



2014

Climate Action Report Five-Year Review



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Executive Summary

Over the past five years since the release of the Partnership for a Green City's Climate Action report, there have been some wonderful achievements across the original three partners and the addition of a fourth public partner, Jefferson Community & Technical College. Our sustainability collaboration of public partners is unique across the country although there was a similar public partnership in Lexington and a public-private partnership in Cincinnati. The collaborative nature of our work builds capacity in all four partners and working together, we achieve more than any partner could achieve alone.

In the original document, there were 175 recommendations from the seven subcommittees of the Climate Change Committee. As we have been filling in progress (or lack thereof) for each recommendation, approximately 140 of the original recommendations have noted progress. Many initiatives are ongoing and by their nature will take time to complete. The text in the balance of this document will discuss successes as well as the recommendations where there was not success, as we determine how to best proceed.

One major accomplishment since the original Climate Action Report was Mayor Greg Fischer's formation and support of the Office of Sustainability, hiring a Sustainability Director in 2012 and a Sustainability Project Coordinator in 2013 to lead and manage sustainability initiatives in Louisville Metro Government and promote sustainability in the community.

The Partnership embarked on a strategic planning process in 2010-11 as a way to manage change and remain relevant as a public sustainability collaboration. We developed a vision statement – *“The Partnership for a Green City envisions Louisville as an innovative national leader for economic sustainability and environmental quality. As members and publicly funded institutions, the Jefferson County Public Schools, Jefferson Community & Technical College, Louisville Government and the University of Louisville make a long-term commitment to lead by example, educate, engage and collaborate with the community”*. Our mission is to *“Inspire and promote a sustainable green city through innovation, collaboration, action and measurable progress”*. Five strategic priorities emerged: increase influence through - collaboration, resource enhancement, advocacy, measurement and increasing the level of sustainability research and demonstration projects.

The Partners have achieved success in multiple areas over the last five years that will be discussed in the sections of the report. Some major achievements have been made by Partnership teams. The Green Buildings Team has been tracking progress on the energy savings performance contracts at the four partners and working to build or renovate LEED Certified and Energy Star Certified buildings. The Green Transportation Team has not only right-sized vehicles appropriate for their use in the partner fleets, they have moved to hybrid electric or electric vehicles along with diesel emission reduction grants at JCPS and Louisville Metro. The team has also achieved all four partners creating anti-idling policies. The Green Issues Orientation Team was the first team to complete its mission, getting sustainability in the new employee orientation sessions at all four partners, and be put on hiatus. We also have created and presented multiple sustainability professional development sessions within the partners, in the community and at conferences around the country. The Green Purchasing Team has continued to bid

joint contracts, including 30% post-consumer recycled content paper, hazardous waste disposal, containerized waste disposal, electronics recycling, spent lamp recycling, green cleaning chemicals, office supplies and more. Total Materials Management has implemented single stream recycling programs within all four partners and shared capacity on how to make it work in a large multi-building organization. The team also ensured that the partners were environmentally responsible with electronics recycling, using a company in Kentucky that recycles 100% within the commonwealth.

We have not stopped working on sustainability. We continue working on the climate recommendations and projects that will promote sustainability within our organizations and the community. Our focus is on our public organizations first, as we collaborate and partner with similar groups with a sustainability agenda, to share best practices and minimize duplication of efforts. When we work together, little things do add up to big results!

Introduction

The Partnership for a Green City (PGC) was created in August 2004 through the creative minds of David Wicks at Jefferson County Public Schools, Allan Dittmer and Russ Barnett at the University of Louisville. Through discussions with Joan Riehm at Louisville Metro Government, three large public organizations forged a collaborative partnership that has evolved into a sustainability partnership unlike anything in the country. In 2011, Jefferson Community & Technical College joined the PGC through the tenacity of Pamela Dumm, who championed sustainability at JCTC. We have remained a partnership of public entities as we work to be sustainable organizations while also being good stewards of the public's tax dollars.

Climate Action History

In December 2006, the Partnership for a Green City Steering Committee worked with Art Williams (then Louisville Metro Air Pollution Control District (APCD) Executive Director) to create the Partnership's first community-based committee on climate change. Individuals representing a diverse set of groups (such as industry, utilities, quasi-governmental entities, non-profits, environmentalists, and citizens) joined the representatives of the partner organizations and worked slightly over two years to generate a report with recommendations to improve our performance yet adapt to the changing climate. A copy of the updated recommendation listing with the progress made will be posted on the Partnership for a Green City web site – www.partnershipforagreencity.org.

The overarching climate change committee had a subcommittee structure including experts and concerned individuals who populated the following subcommittees: Greenhouse Gas Emissions; Local Impacts (including climatological data from Louisville for almost 75 years); Energy Efficiency and Alternative Energy; Utility Regulations, Policies, and Practices; Land Use and Transportation; Urban Forest; Waste and Outreach and Education. This report follows a similar format in its updates across the partners.

Greenhouse Gas Emissions

University of Louisville

The University of Louisville has reduced its greenhouse gas emissions by more than 27 percent in seven years, according to a report it submitted Jan. 15, 2014 to the American College and University Presidents Climate Commitment (ACUPCC) and Second Nature, a national organization working to address climate change.

UofL's annual carbon emissions decreased 68,000 metric tons during the period—from 247,000 in 2006 to 179,000 in 2013—an amount equal to taking 14,167 cars off the road. Lower electricity, fuel and water use made up a big part of the savings.

"The university's net emissions have begun to fall, even though its size has grown," said Justin Mog, assistant to the provost for sustainability initiatives. "This shows our efforts to reduce our environmental

impact are trending in the right direction, even as we grow.”

A two-phase \$46.2 million performance contract UofL launched with Siemens Industry Inc. in 2009 to reduce energy use on its campuses has paid big dividends, he added. By 2011-12, the university had trimmed its use of fuel by 48 percent, electricity by 27 percent and water by 31 percent.

UofL’s Sustainability Council adopted a Climate Action Plan in 2010 aimed at trimming the university’s greenhouse gas emissions to zero by 2050. The school tracks its emissions and reports them every other year to the ACUPCC, a consortium of schools that has pledged to take active steps toward climate neutrality.

Specifics on the UofL reports from 2006 – 2013 are included on the following website:

<http://rs.acupcc.org/ghg/1889/> . The 2013 update available at <http://rs.acupcc.org/progress/753/>.

On September 15, 2010, UofL released its [Climate Action Plan](#), a comprehensive roadmap for achieving this goal over the next four decades. A summary of the Plan and a link to the full document can be found [here](#). The UofL Sustainability Council coordinates UofL's Climate Action Planning as well as the reporting of its greenhouse gas emissions.

In September 2011, UofL produced a [Greenhouse Gas Emissions Inventory for 2006-2010](#). This followed its first benchmark [Greenhouse Gas Emissions Baseline Inventory \(2006-2008\)](#), released in September 2009. UofL's target goals for university-wide reductions in greenhouse gas emissions from its 2008 benchmark estimate of 192,788 MT eCO₂ are:

Goals	Timeframe	Reduction in net GHG emissions	Target maximum net GHG emissions (MT CO ₂ e)
Short Term	2010–2020	20%	154,230
Mid Term	2021–2030	40%	115,673
Long Term	2031–2050	100%	0

UofL’s plan for making progress toward climate neutrality is dynamic and multifaceted. We recognize that sustainability demands progress on multiple fronts and that lasting change cannot be achieved without coordinated efforts campus-wide. As such, we propose taking a variety of steps to lead UofL down a path toward climate neutrality with a focus on the following initiatives: green purchasing; energy conservation and efficiency; renewable energy; carbon sequestration; master planning; green building design; composting and horticultural practices; behavior change; recycling; transportation; food; and carbon offsets.

Jefferson Community & Technical College

JCTC, as a part of the Kentucky Community & Technical Colleges System (KCTCS) is currently creating its first greenhouse gas emissions report. They are also reporting under AASHE’s Sustainability Tracking Assessment and Rating System (STARS) program.

Local Impacts

In 2013, the Partnership convened a process around climate instability and behavior change for sustainability. The University of Louisville and Louisville Metro Government have made public

commitments to reduce their carbon emissions, with an updated plan under development at the University and Louisville Metro's first Sustainability Plan - Sustain Louisville, written by the city's first Sustainability Director Maria Koetter. JCPS and JCTC will participate under the city's plan but may also formulate their own plans as time, resources and personnel permits. The Partnership for a Green City provided the forum and support to prepare a Climate Action Report for the city in 2009. The plan received wide public and Partnership input. The community set a goal to reduce carbon dioxide equivalents to 7% below 1990 levels by 2012 (as stated in the U.S. Conference of Mayors Climate Protection Agreement, signed by Mayor Jerry Abramson and Mayor Greg Fischer) and we have work to do still to reach this goal.

This climate instability and behavior change workshop investigated how best to involve all of the Partners in working collaboratively to further reduce our carbon emissions. Specifically, in what key areas can the Partnership work to reduce emissions? What goals should we pursue in future years? How do we change behaviors in Louisville to support further reductions? Two identical workshops took place on May 16 and May 17, 2013 to provide flexibility in scheduling and to allow a larger number of people to attend we had 48 people attend on the two days. The goals of the workshop included:

- Identifying challenges associated with climate instability that are priorities for all four partners
- Empowering the Partnership to create effective collaboration and institutional support to reduce the community's carbon footprint
- Strategizing to connect with individuals in other partner organizations that are working to address sustainability problems endemic to the partnership
- Developing and testing strategies to solve or mitigate the identified challenges
- Introducing participants to design thinking, a creative problem-solving method

Design thinking is a methodology for innovation that combines creative and analytical approaches and fosters collaboration across disciplines. Starting with problem definition, it addresses technical, business feasibility, and human values to develop solutions. It focuses on process instead of focusing on problems or solutions. This interdisciplinary method has been widely used in business, education, product design, and community settings.



Out of those workshops came several outputs that were considered by the Partnership Steering Committee as we have moved toward achieving the workshop's goals. Three new teams were created to address the needs of the Partners and the community.

The Climate Instability Team was created to examine ways that the partners can deal with climate instability, adaptation and resilience while reducing our collective impact on local climate change. The team is reviewing the original recommendations seeking ways that the partners can further reduce their carbon emissions.

The Behavior Change for Sustainability Team seeks ways to create sustainable behavior change from employees and students at the partner organizations. The team is working on a behavior change campaign that will be universal across the partners targeting performance improvements on items with measurable outcomes.

The Urban Heat Island Team determines ways the partner organizations further research on the UHI effect while identifying and implementing UHI mitigation projects.

For all three teams, the Partners will lead climate instability, behavior change and UHI efforts in the community and provide educational and behavior change opportunities.

Climate Data

Dr. Keith Mountain at the University of Louisville and several of his graduate students are continuing their research on Louisville climate data and trends. We will add the data and graphical representations as the results are published.

Louisville Climate data from the past 60-plus years indicated that the daily average low temperature is slowly increasing. This trend is predicted to cause an increased frequency of heavy precipitation events, flooding, droughts and heat waves, which each have the potential to affect negatively public health, infrastructure and the economy in Louisville.

Urban Heat Island Effect

The creation of an Urban Heat Island (UHI) Team was fortuitous since Dr. Brian Stone, a researcher from Georgia Institute of Technology, has determined that the urban heat island effect in Louisville has outpaced other cities in the United States, so the problem here definitely needs to be addressed. Each partner has been working on tree planting and other urban heat island effect mitigation projects, but by creating a team with researchers and interested parties within each partner should allow the public partners to lead by example. The new committee met for the first time in November 2013. This team is working with the partner organization to facilitate local research on the UHI effect while finding and implementing UHI effect mitigation projects. Through the leadership of this team, we will provide educational and behavioral opportunities.

Heat Island Mitigation - The Louisville Metro Government Office of Sustainability has received \$135,000 in private grant funding on Urban Heat Island Planning and has contracted with Dr. Brian Stone to complete the most comprehensive UHI assessment and heat management plan in the country.

Jefferson Community & Technical College is participating in the Urban Sustainability Accelerator with Portland State University and the City Office of Sustainability and other area partners in the South of Broadway (SoBro) neighborhood.

The Urban Heat Island Team has been working to distribute Meteorological stations at strategic points in the community to collect data to establish a ground level baseline. Fire Stations and Schools were part of the collaborative effort to gather the data to support both the research and work of the UofL and JCTC faculty as well as augment Dr. Stone's work.

Emission Reduction Strategies

Energy Efficiency

The four partners have been working with improving their Energy Efficiency and Energy Conservation efforts for a number of years, leading to some excellent interaction and programs at each partner organization. JCPS and JCTC were early adopters of the energy savings performance contracts, executing contracts over 10 years ago and providing guidance as other partners requested it. Early in the Partnership's work, the partners undertook a "When Not In Use, Turn Off the Juice" program reminding people to turn off lights when leaving an office or other room. With the help of the Kentucky Pollution Prevention Center (KPPC) several research projects and energy efficiency assessments were undertaken at partner facilities. These projects included a study of vending misers, solar powered street lamps, light reflecting shelves in the schools, alternative energy options (biodiesel, solar and photovoltaic), light harvesting ballasts and solar tubes.

Louisville Metro Government (LMG)

In 2010, the City entered into its first energy savings performance contract (ESPC). Energy efficient upgrades were installed in 24 city-owned buildings with a guarantee of 23% in energy costs, totaling \$443,310 the first year and increasing annually. The project has a 15 year return on investment and an estimated reduction of 7,500 metric tons of greenhouse gas emissions each year. In the Installation Measurement and Verification Report, Johnson Controls reported actual project benefits (savings) in the implementation months (July 2010 – October 2012) of \$979,198, exceeding the guarantee by \$535,888. During the implementation period, the City reduced kilowatt hours by 10,343,395, and reduced demand by 15,401kW, while also reducing natural gas use by 28,254 MCF (1 MCF equals the volume of 1,000 cubic feet of natural gas). This resulted in \$321,448 of electric savings, \$193,114 in electric demand costs and \$304,227 in natural gas savings. The emission reductions saved 40,308 trees or removed the equivalent of 2,660 cars from the roads of the Metro area.

Year 1 results of the ESPC are an abbreviated year, starting November 2012 – June 2013, with a guaranteed savings of \$693,998. Given the transition of years, the actual benefits were \$500,697, although there was a balance when you average the first year with the implementation year. During the abbreviated year, the City saved an additional 5,735,792 kilowatt hours, 7,643 kW electric demand and 21,862 MCF of natural gas resulting in additional savings of \$175,330 in electrical costs, \$89,027 in demand costs, and \$236,340 in reduced gas costs. The emission reductions saved an additional 23,465

trees or removed the equivalent of 1,549 cars from Metro roads.

Noted in the 2013 Sustain Louisville Progress Report, the ESPC has saved more than 14.6 million kilowatt hours (kWh) in electricity consumption and more than 350,000 hundred cubic feet (CCF) of natural gas since 2010. That is the equivalent of 918 home's energy use for one year in reduced electricity and 169 home's energy use for one year in reduced natural gas. The ESPC saved Louisville Metro government over \$750,000 in the first year following implementation completion in 2012.

In 2013, Metro Government began a new ESPC with Johnson Controls that will result in an additional \$27 million of energy saving opportunities in municipal buildings.

Improved preventative maintenance and upkeep of equipment improves efficiency and reduces energy-use in government buildings. Vegetated green roofs on the Metro Development Center (444 South 5th Street) and the 645 Industry Building A or Energy Star white cool roofs on the 645 Industry Building B, the Firearms Training Center and the Alexander Building have been installed to increase energy efficiency.

The City is also benchmarking all their buildings possible with Portfolio Manager to certify as many buildings possible as Energy Star Buildings. The Old Jail was the first Metro facility to achieve Energy Star Certification and operates in the top 25% of similar buildings nation-wide. As a Partner City with Energy Star, Louisville Metro has led efforts to promote Energy Star Certification through the Louisville Energy Alliance and the Kilowatt Crackdown since 2009. Leadership in Energy and Environmental Design (LEED) has also become a focus when building or renovating Metro properties. The Newburg Library and the Fairdale Library are LEED Silver and the City has two LEED Certified buildings underway including the new Southwest Library. The Liberty Green Community Building is LEED Silver and the TARC Bus Maintenance Annex is LEED Gold. LEED Buildings, in general, operate with 10% lower operating costs and are up to 10% more energy efficient than conventional construction or renovation projects. In Sustain Louisville (2013), goals are set to decrease energy use in city-owned buildings by 30% by 2018 while working with the community to decrease the per capita energy use by 25% city wide by 2025.

At the 2013 Kilowatt Crackdown Awards luncheon, Mayor Fischer announced the goal of having at least 25 newly certified Energy Star buildings by the end of 2013. The goal was achieved and as a result of this effort, Louisville was listed on the Energy Star's Top 25 List of Cities with the most Energy Star buildings. The newly certified buildings included eleven Kroger supermarkets, seven public schools, four Rite Aid drug stores, two Target stores and the UPS Air Group Building.

Jefferson County Public Schools

JCPS has been tracking its energy usage and efficiency since the 1979-80 school-year and over the past 34 years has made great strides in many ways, even with the advent of electronic technology. The district has had an energy auditor for years who monitors consumption and troubleshoots problems that arise in the schools. As he tracks the energy use across the 155 schools, each and every school and many of the administrative buildings in the JCPS portfolio participate in the local Kilowatt Crackdown.

JCPS has 28 Energy Star Certified Schools in the district at Ballard and Iroquois High Schools, Myers Middle, Conway Middle, Kammerer Middle, Ramsey Middle, TT Knight Middle, Newburg Middle, Shelby Elementary, Stopher Elementary, Cane Run Elementary, Farmer Elementary and J-Town Elementary, Hawthorne Elementary, Zachary Taylor Elementary and Layne Elementary, Fairdale Elementary, Audubon Elementary, Blue Lick Elementary, Fern Creek Elementary, Luhr Elementary, Rutherford Elementary, Smyrna Elementary, Shacklette Elementary, Blake Elementary, Hartstern Elementary, Slaughter Elementary and Bates Elementary.

