

***REPORT OF THE  
CROSSVILLE ENERGY  
AND  
SUSTAINABILITY  
INITIATIVE***

**A project of  
The City of Crossville, Tennessee**

**In partnership with  
The Master of Science in Planning program  
Department of Political Science  
University of Tennessee, Knoxville**

**April 2008**

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**A project of  
The City of Crossville, Tennessee  
J.H. Graham, Mayor**

**In partnership with  
The University of Tennessee Master of Science in  
Planning program**

**Faculty  
Edward J. Jepson, Jr.**

**Graduate Students  
Sarah Booher  
Quaine Finley  
Amanda Slough  
Ashley Smith  
Sarah Young**

**With support from**

Crossville Chronicle  
Crossville Housing Authority  
Cumberland Business Incubator  
Cumberland County Board of Education

Cumberland Sustainable Energy Association  
First National Bank of Tennessee  
Veolia Water  
Volunteer Energy Cooperative

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Any idea, finding or statement contained in this report should not be construed as necessarily reflecting the view of any participating or supporting person or organization.

## I. INTRODUCTION

Every year, The University of Tennessee's Master of Science in Planning (M.S.P.) Program gives its students an opportunity to work with communities in East Tennessee to find ways to move their communities toward a common goal. Through facilitated workshops, the students are able to implement the techniques and take on the characteristics that are required of today's urban and regional planners and other related fields.

Over the course of a semester, five graduate students worked with residents of Crossville, TN to prepare the Crossville Energy and Sustainability Initiative (CESI). In preparation for the workshops, the students researched the current energy profile of Crossville, TN and the United States, identified the importance of reducing consumption of non-renewable energy sources and searched for government and privately funded programs that could be used to increase Crossville's energy sustainability. Sustainability is defined by the U.S. Environmental Protection Agency (EPA) as "meeting the needs of the present without compromising the ability of future generations to meet their own needs." With this said, it important to search for alternative ways of producing energy at lower costs with the goal of improving our country for future generations. With the assistance of many stakeholders consisting of residents, elected officials and industry leaders, the CESI was created, identifying the projects that will help Crossville gain the energy independence this nation is seeking.

While this process of serious consideration of its energy condition is a significant accomplishment for the City of Crossville, it is only a first step. It is now necessary to organize to take action. The project ideas contained in this report need to be reviewed and selected for implementation. Widespread community support is required for the enactment of new public policies and the adoption of new approaches, programs and practices among residents, organizations and government. This is the true measure of success for which Crossville has now positioned itself and which will set it apart from other cities in Tennessee.

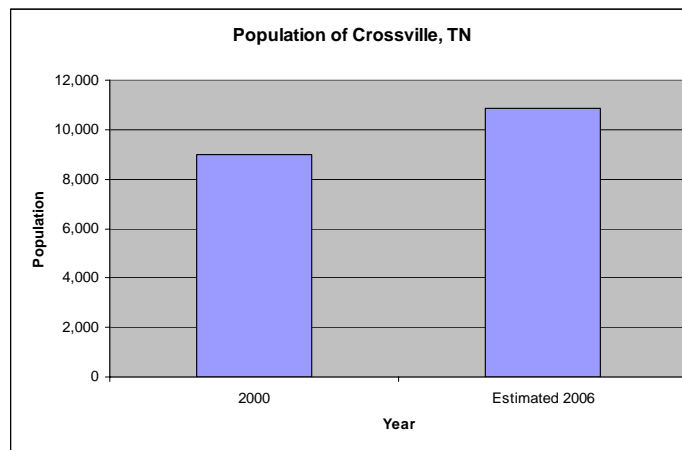
## II. COMMUNITY INFORMATION

### A. *Demographic Profile*

The City of Crossville is the county seat of Cumberland County, located in East Tennessee on the Cumberland Plateau. Crossville is situated in an area of scenic beauty and temperate climate. Its hilly to mountainous terrain and abundance of available land contributes to Crossville's growing reputation as a tourism and recreation center. In particular, Crossville is known for its quality golfing opportunities, so much so that it is referred to as the "Golf Capital of Tennessee". Overall, Crossville is a thriving town with an expanding population and increasing development activity.

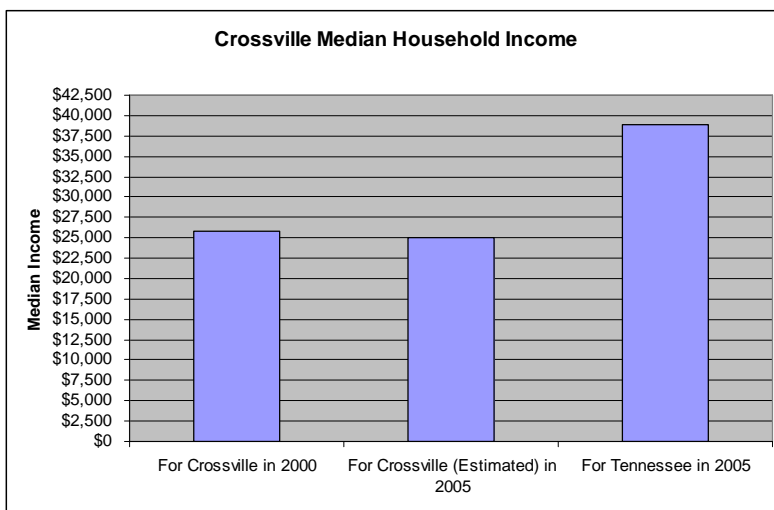
The population of Crossville was 8,981 in year 2000, and was estimated to have grown to 10,840 by July 2006 (see Chart 1, below.) This represents a 20.7% change over those six years. The City has 4170 houses, of which 3,728 are occupied. It has an average household size of 2.3, compared to the state average of 2.5. In terms of land area Crossville spans 14.7 square miles and has a population density of 709 persons/square mile.

**Chart 1**



In 2005, Crossville had an estimated median household income of \$25,100. This figure is a drop from the 2000 figure of \$25,796. The estimated 2005 figure is also below that of the state median household income of \$38,874 (see Chart 2, below). About 24.6% of the population lives below the poverty line, compared to 13.5% for the state of Tennessee and 47% of the housing population rents, rather than owns its homes, compared to an average of 30% across the state. This underscores an important feature of Crossville's economic status: it has a high percentage of lower income residents who might not have the necessary economic resources to easily invest in energy efficient technologies on their own.

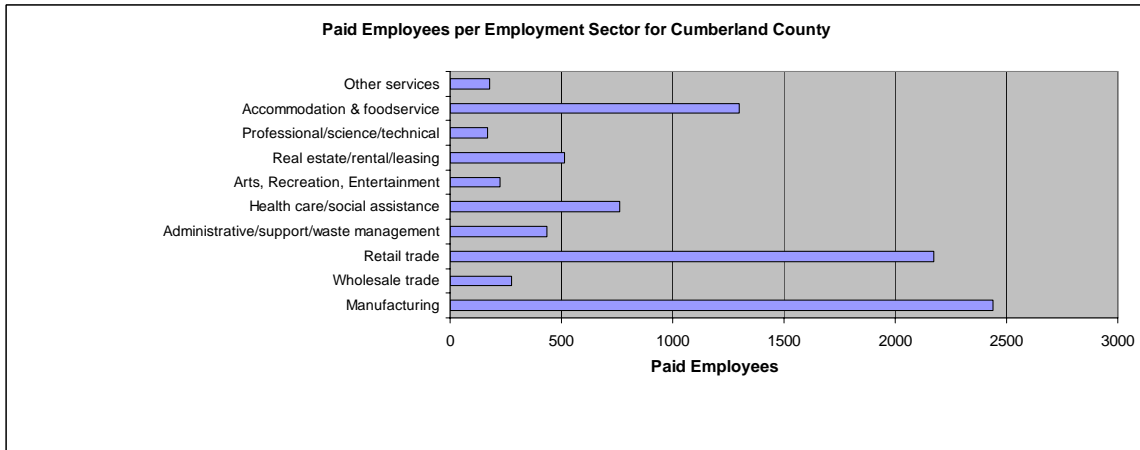
**Chart 2**



Crossville has enjoyed an increase in building and development activity over the past decade. Over the period between 1996 and 2006, Crossville had a higher than average number of building permits per 10000 population than the state average, with the exception of year 2001. Permitting peaked in 2004 with about 170 permits per 10000 population in Crossville compared to the state average of about 68 per 10000 population. Clearly, a great deal of new construction and development is taking place in Crossville, which suggests a wealth of opportunities for employing new energy efficient building designs.

