energy rebate to Town. Total CL&P rebates to Town and BoE, actual and anticipated, since 2000 total over \$880,000.

Led by 12 founding partners, including the City of Seattle, the Seattle Climate Partnership provides assistance to Seattle-area employers who want to reduce their carbon footprint. As of September 2007, 51 Seattle-area businesses have signed on as partners representing sectors including health care, finance, engineering, industry, development, biotechnology, education, and government. The Partnership focuses on providing technical assistance and networking opportunities to member organizations. So far, the Partnership has developed a resource guide, a carbon footprinting tool, and intensive technical assistance, both in the form of quarterly workshops and one-on-one assistance for some partners. In 2008, the Partnership will launch a recruitment effort aimed at the largest employers and fleet owners, expand its technical assistance program, and develop a strategy to assist partners in reducing emissions related to fleets and fuels. More information on the Partnership is available at www.seattle.gov/climate/partnership.htm.

The City also recognizes the importance of developing networks among cities through The U.S. Conference of Mayors, to share successful strategies and leverage political influence in support of climate protection at the national level.

Seattle residents realize that climate change poses an undeniable threat to the City's most valuable assets: its natural beauty and recreational opportunities, the availability of drinking water, and access to renewable energy. Residents also understand that the solutions require life-style changes for the long term in order to preserve the quality of life they now enjoy.

Additional information is available at www.SeattleCAN.org/index.htm and from Kristine Kertson, Public Information Officer, at (206) 233-0073 or Kristine.Kertson@Seattle.gov.

Stamford, CT: Mayor Dannel P. Malloy

STAMFORD COOL & GREEN 2020

On October 17, 2007, Mayor Dannel Malloy issued an environmental proclamation, "Stamford Cool & Green 2020," featuring a multi-faceted approach to the climate protection challenge. In addition to ongoing energy efficiency programs, the City will substantially expand its climate protection efforts, with the ultimate goal of making Stamford the leading environmental steward in Connecticut. Among the initiatives listed in the proclamation are the following:

- Creation of an Energy Improvement District to promote the development of combined heat and power generation and renewable power.
- Construction of two large-scale solar systems on the roof of the Rippowam Middle School and Highway Department facilities – funded by \$2 million in Clean Renewable Energy Bonds.
- Requiring LEED standards for private buildings – site plans to be LEED-certifiable by 2011 – and reducing building fees by 10 percent for LEED Silver, 20 percent for LEED Gold, and 25 percent for LEED Platinum.

- Through the Green Lights Program, encouraging residents to replace traditional light bulbs with compact fluorescent bulbs. The City plans to supply 5,000 free bulbs to residents.
- Providing tax relief for citizens who purchase hybrid cars. Reducing the assessed value of a hybrid vehicle by \$2,000 will result in a \$68 reduction in car tax.
- Encouraging residents to sign up for clean energy through their electric bill to support electricity generated by alternative energy sources. The goal is for Stamford to be number one in the State for enrollment – the “Cleanest & Greenest” energy city in the State.
- Conversion of 20 percent of the City’s car fleet to hybrids, alternative fuels, or high fuel efficiency vehicles within five years.
- Increasing solid waste recycling to 40 percent by 2010 by recycling of plastics numbered 3-7, recycling electronics more frequently, and broadening the composting system.
- Developing a list of the “top 10” green items or services that are routinely purchased by the City and implementing a policy to ensure that the green items (cleaners, computers, vehicle fleets, office electronics and paint, among them) are purchased.

The Stamford Cool & Green 2020 proclamation builds upon the success of City efforts dating to 1998. Stamford has implemented over 50 energy efficiency projects within municipal facilities, saving over \$2.4 million in cumulative energy costs and receiving over \$2 million in utility rebates. The City shed 1.5 megawatts of power over eight facilities when called upon to do so by the electric grid operator – another resource that helps to defer or eliminate the need for power plant construction – and in 2004 installed the first municipal solar system in Connecticut to sell kilowatt hours back to the grid. Stamford also purchased its own street lights from the local utility company and is actively implementing reduced wattages and newer lighting technologies.

Additional information is available from Nancy Domiziano at (203) 977-4203 or ndomiziano@ci.stamford.ct.us.