Cane Run Elementary (an environmental magnet school) was one of only three schools in the state to receive the 2013 Kentucky Green Ribbon School Award. It recognizes schools in which staff, students, and communities have worked together to promote environmental literacy and produce energy-efficient and sustainable learning environments. The award is presented by the Kentucky Department of Education (KDE) and its Green partners: the Kentucky Environmental Education Council, the Department for Energy Development and Independence, and the Kentucky School Boards Association. In 2012, Cane Run Elementary was up for the Kilo Watt Cup against the First National Tower (40-story tower in downtown Louisville) in the Kilowatt Crackdown and came in second with a 66% energy reduction through its geothermal systems. A portfolio created by the school's Green Energy Team was selected as the Kentucky NEED (National Energy Education Development) most outstanding elementary rookie project. In addition, Cane Run was named the 2011-12 NEED Elementary Rookie School of the Year.

University of Louisville

A long-term Energy Savings Performance Contract (ESPC) to save energy at UofL is outpacing its original goals. The Belknap Campus project extends over 13 ½ years and cost \$21.7 million with UofL paying for the improvements with the money it saves in lower energy costs. The university's agreement with Siemens guarantees the amount of energy that will be saved. Siemens is to make up the difference if the energy-savings goal is not met. The project was expected to generate savings for the University of \$6,400 a day or more than \$31 million over the life of the contract.

Belknap Campus fuel use dropped 48 percent while electricity and water use dropped 27 and 31 percent, respectively, from their annual usage before the project started. When UofL and Siemens Industry, Inc., announced the project in 2009, engineers had predicted fuel use on the campus would drop nearly 40 percent and electricity use at least 20 percent annually.

The reported energy savings is from 2011, the first full year after workers installed more efficient lighting; updated heating, cooling and ventilation systems; and found ways to cut water consumption in 71 campus buildings and outdoor areas.

The overall reduction in energy use has trimmed the greenhouse gas emissions emitted on Belknap Campus by an annual 53 million pounds — an amount equal to removing 4,400 cars from the road for a year, Siemens officials said.

The Health Sciences Center and Shelby Campus were added as a second phase in 2011. Engineers are still measuring results of the improvements made on those campuses. The \$26 million ESPC expanded on top of the \$21.7 million Belknap Campus ESPC with Siemens was estimated to reduce UofL utility bills by about \$11,800/day for all campuses.

The Information Technology data center has gone green as well. From recycling old equipment to saving power, IT has committed to UofL's sustainability initiatives.



One of Information Technology's sustainability initiatives was an energy-saving strategy called cold aisle containment. It limits cooling to the IT equipment, rather than the entire room. In the past few years, IT has taken a number of opportunities to embrace more sustainable practices. Used items such as servers, racks, printers and network equipment are repurposed or recycled. IT has replaced old, less efficient equipment with new hardware. For example, IT recently replaced several old servers with new, more energy-efficient models, saving 14 kW of power. Each new server has a useful life of 15 to 20 years. The Virtual Tape Library, a disk subsystem for backups, has been replaced with larger, energy-efficient systems, saving 4 kW of power. Another 8 kW of power has been saved by replacing multiple storage units. IT has increased power density in server racks, saving floor space and cooling requirements. The data center has maintained its power consumption while increasing the number of servers three-fold. Finally, the Tape Library in MedCenter 3 was scheduled to be decommissioned by June 2013, saving 4 kW of power, freeing up floor space and reducing cooling requirements.

Another data center initiative is a strategy called virtualization. Physical servers were consolidated, reducing the data center's carbon footprint by saving power and increasing system operating efficiencies. To date, more than 600 physical servers have been virtualized and replaced with 14 physical servers, significantly reducing power, floor space and cooling needs.

Cooling requirements have been further reduced through a process called cold aisle containment. Rather than cooling an entire room, this strategy works by trapping cold air around IT equipment. Thick plastic sheets hang from the ceiling, surrounding servers and other hardware and keeping cool air where it is most needed. Raised floors improve airflow dynamics. The strategy achieves energy savings by allowing higher ambient temperatures in the surrounding room. Cold aisle containment also protects crucial data center equipment in the event of a power or cooling failure.

IT also has equipped the data center with overhead cabling. Keeping cables above rather than below hardware provides better airflow under floor tiles, resulting in additional power savings. Environmental

control panels allow IT employees to maximize equipment efficiency and monitor the data center's power usage.

Information Technology is dedicated to continual improvement in its sustainability initiatives. The department is working to increase efficiency and reduce its environmental footprint, all while providing UofL with the reliable technology systems its students, and faculty and staff depend on.

In 2011, the School of Dentistry marked the completion of a two-year, \$45 million renovation on Sept. 27th with a ribbon-cutting and tour. In June, the School of Dentistry earned LEED Silver certification from the US Green Building Council. The project added more than 20,000 square feet to the facility and renovated another 211,000 square feet. Among the green changes are more efficient HVAC systems and motion-sensor lighting. These improvements will result in a 7% increase in energy efficiency and an annual reduction in water usage by 534,455 gallons. The project used more than 30% recycled and regional materials. The University of Louisville School of Dentistry renovation features new pervious pavement, one of the largest applications in the region.

The School of Engineering completed the renovation of an older 35,000 square foot building previously used as a library into the Duthie Center for Engineering. Originally built in 1947, the Duthie Center's mechanical and electrical systems and finishes had outlived their useful life. New carbon dioxide monitoring units control ventilation rates, reducing the amount of energy to heat or cool the outdoor air. Energy-efficient light fixtures with electronic ballasts achieve a lighting power density of 1.1 watts per SF in the classrooms and research labs, exceeding ASHRAE by 8.3 percent. The lighting features dual level switching, zoned lighting and automatic lighting shut-off in classrooms. Existing windows were upgraded to enhance the building's energy performance by 31.9 percent. New ultra-efficient plumbing fixtures were installed projected to reduce water use by over 50 percent.

In 2012, the College of Business completed construction of a new 7,000-square-foot wing to provide space for the school's Equine Industry Program and Forcht Center for Entrepreneurship in June. The \$3.4 million wing was built to meet LEED Silver Certification. The wing has a green roof with plants to retain water and to provide additional insulation. This is the first green roof on campus and is expected to trim 25 percent from heating and cooling costs in the two-story addition it covers. It also drains to a rain garden on the ground below to help prevent campus flooding. Other green features include:

- 97 percent of all occupied spaces have natural day lighting; 94 percent have a direct line of sight to the outside.
- Radiant heat panels along the window wall keep the rooms evenly heated.
- Low-E glass reduces heat buildup in the summer and reflects heat back in the winter.
- Low VOC-emitting paint, sealant, adhesives and flooring reduce indoor air contaminants.

When the Health Sciences Center expanded their imaging capabilities, the University opted to renovate a small portion of an existing facility to house a new state of the art Magnetic Resonance Imaging Suite. This is the first LEED Silver certification for commercial interior renovation. A building automation

system (BAS) was installed to monitor and control the equipment by the university's physical plant division. This system can be used to remotely adjust settings that allow the owner to save energy while the space is occupied, and to turn equipment off when it is unoccupied. Efficient T8 fluorescent lighting was installed in the new spaces and dimmer panels were installed to control light intensity in certain areas. These energy measures reduced energy costs by 21.4 percent.

New ultra-efficient plumbing fixtures were installed, and are projected to reduce water use by over 30 percent. Over 25 percent of the materials used for construction of the space were extracted and manufactured within 500 miles of Louisville and the recycled content of materials used exceeded 20 percent.

In 2013, a \$38 million student sports and recreation center was completed in October. The 128,000-square-foot center contains a gymnasium with six courts for basketball, volleyball and other sports; a multisport court for indoor soccer and floor hockey; racquetball courts; a jogging track; and aerobics and wellness studios. The Center was designed to meet LEED Gold certification, which it received. It is the first UofL building to be heated and cooled with geothermal energy. The geothermal heat pipe is a closed-loop vertical well system with a total of 180 wells 400 feet deep. The system provides ample reserve capacity and is expected to generate about 22% annual energy cost savings compared to a conventional system. The building also features a solar hot water system, natural lighting, and a "cool roof" to reflect solar radiation.

In late 2013, the NUCLEUS building on the Haymarket also opened, achieving LEED Silver in 2014. Environmentally friendly features of The Nucleus include a green rooftop terrace, smart HVAC and energy-management systems, and motion-activated lights and plumbing in all restrooms. Natural light is abundant throughout the building with efficient low-e glass to keep the weather outside from impacting the internal temperature. "Responsible growth continues to be our goal at U of L," university president James Ramsey, "and having these buildings achieve LEED certification shows the university's commitment to long-term sustainability, carbon-footprint reduction and environmentally friendly development."

Project currently in design or construction targeted for LEED certification:

- Center for Predictive Medicine Addition, Shelby (seeking LEED certification) - new construction
- Student Activities Center east wing renovation, Belknap (seeking LEED Silver) - renovation
- Soccer Stadium, Belknap (seeking LEED Silver) - new construction

Jefferson Community & Technical College

JCTC has participated in an EPSC with the Kentucky Community & Technical College System (KCTCS). The contract is with the Energy Systems Group. All future buildings will be built LEED certified. Light bulbs have been removed from all vending machines on every campus, except the Shelby Campus for the reason that they remain on to light a hall where less energy is consumed than turning on overhead lights.

Energy Metering has been a focus. JCTC receives a discount on its electric bill for owning our own medium voltage equipment. LG&E supplies us with 13800 volts into the Hartford Building. This feed supplies power to the Hartford Building, the LRC Building, VTI Building, and the new HSB building. There is only one meter on this 13,800 volt supply and it is located in the basement of the Hartford Building. The Southwest Campus has a similar set up with one meter on the 13800 volt supply. This meter meters all the buildings on the Southwest Campus. The Broadway Building has its electric meter, the JEC Building has four meters, Shelbyville has its own meter, Tech Building A has its own meter, and Tech Building B has its own meter.

Lighting Sensors have been another focus. As part of the same energy conservation project in buildings A&B on the Tech Campus completed in May 2004, all office, classroom, and hallway lighting fixtures were converted to two T-8 fluorescent bulbs per unit with electronic ballasts and reflectors. The high ceiling labs in building B were changed from metal halide low bay fixtures to 6 bulb T-8 fluorescent fixtures with electronic ballasts. The light switches in the offices were changed to "Watt Stopper" passive motion sensor switches with adjustable sensitivity and duration of lapse of movement before switching off the lights. These were installed wherever feasible.

To help with energy efficiency the JCTC Green Purchasing policy requires equipment to be Energy Star certified and EPEAT computer standards for technology.

JCTC installed cool roofs on the Library, Broadway and HSH buildings on its downtown Louisville campus.

Water Conservation is important at JCTC with the campuses going to all low flow fixtures.

On the Southwest JCTC campus buildings have been equipped with lighting sensors and times for temperature controls are installed in all buildings and temperature sets are reasonable for saving energy. Motion sensors have been installed in all faculty and staff offices, and have been installed in some classrooms and work areas. Ninety percent of the lighting used is energy efficient and non-LED. Outdoor lighting is all equipped with photocells for daylight shutoff.

The SW campus was also part of the Energy Conservation project in 2004. The same updates were done at that time including upgrades to all interior lighting on the SW campus. Other improvements included: A new generator for Building B at the Tech Campus. This project started in last FY (May of 2012) and finished in this FY (September of 2012). This building did not have a generator prior to this project but had an inverter system. The inverter system was not functioning properly and this is a huge improvement for the building. The level of backup power for the building was greatly increased as well as the level of safety for building occupants.

A new generator for Building A at the Tech Campus. This project has been designed and the actual bid opening for the work is scheduled on May 7, 2013. The work should begin in late May and finish by September. Building A also has an old inverter system installed so the improvements to Building A will

be similar to the improvements mentioned above for Building A.

Major improvements to the Electrical Infrastructure at the Southwest Campus. This is actually Phase 2 of a project that was initiated in 2008. Phase 1 completed in 2008. This project was initiated and completed in the FY. This project made upgrades to the electrical infrastructure that serves the entire campus. The upgrades included replacing aged wiring, switchgear, and connections. The project also replace a single, low capacity generator that served the campus with 3 new generators that divide the campus into zones and better serve the campus during power outages. The generators also add the ability to maintain phone and data service for the College that was not provided by the original generator.

- Roof Replacement for the Natural Science Building at the Southwest Campus. Existing roof was original to the building (1980) and was in need of replacement. This project was initiated and completed in the current FY.
- Shingle Replacement for the Business Building on the Southwest Campus.
- Repairs to Seminary Building Roof. Repairs includes leak repairs and painting metal portions of the roof. Started this FY and should complete before the end of the FY.
- HVAC upgrades to the Social Science Building and the Humanities Building at the Southwest Campus. The needed repairs were discovered we began to gear-up for cooling season. Units that need repair are aging (Social Science Building unit is 20 years old, Humanities Building unit is 33 years old) and original to the building. Purchase Orders have just been issued for the upgrades and should be completed by within the next few days.
- Streetscape improvements for First Street between Gray Street and Broadway. This project is funded by a \$500,000 Transportation Grant and matched by \$125,000 of College funds to create a \$625,000 project. Design work is in beginning stages and the project will complete in next FY.
- Improvements to administrative offices in the Broadway Building. The improvements were performed by College personnel and totaled nearly \$8,000.
- Modifications to the DT library to prepare space for student orientation for ATD. Currently we have committed \$15,000 to complete the project and that portion of the work will finish by April 30th. Additional modifications to restrooms are needed and are estimated to be around \$80,000. If funded, the restroom modifications would begin in this FY but complete in next FY. These costs do not include new computer equipment that will be needed for the space. Additional costs for computers and needed furniture should be around \$50,000.
- Work will also begin this summer to modify space in Building B at the Tech Campus to expand the Automotive Technology Program. These modifications will expand training to include training for Honda Motors. There is not an estimate of this work at this time.
- There was some additional work performed by College personnel at the Carrollton Campus, but the College was reimbursed for all costs by the Carrollton Education Foundation.

During the summer of 2012, Jefferson's sustainability interns took big ideas of how to make Jefferson more sustainable and made them reality. They spent the summer months at each campus, going around offices and classrooms to conduct vampire load audits, in hopes improving energy efficiency at Jefferson, while also assisting in the development of the FreeCycle Program. Their hard work around the campuses and in our sustainability office will be great help in with JCTC's commitment to the stewardship of the environment and to reducing the college's dependence on non-renewable energy.

In December and May, a "Power Down for the Holidays" and "Go Green Before You Go" email was sent to faculty, staff, and students in hopes of educating the college of the high cost of phantom energy and help Jefferson save energy overall. The Power Down Campaign is intended to reduce unnecessary electrical consumption at Jefferson and raise awareness about what each of us can do in our daily lives to help conserve energy. Intended to help reduce energy costs for the winter and summer breaks, we provided instructions to turn off and unplug all media equipment and electronics, turn off all lights, close blinds, and other tips to help save electricity and money for the college.

To ensure products that conserve energy are purchased at the college, an Energy Star® purchasing policy is being implemented at Jefferson. When determining whether a product is environmentally preferable all phases of the product's life cycle will be considered, including: raw materials acquisition, production, manufacturing, packaging, distribution, operation, maintenance, disposal, potential for reuse and ability to be recycled. The goal of this policy is to reduce the adverse environmental impact of our purchasing decisions by buying goods and services from manufacturers and vendors who share our commitment to the environment. The Energy Star® Policy minimizes negative environmental and social effects through the use of environmentally friendly products. The policy attempts to identify and reduce environmental impact and to maximize resource efficiency. Jefferson recognizes that purchasing choices made by the college have an impact to the environment. As a result, this policy intends to minimize greenhouse gas emissions and operational costs.

Alternative Energy

Louisville Metro Government

LMG included some alternative energy in its first energy savings performance contract installing PV panels and some micro wind turbines on the 645 Industry Building in 2010.

Jefferson County Public Schools

JCPS has added alternative energy sources on several different schools in the past four years. The jewel of the district's alternative energy sources is Ramsey Middle School where there is a photovoltaic panel and a wind turbine are tied into a building dashboard system for students to monitor their energy use and see how much energy is created on a sunny or windy day. Lincoln Elementary School also has a large solar PV array that was added in 2013. Churchill Park School has had solar hot water for the school funded under a grant and cooperative planning process with the Speed School of Engineering since 2008 or 2009. Solar hot water is also at Ramsey Middle School, Farmer Elementary School, and Cane Run Elementary School. There are 34 Solar tubes to bring natural light into the classrooms at Cane Run, four more solar tubes are at Ramsey Middle and one solar tube is in a conference room at the C.B. Young

Service Center. Cane Run Elementary and the Billtown Road Bus Compound have geothermal heating and cooling systems.

University of Louisville

UofL has had the only tracking solar array in the Commonwealth of Kentucky on Sackett Hall of the Speed School for a number of years. The array is both solar PV and solar hot water and serves as a living laboratory for the Speed School of Engineering Students. Team Kentuckiana, a joint venture of the University of Louisville, Ball State University and the University of Kentucky, was selected to participate with 20 other collegiate teams from the United States, Canada and Europe in the 2013 Department of Energy Solar Decathlon. The Phoenix House is fabricated in two modules and can be assembled on site in a week. The Module 1 roof is supported by wood trusses that are designed to be collapsible during transportation. The primary roof is raised at a slope for optimal performance of the PV panels, and infill pieces are put into place. The corrugated metal roof supports a 7.8 kilowatt array of solar panels that will completely power the house. Phoenix House recently returned from the Great Park at Irvine, Calif., where Team Kentuckiana tied for first in the affordability and power contests. The home will be set up on campus to be used for education, research and extension purposes.

The Center for Predictive Medicine on Shelby Campus has 256 photovoltaic panels on the roof that helps offset the energy Intensiveness of a research laboratory. Also on Shelby Campus, Burhans Hall has solar hot water that helps supply the building year round.

Land Use

The Partner organizations manage over 25,135 acres of land in the Louisville Metro area, representing over 1/10th of all the land in the county lines. The way we use our lands and the ways we manage them have an effect on the people who populate the public spaces as well as our community.