The status of Cumberland County's labor market is similar to that of the state of Tennessee. It had an unemployment rate of 4.5% in September 2007, in comparison to the state unemployment rate of 4.4% (Crossville Community Data Sheet, Tennessee Office of Economic and Community Development. In January of 2007 the County had a total employment of 21,420. Employment figures per sector of the County's labor force your year 2002 is shown below in Chart 3. Note that manufacturing, retail trade, and accommodation and food service comprise the largest employment sectors in the county.

**Chart 3**



### *B. Energy Profile*

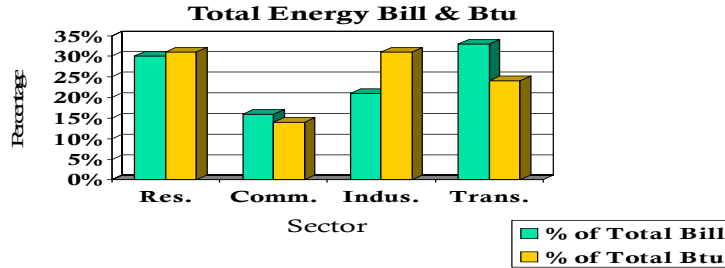
In Crossville, Tennessee and many other small cities across the Southeastern United States, energy is fundamental to socio-economic development. The demand for energy in Crossville can be expected to increase in the years ahead as the population and the economy continue to grow.

Presently, a large proportion of this demand is met by non-renewable fossil fuels (i.e., coal, petroleum and natural gas) supplied by one of the three main energy distributors within the state that services the area. These three energy distributors that service the community of Crossville are: Volunteer Energy Cooperative (Electricity), Upper Cumberland Natural Gas (Natural Gas), and the Middle Tennessee Gas District (Natural Gas).

The total cost for energy demand in Crossville for the year 2007 was calculated to be about \$57 million which equals about \$5,240 per person. Total energy consumption was measured in four sectors – Residential, Commercial, Industrial, and Transportation – as illustrated in Graph 1, below.

**Graph 1:**

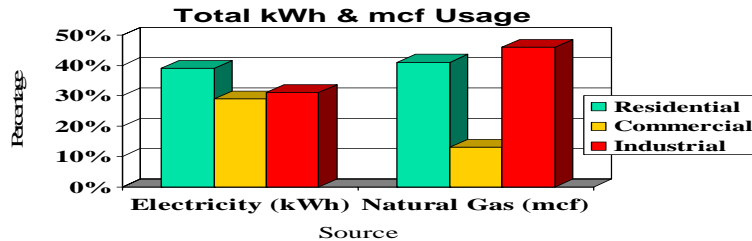
## Crossville, TN Energy Bill



Almost \$19 million is spent annually on gasoline to move our cars and trucks. The distribution of the remaining energy consumption is shown in Graph 2. As can be seen, the greatest opportunity for energy savings lie in the residential (electricity and natural gas) and industrial (natural gas) sectors.

**Graph 2:**

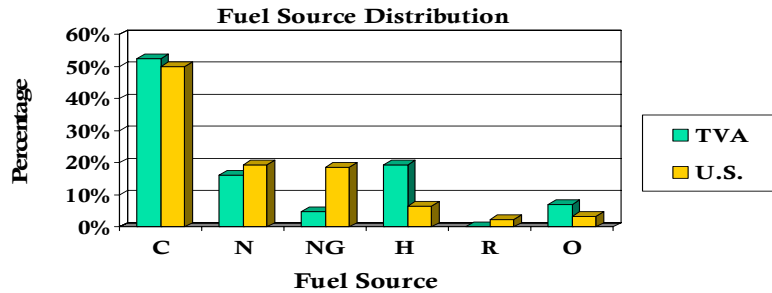
## Percentage of Total kWh & mcf Usage



Our source of electricity is the Tennessee Valley Authority, which operates generating plants throughout the Southeast and contracts sales with local provider, such as VEC here locally. As shown in Graph 3, most of our electricity comes from coal-fired plants (category C) at a level that slightly exceeds the rest of the county. Coal is the most polluting of all energy fuels, being the principal single source of CO<sub>2</sub> emissions, a contributor to global warming. Moreover, as also shown in Graph 3, TVA's investment in renewable sources (category R) currently lags behind the rest of the nation.

**Graph 3:**

## TVA Distribution of Fuel Sources



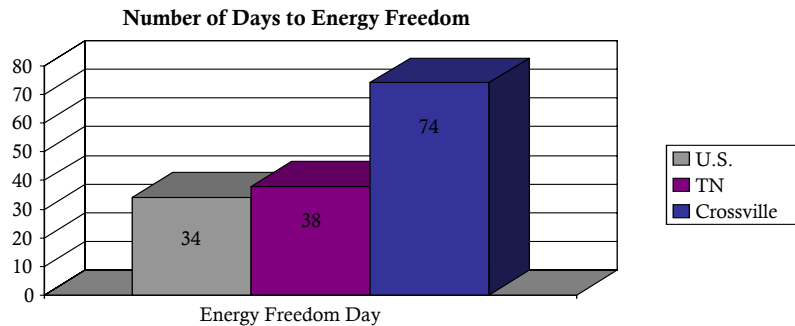
C= Coal; N= Nuclear; NG = Natural Gas  
H = Hydrogen; R = Renewable; O = Other

“Energy Freedom Day” is the day that the energy “bill” has been paid by a community. It is calculated as a function of how much it earns in income and how much it spends on energy. As Graph 4 indicates, it takes more than seventy days for the City of Crossville to reach its Energy Freedom Day. This is significantly longer than the average length of time it takes for that day to be reached in the state of Tennessee generally and the nation. Part of the reason for this is that smaller cities and rural areas tend to have lower income levels than the large cities, but the same energy costs. Thus, the time to pay off the “bill” is extended considerably.

**Graph 4:**

## Energy Freedom Day

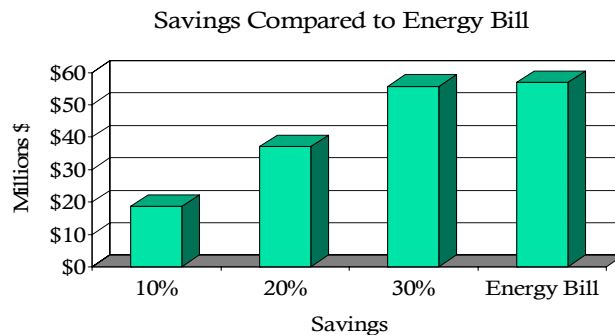
*March 14, 2008*



It is not necessary to eliminate all energy spending to eliminate the energy bill. This is because every dollar of energy spending saved is rippled throughout the local economy, in what is called a “multiplier effect”. As can be seen here, this multiplier effect is substantial: Just 30% savings in energy payments is equal to the total energy bill. This, then, becomes the “break-even” point, that is, the point at which economic benefit (i.e., additional dollars in the community) equals our energy spending.

**Graph 5:**

## Economic Payback as a Result of Reducing Energy Consumption



The profile that emerges is of a growing community that has significant opportunities to improve its economic and environmental welfare through an energy strategy that reduces consumption and dependency on non-renewable fossil fuels. From an economic perspective, the goal need only be a 30 percent reduction in energy spending; from an environmental perspective, the City’s high reliance on coal means that a shift to local, renewable sources of energy will have significant impacts relative to air quality and global warming; from a community perspective, Crossville’s increased prosperity and reduced dependence on external sources of energy will help ensure its long-term sustainability and well-being.

### III. PROCESS AND PARTICIPANTS

#### A. *Process*

The process by which this proposal was developed by the University of Tennessee's Master of Planning (MSP) students involved extensive research on all aspects of environmental sustainability, collaborative group meetings to determine facilitation methods, trips to Crossville to meet with concerned citizens, government officials, and business leaders, and finally, combining all the information gathered throughout the community workshops into an understandable and applicable paper that will benefit the city of Crossville, Tennessee.

On January 17, 2008 the MSP students and their professor, Dr. Edward Jepson, came to Crossville to meet with Mayor Graham, government employees, and interested citizens to kick off CESI, the Crossville Energy and Sustainability Initiative. At that meeting, the participants provided their concerns for and vision of Crossville in the future. Students took this information back to the classroom to develop a plan of action for CESI.

As their guide to help build a sustainable economy, the students used the Rocky Mountain Institute's (RMI) *Community Energy Workbook*. This book laid out the necessary steps needed to ensure a successful process, and guided the student-facilitated community workshops.