Syracuse, NY: Mayor Matthew J. Driscoll

ACTION PLAN FOR SUSTAINABILITY

The City of Syracuse has developed an action plan for building a sustainable way of life in which three key strategies are integrated into the City’s municipal policies: economic growth and development, environmental conservation and use of natural resources, and social equity.

In leading the development of the plan, Mayor Matthew Driscoll has partnered with Syracuse University, the State University of New York (SUNY) College of Environmental Science and Forestry (ESF), and the U.S. Green Building Council, all on the cutting-edge of renewable energy, indoor environmental quality systems, and green building practices. With their assistance, numerous initiatives have been spearheaded.

ATTACHMENT C

Municipality	Utility (1 = UT, 2 = CLAW)	20% by 20% Mileage	Municipal Green Energy Purchase	100 Signup Point Threshold	CCEC	Community Incentives Programs	EWCT	100 Sign-ups Qualifications	1 GWh Customers Qualifications	10% Households Qualifications	100 Sign-ups Sched District	Leadership Rewards	Achievement Rewards	Total Free Solar PV Systems
Andover	2	1,105						0	0	0	0	0	0	0
Andover	1	7,530						0	0	0	0	0	0	0
Andover	2	1,820						0	0	0	0	0	0	0
Andover	2	6,021						0	0	0	0	0	0	0
Andover	2	1,446						0	0	0	0	0	0	0
Barnstable	2	2,064						0	0	0	0	0	0	0
Barnstable	2	6,875						0	0	0	0	0	0	0
Barnstable	2	1,848						2	0	0	0	6	5	15
Barnstable	2	8,392						0	0	0	0	0	0	0
Barnstable	2	1,317						0	0	0	0	0	0	0
Barnstable	2	8,081						0	0	0	0	0	0	0
Barnstable	2	1,995						0	0	0	0	0	0	0
Barnstable	2	934						0	0	0	0	0	0	0
Barnstable	2	12,657						3	0	0	0	0	1	7
Barnstable	2	50,791						0	0	0	0	0	0	2
Barnstable	2	743						0	0	0	0	0	0	0
Barnstable	2	24,656						0	0	0	0	0	0	0
Barnstable	2	5,996						0	0	0	0	0	0	0
Barnstable	2	2,582						0	0	0	0	0	0	0
Barnstable	2	3,012						0	0	0	0	0	0	0
Barnstable	2	458						0	0	0	0	0	0	0
Barnstable	2	1,788						0	0	0	0	0	0	0
Barnstable	2	3,819						1	0	0	0	0	1	2
Barnstable	2	898						0	0	0	0	0	0	0
Barnstable	2	9,491						2	0	0	0	0	1	5
Barnstable	2	1,597						0	0	0	0	0	0	0
Barnstable	2	5,427						0	0	0	0	0	0	0
Barnstable	2	5,605						0	0	0	0	0	0	0
Barnstable	2	91						0	0	0	0	0	0	0
Barnstable	2	1,995						0	0	0	0	0	0	0
Barnstable	2	655						0	0	0	0	0	0	0
Barnstable	2	4,466						1	0	0	0	0	0	1
Barnstable	2	5,472						0	0	0	0	0	0	0
Barnstable	2	27,857						0	0	0	0	0	0	0
Barnstable	2	6,604						0	0	0	0	0	0	0
Barnstable	2	1,811						0	0	0	0	0	0	0
Barnstable	2	5,344						0	0	0	0	0	0	0
Barnstable	2	2,360						0	0	0	0	0	0	0
Barnstable	2	1,951						0	0	0	0	0	0	0
Barnstable	2	3,560						0	0	0	0	0	0	0
Barnstable	2	4,402						0	0	0	0	0	0	0
Barnstable	2	19,974						0	0	0	0	0	0	0
Barnstable	2	11,563						0	0	0	0	0	0	0
Barnstable	2	6,865						0	0	0	0	0	0	0
Barnstable	2	4,224						0	0	0	0	0	0	0
Barnstable	2	852						0	0	0	0	0	0	0
Barnstable	2	2,480						1	0	0	0	0	1	3
Barnstable	2	6,820						0	0	0	0	0	0	0
Barnstable	2	16,379						0	0	0	0	0	0	0
Barnstable	2	3,053						0	0	0	0	0	0	0
Barnstable	2	20,002						5	0	0	0	0	1	11
Barnstable	2	9,701						0	0	0	0	0	0	0
Barnstable	2	728						0	0	0	0	0	0	0
Barnstable	2	12,444						4	0	0	0	0	1	5
Barnstable	2	1,149						0	0	0	0	0	0	0
Barnstable	2	3,692						0	0	0	0	0	0	0
Barnstable	2	23,170						0	0	0	0	0	0	0
Barnstable	2	4,889						0	0	0	0	0	0	0
Barnstable	2	16,192						0	0	0	0	0	0	0
Barnstable	2	8,356						0	0	0	0	0	0	0
Barnstable	2	2,875						0	0	0	0	0	0	0
Barnstable	2	23,264						4	0	0	0	0	0	8