Louisville Metro Government

The City is working to incorporate sustainability into the Land Development Code and the Comprehensive Plan, including the work that is ongoing in the SoBro neighborhood. With the new Tree Advisory Commission, the city is partnering with interested groups, planting over 9,000 trees in 2013. In 2014, the City and MSD funded a comprehensive tree canopy assessment which is currently underway.

The City has a remarkable system of parks with the original Olmsted Parks, the Jefferson Memorial Park, The Parklands at Floyds Fork and many other parks. The Louisville Loop is a distinctive feature that will provide a 100-mile loop around the community through the parks and associated lands.

University of Louisville

UofL has achieved Tree Campus USA status from the Arbor Day Foundation for every year since 2010! Tree Campus USA recognition is awarded to colleges and universities that meet five core standards for sustainable campus forestry: a tree advisory committee, a campus tree-care plan, dedicated annual expenditures to their campus tree program, an Arbor Day observance and student service-learning projects. All of these standards have the ultimate goals of reducing the footprint of college campuses and inspiring a lifelong passion for protecting the environment in today's college students.

Jefferson Community & Technical College

Jefferson has been recommended to be a Tree Campus USA member to encourage best practices in the planting and management of our campus trees. Tree Campus USA program recognizes college and university campuses that:

- Effectively manage their campus trees.
- Develop connectivity with the community beyond campus borders to foster healthy, urban forests.
- Strive to engage their student population utilizing service learning opportunities centered on campus, and community, forestry efforts.

JCTC has also acquired several properties on First Street and has added community gardens with raised beds. These gardens are open for JCTC personnel and people in the area to come in and harvest the fresh fruits and vegetables as desired.

Transportation

Transportation in the Louisville Metro area continues to be a focus in different ways. All four partners are working to create more bikeable and walkable campuses, promoting alternative transportation, and countering the single occupancy vehicle culture through carpooling, car sharing and social media.

Louisville Metro Government

Louisville Metro Government was recognized in 2013 with a Bronze designation by the League of American Bicyclists' Bicycle Friendly Community Program. Bicycling improvements in the City focused on connecting to and within the Central Business District and expanding through the major thoroughfares of the City. Future planning efforts include connecting with recreational sites and the Louisville Loop.

In 2013, The City also created Move Louisville, a ten-month process to engage the community in creating a long-range strategic multimodal transportation plan. TARC also began replacing older, less efficient buses with eleven hybrid-electric and sixteen clean-diesel buses with the latest fuel conservation technologies. May buses also now include bicycle racks to serve a bike friendly public. Goals set in Sustain Louisville are to decrease transportation greenhouse gas emissions by 20% by 2020 and reducing vehicle miles traveled by 20% by 2025.

Working with APCD, Louisville Metro has implemented an anti-idling policy for metro vehicles and is working with various metro agencies to get the word out. Kentuckiana Air Education (KAIRE) has promoted idling no more than 10 seconds in public service announcements through a radio campaign primarily aimed at people in their vehicles. It reminds people if you can count to 10, shut it off. The Partnership for a Green City has incorporated the 10-second rule in New Employee Orientation at each of the Partners. The following statistic can make people think, especially when gas prices are on the rise. An hour of idling time in a 4-cylinder vehicle uses more than a gallon of gasoline and more than 4 gallons in an 8-cylinder vehicle. In a diesel vehicle, idling for an hour consumes approximately a gallon of fuel.

Jefferson County Public Schools

JCPS has been using biodiesel in its buses since biodiesel came to the Louisville area. Now, all biodiesel in the Louisville Market runs between 0 – 5% in diesel fuel. The school district has a bus ridership above the national average of 50% for school districts. JCPS safely transports 70% of its students to school on a daily basis. The district also boasts the largest fleet of hybrid electric buses in the nation with 50 of their 1200+ buses. Working with the Kentucky Clean Fuels Coalition, JCPS purchased their hybrid electric buses with grant funding, working to be good stewards of the taxpayer's money.

JCPS has implemented an anti-idling policy for school district properties, schools and carpool lines across its 155 schools. Additionally, school buses are only allowed to idle for the two-minutes before school lets out each day.

University of Louisville

In November 2013, UofL was named the most bicycle-friendly university in Kentucky, earning a Silver rating in the League of American Bicyclists' Bicycle Friendly University program! As of fall 2013, there are a total of 75 Bicycle Friendly Universities in 32 states, including three in Kentucky:

1. University of Louisville - Silver (New Fall 2013)
2. University of Kentucky – Bronze
3. Western Kentucky University - Bronze (New Fall 2013)

UofL has a bike sharing program, multiple repair stations and has recently added bike lanes on and around the campus. The university has also been recognized for its Earn-a-Bike program where faculty, staff and students who forego a parking permit for two years earn a \$400 voucher for use in local bike shops and additional training in safe bicycle commuting.

The University has joined Zimride – a social networking site that connects like people for car-pooling opportunities whether going to work, school or vacation in an effort to decrease single occupancy vehicles coming to campus. Enterprise CarShare has multiple vehicles on the Belknap campus and over the past year, use of the CarShare program have doubled, resulting in negotiations to site more vehicles at the university. There are also circulator buses that shuttle students between outlying parking and campus on the Belknap and HSC campuses. Transportation to Frankfort and Lexington runs three times a day through Miller Transportation.

UofL has also implemented an anti-idling policy for its fleet vehicles as well as asking faculty, staff and students not to idle their vehicles on campus.

Jefferson Community & Technical College

JCTC now has a program to supply under resourced students with TARC tickets and JCTC supports employees who are able to telecommute. During the summer months Jefferson offers an alternating 4 day work week.

JCTC has implemented an Anti-idling policy for its six campuses and has reduced its vehicle fleet to 1 pool car and currently purchase E85 flex fuel vehicles and higher

JCTC has also investigated Zimride opportunities through a presentation at UofL with the Partnership for a Green City on June 12, 2012 to learn more about carpooling opportunities to bring the program to JCTC. At this point, the program has been cost prohibitive but JCTC continues pursuing other carpool networking options.

Urban Forest

Recent research has estimated that Louisville's urban forest is not on par with comparable cities. The partner organizations are working on improving their urban forests on their respective properties as well as working with community partners.

Louisville Metro Government

The City has managed its urban forest in the Parks and along the Parkways since the parks were created in the early 1900s. The City has had a City arborist who worked in the downtown management district area and across the city. Pursuant to the original CAR recommendations, the City has hired an urban forester who will oversee the tree canopy expansion and assessment. In October 2013, the first Urban Forester started working with the City on issues with the urban forest. The Emerald Ash Borer has wreaked havoc on Ash trees in the area and Metro Parks, the City Arborist and the Urban Forester have been kept busy working on this issue.

The City has planted over 10,000 trees with Mayor Fischer's focus and dedication. Approximately 2,900 of these trees were planted by Metro government and 7,300 were planted by non-profits, neighborhoods, higher education institutions and private businesses.

University of Louisville

Besides the university achieving Tree Campus USA designation, UofL has a comprehensive tree management plan and Speed school students in cooperation with Biology students created an APP that maps all the trees on the Belknap Campus. The APP is available, as is the tree map, at: <http://trees.cecsresearch.org/>. The Belknap tree survey was completed by the Urban Wildlife Research Lab with assistance from students in Environmental Biology (BIO 263) and UofL's center for GIS. Species, diameter at breast height (dbh), crown width, height, and GPS coordinates were recorded for the approximately 2,500 campus trees. These data were then used to calculate the amount of CO₂ sequestered yearly and over the entire life of the tree, the live and dry weights, approximate age, and dollar value for each tree.

Trees have been planted on all three UofL campuses to replace dead or diseased trees that have been removed.

Jefferson Community & Technical College

Jefferson is participating in the Urban Sustainability Accelerator with Portland State University. While the urban downtown campuses are mostly paved and buildings, the inventory of trees planted during the early years of the Downtown campus is aging. Many of those trees have already had to be replaced due to age or weather damage. In the past 5 years we have planted 43 new trees on the campus to

replace these aging or damaged trees. We are currently working with an external funding source to plant an additional 12 trees this fall. We hope these added trees can be enjoyed for years to come. Jefferson Community and Technical College does have some urban forests on its suburban campuses. At the southwest campus, there are 57 acres of maintained grounds and 22 acres of undeveloped land.

Waste Management

In support of the Sustain Louisville Goal of diverting 90% of solid waste from landfills by 2042, all four partner organizations are working with single stream recycling or commercial wet/dry materials management. The Partnership Purchasing Consortium, which includes the four partners plus MSD, TARC, the Louisville Water Company and the Louisville Regional Airport Authority, has had joint purchasing contracts underway for both containerized waste disposal (read trash disposal) and Total Materials Management (read recycling). By combining our purchasing power, all organizations save money and in theory receive better service.

The Partnership purchased two different types of composting containers for pilot projects among the four partners. JCPS wanted to experiment with on-site composting at some of their administration facilities, with C. B. Young being the first pilot site. The University is piloting a dormitory composting project in one freshman dorm, the Louisville Zoo is piloting a composting project with their food service vendor and JCTC is piloting a composting project in their Culinary Arts program at its Downtown Louisville Campus.

Louisville Metro Government

The City is working to increase recycling in its own facilities as well as increasing city-wide recycling by 25% by 2015, and achieving a 90% rate of residential recycling by 2025. There are several commercial wet/dry pilot programs underway at Fourth Street Live and the Central Business District, expanding recycling and composting options for commercial buildings, restaurants, and retail stores with multi-family housing on the horizon. Louisville Metro Government facilities are also using commercial wet/dry materials management where dry materials are recycled while food wastes and restroom towel paper is composted.

Jefferson County Public Schools

JCPS has had single stream recycling in all of its schools for the past five years, which means that all recyclable items are collected together in the recycling containers. Cane Run Elementary, Portland Elementary and Fern Creek High School piloted school composting programs and composted nearly 25 tons of organic materials between the three schools during the school year.

University of Louisville

The University of Louisville is taking a variety of steps to reduce the amount of waste generated on campus and to divert a greater percentage of our waste from going to landfills. In 2013, UofL reduced its total annual waste generation by over 886,000 pounds (a 10% reduction from 2012)! In addition, we recycled nearly 4.5 million pounds (57.4%) of our waste in 2013. Diversion programs include extensive [recycling](#), reuse, [composting](#), waste minimization, and other landfill diversion programs from the classroom to the construction site.

Jefferson Community & Technical College

JCTC has Single Stream Recycling in place on all campuses and is considering food compost pilot in its Culinary Arts Program. The Tech and SW campuses compost all yard wastes. Jefferson also recycles all college Electronics waste (e-waste) and holds an employee and student e-waste event each spring. Jefferson also recycles discarded library books and reference books with Better World Books. Each year, JCTC competes in RecycleMania, a friendly competition among college and university recycling programs in North America and Canada. During 8 weeks each spring, schools compete to reduce waste, increase recycling and raise awareness of conservation issues across campus. We have started participating in the RecycleMania competition at the beginning of February. Every week, we report how much recyclable material is collected on each campus. To help promote the competition, we have received great promotional items and giveaways to pass out at events around the campuses.

As of February 3, 2012, the Shelby campus, partnering with Rumpke, now participates in single stream recycling. Most existing office and classroom garbage cans have been affixed with a label and converted to recycling bins. True trash bins will most likely be found in restrooms, kitchens, and break areas.

As of August 17, 2012, the Carrollton campus, partnering with Rumpke, now participates in single stream recycling. Most existing office and classroom garbage cans have been affixed with a label and converted to recycling bins. True trash bins will most likely be found in restrooms, kitchens, and break areas.

JCTC was awarded \$1,000 as a part of the Cigarette Litter Prevention Program (Keep America Beautiful). The program is intended to support enforcement of local litter laws, including cigarette litter, change littering behavior through public education/messaging, install ash receptacles at "transition points," places where smokers must stop smoking before proceeding, and distribute pocket ashtrays to adult smokers. We have conducted an initial scan, where we counted cigarette butts on the Downtown campus. Since then, we have purchased outdoor ash urns with the grant funds that will be placed in convenient and visible areas. Once the urns are placed, we will conduct a follow-up scan and continue to educate the college about the importance of reducing cigarette butt litter.

Earlier in November 2012, we announced the new program, Jefferson Freecycle@Work, an online system that creates an easy way for you to post items you no longer need, find items you do, and support the environment by reusing items rather than disposing of them. It saves money too! The Jefferson Freecycle@Work website (a partnership with Intuit QuickBase) is for all Jefferson Community and Technical College employees. Freecycle@Work is an on-line system for exchanging reusable items within the Jefferson workplace. You can post items from your office or browse items that other departments no longer need. It can be a great way to get rid of or find office supplies, laboratory supplies & equipment, computer supplies and other small items to keep them in circulation among Jefferson departments.

Outreach and Education

In 2009, the Partnership for a Green City established the Joan Riehm Memorial Environmental Leadership Award in memory of the former Deputy Mayor, a dedicated public servant, lifelong advocate of living “green” and public partnership visionary. This uniquely Louisville award recognizes sustainable environmental leadership in public service. The award will comprise a monetary element and a plaque, which will be awarded annually on or around Earth Day (unless Earth Day falls on a weekend).

The Partners seek to recognize an individual who leads environmental sustainability efforts in the community. The person could have implemented a sustainability project, program or event. The nominee could be knowledgeable and educate others or may be a catalyst in the organization or community. He or she may lead by example or be a change agent. The Partners want to know the work that the nominee should be recognized for, moving toward greater environmental sustainability. The recipients of the award during the past 5 years have been:

2010 – Larry Owsley, University of Louisville

2011 – Mike Mulheirn, Jefferson County Public Schools

2012 – The Honorable Tina Ward-Pugh, Louisville Metro Councilwoman

2013 – Pamela Dumm, Jefferson Community & Technical College

2014 – Darleen Horton, Cane Rune Elementary School, JCPS – with her students below





Mike Mulheirn, Tina Ward Pugh, & Larry Owsley Mike Mulheirn, Pamela Dumm, & Larry Owsley

In October and November of 2013, the Partnership conducted an America Recycles Day contest focusing staff and students at the partners on taking selfies or having someone taking a photograph of them recycling as they do at work or school. Office Max was our partner in this effort as the sales representative provided some excellent recycled content prizes. Pictures were posted to our Partnership Facebook page and people had to “Like” the photos. The one with the most “Likes” from each partner received the recycled content goody-bag.

In March and April of 2014, the Partnership worked with the My Actions social network to promote behavior change. Those interested could sign up for a My Actions account and update up to 10 sustainable behaviors a day. For the first four actions, a generous donor was donating a quarter for each with the donations going to the Louisville Zoo or Louisville Trees. I need to get data from Russ to finalize what we accomplished over all with actions and donations.

Louisville Metro Government

LMG has worked to increase access in the community to healthy foods and has nine farmers markets that offer shoppers the opportunity to purchase healthy foods with SNAP or food stamps. The city has also established code updates that allow community and market gardens in a variety of zoning districts, including a \$25,000 grant to fund thirteen new community gardens or expansion plots in the Portland and Shawnee neighborhoods.

With an eye to the future, the City has created Vision Louisville, a 25-year visioning effort. Community input was solicited and over 80,000 ideas for the future were provided to City officials.

In January, 2014, the Office of Sustainability partnered with the Louisville Sustainability Council in Louisville’s first Sustainability Summit. Five action teams were created to recommend actions germane to Sustain Louisville: Green Buildings, Green Economy, Transportation, Trees, and Community Engagement. The teams have been meeting since January and are excited about their contribution to sustainability in the community.

Also in early 2014, the Office of Sustainability partnered with the Louisville Sustainability Council to join the STAR Communities as a Partnership Community, seeking STAR Community certification. This is a robust rating system with seven areas (built environment, climate and energy, economy and jobs, education, arts and community, equity and empowerment, health and safety, and natural systems) with 44 possible goals and objectives to measure. Data collection is underway with the LSC and one of their data collection interns to pursue Louisville's first rating on a system being used across the country.

Jefferson County Public Schools

JCPS is involved in community engagement through multiple areas across the 155 schools in the district. The school district was the first to have the Partnership join the Classified New Employee Orientation program discussing sustainability awareness with new staff members. People accept sustainability as an organizational culture when it is a demonstrated expectation at orientation and then in the schools.

University of Louisville

UofL has worked through its office of Community Engagement to promote outreach and education opportunities throughout the community. That office created Community Engagement Awards which are given out to a student, faculty and staff member as well as a community partner. UofL also added sustainability to new employee orientation sessions soon after JCPS did. The sustainability education demonstrated the university's commitment to sustainability as people begin their new job and people are asked to adopt green behaviors at work and at home.

Jefferson Community & Technical College

Professional Development is an important part of keeping sustainability in front of faculty, staff and students. In conjunction with the PGC, JCTC has created a Sustainability 101 Professional Development that has been taken to the 6 campuses. Sustainability is also promoted in New Employee Orientation sessions and new student orientation.

In January 2012, we released JCTC's first sustainability newsletter, Rocko's Review. Published every month, Rocko's Review is emailed to the college and posted on the JCTC Sustainability website. The publication offers information about current sustainability topics and news, events, and recognition in the sustainability field.

Pamela Dumm and Maggie Peake joined with Brent Fryrear, Director of Partnership for a Green City, to present professional development workshops for sustainability at JCTC at least once per semester. Going Green: Sustainability 101 is designed to teach participants sustainability concepts and how to apply them at JCTC, as well as at home. Sustainability 101 explores why going green matters and how faculty and staff can translate the importance to fellow colleagues and students.

Since the beginning of 2012, we have spent a lot of time at Shelby campus, learning and promoting their sustainability initiatives. The facilities crew works with vendors and suppliers to make sure they only use environmentally-friendly cleaners and products. The campus has a contract with a company through KCTCS that picks up light bulbs, ballasts, batteries, waste oils, antifreeze, and syringes. Currently, we are working on retrofitting the water fountains with water bottle filling stations that helps reduce

dependency on plastic water bottles. The Shelby campus also has a ¾ mile walking trail around the campus, as well as a 100 mile walking club to promote healthy living on campus and in the community. Along with the promoting outdoor activity, the campus stocks the pond outside their building with fish and wildlife. We are working with USDA, as a part of the Wildlife Habitat Incentive Program, to return approximately 30 acres of the Shelby campus land to a fertile natural habitat with native grasses.