Once the students had a clearer vision of the goals for this project, they used the RMI system to research Crossville's energy use. In an effort to build community support and identify incentives for decreasing the community's energy consumption, they determined how much energy Crossville was using, how much it was costing the community, and what it means for the economy and the environment.

Recognizing the importance of community participation, there was a great effort to mobilize the community and create participation in the process of energy planning. A well-attended Energy Town Meeting would be essential to create a solid core of workshop participants and critical to create a successful energy plan. On March 6, the first CESI organizational town meeting was held. Dr. Jepson presented on the current and future predictions of energy supply and demand, as well as the negative externalities associated with those energy sources. The students then presented Crossville's current energy picture, how it was affecting their economy and environment, and examples of how it could be reduced. At the end of the meeting, participants were asked to select from two different task force packets: Industrial/Commercial, or Residential and Municipal. The packets provided information on how the workshops would take place and what could be

accomplished. This informational meeting received positive media coverage and was a great stepping stone into the energy planning workshops.

A week later on Thursday, March 13 the first student-led facilitation process took place. The participants met in separate classrooms, depending on which group they wanted to work with, Industrial/Commercial or Residential/Municipal. Both groups went through the same process relating to their specific topics. The majority of the time was spent by participants using “Factor Assessment Worksheets” to brainstorm Crossville’s assets, opportunities, and barriers for each of the three energy factors: (1) People and Organizations, (2) Financing, and (3) Government. The participants worked individually and then in groups to come up with as many factors that affect the local energy picture. Then there was time for everyone to tell the facilitators their findings, which were written on large sheets of paper pertaining to the specific category the energy factor related to. Once all the assets, opportunities, and barriers were placed in the correct category both groups reunited to review their findings and preview workshop B.

Workshop B took place on March 27. The participants once again divided into their separate task forces. The goal of this workshop was to use the pre-determined assets, opportunities, and barriers in workshop A to best utilize local resources. Each group worked to make connections between the three, and to determine how Crossville’s energy sustainability related to local conditions. They broke up into sub-groups to look for the connections and then shared their ideas with the entire group. As in workshop A, the groups’ ideas were recorded on large sheets of paper at the front of the room where everyone could see them. Lines were drawn between the assets, opportunities, and barriers to depict connections. Before the workshop ended, participants were given a worksheet called “What’s Worked in Other Places”. They were then asked to look at their task force packets and any other available resources before the next meeting, to see how other communities have addressed barriers and improved their energy consumption

Workshop C was held on April 10, and was the final facilitated workshop. The goal of this workshop was to take the information about Crossville’s current energy situation and what has worked in other places to brainstorm project ideas. They were broken into sub-groups to come up with project ideas that would be feasible for Crossville. Each of the sub-groups then reported their ideas to the entire group. The ideas were written on large sheets of paper at the front of the room and, once each group had their project ideas visibly recorded, the entire group was asked to rate each suggestion. The project ideas were rated based on: (1) Cost; low, medium, or high, (2) Ease of implementation; low, medium, or high, and (3) Time-frame; short, medium, or long. (See Attachment A for a copy of the criteria explanatory handout that was distributed at the workshop.)

The CESI process culminated on April 29<sup>th</sup>, with formal presentation to Mayor Graham of the City of Crossville Sustainable Energy Plan.

## *B. Participants*

The CESI workshops involved the participation of the following individuals:

Alexander, Don  
Annis, Clark  
Begley, Tim  
Blair, Ralph  
Buxbaum, Margie  
Christopher, Harold  
Elmore, Philip  
Engelhardt, Joseph  
Fox, Brad  
Gorenflo, Louise  
Graham, J. H.  
Graham, Randy  
Green, Lori  
Gregg, Dennis  
Hozer, C. Rae  
Mueller, Carl  
Mullinix, Heather  
Polczynski, Denise  
Polczynski, Theodore J.  
Randolph, Bobby G.  
Safdie, Robert A.  
Sherrer, Pauline  
Sterle, Susan E.  
Stewart, Suzanne  
Strain, John F.  
Van Winkle, Aarona

## IV. PROJECT IDEAS

### A. *List of Project Ideas*

The project ideas that were generated in the three CESI workshops are here organized under five functional categories.

The numbers in parenthesis after each project idea indicate its placement on the list in Attachment B, which is organized according to the three project evaluation criteria: the first shows its location on the list and the second shows its rank relative to the other project ideas. Low rank numbers indicate that a project would be placed high on a list that is organized according to cost (low), ease of implementation (high) and time-frame (short). Such a list might then be used to inform the sequencing of projects.

Some project ideas also include a bullet with the name of a city: these are cities that were identified as workshop participants as possible models for that idea.

Twenty of the project ideas were also selected for expanded review. These are indicated by a bullet that shows its expanded review project number and the page where the expanded review can be found.

#### **EDUCATION/OUTREACH**

- Child outreach – TEEN (Energy Outreach Mascot ‘Otter’) (7/7)
  - Expanded review project 10, page 24
- Insert conservation literature in utility bills (water) Public Service Announcements (15/14)
- New schools – Water Filtration Systems (28/25)
- Public education – Website Design, Branding Campaign w/ Logo, Billboards, Greenways (10/7)
  - Expanded review project 11, page 25
- Public/Community Outreach – U-Tube, Advertise ‘How To’s’ on Local Cable TV Channel (Down Spouts, Collection Barrels) (11/7)
- Non-profits develop education programs to inform citizens (51/NR)
- Continuation/expansion of utilizing available resources (8/7)
- Meetings to learn benefits of fuel cells (22/20)
  - Expanded review project 6, page 20
- Encourage car pooling (3/1)
  - Expanded review project 15, page 29
- Educate government employees (2/1)
- Give recognition/awards to sustainable practitioners (21/22)
  - Expanded review project 1, page 15
- Energy efficient education throughout the school system (37/30)

- Expanded review project 2, page 16
- Create and encourage bike trail/use (33/30)
  - Expanded review project 16, page 30
- Form a committee of government officials, industry professionals and citizens to look at zoning (4/1)
- City kick-off party to promote energy audit (1/1)
  - Expanded review project 3, page 17
- Create sustainable energy plan (with citizen input) (35/30)

## **ENERGY SOURCES**

- Ride Board (Park 'n' Ride Lot, telephone numbers) (49/45)
  - Cookeville, TN
- Incentive discount program for private citizens and community/industries – Water Re-use and Resale @ Discount, Education (Compost, Non-biodegradable, Partnership w/ waste water utility, billing, OBED) (48/45)
  - Expanded review project 12, page 26
- Smart House Credit on building permits – Energy Star (19/19)
- City of Crossville Usage Analysis (Audit) – Energy Assessment & Audit to determine efficiency (Lights, Water, Number of trips) (12/7)
- Financing Home Solar Panel Installation- Private Biz Front Cost, paid back from Residents in form of energy savings (47/45)
  - Expanded review project 20, page 32
- Become a Bio-Diesel Depot through state funds (45/45)

## **BUILDINGS & PROPERTY**

- New schools – Water filtration system, irrigation pond (40/30)
  - Expanded review project 17, page 30
- Preservation/Restoration Tree Program – Pro-active Planting, Tree Board, Tree and Lawn Planting Program for Downtown (29/30)
- Parade of Energy Efficient Homes – Local Home Builders Association as sponsor (5/1)
  - Expanded review project 13, page 27
- Bio-diesel School Buses – Invest in hybrid vehicles (31/30)
- More crosswalks to encourage walking – Pedestrian walkways, bike lanes, greenways, ordinance? (39/30)
- Encourage TVA to re-implement Home Weatherization program (9/7)
- Develop higher building standards for energy efficient homes – in particular for manufactured housing (35/30)
  - Expanded review project 18, page 31
- Rebate Program for Energy Efficient Appliances and technologies (e.g., Low Flow Shower Heads) (18/14)

- Colorado Springs, CO (rebates for water saving fixtures)
- Encourage, require dual flush /low-flow toilets in new housing (50/NR)
- Retrofit existing city buildings to meet LEED Standards (43/30)
  - Expanded review project 5, page 19
- Conduct free energy audit of all city buildings/infrastructure (20/20)
- Purchase Energy Star appliances in bulk for municipal properties (42/30)
  - Expanded review project 8, page 21