Take the Green Government Challenge

Click on: see background materials to read a detailed description of each action. In addition, view examples , links and an explanation of how to score points or partial points.	Total Possible Points	Points for Pro-2008 Actions	Points for 2008 Actions
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Government Policy Adoption

1. Formal adoption of a sustainability plan, climate protection resolution, or similar commitment by the governing body. See background materials .	10		
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Energy Efficiency

2. Create an Energy Improvement Plan (EIP). See background materials	10		
3. Register with the EPA's Energy Star Challenge and use their tools, or an equivalent system, to conduct a baseline emissions inventory of your government facilities. See background materials	10		
4. Conduct an energy audit of two or more of your government facilities and implement at least one recommendation. See background materials	10		
5. Purchase electric power from renewable sources or install renewable energy technology (solar, wind, or geothermal) for use in government facilities. The total of purchased renewable energy and on-site produced renewable energy must equal at least 2.5% of the energy use of all government facilities. See background materials	5		
6. Create a separate real-estate classification and lower tax rate for buildings that are 30% more efficient than required by building code (Code of Va. §58.1-3321.2). See background materials	5		
7. Develop a policy to utilize energy efficient and/or dark sky compliant outdoor light fixtures. See background materials	5		
8. Establish an energy manager position/responsibility or management team within the government. See background materials	5		

To see the complete interactive Challenge, including detailed instructions, background materials and scoring, please register. It's quick and easy! Registering does not obligate you to complete the Challenge, but we urge you to do so.

Green Buildings

9. Establish a policy of LEED certification for all new government facilities. See background materials	5		
10. Approve or build a LEED certified government or school building OR renovate an existing building to the LEED certified level. (5 points for the first building, and an additional 5 for the second). See background materials	10		

Waste Management

11. Implement an internal government program that reduces, reuses, and recycles paper, plastic and other materials. See background materials	5		
12. Establish a procurement policy of a minimum of 30% post-consumer recycled content for everyday office paper use (consistent with the current federal government policy - Exec. Order 13101). See background materials	5		
13. Establish a community-wide recycling collection program. See background materials	5		

Vehicles

14. Adopt a "Green Fleet" policy that incorporates, at a minimum, the purchase of low emitting fuel efficient vehicles for vehicle fleet replacement and the use of alternative fuels (biodiesel, natural gas, ethanol) in fleet operations. See background materials	10		
15. Offer personal property tax break for low emitting fuel efficient vehicles. See background materials	5		

Land Use / Transportation

16. Adopt land-use plans that allow higher-density development either near public transit nodes or in areas with existing infrastructure AND encourage mixed-use communities. See background materials	5		
17. Promote the use of permanent conservation easements on private property within your community and/or implement a permanent conservation easement on public land. See background materials	5		
18. Adopt a land use or development tool that preserves open space, farmland and forests such as Purchase of Development Rights (PDRs) or Transfer of Development Rights (TDRs). See background materials	5		

Water / Air Quality

19. Develop and implement a plan for tree preservation & planting. See background materials	5		
20. Adopt a Low Impact Development (LID) storm water management policy and/or Environmental Site Design (ESD) guidelines. See background materials	5		
21. Adopt an anti-idling policy for school/government fleet vehicles. See background materials	5		