Sustainability is now a component in the New Employee Orientation (presented on March 19, 2012 and March 1, 2013 to inform new faculty and staff of sustainability initiatives going on at the college. Participating in Jefferson's new employee orientation introduces to new faculty and staff why sustainability matters and how faculty and staff can translate the importance to fellow colleagues and students. The orientation session supports sustainable operations on all of Jefferson's campuses and promotes overall sustainability excellence for the college.

Pamela Dumm was awarded the Joan Riehm Memorial Environmental Leadership Award, which recognizes an individual that leads environmental sustainability efforts in the community. She was nominated in both 2012 and 2013.

2012 Earth Day Events: A sustainability table was set up at the Spring Arts Festival on the Downtown campus on April 12th. Maggie and Melyssa are visiting each campus to provide information about various sustainability initiatives, such as recycling, composting, and water/energy saving tips. Amanda Fuller (Breaking New Grounds) provided compost and resources. Bradley Coomes (Louisville Air Pollution Control District) provided tire gauges and idle free resources. On the Shelby Campus, we are planning a tree planting event for April 26th. In addition to all of these events, each campus is collecting e-waste recycling. As a part of the 2012 Earth Day events, JCTC partnered with Bluegrass E-Cycle (<http://www.bluegrassecycle.com/>) to provide a safe and responsible electronic recycling collection day on each campus in April. The containers were placed on each for about a week for all students, faculty, and staff to drop off their old electronics, and then Bluegrass E-Cycle picked them up to recycle.

2013 Earth Day Events: To celebrate Earth Day 2013, we are offering several opportunities for Jefferson employees to get involved:

- **FREE SEEDS!** The weather seems to finally be breaking. Gardening, planting, and Farmers Markets offer a wealth of opportunity for us to save money. These practices help the local economy and make for greener decisions. As part of this initiative to get things growing we have free vegetable, flower, and herb seeds. Please stop by the Business Affairs Office in the JEC Building (Suite 600) to pick up your free seeds—or contact Maggie Peake (maggie.peake@kctcs.edu) if you would like some to be sent to you! Happy Gardening!
- **ONE SHIRT CHALLENGE (EARTH WEEK 2013 April 15th-20th)** Jefferson Community & Technical College, along with hundreds of colleges and universities from every state will be competing against each other and with schools in their conference for the title of **BIG SHIRT ON CAMPUS!** and national bragging rights. The school that works with their community to collect the most clothes [total and per student] during Earth Week 2013 [April 15-20] will be declared the winner! Winning schools will receive some 100% recycled, made in America shirts for your club or group. **PLEASE BE SURE YOUR CLOTHES ARE CLEAN AND IN PLASTIC BAGS!** Once you've

collected items in your department, please bring them to the Business Affairs Office in the JEC Building (Suite 600) and we will store your clothes for you! If you are not able to bring your items, we will work to coordinate a way for them to be picked up and delivered.

- **Campus Clean-Up:** If you are interested in participating in a clean-up on your campus, please let us know! We are coordinating volunteers on various campuses to hold a clean-up day, picking up trash and beautifying the area. We are continually finding ways for Jefferson students and employees to become engaged in keeping our campuses clean, green, and beautiful - so your dedication and hard work are much needed and always appreciated! Please keep an eye out this week for more information.

Business Affairs and Sustainability set up an information table at the Staff Professional Development Day on March 15, 2012. We provided information for supplier diversity, along with recycling/sustainability information, and distributed issues of Rocko's Review.

As a way to educate and inform Shelby campus students, faculty, and staff about single stream recycling and other sustainability initiatives at the college, we joined Vic Fallis and held a Welcome Back Cook Out on August 15, 2012. We served hotdogs, snacks, and highlighted our partnership with Louisville Water Company by providing ice cold tap water for the water bottles we distributed. The event brought a fantastic turn out!

We participated in this year's Student Resource Fair on August 30, 2012. Throughout the day, we provided various information regarding sustainability initiatives at the college, like single stream recycling, Rocko's Review, Cigarette Litter Prevention Program, water conservation, and other helpful tips. We also provided several giveaways, like water bottles, pencils, pocket ashtrays, and notepads. On October 24, 2012, Jefferson participated with University of Louisville at their Campus Sustainability Day event, where students learned what various campus and community groups are doing to create a sustainable revolution. We gave away some green freebies and great information to all who attended! In conjunction with Campus Sustainability Day at UofL, we also held the Jefferson Sustainability Photo Contest: If you believe the power of images changes the way we think and feel, then why not try your hand at capturing an image that describes sustainability at Jefferson? The Jefferson Sustainability Photo Contest intends to celebrate and inspire efforts to make Jefferson more sustainable. Not only does the photo contest provide a space for creativity and imagination, but it also provides an opportunity to raise the profile of green activities at all of Jefferson's campuses, enabling everyone to share their ideas of what a greener Jefferson might look like. 1st Place: Don Poe (Carrollton Campus), 2nd Place: Caroline Reisner and the GeoAdventurers (Carrollton Campus), 3rd Place: Zachary Fisher (Southwest Campus).

The University of Louisville and Jefferson Community & Technical College co-hosted the 6th annual Campus Community Partnerships for Sustainability conference. CCPS brings together students, faculty, staff, administrators, and community partners from around Kentucky and the region to network, celebrate our achievements, and exchange ideas on the best practices in sustainability. This year, CCPS cross-pollinated with Bluegrass Bioneers to create four days rich with ideas and inspiration, bridged together with an unforgettable Interdisciplinary Sustainability Symposium at the University of Louisville.

The four day conference brought together conversation about building resilient, just, and sustainable societies in the face of multiple global crises including climate change, energy and resource constraints, ecological collapse, economic melt-down, and massive disparities in human health, wealth, and happiness. The conference brought together upwards to 300 registrants for this fun-filled weekend, with a great group of presenters from KCTCS: Elizabethtown Community and Technical College, Madisonville Community College, Jefferson Community & Technical College, and Somerset Community College. Big thanks to the Jefferson Community and Technical College Culinary Arts Program. Jefferson has been recognized as being one of only ten schools in the nation to achieve and maintain accreditation with the American Culinary Federation for 25 consecutive years.

On November 15th each year, thousands of organizations hold events to educate people about recycling resources in their community. Through recycling collection drives, demonstrations, competitions, tours, displays and other special events, citizens encourage each other to increase their recycling at home, at school, in the office and in their communities at-large. As the national steward of America Recycles Day, Keep America Beautiful provides this vast network of volunteer organizers in every state with resources and promotional materials to support their local America Recycles Day events. Jefferson will be showing our support by hosting events on all campuses to encourage students and employees to take the pledge to recycle and learn more about recycling initiatives at the college. Jefferson participated once again in America Recycles Day by offering recycling resources and giveaways on the Downtown, Shelby, Southwest, and Carrollton campuses.

In the fall of 2012 and the spring of 2013, Maggie and Pamela helped coordinate and host the Partnership for a Green City and Brightside Environmental Youth Summit. Approximately 300 public and private school student leaders learned how to transform their schools to be “green,” working within a state education initiative called Kentucky’s Green & Healthy Schools Program (for more information: <http://greenschools.ky.gov/>). This interactive program challenges students to investigate sustainability issues and promote individual responsibility for the earth and their school. Youth Summit empowers students to examine their personal choices and address ways in which they can make small changes in their daily living that will result in improved health and environmental impact at school, at home and in the Louisville metropolitan area. Participants develop the leadership skills and strategies necessary to implement environmental stewardship principals in their schools in areas of energy consumption, green spaces, transportation, single stream recycling/solid waste, leadership development, and storm water education.

We are working on Jefferson’s Sustainability Framework draft to the System’s Office. The framework communicates sustainable development goals, progress, and achievements, and provides benchmarking opportunities with other KCTCS colleges. In addition, the framework ensures that sustainability is implemented across KCTCS while providing the college with maximum flexibility to develop a unique sustainability plan and to implement our plan at a pace suitable to our college. The final draft is due April 30, 2013. All local plans will be submitted to the KCTCS Board of Regents in June.

Partnership Teams, Goals & Objectives

The Partnership for a Green City has eight team that meet on a regularly scheduled basis. The teams are listed below, along with their missions, goals and objectives. Seven of the teams are content specific teams that are generating collaboration among the partner organizations and planning projects we can work on together. The Steering Committee oversees the Partnership direction along with the Director, dealing with populating teams with members, ensuring participation, and monitoring team progress. The Steering Committee tracks team goals and objectives to see what works well so we can promote our achievements. The Steering Committee also oversees the spending of operational funds provided to the Partnership under the memorandum of agreement.

Green Buildings Team

The Green Buildings Team is the successor to the original Energy Use Team and its mission is to seek green building and renovation opportunities as well as energy efficiency measures and green infrastructure opportunities. The team continues to use the Climate Action Report recommendations to seek collaborative grant-funded research projects.

The current goals and objectives for the team are:

Green Buildings Team	Research/Demonstration Project with LED lighting across partners	
Green Buildings Team	Promote Behavior Change for Energy Efficiency	
Green Buildings Team	Energy Efficient Lamps RFP	Had lighting vendor attend to discuss various types of high efficiency lighting. Had lighting manufacturer discuss pending lamp efficiency legislation regarding T12 lamps.
Green Buildings Team	Investigate the possibility of a cool roof or white roof policies at the Partner organizations	Had a roofing contractor come in and present on cool roofs.

This team is working on the RFP for energy efficient lamps since we are all purchasing similar energy efficient lighting. This RFP will likely go out in early 2015 because of the complexity of gathering the lamp types used across the partners. The idea would be to prevent the purchase of inefficient lighting. The team has also had a presentation by Windstream Technologies regarding a combined solar panel with three micro wind turbines and is planning a visit to the manufacturing facility and will be gauging the possibility of some pilot projects across each partner organization.

Green Transportation Team

The Green Transportation Team is the successor to the original Green Fleets team and its mission is to ensure that the partners have the right-sized vehicles, hybrid electric and alternative fuels vehicles, plug-in stations, alternative transportation options (public transportation, walking and biking availability) as well as promoting biofuels use.

The current goals and objectives for the team are:

Green Transportation	Promote Carpooling - can we research effect of Zimride and Car Sharing and expand?	
Green Transportation	Promote Transportation behavior change	
Green Transportation	Promote Bike Share network	
Green Transportation	Promote Anti-Idling	

The last few meetings have included discussions of pedestrian and bicycle safety in Louisville and how the partners may promote pedestrian and bicycle safety in the community in addition to promoting ridership on public transportation. An idea has been mentioned to create some interesting public service videos for use on Metro TV and possibly other TV stations in the Louisville Area.

Green Purchasing Team

The Green Purchasing Team includes not only the four partners, it also includes the Metropolitan Sewer District, the Louisville Water Company, the Transit Authority of River City and the Louisville Regional Airport Authority. As a group, the Purchasing Directors seek greener products, such as recycled paper, biofuels, energy efficient lighting, green cleaning supplies, etc. The team also works with green purchasing policies, RFP language and contract language. We are finding purchasing efficiency buying products and services together.

The goals and objectives of the team are:

Green Purchasing	Purchasing Standards of what we can buy -	
Green Purchasing	How do we reduce packaging on what we purchase	
Green Purchasing	ink & toner cartridge recycling	
Green Purchasing	Green Purchasing Standards - who is doing what?	
Green Purchasing	New Purchasing Memorandum of Agreement out for comment	Louisville Metro taking the lead – in process

This team works together when the different teams bring them joint purchasing RFPs. The third Purchasing MOA is in its final stages of signatures. The Purchasing Directors that populate this team also look at joint purchasing opportunities that are outside the green purchasing area. While we are on our third post-consumer recycled content paper contract, we rebid and contract when the market appears to allow additional money savings. The members of this team can discuss pretty much any purchasing contract and see who is available to participate on it. Over the past several years, the group has joint contracts for:

2014 – Total Materials Management Contract (single stream recycling with composting or commercial wet/dry with composting)

2014 – Containerized Waste Disposal Contract (dumpster contract)
 2014 – 30% post-consumer recycled content paper (over 500,000 cases/year)
 2013 – Restroom paper with recycled content
 2013 – Green Office Supplies
 2012 – Green Cleaning Chemicals
 2012 – Road Salt
 2012 – Electronics Recycling
 2011 – Office Supplies
 2011 – Hazardous waste disposal
 2011 – Ink Jet and toner cartridge recycling
 Mulch and landscaping materials – not sure what year.

Additionally, all the partners and quasi-governmental participants are purchasing green office furniture, recycled carpet or carpet squares, and are working to not dispose of old equipment in the landfill. Additionally, construction and demolition waste is recycled under LEED guidelines.

This team also discusses other more obvious ways to green the supply chain. For example Jefferson Community & Technical College participates in black Mondays with its Office Products provider and does not accept deliveries on Monday. JCTC also enforces a purchasing minimum of \$50.00 per order on office products for delivery.

Total Materials Management Team

The Total Materials Management Team is the successor to the Waste/Recycling Team that was original to the Partnership. The team's mission is to decrease the waste leaving the partners, increasing internal recycling, expanding recycling options and finding alternatives to polystyrene.

The goals and objectives of the team are:

Materials Management	Total Materials Management RFP	Contract in place - complete
Materials Management	Containerized waste Disposal RFP	Contract in place - complete
Materials Management	Promote Behavior Change for zero waste	
Materials Management	Green versus white tipped fluorescent bulbs - shouldn't they all be recycled?	
Materials Management	Start working on C&D Recycling RFP	
Materials Management	Other pertinent RFPs for battery recycling	

The Team has worked diligently this year completing two major RFPs in Total Materials management which includes single stream recycling or commercial wet/dry along with composting and a containerized waste disposal. Vendors were selected and contracts were issued. Planning is underway for RFPs for joint recycling of fluorescent lamps and ballasts; batteries of all types; and Construction and Demolition Debris recycling.

Behavior Change for Sustainability Team

The mission of the Behavior Change Team is to seek ways to create sustainable behavior change from employees and students at the Partner organizations. We are creating a universal campaign across the partners targeting performance improvement on items with measurable outcomes.

The goals and objectives of the team are:

Behavior Change Team	Develop a list of 3 - 6 behaviors that all employees and students are expected to conduct	Created by team
Behavior Change Team	Develop a transportation survey to go to all employees and students on how they get to work/school and to identify barriers to alternative transportation modes	Created by team
Behavior Change Team	Create a weekly Green-Tip that can be distributed to all employees and students of the Partnership	Created by team
Behavior Change Team	Use MyActions as a way of educating employees on green behavior, help reshape social norms, and provide incentives for those taking sustainable actions.	Created by team

Institution	Focus Area	Behavior Change Target
UoI	Climate Change	1. Next 3 focus areas support this focus area
	Energy Use	1. Wise use of lights, appliances and powered devices (do not turn on if not needed) 2. Unplug vampire energy devices 3. Turn off lights and computers when finished 4. Use the stairs instead of elevators (Stairway Project being implemented as part of Get Healthy Now program)
	Transportation	1. Increase use of public transportation (TARC) 2. Walk or bike to and from campus 3. Decrease air travel to conferences, meetings, etc.
	Reduction, Reuse, Recycling Waste	1. Increase composting of "wet waste" 2. Reduce consumption of materials, especially one-time-use materials, e.g. plastic bottles 3. Increase level of recycling
Louisville	Transportation	1. Increase use of public transportation (TARC)
	Public Health	1. Promote participation in Get Healthy Programs 2. Decrease idling of vehicles
	Energy Use	1. Wise use of lights, appliances and powered devices (do not turn on if not needed) 2. Unplug vampire energy devices 3. Turn off lights and computers when finished 4. Use the stairs instead of elevators
JCPS	Reduction, Reuse, Recycling Waste	1. Increase level of recycling in classrooms
	Energy Use	1. Turn off lights and computers when not in use 2. Unplug energy vampire devices
	Public Health	1. Increase use of "green" cleaning supplies 2. Decrease idling of vehicles 3. Increase opportunities for students and employees to work in school gardens and have access to locally grown foods 4. Increase opportunities to walk on trails and tracks to improve health and to increase natural experiences
JCTC	Public Health	1. Increase consumption of health food options by reducing unhealthy foods in vending machines while increase local food options in the Café, Farmers' Markets, Food Trucks, etc. 2. Increase level of physical activity among students and employees through 30/30 program (30 minutes of exercise a day for 30 days) and taking the stairs
	Energy Use	1. Eliminate use of electrical resistance space heaters 2. Turn off lights and computers when finished 3. Unplug vampire energy devices



The Team is working to develop an action plan and will soon be moving on to implementation planning.

Climate Instability Team

The Climate Instability Team is a successor to the original Climate Change Committee, except it is comprised of employees of the partners. Its mission is to determine ways that the partners can deal with climate instability (adaptation and resilience) and reduce the partner organizations' impact on local climate change. The team seeks ways that the partners further reduce our carbon emissions.

The goals and objectives of the team are:

Climate Instability Team	Create adult education opportunities for after-hours presentations on climate instability, stormwater, energy efficiency, alternative fuels, etc.	
Climate Instability Team	Work toward sustainability strategies among the partners – there is an interactive app for that...find sustainability projects and identify them within our organizations and in the city – Identify with a Green Logo – Environmental education opportunity for what we have already done.	
Climate Instability Team	Green Roofs for Healthy Cities Workshop. Where is it appropriate for a green roof? Where does a green roof work? Pick a couple of buildings to consider what if? Get MSD to talk about their incentives. Focus it on commercial developers here in Louisville. Louisville Energy Alliance may want to be involved with property owners.	
Climate Instability Team	Continue working through the climate action report recommendations to see what needs attention.	

The team is planning a Green Roofs/Green Architecture Symposium for the spring of 2015 and continues working with the original climate action report recommendations to maximize success of as many recommendations as possible. The team is working on identifying logical partners, such as the Louisville Sustainability Council or the US Green Building Council to expand our professional development opportunities outside the partner organizations to others who can effect change in the city and the region.

The first goal/objective of this committee has also led the Steering Committee of the Partnership to create a speaker's bureau, harnessing the brain power and presentation skills of content experts from the four partners to provide knowledge and education to interested groups in the community.