## **MUNICIPAL RESOURCE MANAGEMENT**

- Signal lights – Coordinate/flash during low volume traffic (Consult w/ City Engineer) (23/20)
  - Milwaukee, Madison, WI
- Purchase Tub Grinder for Recycling Center to recycle contractor waste (17/14)
  - Expanded review project 19, page 31
- Allow contract waste to be recycled – Develop program to encourage recycling waste from Developers (25/25)
- Institute curbside (pick-up) recycling program (16/14)
  - Richmond, IN
- Pass LEED Certification Standards (41/30)
- Work with TN Dept of Planning to determine pros and cons of zoning regulations (13/7)
- Adopt Smart Growth (30/30)
  - Expanded review project 7, page 21
- Become a Cool City – Adopt policies of Cool Cities (26/25)
  - Expanded review project 4, page 18

## **COMMUNITY FACILITIES, INFRASTRUCTURE & ASSETS**

- Photo-voltaic roof tops – Solar panels, city demonstration projects, energy audits (28/25)
  - Berkeley, CA
- Skylights w/ fiber optics (44/30)
- LED lights (38/30)
  - Salt Lake City, UT
- Design greenways & public gardens through Parks & Recreation (46/45)
- TVA – Municipal buildings improvement projects (52/NR)
- Develop local transportation management plan (27/25)
- Hazardous waste pick-up recycling center (37/30)
- Create city recycling program (33/30)
  - Expanded review project 9, page 22

- City purchase energy efficient equipment (14/14)
- Water audit (6/1)
- Urban Forestry Plan- Crossville Tree Board (parking lot vegetation) (24/20)
  - Expanded review project 14, page 28

**B. List of Functional Themes**

A key word review of the project ideas was conducted in an attempt to identify words or ideas that were included more than once. These can be interpreted as reflecting higher levels of interest among the workshop participants and might be used to guide City policies and programs in additional ways beyond the implementation of specific project ideas. For example, as shown in the table below, the repetitive appearance of the term *recycle/recycling* suggests a higher level of interest in this idea than the average ranking of 23 for the five ranked projects that contain the term might suggest.

<b>Functional theme</b>	<b>Number of times mentioned</b>	<b>Project idea numbers (from Attachment B)</b>
Recycle/Recycling	7	16, 17, 25, 33, 37, 54, 59
Audit	6	1, 6, 12, 20, 28, 53
Water	6	6, 12, 15, 28, 40, 48
Forest/trees	3	24, 30, 62
Greenway	3	10, 39, 46
Bike	2	32, 39
Carpool/Ride	2	3, 49
Energy Star	2	19, 42
LEED	2	41, 43
Solar	2	28, 47

**C. Expanded Review of Project Ideas**

The following twenty project ideas were selected by the MSP students (four projects per student) as being in their view particularly significant in terms of their potential impact on the present energy profile either by (a) changing the nature or amount of energy consumed or (b) contributing to the mobilization of the community to achieve such change. Relative to each idea, an effort was made to collect and disseminate information that would be helpful in terms of implementation. Note that they are not presented in any order of priority.

## PROJECT 1

### Give recognition and awards to sustainable energy participants

Throughout this country and around the world there are many communities recognizing and awarding government entities, businesses, and individuals for sustainable energy practices. This is a project idea submitted by participants of the CESI workshop, and could be used to boost support and participation for energy sustainable

#### WHAT OTHER COMMUNITIES HAVE DONE:

##### North Carolina Leadership in Sustainable Energy Awards

This award is given to entities that have made an outstanding contribution in helping North Carolina achieve its energy efficiency, renewable energy and sustainability goals. To learn more about this award visit the North Carolina Department of Administration's energy resources page at: <http://www.energync.net/resources/docs/press/070312.pdf>

##### Northeast Sustainable Energy Association (NESEA) ZERO-Energy Award

This award recognizes net-zero-energy buildings designed for the northeast climate. Entities that receive this award have developed buildings that produce as much energy as they consume, and represent the cutting edge of environmentally responsible construction. As an incentive, a \$10,000 cash prize for the best building offering comfort, affordability and reliability, while documenting net-zero energy. To learn more about NESEA or Zero-energy buildings visit these websites:

<http://www.nesea.org/>

<http://zeroenergybuilding.org/index.php>

##### Flex Your Power Award

Flew Your Power is California statewide energy efficiency campaign that acknowledges and awards outstanding leadership throughout the state. There are 4 different categories of awards that are given out: (1) Energy Efficiency, (2) Education and Leadership, (3) Innovative Products and/or Services, and (4) Demand Response/Conservation. To learn more about the Flex Your Power campaign for energy efficiency and conservation visit:

<http://www.fypower.org/>

#### SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:

This may need to be supported through municipal funds. Crossville can give these awards at a relatively low cost to the community.

#### COMMENTS/SUGGESTIONS:

There are hundreds of energy efficiency related program and rewards throughout the world. Many of them are large scale rewards that require hefty monetary prizes, but this does not have be the reward method Crossville uses. Though money is often a great incentive, simply providing individuals or businesses with a plaque of recognition and a line in the newspaper is enough to promote energy sustainability. These three awards are

just a few of the many rewards that Crossville could retrofit to support and reward their community.

## PROJECT 2

### Energy efficiency education throughout the school system

If Crossville wants a sustainable future it must teach its youth to practice energy sustainability and resource conservation. Many school systems throughout the United States and world have implemented educational programs to help children learn to be good stewards of their communities. Implementing just a few of the ideas below will result in positive immediate and future changes for Crossville.

#### WHAT OTHER COMMUNITIES HAVE DONE:

##### Seaton Primary School in Devon, United Kingdom

Seaton Primary School has installed a wide range of renewable technologies to curb their energy consumption, while educating their students at the same time. A 2.5 kw wind turbine and a 4.7 kw Photovoltaic array on the roof of the school supply electricity directly to the school and help reduce carbon dioxide emissions by 2 tons a year. In addition to that 48 solar water heating panels heat the school's swimming pool. Other environmentally conscious initiatives include class "Energy Agents" to help reduce energy waste; the after-school 'Eco-Club' to monitor energy use, a Energy Audit resulting in many new energy efficiency measures; a newly planted orchard to supply fresh fruit for students and save on food miles; and a grey water collection system to support the school wildlife pond and demonstrate small-scale water power. To learn more about Seaton Primary School visit:

<http://www.seatonprimary.co.uk/>

<http://www.ashdenawards.org/winners/seaton>

##### Northeast Sustainable Energy Association (NESEA) K-12 Educational Materials

NESEA's is the nation's leading regional membership organization focused on promoting the understanding, development, and adoption of energy conservation and sustainability. They have developed educational materials and programs to help with teaching energy efficiency and sustainability within all levels of the education system. They provide lesson plans, activity planners, and workshops to teach educators how to implement these plans into their curriculums. To learn more about NESEA's programs for the education system visit:

<http://www.nesea.org/education/edmaterials/>

##### Mansfield Independent School District

The Mansfield Independent School District realizes that energy conservation is an important part of the school system for many reasons including saving money, conserving natural resources, and preventing pollution. They have developed a program

called E3 (energy.efficient.education) which is an initiative representing their commitment to energy efficiency in the educational process and desire to make energy conservation a permanent part of their culture. They have reduced their energy consumption by almost 17% and saved \$741,000 in just 12 months. The EPA recently named the Mansfield Independent School District an Energy Star Leader and Top Performer. To learn more how this school district is achieving and teaching energy sustainability visit these websites:

<http://www.mansfieldisd.org/E3.htm>

[http://www.energystar.gov/index.cfm?fuseaction=partner\\_list.showLeadersStory&lds\\_id=281&o\\_id=1034606](http://www.energystar.gov/index.cfm?fuseaction=partner_list.showLeadersStory&lds_id=281&o_id=1034606)

**SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:**

Energy Foundation: <http://www.ef.org/programs.cfm>

The Energy Foundation works to reduce carbon emissions from the electric and gas utility industry by advancing energy efficiency and renewable energy

**COMMENTS/SUGGESTIONS:**

By implementing energy sustainability education you will not only cut back on government spending and reduce energy consumption right now, you will teach the youth in Crossville how to be energy efficient, which will have long term effects on Crossville's environment and economy.

**PROJECT 3**

**Have a city-wide kick-off to promote city energy audit**

Expand this to be a general energy kick-off event./barbecue as a way to get government employees, working citizens, and students excited and aware of sustainable energy practices.