Employee Incentives

22. Provide employee benefits for ride sharing, walking, biking, or taking transit to work. See background materials	5		
23. Adopt a policy that a minimum of 20% of the eligible workforce should participate in alternative work schedules or telework by 2010 (consistent with the current VA State policy). See background materials	5		

Education / Community Participation

24. Develop an employee education program on policies/practices relating to the environment and energy conservation. See background materials	5		
25. Establish an advisory commission composed of local residents and business representatives to advise and assist the local governing board on policies and practices dealing with the environment and energy conservation. See background materials	5		
26. Develop and implement an education program for the local community dealing with the environment and energy conservation. See background materials	5		

Schools

27. Establish a Safe Routes to School program, which encourages walking and bicycling to neighborhood schools. See background materials	5		
28. Establish clubs dealing with the environment and energy conservation in at least half of your high schools. See background materials	5		
29. Implement a program in one or more schools that connects students to local farms and/or local produce (such as the Farm to School program). See background materials	5		

Innovation

30. Innovation Credits - for any efforts, policies, activities beyond those identified above which are proven to reduce the carbon emissions of the local government.. See background materials	25		
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Grand Total	200		
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Grand Total: Pre-2008 Actions + 2008 Actions →

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AMHERST COLLEGE**Energy Savings Tracking Spreadsheet**

Version 4.1 - June 2007

PROJECTS IMPLEMENTED SINCE SEPTEMBER 2004

No.	Description	Est Annual Energy Savings	Net Project Cost	Simple Payback	GHG Reduction eCO ₂ (tons/yr)
FY 04/05					
1	Lighting Retrofits (Barrett, Pond & Davis, Stone, Merrill Science, Seeley-Mudd, Converse)	\$ 3,443	\$ 13,418	3.9	33
2	Alumni Gym Daylighting Controls	\$ 3,300	\$ 395	0.1	29
3	Coolidge Cage Daylighting Controls	\$ 8,200	\$ 395	0.0	72
4	Orr Rink Low-e Ceiling, Bi-level Lighting, Ice Temperature Controls	\$ 37,105	\$ 71,518	1.9	1,309
5	Moore Dormitory, Replace Incandescent Lights	\$ 5,800	\$ 395	0.1	52
IMPLEMENTED FY04/05 SUBTOTALS		\$ 57,848	\$ 88,121	1.5	1,485
FY 05/06					
1	Vending Miser installation Phase 1	\$ 5,695	\$ 7,426	1.3	51
2	Music Building Comprehensive Lighting Retrofit	\$ 18,462	\$ 48,250	2.6	165
3	Seeley Mudd Lighting Retrofit	\$ 1,658	\$ 11,874	7.2	15
IMPLEMENTED FY05/06 SUBTOTALS		\$ 25,815	\$ 67,550	2.8	231
FY 06/07					
1	Athletics Lighting Retrofit	\$ 33,149	\$ 89,900	2.7	180
2	Keefe Occupancy Sensors	\$ 1,179	\$ 8,029	6.8	7
3	Athletics Occupancy Sensors	\$ 10,895	\$ 30,777	2.8	69
4	Valentine Kitchen Hood Controls	\$ 36,284	\$ 82,558	2.3	206
IMPLEMENTED FY06/07 SUBTOTALS		\$ 81,507	\$ 211,284	2.8	481
ONGOING ANNUAL EFFORTS					
1	Replace incandescents w/ compact fluorescents	\$ 34,300	\$ 3,000	32 DAYS	208
2	Million Monitor Drive, Students	\$ 13,128	\$ 300	8 DAYS	117
2A	Green Power REC Purchase		\$ 1,072		213
3	Million Monitor Drive, Fac/Staff	\$ 12,423	\$ 100	3 DAYS	111
4	Heating Policy	\$ 54,754	\$ 1,600	11 DAYS	392
5	Temperature setback during winter break	\$ 13,330	\$ 800	22 DAYS	150
6	"Big Turnoff" campaign	\$ 13,562	\$ 400	11 DAYS	82
SUBTOTAL OF ONGOING ANNUAL EFFORTS		\$ 141,498	\$ 7,272	0.1	1,275
AMHERST COLLEGE		\$ 306,667	\$ 372,207	1.2	3,462 tons

equivalent to 769 cars for a year ...
or 474 acres of forest ...

and don't forget 47 lb radioactive waste!