Urban Heat Island Team

The mission of the UHI team is to work with the partners organizations to facilitate research in the UHI effect while finding and implementing mitigation projects. Using the model of leadership by example, the partners will lead the UHI efforts in the community and provide educational and behavior change opportunities.

The goals and objectives of the team are:

Urban Heat Island Team	Establish a monitoring system to measure the urban heat island effect	Need to finalize locations in concert with Brian Stone's study for the City
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Urban Heat Island Team	Identify a baseline for UHI	Keith Mountain is finalizing some data that should help
Urban Heat Island Team	Plan actions to address UHI effect with different mitigation strategies	mitigation strategies should have a cost benefit analysis
Urban Heat Island Team	Identify needed research	What is the origin of UHI in Louisville

The UHI Team is planning an Urban Heat Island workshop to educate the partnership employees and students as well as the community and will likely work with the Climate Instability team on the Green Roofs/Green Architecture Symposium. The Partnership is currently planning our fall 2015 Youth Summit with a focus on the urban heat island effect and has connected UofL researchers with Jcps curriculum& instruction and facilities personnel to discuss siting meteorological stations at middle and high schools

Steering Committee

The Steering Committee determines the direction and focus of the Partnership in consultation with Mayor Fischer, Dr. Hargens, President Ramsey and President Newberry. The Steering Committee works closely with the director on a day-to-day operations, the budget and partnership projects. This committee also reviews the work of the teams and how they are achieving their goals and objectives.

The Steering Committee also does strategic planning and provides historical perspective in the context of the Partnership's work.

	Goal	Resources/Information Needed
Steering Committee	Youth Summit - planning for and Urban Heat Island Youth Summit in Fall 2015 Do we want to repeat the Food Systems Youth Summit for Fall 2015 as well?	Determine core content standards and site to us to create a save the date form to get out to teachers. Work with Teddie to determine the possibility of another Food Systems Youth Summit in 2015
Steering Committee	What projects do we want to work on with the Green Institute and can we find ways to help fund the partner organization attendees?	Each partner should suggest 2 projects Each partner should send one person to next GI and find ways to fund the ~\$1200 cost. How do we want to collaborate?
Steering Committee	Plan some event for the 10th anniversary of the PGC in October	Event has been rescheduled a couple of times, but will happen 12/10
Steering Committee	Evaluate the proposed teams in the parking lot later in this document to assess whether there is a need or if they are duplication.	Parking Lot created
Steering Committee	Internships at any of the Partners?	Does any partner need Interns? We can connect with undergrad and grad students
Steering Committee	Climate Action Report 5-year update.	Need GHG emission data from partners in addition to other data about what has occurred in the past five years.

Steering Committee	Fund Joan Riehm Award through donations or an endowment locally.	Go to local businesses who may be interested in making a donation to fund the award each year in perpetuity
Steering Committee	Strategic Plan review and update	Underway currently
Steering Committee	Collaborate with Cincinnati Partnership	Seeking a meeting date as soon as possible.
Collaboration	JCTC has been working with JCPS, UofL, and Bellarmine to create a 2+2 AA/AS in Sustainability	JCTC has 2 + 2 degree program set. UofL is proposing a MA/MS in Interdisciplinary Studies with a concentration in Sustainability and a BA/BS in Sustainability
Completed Goals		
Steering Committee	Create Urban Heat Island Team	Tentative Mission: This team will work with the partner organizations to facilitate research on the UHI effect while finding mitigation projects. Using our model of leadership by example, the partner organizations will lead UHI efforts and provide educational and behavior change opportunities.
Steering Committee	Create Climate Instability Team for how the four partners can reduce carbon footprint	Mission statement, team members, we will ask Michelle King from APCD to chair and work to set up a first meeting 11/22/13.
Steering Committee	Establish Behavior Change for Energy Efficiency, Transportation and Recycling	Behavior change is a new area for us, how do we proceed? Russ will take a first cut at a potential mission statement. Russ Barnett will chair the committee, the members are determined and we will schedule a meeting before the Thanksgiving break. 10/22/13
Steering Committee	Complete Committee Assignments	Do we have the right people on the existing teams, is there anyone we need to add or are there people who have left who we need to replace? Four teams on hold in the Parking lot!
Steering Committee	Partnership MOA signatures	Signed by JCPS, JCTC, and UofL with a scanned copy to all members 8/12. To Maria on 8/13 for Louisville Metro signatures. Maria has processed and forwarded for signatures
Steering Committee	Set up meeting with the four leaders in conjunction with the Youth Summit if possible	Need Schedulers for the four leaders to provide us with availability for each leader on December 18 at 1:00 to see the closing session but for sure for a 1:30 - 2:30 meeting.

Steering Committee	America Recycles Day Flyer Distribution for contest ending November 15	Brent will get the prize packages together if the SC members will help get the word out
Steering Committee	Review Joan Riehm Award and determine any changes we want to make to the award and the application process.	How do we want to evolve or change the award nomination process and do we change the award in other ways?
Steering Committee	What behavior change projects do we want to undertake at the four partner institutions using Paul Salmon and Russ Barnett's Mindfulness and Sustainable Change class?	Designate on person from each partner on the behavior change team to lead this effort.
Steering Committee	Pilot composting funding program for the 4 partners. Each would conduct a pilot to test how they could increase composting of materials, thereby reducing the amount of their wet waste.	UofL Dorms, JCTC Culinary Arts, Louisville Zoo - for Organic Waste Carts and JCPS for the Tumblers although there may be some available for others to use.
Steering Committee	Joan Riehm Application - is there anything we want to change to make it an easier application process?	
Steering Committee	Appointment letters for teams...created and distributed to steering committee for distribution within each partner organization	
Steering Committee	Promote myActions as a behavior change opportunity	Need to get the leaders of the four organizations on board

Over the past several years, the Partnership has worked with Brightside to host Environmental Youth Summits. Several have been on Kentucky's Green and Healthy Schools inventories with mentors providing education with hands-on experiences. The students are selected by their schools as leaders who can return and lead initiatives on each school campus. The following pictures from recent summits are in order:

1. Students doing a dumpster dive or a trash mob to determine recyclables in the trash.
2. Green Spaces – students planting trees
3. Students at the vendor fair – in this picture they are with the Root Cellar
4. Students from Cane Run Elementary demonstrate the effect that even elementary students can have when they are dedicated to a cause.





In October of this year, we partnered with Teddie Mower and the Healthy Foods Local Farms Conference to introduce middle and high school students to a Food Systems Youth Summit. Breakout sessions for the day included Food Justice, Food Distribution, Biodiversity, Food and the Environment, Permaculture and Food Security. It is a great way to work with JCPS, local private and parochial as well as regional school districts to augment classroom work with such hands-on experience. Our mentors and volunteers also volunteer to go to the schools and work with students on their projects of choice. We have diligently worked to link the lessons to core content at the schools to ensure that the teachers can use the experience to back up lessons in the classrooms. We are constantly looking for teachers who would like to work on the Youth Summit in a planning capacity and we try to provide the students with an opportunity to compete for some prize or project award to further their curricular efforts.

Conclusions

The Partnership continues working on sustainability issues across the four partner organizations. We have changed purchasing markets – like solar installations, energy savings performance contracts, green office supplies, or green cleaning chemicals - by purchasing together or sharing experience. We are changing behavior by communicating the need to be better stewards. We can all conserve energy, recycle and be idle free.

Thanks to our four leaders, Dr. Ramsey, Mayor Fischer, Dr. Hargens and Dr. Newberry and our Steering Committee (Allan Dittmer, Russ Barnett, Mike Mulheirn, Karen Branham, Maria Koetter, Michelle King, Pamela Dumm and Bill Nowak) for their support and emphasis on collaboration. Thank you to the participants on all of our teams and events. We could not achieve anything without many interested participants that champion sustainability in addition to their regular jobs. They exert subtle pressure (okay, sometimes it is subtle) on their coworkers or students to be green. Collectively, these little actions add up to big results.

The Partnership for a Green City still has work to do – change is a long-term process and sustainability change requires embedding new behaviors in our culture. There are some great sustainability initiatives happening in Louisville in public and private employers, nonprofits, churches, commercial buildings, etc. The Partnership and our leaders are committed to sustainability and endeavor to inspire and promote a sustainable green city through innovation, collaboration, action, and measurable progress.

Recommendations from the report	Current Activities Addressing Recommendation	Category	Comments
Implementation Recommendations			
1: PGC should adopt this Report as its guidance and its Partners should use it to prepare Climate Action Plans (CAP) for their organizations. These plans should include funding resources, implementation timelines and metrics to monitor the progress of initiatives towards achieving their emissions reduction goals.	University of Louisville has a Climate Action Plan. Louisville Metro Government just released a Sustainability Plan, JCPS and JCTC are working on a variety of issues internally. JCTC developing a Climate Action Plan under the AASHE STARS Framework. Policy decisions pending on parts of recommendation.	2 – In process	Key 1 – Complete 2 – In process 3 – Feasible – under review 4 – No progress 5 – Economically not feasible 6 – Not done
2: PGC should have a joint event to present this Report to the public.	Completed.	1 - Complete	
3: PGC should ask the full committee to meet quarterly to track goals, make recommendations, and reconvene working groups as new information becomes available.	Policy decisions pending. Questions regarding who will do the actual tracking? Partnership Steering Committee has taken on monitoring with the Partnership Director.	3 – Feasible – under review	
4: PGC entities should each have public stakeholder processes established as they develop their action plans based on the Climate Change Committee's recommendations.	Policy decisions pending –stakeholder involvement is determined by each partner organization.	3 – Feasible – under review	
5: PGC should evaluate the economic impact of business-as-usual practices versus implementing the actions in their CAPs.	On-going as projects arise and some recommendations need broader assessment	2 – In process 3 – Feasible – under review	
6: PGC should tie all of the recommendations to outreach and education themes.	Completed.	1 - Completed	
7: PGC should provide an annual climate change progress report to the public.	Policy decisions needed to determine frequency. Partnership strategic plan says they will report annually, including climate progress.	2 – In process	

Greenhouse Gas Emissions Inventory Recommendations			
8: PGC should conduct GHG inventories biannually through 2014 and then reevaluate frequency by monitoring the impact of data and methodology changes from existing or pending programs or legislation.	Who will complete and pay for the work? Should build proficiency within LMG to achieve cost effectiveness long term. Can Speed Students/Professors help? UofL has completed emissions inventories 2009 (benchmark) and 2011 under the American College & University President Climate Commitment (ACUPP). JCTC is working on a GHG emissions inventory.	3 – Feasible – under review	PGC has one employee which makes this recommendation difficult.
9: If new tools and methodologies or more accurate data sources are identified, subsequent inventory efforts should incorporate these developments as needed and applied retroactively to prior inventories as necessary to make consistent year to year comparisons. For instance, if data from the Federal Energy Regulatory Commission (FERC) forms are refined or a more accurate source of data is identified this could improve the residential, industrial and commercial sector data. Another example of an improved tool for the transportation sector is EPA's Motor Vehicle Emission Simulator (MOVES).	Who will be performing the work overall? APCD mobile modeler was trained on MOVES (July 2009). Can Speed Students/Professors help? Can this be a part of an education process where students who are interested in emissions inventories could create a spreadsheet that accurately tracks emissions of the partner organizations?	3 – Feasible – under review	
10: LMG should maintain its ICLEI membership in order to receive support, guidance and recognition for its efforts to reduce GHG emissions.	Note - ICLEI tools were used on the GHG inventory. We are unsure if LMG has maintained ICLEI membership with budget issues.	3 – Feasible – under review	
11: LMG should investigate participation in The Climate Registry and evaluate how that may assist in future GHG reductions.	Policy decisions are needed. Costs and responsible parties need to be identified.	3 – Feasible – under review	
12: PGC entities should evaluate opportunities as programs are developed to document GHG reductions as a monetized funding source for future initiative implementation.	These evaluations are being performed in the three partner entities.	2 – In process	
13: PGC should create a repository for future GHG emissions data submissions.	APCD database being designed with data field for CO ₂ emissions.	2 – In process	

14: PGC should identify and implement criteria for what additional sources should be quantified in future inventories (data availability, feasibility and quantity of emissions reductions).	Policy decisions pending. Partnership has only one employee with volunteer participants at partner organizations.	4 – No progress	Ties to recommendation #8
15: PGC should work with members of the industrial sector to develop a plan to further refine the Sector information in the community inventory.	Policy decisions pending. Partnership does not have employees to accomplish this.	4 – No progress	
16: PGC should seek refined GHG emissions projections using sector specific factors in addition to population growth.	Policy decisions pending. Partnership does not have employees to accomplish this.	4 – No progress	
17: PGC should encourage local companies to calculate their GHG emissions reductions.	<p>Kilowatt Crackdown partially satisfies this recommendation. Low cost possibility.</p> <p>LG&E was a member of EPA's voluntary Energy STAR and SF6 Emission Reduction Partnership programs and is actively calculating emission reductions achieved from participation. LG&E was also incorporating hybrid vehicles into the fleet and have expanded energy efficiency efforts, from which emission reductions can be estimated where appropriate. APCD and Partnership are represented on the LG&E DSM Advisory Committee.</p>	2 – In Process	
18: PGC should quantify fuel usage (e.g., propane, wood) in addition to natural gas.	Need resources to assess community use.	3 – Feasible – under review	
19: PGC should encourage expansion of demand side management and utility energy efficiency programs and quantify related reductions to evaluate program effectiveness.	<p>E.ON Commercial Rebate Program (DSM expansion).</p> <p>Low cost possibility. LG&E received approval in March 2008 to implement DSM and Energy Efficiency programs with an average spend of \$25/annually through 2014.</p>	2 – In process	
20: PGC should coordinate the timing of data collection with reporting agencies for future GHG inventory updates.	Policy decisions pending. Could this be done with Speed Professors and students?	3 – Feasible – under review	

21: PGC should evaluate emissions and available data sources to determine levels (de minimis?) of emissions from marine vessels—port and underway.	Policy decisions pending.	4 – No progress	
22: PGC should evaluate emissions and available data sources to determine levels (de minimis?) of emissions from railroad equipment—rail yard and hauling.	Policy decisions pending.	4 – No progress	
23: PGC should evaluate emissions and available data sources to determine levels (de minimis?) of emissions from refrigerant usage.	Policy decisions pending.	4 – No progress	
24: The Partners should demonstrate leadership by evaluating emissions and available data sources to determine levels (de minimis?) of emissions from refrigerant usage.	Policy decisions pending.	4 – No progress	
25: The Partners should demonstrate leadership by evaluating emissions and available data sources to identify and quantify Scope 3 emissions where possible and determine levels (de minimis?) of emissions, e.g., from employee/student commutes.	Policy decisions pending.	4 – No progress	
26: The Partners should include emissions reduction potential in prioritizing future project evaluations.	Low cost possibility. Need procedure or model for uniform quantification. This has been used individually in the Energy Savings Performance Contracts at all four partners and should be used in all sustainability projects.	2 – In Process	
Local Impacts Recommendations			
27: The Partners should collaborate on preparedness planning used to develop and implement adaptive strategies, which at a minimum would include a heat stress action plan that includes targeted interventions for high-risk groups.	PGC reviewing the committee structure to see where this may best fit. Part of strategic plan. PGC sponsoring a Behavior Change for Sustainability Workshop May 16 & 17 which will focus on climate change adaptation or urban heat island effect.	2 – In Process	

28: The Partnership should collaborate on asthma action plans that monitor changes in asthma incidence, utilize strategies to enhance adaptation to changes in airborne allergen levels, and provide educational messages for both susceptible persons and professional health care providers.	Health Dept. compiles Asthma data. UofL School of Public Health and Information Science and JCPS have had asthma projects together.	3 – Feasible – further action under review	
29: The Partners should support the maintenance of existing strategies for managing air pollution and the implementation of new control strategies as they become available.	Air Quality Plans (SIPs); KAIRE.	3 – Feasible – under review	
30: The Partners should develop adaptation strategies that ensure persons at risk are identified and that effective intervention programs are available to populations vulnerable to poor air quality.	KAIRE, Asthma Awareness Walk. PGC reviewing committee structure to see where this fits.	3 – Feasible – under review	
31: The Partners should support the maintenance and adaptation of the existing preparedness infrastructure. This offers the best strategy of managing severe weather-related health impacts.	Natural Hazards Mitigation Planning team can address some issues. MSD has had a Wet Weather team in place with respect to infrastructure.	3 – Feasible – under review	
32: The Partners should limit the impact of changes in vector distribution and the introduction of new pest agents through the effective maintenance and minor modification of robust public health programs. Such programs, which include existing disease surveillance and vector control programs, may need modification to assure that emergence of new diseases or vectors can be detected and appropriate programs implemented.	Program(s) in place at Health Department with assistance from the UofL School of Public Health and Information Sciences.	1 - Complete	
33: The Partners should promote trade rules and practices that foster sustainable biodiversity.	Partners are working on this to the extent practical.	2 – In process	
34: The Partners should improve education and public awareness about the value of biodiversity.	Lawn Care for Cleaner Air; Park Initiatives; Brightside; Sustainable City Series.	2 – In process	