**WHAT OTHER COMMUNITIES HAVE DONE:**

The Wanger Institute for Sustainable Energy Research (WISER)

THE WISER Kickoff Celebration took place at the Illinois Institute of Technology to celebrate the launch of a major university initiative, the formation of WISER. A reception was held to honor those who funded the Institute. It was a campus-wide event to introduce and promote energy sustainability efforts and create learning opportunities for students and faculty of the university. For more information on WISER's Kickoff visit the website:

[http://webservices.iit.edu/calendar/webCal3\\_detail.asp?event\\_id=3412&date=3/3/2008&view=week](http://webservices.iit.edu/calendar/webCal3_detail.asp?event_id=3412&date=3/3/2008&view=week)

Girl Scouts of America host Earth Day Celebration

The Girl's Night Out Earth Day Extravaganza was held on April 20<sup>th</sup> at Antelope Park in Lincoln, Nebraska. This was a community-wide event in which participants were encouraged to enjoy the wonders of the earth and its occupants. Organizers encouraged people to ride their bikes, walk, bring their own food, have a picnic, enjoy the band. Many other groups were there, as well as business leaders and Mayor Chris Beutler. For more information on how to celebrate Earth Day or

how to use this celebration to create Crossville's community-wide sustainability celebration visit:  
<http://www.homesteadgsc.org/Girls/GNO-April%202008.pdf>  
<http://www.journalstar.com/articles/2008/04/18/news/local/doc4807dc8928bfb618730236.txt>  
<http://www.earthday.gov/>

**SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:**

Environmental Protection Agency  
Local businesses

**COMMENTS/SUGGESTIONS:**

A city-wide energy efficiency celebration or sustainability barbecue would be a great way to celebrate any gains Crossville has made, such as CESI, and to create a new vision to accelerate environmental progress. It would be a time to unite around energy sustainability initiatives and encourages continuing progress.

**PROJECT 4**

**Become a Cool City and adopt the policies associated with Cool cities**

Crossville has already begun the process of becoming a cool city. As a cool city, Crossville has pledged to take the necessary steps to reduce oil dependency and global warming pollution. Following in the footsteps of many environmentally aware communities such as Seattle and Madison, the three top goals Crossville should aspire to are: (1) Green your city's vehicle fleets with hybrid and other cleaner cars, (2) Modernize city buildings with money-saving energy-efficiency technology, and (3) Invest in clean and safe renewable energy.

**WHAT OTHER COMMUNITIES HAVE DONE:**

**Seattle, Washington**

Seattle has accomplished many milestones as a cool city. They have established a group of local citizens who are committed to reducing warming emissions, worked to engage the community to build support for the cool cities program, created a local climate action plan, performed community-wide "global warming audits", and much more. For more information on Seattle's advancements in the cool cities program visit:

<http://coolcities.us/cityProfiles.php?city=182&state=WA>

**Madison, Wisconsin**

Madison considers itself an environmentally conscious, global community. It preserve this perception, the community has created many campaigns to protect their environment and encourage energy sustainability. Such campaigns include the Green Vehicles Campaign, Clean Power Campaigns, Energy Efficiency Campaigns, the Mayor's Sustainable Design and Energy committee, and other initiatives. To review Madison's success as a cool city go to:

<http://coolcities.us/cityProfiles.php?city=114&state=WI>

**SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:**

To aid Crossville in the difficult task of achieving Cool Cities' goals there are many government-funded programs that offer financial and technical assistance. Because there are several community entities within Crossville that may need some form of support, they can utilize the many different government departments that provide aid. Examples of departments offering assistance include: the U.S Department of Agriculture (USDA), Environmental Protection Agency (EPA), and the Department of Energy

**COMMENTS/SUGGESTIONS:**

Being a Cool City can provide many benefits for the community of Crossville, Tennessee. Having already made a commitment to stop global warming by signing the U.S. Mayors' Climate Protection Agreement, Crossville can benefit from the many tools offered on the Cool Cities website. Activist Tools include: implementation fact sheet, best practices guides, technical information, implementation guides, campaign handouts, and much more. Creating citizen buy-in and getting the community involved is the only way to take advantage of all the help offered to Cool Cities.

**PROJECT 5**

**Retrofit buildings to meet Leadership in Energy and Environmental Design (LEED) Standards**

**WHAT OTHER COMMUNITIES HAVE DONE:**

By retrofitting existing buildings to meet LEED Standards, building operators and owners will be able manage the facilities operations and maintenance through maximizing efficiency and reducing negative impacts on the natural environment. The LEED evaluation system addresses cleaning and maintenance issues (interior and exterior), recycling programs, and system upgrades.

The Environmental Protection Agency's (EPA) Headquarters in Sacramento, California has gone through the process of making the entire building more energy efficient. Since the completion of this project, the building is now 34% more energy efficient, seen \$12 million increase in asset value and prevented over 200 tons of waste being placed into landfills every year.

**SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:**

Aside from the state and local government tool kit provide the U.S. Green Building Council (USGBC) there is a USGBC Excellence in Green Building Curriculum Incentive Grant which "provides monetary support to develop innovative green building curricula across all educational levels and content areas". The Kresge Foundation's Green Building Initiative provides educational resources and special grants to help non-profits

and governments with projects involving renovation, historical preservation, and new construction to meet LEED Standards.

COMMENTS/SUGGESTIONS:

Please visit <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=221> & [www.usgbc.org](http://www.usgbc.org) for more information on these programs. The local government took kit also available on USGBC's website.

PROJECT 6

Meetings to learn the benefits of fuel cells

WHAT OTHER COMMUNITIES HAVE DONE:

A fuel cell functions like a battery but does not require re-charging or run out of energy. As long as fuel is supplied, the fuel cell will produce electricity and heat. Many industries, such as automotive, health care, and municipalities are using fuel cells as an alternative source of energy. In 2007 Fuel Cells were installed at the State Capitol of Sacramento, California. Low wattage lights were placed on the Christmas tree and saved the municipality 95% of the energy that would have been consumed by incandescent bulbs. The North Central Bronx Hospital in Bronx, New York installed Fuel Cells in 2000 to provide supplemental power and back-up power.

SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:

The U.S. Department of Energy's Hydrogen, Fuel Cells & Infrastructure Technologies Program uses an open and competitive procurement process to provide financial assistance in R&D and other projects. The active solicitations can be found on DOE's website. For a more personal and informative meeting, contacting the Oak Ridge National Laboratory's Visitor's Center and the Energy Efficiency and Renewable Energy (EERE) Division to discuss the possibility of establishing a meeting and/or tour of ORNL with the goal of learning more about fuel cells and finding a suitable fit in Crossville.

COMMENTS/SUGGESTIONS:

A Pre-Solicitation Workshop was held on January 23-24, 2008 in Golden, Colorado to inform the public on fuel cell technology, research, development, and demonstration topics where government funding can be used. This workshop will assist in the development of the upcoming FY 2009 Announcement for Fuel Cell Funding Opportunities. More information can be found in the Hydrogen, Fuel Cells & Infrastructure Technologies Program on US Department of Energy's website.

[www.fuelcells.org](http://www.fuelcells.org)  
[www.ornl.gov](http://www.ornl.gov)

[www.fueleconomy.gov](http://www.fueleconomy.gov)  
<http://www1.eere.energy.gov/hydrogenandfuelcells/>

## PROJECT 7

### Adopt Smart Growth Policies

#### WHAT OTHER COMMUNITIES HAVE DONE:

Smart Growth is a creative way to preserve the natural environment by protecting water and air quality and maximizing the use of developed land. In Bethesda, Maryland, Bethesda Row has been transformed from a commercial district into a mixed-use, pedestrian friendly area. The redevelopment has encouraged business from the surrounding metropolitan Washington area. Although mostly commended for its walkable neighborhoods, Bethesda Row has incorporated almost all of the Smart Growth Policies. Smart Growth policies are evident in Aspen, Colorado. The Benedict Commons is an affordable housing option for the traditionally expensive city. The Commons were completed in March 1996 and has been highly regarded ever since. A resident earning \$17,000 to \$38,000 per year is most likely to live in this neighborhood.

#### SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:

The Environmental Protection Agency provides Smart Growth Grants in support of activities implement the goals of Smart Growth. The grants are always announced on the EPA's Smart Growth website and on [www.grants.gov](http://www.grants.gov). To be notified of upcoming opportunities, visit [www.grants.gov](http://www.grants.gov) and register to receive periodic updates.

#### COMMENTS/SUGGESTIONS:

Smart Growth policies include mixed land uses, compact building design, the creation of a variety of housing opportunities and choices, walkable neighborhoods, distinctive communities that have a strong sense of place, the preservation of open space, farmland, natural beauty, and critical environmental area, encouraging cost effective development towards existing communities, public transportation and the encouragement of community and stakeholder collaboration in the decision making process.

## PROJECT 8

### **Purchase Energy Star Appliances in bulk for municipal properties**

#### WHAT OTHER COMMUNITIES HAVE DONE:

None found.

**SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:**

The most common financial options for the public sector are tax-exempt lease purchase agreements and performance contracts. The tax-exempt or municipal lease is similar to an installment purchase agreement. Ownership will vest in the municipality at the end of the financing term. In a Performance Contract payment for the project is contingent upon whether the equipment functions appropriately. There are no upfront costs to the owner and is paid through the energy savings. These options are preferred by many governments instead of the traditional debt financing. The municipality will be able to pay for energy efficiency upgrades by using money that has already been allocated for the utility operating budget.

**COMMENTS/SUGGESTIONS:**

Perform a cost benefit analysis associated with the Municipality purchasing energy star appliances identifying the type and quantity of appliances needed and the applicable purchase, installation, maintenance and replacement costs. Based on the results, if it is a viable option to proceed with the purchase.

Please visit these websites for more information:

[http://www.energystar.gov/ia/business/BUM\\_financing.pdf](http://www.energystar.gov/ia/business/BUM_financing.pdf)

[http://www.energystar.gov/index.cfm?c=bulk\\_purchasing.bus\\_purchasing](http://www.energystar.gov/index.cfm?c=bulk_purchasing.bus_purchasing)

**PROJECT 9**

Create a city recycling program – one that will establish ways to measure and evaluate the success of current residential/commercial/and industrial recycling programs w/ the current Cumberland County recycling program.

**WHAT OTHER COMMUNITIES HAVE DONE:**

Philadelphia, Pennsylvania

**REGIONAL COMMERCIAL RECYCLING GROUP  
PLANS ADDITIONAL OUTREACH**

The Greater Philadelphia Commercial Recycling Council (GPCRC) recently outlined its accomplishments since being founded in 2001 and also proposed new directions in the next two years. Recent projects have involved on-line clearinghouse ([www.gpcrc.com](http://www.gpcrc.com)) partnerships with 12 groups and agencies, and comprehensive waste audits and recycling program designs for more than 30 businesses and institutions in the region. Recycling opportunities in excess of 40,000 tons have been identified with cost savings estimated at \$4 million annually. With rising disposal costs and improved markets the 'new directions' will focus on specific sectors of the region's economy, perform basic research and needs assessment for each sector, and set specific recycling goals over the next five

to ten years.

Please visit the website, <http://www.jgpress.com/archives/free/000172.html> for a more detailed description.

**SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:**

The Tennessee Recycling Coalition (TRC) - is a non-profit organization made up of members representing private business, federal and state agencies, cities and counties, non-profit organizations, trade associations, educational institutions and individuals. The mission of the Coalition is to promote the adoption of recycling and waste reduction programs in the state of Tennessee by: Promoting the state-wide adoption of waste reduction and recycling, providing information and education, and partnering to address waste issues in the state.

Please visit the website, <http://www.trc-online.org/> for a more detailed description.

Recycling Equipment Grant - The recycling equipment grant is an excellent way for local governments and non-profit organizations working with local governments to purchase key pieces of recycling equipment. Items traditionally purchased under this grant include: roll off containers, skid loaders, shredders, scales, assorted styles collection containers, and educational materials used to educate the general public. This grant is a matching grant up to \$25,000. Matching portion is 10%-50% and is based on population and economic ability. State law established the recycling equipment grants to provide financial assistance to the local governments and non-profits

Please visit the website, <http://tennessee.gov/environment/swm/grants/regrant.shtml> for additional information about this grant.

**COMMENTS/SUGGESTIONS:**

The Tennessee Recycling Coalition promotes and encourages recycling and waste minimization through out the state of Tennessee at all levels, and has an established relationship with national, state, and local environmental agencies and other recycling organizations that provide representation whenever feasible.

Require recycling within all government departments

Implement environmentally preferable purchasing programs

Establish a recycling database and monitoring program to be managed by a full-time Recycling Coordinator.

Consider hiring a full-time grant writer committed solely to the purpose of writing grants for sustainable energy projects.

PROJECT 10

Youth Outreach and Education – Create learning programs and incentives for elementary school students.

WHAT OTHER COMMUNITIES HAVE DONE:

Green Schools - To help free up more resources for education while strengthening academic learning, the Alliance's Green Schools Program engages students in creating energy-saving activities in their schools, using hands-on, real world projects. Through basic changes in the operations, maintenance, and individual behavior, Green Schools has achieved [reductions in energy use of 5 to 15 percent](#) among participating schools. Past student participants in the Green Schools Program have made presentations to the school board on energy-efficiency retrofit recommendations, authored pieces for the local newspaper, and conducted energy audits for local small businesses, among other activities. The program is currently active in about 200 schools in select school districts in California, Maryland, New Jersey, New York, North Carolina, and Pennsylvania. New programs are under development in Texas, Virginia, and Washington, DC and also in India. Participation is often contingent upon funding levels, however, any school can access the free lesson plans for K – 12 via the Green Schools website at [http://www.ase.org/section/ audience/educators/lessons](http://www.ase.org/section/audience/educators/lessons) and at <http://www.ase.org/section/program/greenschl> for additional information.

SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:

The Green Schools Program is typically funded through grants from utilities, state energy offices, private foundations, or by school districts through an energy savings performance contract.

The Tennessee Energy Network (TEEN) – Provides information and materials to families on energy development and use to students and their families. The program entails several hands on elements including classroom presentations, in service teacher training, energy materials, a newsletter, and annual contest and awards.

COMMENTS/SUGGESTIONS:

The Academy of Energy Education - combines the study of science, energy, and math with real-world, hands-on experiences. The Academy offers a wide range of courses which can be used in schools to enhance and enrich the curriculum. Programs include:

- Energy Fun (K-3) - Allows students to have fun while learning about energy.
- Energy Fundamentals (4-6) - Teaches older students important fundamental energy concepts
- Energy Action Patrol (5-7) - Encourages students to apply energy efficiency concepts in their homes, school, and communities.
- Energy Action Teams (6-9) - Lets young adults work in groups and apply energy concepts in preparing a school energy efficiency policy.

- Energy Action Technology (9-12) - Focuses on energy technology and incorporates school-to-work and high school-to-college transition programs.

## PROJECT 11

Create a Public/Community Outreach Program that will enhance knowledge and environmental awareness throughout the community by utilizing the local cable channel to demonstrate and teach best management practices.

Create a branding campaign with logo, billboards, and greenway signs that will encourage awareness and sustainable practices.

### WHAT OTHER COMMUNITIES HAVE DONE:

The OEA is comprised of several major programs: **Education and Outreach (EO)**, **Environmental Justice (EJP)**, the **Fleming Training Center (FTC)**, **Governor's Environmental Stewardship Awards**, the **Radon Program (Radon)**, and the **Small Business Environmental Assistance Program (SBEAP)**. The OEA staff includes the Environmental Coordinators (ECs), who are located in four environmental field offices across Tennessee: **Jackson**, **Nashville**, **Johnson City**, and **Knoxville**. Environmental Coordinators provide permit coordination, conduct environmental forums, and serve as points of contact for environmental questions and outreach.

The WasteWise Logo Outreach –The Environmental Protection Agency has created a logo called 'WasteWise.' WasteWise partners are encouraged to highlight their participation in WasteWise by using the WasteWise logo. The logo is often incorporated into employee education tools such as posters, newsletters, and progress reports. EPA's goal is that the WasteWise logo will be recognized as a symbol of environmental leadership



### SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:

Tennessee Department of Environment & Conservation Office of Environmental Assistance (OEA) program provides information and non-regulatory support to businesses, schools, local governments, industries, organizations and individuals in order to prevent and reduce environmental impacts. The OEA and its staff utilize a range of outreach techniques and partnerships to enhance knowledge and environmental awareness for individuals and organizations. Several [annual environmental events](#) are also coordinated through the OEA and its various programs.

Please visit the website, <http://www.state.tn.us/environment/ea/> for additional information.

COMMENTS/SUGGESTIONS:

The Cumberland County Commission broadcast their meetings on the local cable channel and the channel could be used as an advertising mechanism and the cable channel could also be used for public service announcements at no additional cost.

PROJECT 12

Create a compost, non-biodegradable, partnership program w/ residents and local businesses to minimize waste.

OBED (River in Crossville) Protect, restore, and recycle stormwater from OBED river

WHAT OTHER COMMUNITIES HAVE DONE:

King County, Washington  
Composting Program

Cedar Grove Composting is a local composting company that has partnered with the local government's LinkUp program team to assist companies with using more recycled materials. Currently, the county is focusing on five priority materials for recycling: yard trimmings, food residuals, paper, wood and electronics. Together, these materials account for nearly 54 percent of the waste in the county's landfill. Cedar Grove Composting processes four of these five priority materials (all except electronics) in its composting process.