35: The Partners should improve park initiatives by the University of Louisville and JCPS campuses and all departments of Louisville Metro Government (such as Brightside and Metro Parks) to encourage native species.	Lawn Care for Cleaner Air; Park Initiatives; Brightside; Sustainable City Series; Olmstead. All partners encourage the planting of native species and all are working to improve park initiatives adjacent to their properties.	2 – In process	
36: The Partners should work to protect the remaining wetlands in Jefferson County.	MSD has program.	2 – In process	
37: The Partners should promote agricultural best management practices that reduce pollution and sediment runoff into aquatic ecosystems.	This is not easy since none of the Partners have agricultural programs.	4 – No progress	
38: The Partners should adopt a reduced food miles traveled purchasing policy.	Regional Farmers Market Feasibility Study, Community Farm Alliance, Food Literacy Project. All four partners are working to secure more locally sourced foods for dining facilities as well as JCTC's Culinary Arts Program.	2 – In process	
39: The Partners should support educational programs, which use research to facilitate the sustainability of the horticultural and agricultural sector.	Lawn Care for Cleaner Air; Park Initiatives; Brightside; Sustainable City Series, Food Literacy Project, CFA. Sustainability 101, dumpster diving, energy auditing and the Youth Summit. Publicize and promote through websites like go green Louisville and PGC as well as social media – the PGC has a Facebook page.	2 – In process	
40: The Partners should avoid using pesticides known to kill pollinators.	Public Works, Parks, Housing Authority. Can Purchasing consortium integrate into their Procurement policies? JCPS uses integrated pest management.	2 – In process	
41: The Partners should avoid using exotic, invasive plant species.	LDC Prohibited Plant List (Appendix 10B). Needs information shared with agencies & enforcement. Cooperative Extension agents? Native planting plans in the Partner organizations	2 – In process	
42: The Partners should promote water conservation practices such as drip irrigation.	Reasonable to integrate into programs through energy consumption and water conservation. Water conservation has been addressed in the performance contracts at the four partner	2 – In process	

	organizations and continues with improved irrigation processes. The partners are all seeking ways to provide more efficient irrigation with less water loss.		
43: The Partners should encourage food producers and gardeners to select plant and livestock species that are more naturally resistant to diseases, pests and climatic variances, including droughts and excessively wet periods.	Lawn Care for Cleaner Air; Park Initiatives; Brightside; Sustainable City Series. Local foods/fresh foods initiative → Economic Dev. Should develop protocol, Cooperative Extension Service should be involved in this. Each partner is working toward this on their own properties.	2 – In process	
44: The Partners should encourage participation with programs that assist farmers in improving the energy efficiency of their operations.	Local foods initiative – Economic Development should develop protocol.	3 – Feasible – under review	
45: The Partners should promote programs to the general public that connect people with locally produced products.	Regional Farmers Market Feasibility Study, Economic Development has an expediter to work with local farmers to identify preferences for dispersing foods, Mayor’s Healthy Home Town, Econ. Dev. Fresh Foods Initiative, EPA R4 website resources, Healthy in a Hurry, Kentucky Proud resources. UofL, JCTC and JCPS have increased locally sourced foods.	2 – In process	
46: The Partners should update design standards for stormwater conveyance systems and erosion control structures.	MSD consent decree implications? UofL, JCPS, LMG and JCTC are all working with MSD on stormwater conveyance projects.	2 – In process	
47: The Partners should continue to encourage property owners to reduce sewer overflows by disconnecting downspouts and sump pumps, redirecting downspouts to encourage infiltration into yards or gardens, and to have private plumbing inspected and repaired if damage is found.	MSD – Project Win, MSD consent decree (Brian Bingham and Lori Rafferty). Partners can promote this internally to the 27,500 employees of the partner organizations through web sites, social media and professional development training.	2 – In process	
48: The Partners should encourage water conservation programs and stormwater reuse, such as cisterns and rain barrels, to minimize water demand.	MSD – Project Win, MSD consent decree (Bryan Bingham and Lori Rafferty), Water Company Wise Water Use program? Similar to above with employees.	2 – In process	

<p>49: The Partners should continue to encourage "green" construction methods to increase infiltration and thereby reduce water temperatures and increase water quality.</p>	<p>MSD – Project Win; 444 green roof; Library? UofL and JCPS have green roofs and green infrastructure projects. All four partners working on green construction with new construction and renovation projects.</p>	<p>2 – In process</p>	
<p>50: The Partners should expand existing blue line stream buffer to include intermittent blue line streams.</p>		<p>4 – No progress</p>	
<p>51: The Partners should evaluate wetland function, restoration and protection efforts.</p>	<p>UofL Streams group in Biology</p>	<p>2 – In process</p>	
<p>52: LMG should adopt a post-construction erosion control ordinance.</p>		<p>4 – No progress</p>	
<p>Energy Efficiency and Renewable Energy Recommendations</p>			
<p>53: LMG should require an energy rating disclosure for all energy-consuming buildings in Jefferson County at the time they are placed on the market.</p>	<p>Large undertaking with broad implications for multiple stakeholders in the community. Should be considered as a part of Sustain Louisville.</p>	<p>4 – No progress - examining at feasibility</p>	
<p>54: (Similar to Recommendations 94, 102 and 114) LMG should provide incentives for builders, contractors and building owners to renovate or construct buildings to a green standard. These buildings would include features such as energy efficiency that goes beyond state energy code requirements, sustainable use of water and building materials and/or use of renewable energy resources. Examples of possible incentives include expedited permit processing, waived fees and property tax rebates.</p>	<p>Non-profit Energy Audit Grants; Non-profits Loan Loss Guarantee.</p> <p>Refer to No. 102 Further Explanation column that highlights the LG&E Residential New Construction Program.</p> <p>This program also offers rebate incentives to partially cover the cost to receive Energy Star certification on the new homes. LG&E will implement a Residential New Construction Program as a part of its DSM/Energy Efficiency plan that will partner with homebuilders associations within the state of Kentucky to adopt and implement the Energy Star® new homes energy efficiency program. New home inspections are required under Energy Star® guidelines to be completed by Home Energy Rating System (HERS) qualified raters, the number of which in Kentucky is</p>	<p>1 - Complete</p>	

	<p>inadequate. To promote the entry of new raters into the market, LG&E will provide equipment purchase incentives to new raters who complete HERS training, pass the national exam, provide proof of insurance and purchase testing equipment. In addition, LG&E plans to sponsor educational seminars, training classes and reference materials for Raters and Builders. As noted earlier, the PSC issued an Order in Case No. 2007-00319 approving LG&E and KU's request to expand their energy efficiency program offerings. In addition to education and infrastructure support, the Residential New Construction Program will create sufficient supply to spur growth and support for service to over 4,400 residential sites for LG&E and KU over the next seven years. The plan includes an average annual program budget of \$1.1 million for the period of 2008-2014 and planning is in the works for the next filing.</p>		
<p>55: (Similar to Recommendation 95) The Partners should lobby the state legislature in the following areas: (1) stronger energy standards in state building codes, (2) the ability for local governments with local code enforcement capability to go beyond state standards in energy codes, (3) state tax credits for highly energy efficient buildings, (4) tax code adjustments for accelerated depreciation on energy efficient equipment, and (5) the establishment of a fund for local governments to implement energy efficiency projects.</p>	<p>Mayor would need to lead this. Large undertaking with broad implications. Some aspects could be adopted more frequently and in total. Enforcement outside of cities inconsistent. Cities are restricted with the inability to requiring exceeding minimum standards. #3 does not exist, #4 may have some ability, #5 ARRA funds. US Green Bldg. Council is watching what is happening on the state level. Covered under advocacy in the partnership strategic plan</p>	<p>3 – Feasible – under review</p>	
<p>56: (Similar to Recommendation 106) LMG, working with community resources, should establish a revolving loan program to provide low-cost financing to commercial and residential energy efficiency and renewable energy projects.</p>	<p>Green Jobs Revolving Loan Fund; Non-profit Energy Audit Grants; Non-profits Loan Loss Guarantee. EECBG Grants covered for a couple of years under the stimulus package.</p>	<p>2 – In process</p>	

<p>57: LMG should examine its historic buildings preservation framework and work to remove barriers to increasing the energy efficiency of these buildings.</p>	<p>Replacement windows guidelines may need to be updated?</p>	<p>3 – Feasible – under review</p>	
<p>58: LMG should investigate and work to remove barriers and provide incentives to stimulate greater adoption of combined heat and power systems (CHP). This includes issues of appropriate environmental regulations, utility interconnection policies, utility tariffs and reasonable financial incentives for high performance CHP systems.</p>		<p>4 – No progress</p>	
<p>59: LMG should adopt a Residential Energy Conservation Ordinance (RECO) to upgrade the energy efficiency of existing housing stock. This ordinance would establish energy efficiency requirements to be met at the time a home or residential rental property is sold.</p>		<p>4 – No progress</p>	
<p>60: (Similar to Recommendation 104) LMG should expand city-sponsored weatherization programs for owner-occupied households that meet established income qualifications to reach a target of at least twice the current number served. Require anyone receiving this assistance to attend an energy education program.</p>	<p>ARRA funds – state and local allocations. Integrate into the dispersal of funds.</p> <p>As a primary sponsor of Project Warm, LG&E donates both funding and volunteer time to the weatherization effort in Louisville. Since 1982, Project Warm has provided free weatherization services for low-income people who could no longer afford their high utility bills. These services range from just hanging plastic over windows to repairing broken glass to installing weather stripping and changing furnace filters. In 1990, Project began holding annual Blitzes during which they focus on a few days to get as many volunteers as possible to put up plastic on windows before the worst weather hits.</p> <p>LG&E also provides a home energy audit for a minimal fee. Our auditor analyzes the home's energy efficiency and check for leaks and drafts inside the home. In addition to the detailed</p>	<p>2 – In process</p>	

	<p>information, customers receive a number of energy-saving products, including compact fluorescent light (CFL) bulbs and water restrictors to help them get started without having to make any major lifestyle changes. YouthBuild is also doing weatherization in the community with at-risk youth.</p>		
<p>61: (Similar to Recommendations 158 and 163) LMG should establish a program aimed at greening the community's business sector. This program would serve as an engagement tool for business involvement and a recognition tool for highlighting best practices implemented locally. Importantly, this program would also serve as a resource center for the business community, making available information on local resources, such as local contractors/energy service providers that are Energy Star® certified or a list of contractors that pick-up spent fluorescent lights, and on technologies and policies that will help them achieve their energy use reduction goals. This subcommittee recommends that the program be built upon the previously established Green Inc. program.</p>	<p>Kilowatt Crackdown; Green Jobs Revolving Loan Fund; Non-profit Energy Audit Grants; Non-profits Loan Loss Guarantee. Office of Sustainability with Sustainability Director. Division of Waste is providing some outreach products.</p>	2 – In process	
<p>62: All commercial building operators should be encouraged to investigate and install energy efficient lighting and utilize daylighting where possible.</p>	<p>Kilowatt Crackdown; Non-profit Energy Audit Grants; Non-profits Loan Loss Guarantee; LEA member and nonmember associations could help.</p> <p>LG&E has numerous energy efficiency programs available for the business sector. 1) Commercial Load Management - installing load control devices on customer equipment. 2) Commercial Conservation/Rebate Program - no charge energy audits and rebates on energy efficient/new technology equipment. 3) Responsive Pricing and Smart Metering Pilot - critical peak pricing program along with DSM</p>	2 – In process	

	technology. 4) Commercial HVAC Diagnostic and Tune-Up Program - improve HVAC performance.		
63: LMG should engage the industrial sector with an energy efficiency challenge program, similar to the Kilowatt Crackdown program for the commercial sector, and encourage industrial sector participation in Energy Star® programs. This initiative should include outreach and educational opportunities directed toward this sector's needs.	Cemex has Energy Star label and want to be more active in promoting their accomplishments.	3 – Feasible – under review	
64: Industrial entities should survey their facilities for waste heat utilization opportunities.	There may be more of this under review than the PGC knows. Businesses are seeking ways to eliminate waste of all types. KPPC in the Speed School at UofL has been doing this in Jefferson County as well as Statewide when its engineers conduct energy assessments.	2 – In process	
65: (Similar to Recommendation 99) The Partners should continue to pursue and implement energy savings performance contracts (ESPC). The Partners should highlight their ESPC projects using them as case studies to promote this practice throughout the industrial and commercial sectors.	UofL and LMG have ESPC projects underway and JCPS has done them in the past (will do so again). Viability for businesses – case study needed. PGC working with an LED manufacturer on some demonstration/research projects with LED lighting as a follow-up to performance contracts.	2 – In process	
66: After performing energy audits (through an ESPC or otherwise), the Partners should implement those measures that result in an immediate positive cash flow.	Underway at the three partners with a savings of 30 million kWh, \$3,597,000/year or \$10,400 a day in FY 2012, JCTC has had an ESPC since 2004	2 – In process	
67: The Partners should each adopt energy and resource-efficient building standards for all new construction. Consider adoption of a national standard, such as LEED, Green Globes and/or Energy Star®.	State law requires that state funding for construction or renovation be to LEED silver standards at a minimum at UofL and JCTC. UofL builds or renovates at LEED Silver at a minimum and has three LEED Gold buildings and three LEED silver buildings and four LEED projects under construction. Louisville Metro has a LEED Silver Newburg Library and an Energy Star	2 – In process	

	<p>renovation of the Old Jail building on Liberty. TARC has a new LEED Certified Silver maintenance annex building.</p>		
<p>68: The Partners should develop, and make publicly available as examples, policies regarding energy use, including building operations and maintenance, purchasing and employee resource use (this would include turning off lights in offices or facilities that are not in use, personal appliance use, computer policies, etc.).</p>	<p>Low cost; info exists so need to share; research best practices for other cities first, develop database for businesses to share information.</p> <p>Partnership has had When Not In Use, Turn Off The Juice light switch plate stickers since 2005, has evolved to programs at all four partners.</p> <p>TARC has committed to APTA’s¹ sustainability standards, and is currently developing baselines for resource use and environmental impacts.</p> <p>UofL has energy policy and green purchasing policy.</p>	2 – In process	
<p>69: When purchasing energy-consuming devices, the Partners should specify Energy Star® or an equivalent standard is met when available. If equipment is not rated by this type of standard and the equipment purchase is over \$15,000, a life-cycle cost analysis should be performed.</p>	<p>Needs Purchasing Policy. UofL and JCTC have Green Purchasing Policy and the Partnership green purchasing team includes TARC, MSD, Lou. Water Co., and the regional airport authority working on green purchasing policies.</p>	2 – In process, but also partially complete	
<p>70: The Partners should periodically re-evaluate purchasing lists for new information and more efficient products.</p>	<p>Currently underway with Green Purchasing Directors Group. Not all partners have green purchasing policy.</p>	2 – In process and ongoing	
<p>71: The Partners should give preference in their contracting processes to those contractors with Energy Star® certification.</p>	<p>UofL and JCTC have this but others need Purchasing Policy.</p>	2 – In process	

¹ American Public Transportation Association

<p>72: The Partners should survey their facilities for waste heat utilization opportunities and implement as possible, using these projects as case studies to promote this practice throughout the industrial sector.</p>	<p>This is included in the ESPCs at the four partner organizations</p>	<p>2 – In process</p>	
<p>73: The Partners should identify opportunities for water conservation since water treatment and pumping are significant energy uses. A priority should be placed on identifying and correcting higher-profile practices that normalize waste to passers-by, e.g., spray-pool fountains that run from dawn to dusk during summer months even when not in use.</p>	<p>First sentence is underway at LMG, JCPS, JCTC and UofL. JCPS and JCTC do not have any fountains. Timers and other controls are under consideration at other two partners where fountains and spray pools are used. Parks has implemented some controls already.</p>	<p>2 – In process</p>	
<p>74: The Louisville Water Company should evaluate its treatment and distribution facilities to maximize operational energy efficiencies and minimize water losses. Similarly, MSD should optimize its collection and treatment facilities to maximize operational energy efficiencies and minimize the conveyance and treatment of clean groundwater and surface run-off.</p>	<p>This should be underway as a function of efficiency within the Louisville Water Company on an ongoing basis</p>	<p>3 – Feasible – under review</p>	
<p>75: (Similar to Recommendation 103) Each Partner should have two cool roofs (meaning it has either high solar reflectance or is vegetated) installed by 2010.</p>	<p>444 S. 5th St & Newburg Library (4800 Exeter Ave); Government Building Demonstration Projects. UofL has one on Early Learning Childcare Center, one is going on the addition to the College of Business and is looking at other options. JCPS is going to white reflective roofs as school roofs are replaced.</p> <p>Using ARRA funding, TARC is re-roofing its 200,000 ft. sq. Union Station bus garage with high-reflectance, EPDM (rubber).</p>	<p>2 – In process</p>	
<p>76: The Partners should work to establish a 501(c)(3) to accept and administer funds for the implementation of energy efficiency and renewable energy projects in the community.</p>	<p>LEA may be eligible and is pursuing in commercial sector. Further investigation needed. Energy Efficiency Community Block Grant possibility</p>	<p>4 – No progress</p>	

<p>77: The PGC should encourage local organizations, such as the KY Division of Energy Development and Independence – Department of Renewable Energy and Energy Efficiency, KY Chapter of the US Green Building Council, Louisville Home Builder’s Association, Energy Pros, KY Solar Partnership, hardware stores, etc., to periodically provide educational opportunities to both professionals (continuing education credits) and homeowners.</p>	<p>USGBC Lunch and Learn and Green Scene events; Low cost resource sessions in trade shows; Energy Pros; LMG employees attend sessions for personal or professional development; Home Builders have education features at Home & Garden Show.</p>	<p>3 – Feasible – under review</p>	
<p>78: JCPS should expand energy efficiency and renewable energy education through its vocational and construction technology programs.</p>	<p>JCPS is reviewing with JCTC. JCTC does expand energy efficiency and renewable energy education in programs whenever possible</p>	<p>3 – Feasible – under review</p>	<p>JCTC 2+2 AA/AS in Sustainability January 2014, UofL BA/BA Sustainability in Fall 2014. JCPS has magnet schools.</p>
<p>79: All schools in Jefferson County, including private and parochial schools, should incorporate energy education materials into their curricula.</p>	<p>This is a difficult task in the relatively constrictive time of core curriculum and test accountability.</p>	<p>4 – No progress</p>	
<p>80: JCPS should provide E2 classes through their Lifelong Education program.</p>	<p>JCPS investigating.</p>	<p>4 – No progress</p>	
<p>81: The PGC should establish an annual Energy Expo.</p>	<p>LEA will continue their trade shows for commercial focus; Home & Garden Show. Currently LG&E participates in community events and fairs, providing information on both safety and energy efficiency. In the past, these have included The Kentucky State Fair, The Home and Garden Show, Home-a-rama, The Great Louisville Fire Drill, in addition to a number of other community festivals. LG&E would consider any opportunity to further promote wise energy use through the company’s energy efficiency programs. The utility already participates in many community</p>	<p>4 – No progress within partners, but work is ongoing with the Louisville Energy Alliance</p>	