Please visit the website, <http://www.jgpress.com/archives/free/000172.html> for more additional information.

Stormwater Protection in Los Angeles, CA

***TMDL for Toxics in Marina del Rey Harbor Back Basins, RWQCB, Los Angeles Regional Water Quality Control Board (CA), \$150,000***

Develop TDML for toxics (copper, lead, zinc, DDT, dieldrin, chlordane, PCBs, toxicity)

Transferable approach to other watersheds  
Source characterization and linkage analysis

Waste load allocation and load allocation implementation plan  
Compliance monitoring program  
Public outreach

***Los Angeles River Watershed Stakeholder-Led TMDL Development and Water Quality Standard (WQS) Studies, City of Los Angeles (CA), \$150,000***

Metals allocation and implementation scheme for TMDL report (copper, lead, zinc, selenium, cadmium)  
Site Specific Objectives (SSO) Report, Basin Plan Amendment supporting documentation, and implementation plan for final TMDL  
TMDL development and WQS Studies for coliform, organics, and oils  
SSO Report for bioaccumulative pollutants  
Oils, organics and pesticides monitoring  
Facilitated collaborative stakeholder process

**SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:**

Currently, the EPA administer and manage about 600 water quality program and project grants to states, Tribes and local governments and provide oversight for over \$300 million in federal financial assistance each year. For example, the CWA [State Revolving Loan Fund \(SRF\)](#) is an innovative infrastructure construction financing tool available to states and territories for a range of water quality and environmental improvement projects.

Please visit the website, <http://www.epa.gov/region09/water/grants/index.html> for more information.

**COMMENTS/SUGGESTIONS:**

Currently, the Maple Valley composting site processes about 25,000 tons of material in peak months. Cedar Grove sells approximately 500,000 bags of compost each year to home gardeners in addition to its commercial and municipal accounts.

**PROJECT 13**

Either include Energy-Efficient homes in a community's annual Parade of Homes, or showcase these homes a completely separate Parade to help community residents see the possibilities that exist for improving their own homes.

WHAT OTHER COMMUNITIES HAVE DONE:

**Detroit, MI; Panama City, FL; Frisco, TX; Aurora, CO; & Minneapolis/St. Paul, MN:** all included energy-efficient, “green,” or technologically-advanced homes in their general Parade of Homes. Some Parades are hosted by the developers or contractors themselves to promote their products and services, others are hosted by women’s and/or civic organizations as a fundraising and/or charitable event. Either way, they raise awareness about the community, neighborhoods, housing, financial, and environmental resources.

**Home Builders Association of Durham, Orange, and Chatham County:** Has an annual Green Home Tour that showcases *only* green homes, has environmental keynote speakers, and puts builders, sellers, and buyers in touch with one another.

<http://www.hbadoc.com/displaycommon.cfm?an=1&subarticlenbr=242>

SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:

It is best to get local organizations and businesses to sponsor this event in order to make it the most beneficial for all parties involved. Be sure to include banks and mortgage companies, local builders, hardware and home improvement stores, utility companies, environmental organizations and chapters, developers, and contractors.

PROJECT 14

Establish an Urban Forestry Plan or Tree Ordinance in the City of Crossville to simultaneously help maintain its small-town charm and create a healthier community for citizens and their environment.

WHAT OTHER COMMUNITIES HAVE DONE:

**Bell Buckle, TN:** Created a Tree Ordinance to promote and protect the welfare of trees in their community. <http://bellbucklepark.info/bbtree/ordinance.htm>

**Morristown, TN:** Established an award-winning tree board with monthly meetings, responsibilities, and is a member of Tree City USA.

[http://www.mymorristown.com/plan\\_tree.php](http://www.mymorristown.com/plan_tree.php)

**Germantown, TN:** Established an ordinance because “trees are a part of our heritage and our future, and that they are an essential part of the quality of life within our city.”

[http://www.ci.germantown.tn.us/Parks\\_and\\_Recreation/vegetation\\_ordinance.htm](http://www.ci.germantown.tn.us/Parks_and_Recreation/vegetation_ordinance.htm)

SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:

**USDA:** Provides assistance to currently unfunded projects while requiring matching funds from the municipality.

<http://www.state.tn.us/agriculture/forestry/urbanforestry/infopak.pdf>

**Tree City USA:** Provides direction, technical assistance, and recognition for community forestry programs. It promotes creation of green space in cities through local policy techniques. [www.arboday.org/programs/TreeCityUSA.cfm](http://www.arboday.org/programs/TreeCityUSA.cfm)

**American Forests:** Global ReLeaf Grants provide funds for public lands or public-accessible private lands of (potentially) 20 acres or more that have been damaged. Becomes part of American Forests' carbon sequestration credits.

## PROJECT 15

Make carpooling a more intentional act, through centralizing information and resource databases, creating incentives to participate, maximizing the rewards for involvement, and decreasing the number of cars on the road.

### WHAT OTHER COMMUNITIES HAVE DONE:

**Knoxville Regional Transportation Planning Organization:** Smart Trips helps coordinate carpooling, rewards members for taking alternative transportation, and rewards employers also for encouraging carpooling/alternative travel.

<http://smartrtrips.knoxtrans.org/>

**San Mateo County Carpool Incentive Program:** Gives gas cards to all participating commuters, paying more if the vehicle is a hybrid or clean-air car. They also have a phone number contact to find already existing carpools to join.

**Denver Ridearrangers Program and Portland Tri-Met:** Both programs help commuters arrange bikepools, schoolpools, carpooling, and carsharing activities

**Neighborhood Eco-Pass:** Boulder, Colorado offers significantly reduced bus passes to neighborhoods who use mass transit instead of their personal vehicles. Still other communities offer reductions on parking passes and other fees.

### SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:

**Carpool Incentives Program:** EPA assembled this packet to discuss benefits for employers and employees, implementation issues, tax considerations, services contacts, environmental benefits, and sample guidelines.

<http://www.cleanairpartnerstx.org/resources/Carpool%20Incentive%20Programs%20-%20EPA.pdf>

[www.erideshare.com](http://www.erideshare.com): Helps coordinate carpoolers with travel times and destinations.

**University of South Florida:** Has compiled ride-matching software systems into one database with descriptions of and links to each one.

<http://www.nctr.usf.edu/clearinghouse/ridematching.htm>

**Federal Transit Administration:** Has 20 grants options communities can choose from to finance their alternative transportation projects.

[http://www.fta.dot.gov/funding/grants\\_financing\\_263.html](http://www.fta.dot.gov/funding/grants_financing_263.html)

PROJECT 16

Create bike trails in the City of Crossville that produce better recreational opportunities, safer transportation, and enhance tourism.

WHAT OTHER COMMUNITIES HAVE DONE:

**Virginia Creeper Trail:** Spans from White Top Mountain to Abington, VA and was created from an abandoned railroad track.

**Haw Ridge Park:** Oak Ridge, TN, created over 25 miles of trail from previous Jeep roads that includes color-coding for trail difficulty and winds along Melton Hill Lake.

**Longleaf Trace:** Hattiesburg, MS created a mountain bike and horseback trail that extends from the community to a college campus in Prentiss, MS. It was also converted from a former railroad track.

**Minuteman Bikeway:** This 4-community bike path in Massachusetts connects to both subway and bike routes in a conscious effort to reduce automobile traffic in the area. Can be a good path to aspire to, as it is considered “America’s most celebrated bike path.”

SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:

**International Mountain Bicycling Association:** A comprehensive list of funding opportunities, toolboxes, and articles. <http://www.imba.com/resources/grants/index.html>

**Bikes Belong Coalition:** Offers grants annually for trail construction. [www.bikesbelong.org](http://www.bikesbelong.org)

**Tennessee Department of Transportation:** Enhancement Grants for the construction of bike paths. Includes bike trail standards. <http://www.tdot.state.tn.us/local/grants.htm>

**Tennessee Parks and Greenways Foundation:** Includes tips on successful trail construction, funding opportunities, and contact information for state and federal organizations. <http://www.temngreen.org/greenwaysandtrails.htm>

PROJECT 17

New school – Re-capture water runoff from roof – irrigation pond for watering football field

WHAT OTHER COMMUNITIES HAVE DONE:

Rainwater harvesting ponds have been used in Florida.  
See <http://www.stormwatercenter.net/Library/Practice/82.pdf>

**SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:**

Department of Energy Smart Schools – Building America Program assists in providing assistance to new/existing schools for energy sustainable improvements. Day lighting, efficient HVACs, and better insulation are some methods funded before. The water re-use programs might also qualify.