	<p>events that focus on energy education and proactively seeks out other avenues for continued partnerships with its customers.</p> <p>May be duplicative of other efforts but not out of the question.</p>		
<p>82: The PGC should revive and expand its “When Not In Use, Turn Off the Juice” program.</p>	<p>In process, JCTC has a Turn Off The Lights Program (TOTL)</p>	<p>2 – In process</p>	
<p>83: Expand Partnership web resources to include energy efficiency and renewable energy information for homeowners, e.g., a clickable house that shows energy-saving opportunities throughout that is customized to Louisville residents. Establish similar web resources for commercial and industrial facilities.</p>	<p>Go Green Louisville website and expand Partnership website.</p>	<p>3 – Feasible – under review</p>	
<p>84: LMG should investigate and work to remove barriers and provide incentives to stimulate greater adoption of solar photovoltaic (PV) systems. This includes issues of zoning, homeowner association restrictions, solar easements, environmental regulations, utility interconnection policies, utility tariffs and reasonable financial incentives for high performance PV systems.</p>	<p>Government Building Demonstration Projects. LG&E has a Net Metering tariff that is available to customers, who own, operate and maintain a generation system located on customer's premises, that uses as its total fuel source solar energy, wind energy, biomass or biogas energy, or hydro energy up to a maximum of 30 kilowatts. If electricity generated by Customer and fed back to Company's system exceeds the electricity supplied to Customer from the system during the billing period, Customer shall receive a credit for the net delivery on Customer's bill for the billing period. Any such unused excess credits will be carried forward and drawn on by Customer as needed. This tariff was recently updated to reflect the Interconnection guidelines</p>	<p>3 – Feasible – under review</p>	

	issued by the KPSC in Case No. 2008-00169.		
85: The Partners should track other cities' efforts in utilizing renewable energy, looking specifically for projects that are applicable to Louisville. Specifically, the Partners should engage with those cities in our region (Knoxville, Ann Arbor, Milwaukee, Pittsburgh) that have become United States Department of Energy (DOE) Solar Cities in order to take advantage of experience gained.	Energy Efficiency Community Block Grant possibility. PGC is in process of looking into solar opportunities at all three organizations.	3 – Feasible – under review	
86: (Similar to Recommendation 98) The Partners should commit to purchase or produce 20% of their electricity needs from renewable resources by 2020.	Government Building Demonstration Projects; Energy Efficient Lighting (solar lights). UofL has set renewable energy goal and has solar power and hot water. Louisville has renewables in ESPC. JCPS has renewables on several schools.	2 – In process 3 – Feasible – under review	
87: The Partners should evaluate the feasibility of emerging technologies for producing energy using alternative fuels, such as solid waste, process waste or biomass.	Evaluate methane digester technology. Partners are investigating this also.	2 – In process	
88: The Partners should survey their facilities for opportunities to use solar hot water heating and implement as possible, using these projects as case studies to promote this practice throughout the community.	Government Building Demonstration Projects. JCPS and UofL both have solar hot water projects in place.	2 – In process	
89: The Partners should collaborate with the Center for Renewable Energy Research and Environmental Stewardship (established in Kentucky Revised Statutes (KRS) 152.713) "to actively pursue federal research and development resources that are dedicated to	PGC will work with the Conn Center per its strategic plan.	3 – Feasible – under review	

renewable energy" and should continue to look for similar opportunities elsewhere.			
90: The Partners should evaluate the feasibility of solar heating for any Partnership swimming pools that are heated.	This is being done at Churchill Park School and was considered at the UofL Natatorium	3 – Feasible – under review	
Utility Regulations, Policies & Practices Recommendations			
91: LMG should renegotiate the LG&E franchise agreement when it is next up for renewal to incorporate any additional measures deemed necessary to implement the recommendations.		4 – No progress	
92: LMG should work to establish Louisville Metro Carbon Offset Commission.	No evaluation done to date. No authority delegated.	4 – No progress	
93: LMG should implement a System Benefit Fund that will help finance the recommendations in the PGC’s Climate Action Plans.		4 – No progress	
94: (Similar to Recommendations 54, 102 and 114) LMG should implement a Green Permitting process to incentivize green building. To assist with this process, each approving agency within the city should have a Green Building Professional designated to oversee approval of “green” projects.		1 - Complete	
95: (Similar to Recommendation 55) The PGC should encourage the Legislature to pass bills and the PSC to amend regulations so as to: 1) require industrial customers to participate fully in energy efficiency programs, 2) assure that all cost-effective energy efficiency programs and DSM measures be deployed prior to approval of new generating capacity, 3) restore adequate	Addressed in the PGC Strategic Plan under Advocacy.	3 – Feasible – under review	

<p>funding to the PSC and 4) require the PSC to work on adoption of rate decoupling.</p>			
<p>96: LG&E and LMG should develop a program to increase the use of renewable distributed generation in the Residential, Commercial, Industrial, and Institutional Sectors.</p>	<p>Government Building Demonstration Projects.</p>	<p>4 – No progress</p>	
<p>97: LG&E should reduce the carbon intensity of its generation portfolio as rapidly as possible, and the PGC should lobby vigorously for legislation which will enable the process.</p>	<p>The state legislature in House Bill 299 recognized the value of energy efficiency and renewable energy in assisting the State of Kentucky to respond to issues of carbon management, by diversifying the resources used to meet the State’s energy needs. Among the provisions of the bill was a directive to the Kentucky Department for Energy Development and Independence (KYDEDI) to produce a report and recommendations regarding the adoption of a renewable-energy and energy efficiency portfolio standard and funding mechanisms for financing incentives of energy efficiency and renewables. PGC entities should encourage the General Assembly to adopt a renewable and energy efficiency portfolio standard and funding mechanisms for energy efficiency and renewable energy measures. The details of HB299 can be found at the following website link: http://www.lrc.ky.gov/record/08RS/HB299.htm</p> <p>On June 26, 2009, the American Clean Energy and Security Act (ACES), more popularly known as the Waxman-Markey bill, was passed by the U.S. House of Representatives. The bill, which has yet to pass in the Senate, sets</p>	<p>2 – In process 3 – Feasible – under review</p>	

	<p>stringent greenhouse gas reduction targets for utilities such as LG&E. LG&E is monitoring the progress of the legislation to determine, if enacted, how it will affect the company's generation portfolio.</p>		
<p>98: (Similar to Recommendation 86) By 2020, PGC entities should purchase at least 20% of their electric and gas from renewable resources and explore cost-effective opportunities to invest directly in new larger-scale renewable projects (such as photovoltaic and landfill gas).</p>	<p>Government Building Demonstration Projects.</p> <p>LG&E's main source of energy comes from coal-fired generating stations. The company continues to undertake a comprehensive review of generation technology options as noted in their 2008 Integrated Resource Plan (IRP). The IRP includes analysis of a variety of renewable supply options and the potential CO2 cost impacts, including an evaluation of the economics of alternative carbon capture and sequestration technologies. Metro Government should continue to encourage LG&E to reduce the carbon intensity of its generation portfolio.</p> <p>The current version of ACES sets a renewable electricity standard that requires electricity providers such as LG&E to meet at least 20% of their electricity demand through renewable energy sources or energy efficiency by 2020. LG&E is monitoring the progress of the legislation to determine, if enacted, how it will affect the company's power supply requirements.</p> <p>Cane Run generating station being switched over to natural gas turbines.</p>	<p>2 – In process 3 – Feasible – under review</p>	
<p>99: (Similar to Recommendation 65) Continue to promote the use of energy-savings performance contracts (ESPC), when appropriate, by businesses, government and non-profit agencies.</p>	<p>ESPC projects underway at all four partners. UofL has had two EPSC's, LMG is in Phase II, JCTC is looking at phase II and JCPS is completing first phase, but doing energy upgrades with building renovations.</p>	<p>2 – In process</p>	

<p>100: Encourage Louisville Metro residents and commercial businesses to sign-up for LG&E’s Load Management Program and receive a free programmable thermostat.</p>	<p>This initiative is two-fold. First, it will increase the number of homes and businesses participating in the load control program, which helps reduce the need to generate electricity from less efficient peaking stations of LG&E or to purchase peak power. Second, the programmable thermostat allows people to control the heating and cooling of their homes during sleeping hours or at times when the house is empty. As a rule of thumb, for each degree of change from “normal” temperature settings, a 1-2% energy savings is realized. In addition to the Load Management program, residents and commercial customers can receive benefits from the HVAC Diagnostic and Tune-Up Program now offered by LG&E. Furthermore, on March 31, 2008, the PSC issued an Order in Case No. 2007-00319 approving LG&E and Kentucky Utilities’ (KU) request to expand their energy efficiency program offerings. The plan proposes to continue installing load control switches and load control programmable thermostats for an additional 100,000 residential and 5,000 commercial LG&E and KU customers between 2008 and 2014. The plan includes an average annual program budget of \$10 million for the period of 2008-2014.</p> <p>LG&E is continually marketing its Load Management Program for customers to sign up for either A/C switches or</p>	<p>3 – Feasible – under review</p>	
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	<p>programmable thermostats and would welcome any joint marketing or education opportunities with the PGC.</p>		
<p>101: The PGC should encourage Louisville Metro residents to participate in the LG&E Energy Efficiency Residential High-Efficiency Lighting program.</p>	<p>The objective of this program is to facilitate market transformation by creating a shift in consumer purchasing from incandescent light bulbs to compact fluorescent lighting (CFL). To facilitate the introduction of CFLs into customer's homes, LG&E plans to provide CFLs through different mechanisms such as providing coupons to be used at local retailers and through giveaway programs. The PSC issued an Order in Case No. 2007-00319 approving LG&E and KU's request to expand their energy efficiency program offerings. The plan proposes to partner with retail outlets and provide incentives to place 5.8 million Energy Star® rated CFLs to LG&E and KU customers over the next seven years. The plan includes an average annual program budget of \$3.4 million for the period of 2008-2014.</p> <p>LG&E marketing the Residential High-Efficiency Lighting Program for customers to receive valuable manufacturer coupons for the purchase of Compact Florescent Light Bulbs and would welcome any joint marketing or education opportunities with the PGC.</p> <p>PGC has been working on this and promoting the high efficiency lighting program.</p>	<p>3 – Feasible – under review</p>	

<p>102: (Similar to Recommendations 54, 94 and 114) LMG should encourage all new residential construction to meet Energy Star® standards and upgrade energy code requirements for new commercial buildings.</p>	<p>LG&E will implement a Residential New Construction Program as a part of its DSM/Energy Efficiency plan that will partner with homebuilders associations within the state of Kentucky to adopt and implement the Energy Star® new homes energy efficiency program. New home inspections are required under Energy Star® guidelines to be completed by Home Energy Rating System (HERS) qualified raters, the number of which in Kentucky is inadequate. To promote the entry of new raters into the market, LG&E will provide equipment purchase incentives to new raters who complete HERS training, pass the national exam, provide proof of insurance and purchase testing equipment. In addition, LG&E plans to sponsor educational seminars, training classes and reference materials for Raters and Builders. As noted earlier, the PSC issued an Order in Case No. 2007-00319 approving LG&E and KU’s request to expand their energy efficiency program offerings. In addition to education and infrastructure support, the Residential New Construction Program will create sufficient supply to spur growth and support for service to over 4,400 residential sites for LG&E and KU over the next seven years. The plan includes an average annual program budget of \$1.1 million for the period of 2008-2014.</p> <p>This program also offers rebate incentives to partially cover the cost to receive Energy</p>	<p>3 – Feasible – under review</p>	
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	Star certification on the new homes and to individuals who complete HERS training.		
103: (Similar to Recommendation 75) LMG should encourage roofs with high Solar Reflectance Indexes (SRI)/ white roofs/ vegetated roofs similar to a Chicago Program already in place.	444 S. 5 th St; Zoo; & Newburg Library. UofL, JCTC and JCPS are installing reflective roofs.	2 – In process	
104: (Similar to Recommendation 60) LMG should develop a program (could be patterned after the Clean Energy Corps proposal) to leverage state financing, university support, job creation and training programs as well as attract private investment to spur a community-wide effort to retrofit existing housing stock for efficiency and renewable energy.	Perhaps JCTC can offer such a program	3 – Feasible – under review	
105: LG&E Should provide more current and informative electric meter usage data to customers.	Meter usage information that conveniently displays both dollars to date as well as the real-time dollars/minute usage allows the building occupants receive economically-quantified cause and effect feedback to encourage lowered consumption. On July 12, 2007, the PSC issued an Order approving LG&E’s Responsive Pricing and Smart Meter Pilot program. The pilot combines responsive pricing rates with smart metering technology, appliance control and energy information displays to display usage and pricing information. The energy information displays are capable of displaying data in units of usage or cost; current rate of use, usage per day, and usage for the month to date and projected usage for the current billing month. LG&E will need to conduct a feasibility analysis	3 – Feasible – under review	

	<p>based on the results of this pilot to determine if these types of displays can be implemented in other parts of the service territory.</p> <p>The Responsive Pricing and Smart-Meter Pilot Program has been in effect since 2008. LG&E will file a complete evaluation of the Responsive Pricing and Smart-Meter Pilot program in June 2011.</p>		
<p>106: (Similar to Recommendation 56) Offer financing for the purchase of high-efficiency furnaces, heat pumps, air-conditioning systems, replacement windows, insulation, water heaters, appliances and other large energy-using systems.</p>	<p>Non-profit Energy Audit Grants; Non-profits Loan Loss Guarantee.</p>	<p>2 – In process</p>	
<p>107: LG&E should broaden standard residential energy audits to include watts meter testing of major appliances.</p>		<p>4 – No progress</p>	
<p>108: PGC and LG&E should develop an education strategy that results in the reduction of electric use in the residential sector.</p>	<p>In planning with the Partnership in a Sustainability 101 presentation</p>	<p>4 – No progress</p>	<p>Presentation developed, need to work with LG&E</p>
<p>109: LG&E should develop an education program providing tools to local residents and business to estimate their greenhouse gas emissions and emission reductions.</p>	<p>LG&E currently provides an estimate of GHGs produced based on electric usage, on customer’s monthly bills. The group proposes that LG&E add the CO₂ equivalent of natural gas consumption to customer’s bills and move the estimates to the front-page of the bill.</p> <p>In July 2007, Kentucky Utilities Company and Louisville Gas and Electric Company became the first U.S. utilities to inform their customers of how much carbon dioxide is being produced as a result of</p>	<p>2 – In process</p>	

	their electricity use by placing this information directly on customer bills, along with tips and suggestions on how to reduce or offset their carbon output. Future plans do call for adding customers’ natural gas carbon dioxide component to monthly bills.		
110: PGC and LG&E should develop an education program that highlights the available federal and state tax credits available for implementation of energy efficiency measures.	Partner Steering Committee members on the LG&E-KU Demand Side Management Advisory Team along with Michelle King.	3 – Feasible – under review	
111: LG&E should encourage consumer use of “Kill-A-Watt” or other similar products to identify, monitor and control “phantom” electricity usage.		4 – No progress	Partnership working on a phantom energy training program. Offering Professional Development sessions at JCPS, UofL and JCTC.
Land Use Recommendations			
112: LMG should adopt new and use existing land development policies, regulations and incentives that facilitate compact development, transit oriented development and pedestrian-friendly development. Discourage low-density sprawling residential and commercial development on the outer edges of the Louisville Metro area.		4 – No progress	
113: LMG should adopt new and use existing land development policies, regulations and incentives that facilitate infill development, effective and efficient use of existing infrastructure, and clean-up, re-use and rehabilitation of already-developed sites.	Park Hill Industrial Corridor initiatives; Waterfront Development Corporation; Downtown Development Corporation.	3 – Feasible – under review	

<p>114: (Similar to Recommendations 54, 94 and 102) LMG should require all new development, whether by the private or public sector, to meet minimum standards of energy efficiency for buildings, other structures and infrastructure, while providing incentives, assistance and public education to owners or users of existing development to retrofit their buildings, other structures and/or infrastructure for maximum energy efficiency improvements.</p>	<p>Non-profit Energy Audit Grants; Non-profits Loan Loss Guarantee.</p>	<p>3 – Feasible – under review</p>	
<p>115: LMG should require all major development plans, projects and permit applications, submitted by the private or public sector, to complete a basic environmental impact assessment that identifies the likely environmental impacts of the proposed plan or project, including net contributions to greenhouse gasses.</p>		<p>4 – No Progress</p>	
<p>116: LMG should engage in long-range (i.e., 50-year) comprehensive planning for transportation that includes consideration of land use, land development, infrastructure development (including transportation and green infrastructure), emergency preparedness, growth scenarios, economic development, social equity, natural resources, public health, and energy conservation. This planning process should be linked to long-range regional planning with Kentuckiana Regional Planning & Development Agency (KIPDA) and to neighborhood-based planning with Louisville Metro.</p>	<p>Mayor Fischer has convened a 25 year plan for the city which should cover some of the issues addressed here</p>	<p>2 – In process</p>	
<p>117: The Community should conserve land and natural resources as natural capital. This supports ecosystem services to society and defines a sense of place in our local communities.</p>	<p>City of Parks; Conservation Design Guidelines.</p>	<p>2 – In process</p>	

<p>118: The Community should modify land development patterns, design, construction methods and ongoing uses to minimize and mitigate water runoff and to achieve low-impact development standards.</p>	<p>By utilizing a bio-swale, a vegetative roof, and a grey water system, TARC is reducing storm-water runoff over 90% and creating a model of low-impact development at its new maintenance annex.</p>	<p>3 – Feasible – under review</p>	
<p>119: LMG should develop a comprehensive local and regional food system and sustainable agriculture policy.</p>	<p>Regional Farmers Market Feasibility Study. Sarah Fritschner working with Economic Development</p>	<p>2 – In process</p>	
<p>120: LMG should develop a regional network of Kentuckiana local governments, KIPDA, and stakeholders throughout the region (including major businesses, major institutions and representative community-based groups) to engage in collaborative problem-solving to address regional issues related to climate change and land development patterns.</p>		<p>4 – No progress</p>	
<p>121: LMG should increase and enhance enforcement mechanisms for local land use requirements, restrictions and land development approval conditions sufficient to strongly deter non-compliance, assure those who comply of the fairness of the system, and fully mitigate any harm to the public, community and neighbors from non-compliance. Increase penalties for non-compliance, and improve both governmental and public oversight of compliance with land development laws and regulations.</p>		<p>4 – No progress</p>	
<p>122: PGC and partner entities should develop public education and engagement programs about sustainable and responsible land use, the impacts of our land use practices on our environment (especially climate change), and methods of avoiding, minimizing or mitigating these impacts. Develop specific programs for land developers, the construction industry, other real estate professionals, land use planners, homeowners, businesses, landscape architects, vegetation/food growers, and others.</p>	<p>All four partner organizations and PGC have presented at the Sustainable City Series. PGC presents at multiple conferences each year.</p>	<p>2 – In process 3 – Feasible – under review</p>	

<p>Increase the quantity and quality of public participation in—and thoughtful deliberation about—land use planning, policy and practices</p>			
<p>Transportation Recommendations</p>			
<p>123: LMG and KIPDA should develop a mobility strategy for Louisville. The new strategy will form the foundation of an integrated multi-modal transportation plan focused on mobility for people and freight.</p>	<p>Mayors Healthy Hometown; Pedestrian Plan; Bicycle Plan.</p>	<p>2 – In process</p>	
<p>124: LMG, KIPDA, developers and the public should promote and invest in transit oriented development as a way of planning for more livable, sustainable communities through the integration of transit and development at the regional, community, corridor and neighborhood levels.</p>		<p>4 – No progress</p>	
<p>125: PGC should support increased funding for TARC services as well as a transportation strategy that consciously meshes with initiatives for economic development and land use as an integral part of full community planning.</p>	<p>Louisville and UofL subsidize TARC passes for employees and UofL for students. UofL uses circulator buses to take students from Papa John’s parking to campus. TARC provides routes from HSC to Belknap and back.</p>	<p>2 – In process 3 – Feasible – under review</p>	
<p>126: PGC and public should fully support the expansion of services and infrastructure that promote bicycling and walking.</p>	<p>Mayors Healthy Hometown; Pedestrian Plan; Bicycle Plan; LMG adding bicycling lanes when repaving streets; CMAQ and Stimulus funded projects. UofL has added on Third Street and Eastern Parkway and has added bike racks, Bike in lieu of a parking permit program and bike loan program.</p>	<p>2 – In process</p>	

127: PGC and public should reduce VMT by providing public and private incentives for public transit use and high occupancy vehicle trips.	Free bus services for Metro employees as well as UofL employees and students. UofL has Enterprise Car Sharing (rental) on campus and Zimride social networking for people to ride together.	2 – In process	
128: PGC and local partners should evaluate whether implementing a 4-day, forty-hour workweek will reduce VMT and energy consumption.	UofL offers a flexible work-week schedule.	2 – In process 3 – Feasible – under review	
129: PGC and the public should advocate reduced speed limits on state and federal highways to improve fuel efficiency.	Strategic Plan under advocacy.	3 – Feasible – under review	
130: LMG and KIPDA should integrate freight transport planning into the metro area transportation plan.		4 – No progress	
131: PGC and public should implement practices and policies to reduce unnecessary idling and acquaint partner entity employees and the public with related regulations and APCD recommendations.	APCD proposed idling ordinance and continues working with Metro Council. All four partners have anti-idling policies for their organizations and we promote idling no longer than 10 seconds.	2 – In process	
132: PGC should expand their participation level in Green Fleets.	LMG participation ongoing. Good Oil upgrades diesel fleets on recycled vegetable oil which is the only carbon neutral fuel available on the market today. Go Green Tours conducts tours and limousine services using a fleet of vehicles that run on recycled vegetable oil. TARC added three more hybrid buses to its fleet in 2009, and has ordered another 9 (delivered late in 2010), bringing the total number of hybrid buses to 21 in an active fleet of 244. JCPS has a hybrid electric bus fleet of 50 buses.	2- In process	
133: PGC should adopt a high-efficiency vehicle purchasing policy.	Should go to the Green Transportation Team.	2 – In process 3 – Feasible – under review	
134: PGC, public, state and federal governments should fully support the most stringent fuel efficiency and GHG reduction	Should go to the Green Transportation Team.	2 – In process 3 – Feasible – under review	

<p>measures that either federal or individual states are seeking to implement.</p>			
<p>135: PGC should consider the energy replacement value, GHG emissions per mile/km and the complete life-cycle and upstream emissions impact when using bio-fuels in fleet operations.</p>	<p>Should go to the Green Transportation Team.</p>	<p>2 – In process 3 – Feasible – under review</p>	
<p>136: PGC should establish clear fleet operating policies including procurement, idling and fuel use guidelines, and should make them publicly available as an example to other fleet operators.</p>	<p>Anti-idling policies at LMG, UofL, JCPS, JCTC and Louisville Water Company.</p>	<p>2 – In process</p>	
<p>137: (Similar to Recommendation 150) PGC should encourage measures (including cool roof and green roof installations, tree planting along sidewalks and throughout parking lots and increased use of pervious materials to augment soil water holding capacity) to decrease the urban heat island effect caused by transportation infrastructure.</p>	<p>LG&E's "Plant for the Planet" program is a newly developed community grant program that will provide \$ to community groups currently engaged in successful tree planting efforts throughout our service territory. 'E.ON US has added landscaping and planted low growing trees in parking lots and along the sidewalk surrounding the office located at 8th & Broadway. We also maintain landscaping at our service centers and offices throughout the service territory and offer trees to customers and employees. LG&E is also provides educational materials on planting the right tree in the right place to help maintain tree coverage. JCTC considering what to do with parking lots to aid stormwater conveyance.</p>	<p>2 – In process</p>	
<p>138: LMG should seek ways to reduce non-road greenhouse gas emissions by fully supporting regional and national efforts, as well as implementing local measures to restrict GHG emissions.</p>	<p>APCD proposed idling ordinance.</p>	<p>2 – In process</p>	

<p>139: LMG and KIPDA should develop a network of High Occupancy Vehicle lanes, Bus Only lanes, or “Green Lanes” throughout Jefferson County.</p>		<p>4 – No progress</p>	
<p>Urban Forestry Recommendations</p>			
<p>140: LMG should create a new position of Urban Forester to develop plans to reduce the community carbon footprint by using urban trees to offset carbon emissions, to buffer the city from adverse climate change impacts by strategically distributing different kinds of vegetation around the city, and to advise government and private property owners about the selection, installation and maintenance of trees.</p>	<p>5/20/2013 – Mayor Fischer announced that the City will hire an Urban Forester in the 2014 FY, which starts in July Urban Forester position established (currently filled as of December 2013)</p>	<p>1 - Complete</p>	
<p>141: LMG should implement more science-based forestry planning at the county scale.</p>	<p>Community of Trees and Tree Commission</p>	<p>2 – In process</p>	
<p>142: LMG should provide the Urban Forester with resources to acquire information for inclusion in an Annual or Biannual “State of Our Trees” report to the Mayor.</p>	<p>Tree Commission</p>	<p>2 – In process 3 – Feasible – under review</p>	
<p>143: LMG should strengthen the land development code so that developers must address tree protection prior to filing the site development plan so as to reduce the number of trees lost during construction and other related activities.</p>	<p>LDC Chapter 10 on Tree Canopies is currently being revised. 5/20/2013 Mayor Fischer is also funding a preliminary tree canopy inventory with the addition of the Urban Forrester in FY 14</p>	<p>3 – Feasible – under review</p>	
<p>144: LMG should establish a tree ordinance that includes strengthening tree canopy maintenance and the mandatory replacement of trees lost.</p>	<p>Street Tree Ordinance currently being reviewed. LG&E participates in Louisville's Community of Trees effort, which works to increase the amount of tree cover in our community. LG&E also promotes our "Right Tree, Right Place" program in an effort to reduce the interference of trees</p>	<p>3 – Feasible – under review</p>	

	<p>with neighborhood power lines.</p> <p>LG&E's new "Plant for the Planet" program is a newly developed community grant program that will provide \$75,000 to community groups currently engaged in successful tree planting efforts throughout our service territory.</p> <p>2013 - Tree Ordinance is a recommendation of the Tree Commission in negotiations with Mayor Fischer</p>		
145: LMG should increase recognition of heritage and champion trees in our county and urge that a plan be filed that encourages their preservation.	Tree Commission and Community of Trees	2 – In process	
146: The Partners should create an Urban Forest website with information to increase public awareness of the value of trees in reducing household and collective city carbon footprints.	UofL Law Student/Master Urban Planning Student Tree plan posted on the PGC web site	1 - Complete	
147: The Partners should create programs and incentives for residents to plant trees.	Each partner organization has independent tree planting programs and all are working with MSD, LG&E and other organizations that fund trees as green infrastructure or an eco-benefit	2 – In process	
148: The Partners should encourage the planting of a greater diversity of native trees through education of the public, tree planting agencies and tree nursery owners.	Tree Commission and Community of Trees – merged the Urban Forestry Team into the COT 2011	2 – In progress	
149: The Partners should work toward achieving the criteria needed for Louisville Metro to become a Tree City USA®.	Louisville named a Tree City April 2010. UofL named Tree Campus USA 2011.	1 - Complete	
150: (Similar to Recommendation 137) The Partners should establish requirements for minimum percent tree cover in locations with high pavement density such as parking lots.	LG&E's "Plant for the Planet" program is a newly developed community grant program that will provide \$ to community groups currently engaged in successful tree planting	2 – In process	

	<p>efforts throughout our service territory. E.ON US and PPG have added landscaping and planted low growing trees in parking lots and along the sidewalk surrounding the office located at 8th & Broadway. We also maintain landscaping at our service centers and offices throughout the service territory and offer trees to customers and employees. LG&E is also provides educational materials on planting the right tree in the right place to help maintain tree coverage. JCTC considering what to do with parking lots to aid stormwater conveyance.</p>		
<p>151: The Partners should encourage removal of non-native bush honeysuckle, which has been proven to greatly reduce the natural regeneration of tree seedlings in wooded areas along highway verges.</p>	<p>Park Champions. Dr. Margaret Carreiro working on this at UofL as part of her research. Green Spaces at the Youth Summit covers this as does Brightside cleanups!</p>	<p>2 – In process</p>	
<p>152: The Partners should encourage decreased mowing along our transportation corridors to allow more tree growth in appropriate locations.</p>	<p>The Louisville Zoo and some JCPS properties are leaving more “natural areas” for less mowing. UofL mowing less around LEED Gold buildings.</p>	<p>2 –In process</p>	
<p>153: The Partners should seek opportunities and locations along highways for planting more native trees.</p>	<p>Brightside continues working on this.</p>	<p>2 – In process</p>	
<p>Waste Recommendations</p>			
<p>154: The Partners should analyze and monitor waste generation by: 1) performing waste audits (dumpster dives) of respective waste streams to identify opportunities for reduction, reuse and recycling and to provide a model for the community and 2) measuring solid waste streams annually, including materials disposed and materials recycled, and reporting the totals for inclusion in the PGC's Annual Report.</p>	<p>Low cost opportunity. PCG is working on this by monitoring both solid waste stream and single stream recycling program. Composting is a focus at partners.</p>	<p>2 – In process</p>	

155: The Partners should review and improve where appropriate internal recycling and reduction programs and expand the programs where possible.	The partners are all on single stream recycling internally and Metro Solid Waste is on single stream for curbside. New Metro Pilot with larger 55 gallon totes in 2 neighborhood routes.	2 – In process	
156: LMG should pursue the expansion of community recycling opportunities by expanding the material waste stream and increasing the number of drop-off locations, and expanding companion recycling education programs.	Large bin pilot project; LMG continues to pursue new recycling opportunities; new drop off center.	2 – In process	
157: LMG’s Waste Management District Board, working with its Advisory Committee, should evaluate the feasibility, benefits, barriers and potential costs of implementing additional mechanisms for increasing community-wide recycling, including, but not limited to, standard service packages, mandatory recycling, prohibiting disposal of various recyclable materials in local landfills (i.e., yard waste ban) and volume based waste disposal system (also known as variable can rate and pay-as-you-throw).	Preliminary research needed to decide next steps.	3 – Feasible – under review	
158: (Similar to Recommendations 61 and 163) LMG should revive the Green Inc. program to promote waste reduction and recycling resources to help local businesses implement or expand waste reduction and recycling programs and to provide recognition for those that do so.	Possibly a low cost opportunity.	3 – Feasible – under review	
159: LMG’s Economic Development Department, working with the Waste Management Division, should develop a waste-based economic development initiative.	Begin by educating EDD and WMD of possible opportunities and existing projects in Louisville.	3 – Feasible – under review	
160: LMG should work with the privately-owned Outer Loop Landfill, Breaking New Grounds, and any other appropriate entities to explore the possibility of expanding or developing a compost operation that will include food scraps and other compostable	LMG provides support to OLL for sources of materials; waiting for permit. OLL operating composting facilities. UofL is investigating composting food waste to generate methane to help power steam and chill plant. All four partners are composting. JCPS and UofL are composting with Blue Skies Recycling	2 – In process	

materials such as compostable food service ware.			
161: LMG should provide support for Waste Management of KY and its Outer Loop Landfill to fully market methane/landfill gas generated at OLL, and review other closed landfills in Louisville Metro to see if there are opportunities for capture and marketing of methane/landfill gasses.	APCD has supported information gathering for a local company seeking to purchase LFG from Outer Loop. Continuing to identify projects throughout the county.	2 – In process	
162: LMG should identify and coordinate community resources for educating the public about existing and expanded recycling opportunities implemented by LMG and other entities.	Underway now with the Innovation and Delivery Team and the Bloomberg Grant	2 – In process	
163: (Similar to Recommendations 61 and 158) LMG should promote waste reduction and recycling to community businesses by reviving the Green Inc. outreach program.		3 – Feasible – under review	
Outreach and Education Recommendations			
164: U of L should formally adopt NOAA's Climate Literacy principles during the April 16th, 2009 Energizing Kentucky conference.	This was not done.	6 – Not done	
165: JCPS should align its core curriculum with the NOAA Climate Literacy Framework.	Dr. Berman was working on systemic environmental education. Kentucky Department of Education published new environmental literacy standards in 2012 and the Partnership published the work of an intern who created a guide of sites with environmental education programming in concurrence with the new literacy standards.	6 – Not done	New superintendent and board are dealing with student achievement issues

166: JCPS should develop a collection of field trip experiences that are connected to the core curriculum and NOAA Climate Literacy framework.	Louisville Zoo office Science Behind Global Warming program 1 hour class Middle School – High School. PGC Intern worked on something similar with Ky. Environmental Literacy Standards	2 –In process	
167: JCPS and U of L should support the development of a curriculum from Dr. Keith Mountain's historic climate data, making it available to Louisville and state students for climate research.	UofL is making the data available and Dr. Mountain updates it as necessary.	2 –In process	
168: U of L should create a degree track in sustainability.	In process, with JCPS Environmental Magnet programs to JCTC 2+2 sustainability Associate Degrees to UofL Bachelors and graduate degrees. Jefferson has created a 2+2 in conjunction with UL. Dual credit courses for 2+2+2 is next for JCPS Jefferson plans to create a stand-alone associates along with several imbedded certificates and diplomas ranging from economics to landscape	2 – In process	
169: The Partners should create public exhibits illustrating the volume of one ton of CO ₂ at room temperature and the average human annual impact. A public, traveling display could accompany a "Know Your Carbon Footprint" campaign that will travel through the state.	Louisville Zoo's new Glacier Run exhibit includes information about global climate change, your carbon footprint, etc.	3 – Feasible – under review	
170: The Partners offer expertise and a range of professional development programming. As a climate change coalition, they should work together with JCPS to determine the needs and develop a framework of professional development programming and resources that will support educators who are teaching climate change topics in their classroom curriculum.	Louisville Zoo offers Global Warming programs off-site and on site. Partnership offering Sustainability 101 course to underserved areas of Louisville to educate citizens on the importance of sustainability and how it benefits them as well as in house at JCTC, UofL and JCPS.	3 – Feasible – under review	

<p>171: The Partners should support a website that contains a comprehensive calendar and list of events, programs, interest groups, retail centers and other resources related to sustainability and available locally.</p>	<p>The Green List is becoming somewhat close to this. http://www.greenlistlouisville.com/ Actual support with funding from one of the partners would probably be very helpful to that endeavor.</p> <p>Louisville Zoo's website provides reducing your carbon footprint info, etc.</p>	<p>2 – In process</p>	
<p>172: The Partners should develop and populate a community wide "Green Map." This map should identify the locations of events, interest groups, retail centers and other items related to sustainability and available locally.</p>	<p>LOJIC layers exist. MTS has expertise to implement. Need to develop criteria for inclusion. "Participants in..."</p> <p>Calendar with events available from the Louisville Zoo.</p>	<p>3 – Feasible – under review</p>	
<p>173: The Partners should work together to host a sustainability/energy expo for Louisville.</p>	<p>Louisville Energy Alliance Expo; Energizing KY.</p> <p>Go Green Tours participates in local sustainability fairs and local energy expos to promote carbon neutral fuel usage. Go Green Tours is a new transport business that uses vehicles that run on the only carbon neutral fuel on the market-recycled vegetable oil. We conduct tours of Louisville's best attractions and provide limousine services for direct transport. gogreentoursoflouisville.com</p> <p>GoodOil is a private company that converts diesels to run on a dual fuel system with diesel and recycled vegetable oil. We participate in the energy expo, sustainability fairs and other local environmental events to educate the community about the only carbon neutral fuel on the market-vegetable oil.</p>	<p>2 – In process</p>	
<p>174: The Partners should work together to host a Climate Change forum for key members of</p>	<p>Louisville Zoo will be offering talks and experiences relating to global climate change. UofL has done this on the annual Climate</p>	<p>2 – In process</p>	

Louisville media outlets (meteorologists, journalists, etc.).	Change Teach-in and Sustainability Week in 2009, 2010 and 2011.		
175: The Partners should work together to host a state Climate Summit in Frankfort for local and state policy-makers.	State hosted one in Lexington - Dec. 2009.	6 – Not done	Did not want to duplicate efforts