The American Rainwater Catchment System Association provides technical assistance and information on this strategy: see <http://www.arcsa.org/>

**PROJECT 18**

**Energy Efficient Housing Rehabilitation – for Manufactured Housing in Particular**

**WHAT OTHER COMMUNITIES HAVE DONE:**

Implementing LEED standards has been done in communities across the US Philadelphia project had manufactured homes built to LEED standards, see <http://www.philadelphiasustainabilityawards.org/nominees/eca> (Scroll down to ‘Background on ECA’s New Initiatives’)

**SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:**

Possible Funding under Rural Housing Preservation Assistance:  
<http://www07.grants.gov/search/search.do;jsessionid=LRncw12rsspzYJGB2s7mdXrTqQv3zQ4yT8LMWX8877069840?oppId=40800&flag2006=false&mode=VIEW>

**COMMENTS/SUGGESTIONS:**

More study to determine number of manufacture housing units in Crossville and ways to encourage energy efficient design/rehab in such homes. Work with local suppliers to encourage energy efficient models.

**PROJECT 19**

**Purchase tub grinder to recycle construction waste**

**WHAT OTHER COMMUNITIES HAVE DONE:**

New Berlin WI uses a tub grinder to recycle organic developer- generated waste:  
See <http://www.timberlinemag.com/articledatabase/view.asp?articleID=2469>

**SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:**

See EPA information on this page for a host of links to construction waste recycling:

<http://www.epa.gov/epaoswer/non-hw/debris-new/index.htm>

COMMENTS/SUGGESTIONS:

See link

<http://observationmountain.com/wood-recycling-a-green-opportunity/>

Gives info on recycling wood related construction and demolition waste.

PROJECT 20

Finance Home Solar Panel Installation – Private Businesses Front Costs and customers Pay back through PPA’s (power purchase agreements). A PPA recoups costs by charging the homeowner a monthly power rate, but at a discount price still less than regular energy costs. The solar generated energy cuts down on energy needs from the local power companies, saves customers money, provides an investment opportunity to the businesses who market and maintain them, and increases the market demand for what would otherwise be a cost prohibitive project.

WHAT OTHER COMMUNITIES HAVE DONE:

Silicon Valley based Sun Run company offers PPAs to customers in Pleasanton, CA.

Private utility companies looking to try the same plan: Duke Energy in North Carolina  
So CA Edison in Southern CA

Berkley CA wants to buy these up for citizens by securing low rate bonds and buying in mass. Then citizens pay back to the City over 20 years. These monthly bills would be rolled in property tax bill.

SOURCES OF TECHNICAL AND/OR FINANCIAL ASSISTANCE:

Cities can sell bonds to help finance these initiatives.

Identification of private companies to fund PPA’s in Crossville would need to occur.

COMMENTS/SUGGESTIONS:

Investment in these energies help utility companies meet state energy mandates.

Maintenance on panels less costly than repairs required during mass grid power outages.

See article, “Companies give folks solar help to go green” in USA Today, March 31, 2008

## V. ADDITIONAL CONSIDERATIONS

In order to see any of the goals and objectives contained in this report through to fruition, it is recommended that an Energy Commission be established immediately by the Crossville City Council. Such an entity is necessary to preserve the momentum, enthusiasm, and knowledge created by the Crossville Energy and Sustainability Initiative. It will be the duty of this Commission to gather and study information, determine priorities, develop plans for the implementation of programs and policies, make recommendations to the City Council for implementation, and establish project scopes of work, schedule, and budget.

The Energy Commission could be established any number of ways, depending on what the City of Crossville finds most appealing and beneficial. One method could be for each City Council member to appoint one person to it. The mayor and/or City Council could also together appoint various relevant department heads and community members to the Commission. Participants in the CESI or other members of the community could also “nominate” citizens they feel would be a boon to the process.

Once established, the Energy Commission would elect a director/chairperson and assistant director/vice-chairperson. Meetings would be advertised and open to the public and minutes kept for the public record. City of Crossville elected officials and employees would be available to help the Commission in matters of logistics, preparation, expertise, and execution. The Commission shall meet on a regular basis and communicate its progress and activities to the Mayor and/or the City Council. Periodically (perhaps every 2-4 years), the City Council shall direct a reassessment of the barriers, assets, and opportunities that guide the efforts of the Commission for any changes in condition and situation that may have occurred during that time and determine if it has run its course or should continue, or if it needs to take a different path or continue the one it is on for any changes.

Communities that have instituted similar efforts include Pleasanton, CA’s “energy advisory committee” (<http://www.ci.pleasanton.ca.us>), Dayton, OH’s “energy team” (contact Diane Shannon at [diane.shannon@cityofdayton.org](mailto:diane.shannon@cityofdayton.org)/937-333-3762). Another model of how an energy program can be integrated into local policy and program decisions is through an “energy analyst” as has been set up on Eugene, OR (contact Lynn Eichner-Kelley at [lynne.m.eichnerkelley@ci.eugene/](mailto:lynne.m.eichnerkelley@ci.eugene/)541-682-5083).

It is also advised that the Energy Commission find an “energy sister city” for the City of Crossville. This other community could either be one that has already been through the same or a similar process and could offer some wisdom to

Crossville, or it could be a city that is currently in the same situation that could share in the assembly of information, as well as provide advice on projects that are being implemented. Establishing this relationship early could preempt the City of Crossville from “reinventing the wheel” and make their journey towards energy sustainability easier, more predictable, and ultimately more successful. One possibility is Cookeville, TN, which, as a signatory to the Cool Cities campaign, has committed itself “to implement smart energy solutions...to save money and build a cleaner, safer future” ([www.coolcities.us](http://www.coolcities.us)).

## ATTACHMENT A – Criteria Handout

# CROSSVILLE ENERGY AND SUSTAINABILITY INITIATIVE

## PROJECT EVALUATION CRITERIA

Here are three criteria that will be used in the workshop to evaluate the project ideas:

**Criterion 1 – Cost:** How expensive will it be for this project to be implemented? The bearer of the cost of the projects will vary: It may be at an individual level (i.e., a project that will require individuals to spend household money to achieve its implementation), an organizational level (i.e., a project that will require the expenditure of funds by a business or group) or a municipal level (i.e., a project that will need to be funded by the City).

One of the following should be selected to characterize this aspect of the project:

- L = Low
- M = Medium
- H = High

**Criterion 2 – Ease of implementation:** How difficult will it be for the project to be implemented? This would involve consideration of such dimensions as availability of needed expertise, consistency with other plans and projects, likely support/opposition within the community in general, among local groups and organizations, and on the part of local government.

One of the following should be selected to characterize this aspect of the project:

- L = Low (likely to be relatively difficult to implement)
- M = Moderate
- H = High (likely to be relatively easy to implement)

**Criterion 3 – Time-frame:** How long will it take for the community to take action on this project, that is, organize and implement? This would involve consideration of such issues as funding availability, organizational capability (are there groups and organizations available now to give it attention), technology (is it likely to become more feasible at some future date) and project complexity.

One of the following should be selected to characterize this aspect of the project:

- S = Short (<24 months)
- M = Medium (3-5 years)
- L = Long (> 5 years)

## ATTACHMENT B – Project Ideas Analysis

**Table 1 shows the criteria evaluation for forty-nine of the sixty-two project ideas that were proposed and discussed at the CESI workshops. The evaluation is the sum total (“total score”) of the points that each project idea generated according to the following scales:**

**Cost: Low=3, Moderate=2, High=1**

**Ease of implementation: Low=1 (difficult), Medium=2, High=3 (easy)**

**Time-frame: Low=3, Medium=2, High=1**

**Using this scoring method, the project ideas that were perceived by the workshop participants to be least costly, easiest to implement and shortest in terms of time-requirements would score the highest. Thus, these are project ideas that are most amenable to implementation.**

**Within each ranking group, the project ideas have been arranged in alphabetical order.**

<b>Project #</b>	<b>Project Idea</b>	<b>Cost</b>	<b>Implem</b>	<b>Time</b>	<b>Total score</b>	<b>Rank</b>
1	City kick-off party to promote energy audit	L	H	S	9	1
2	Educate government employees	L	H	S	9	1
3	Encourage car pooling	L	H	S	9	1
4	Form a committee of government officials, industry professionals and citizens to look at zoning	L	H	S	9	1
5	Parade of Energy Efficient Homes (Local Home Builders Association as sponsor)	L	H	S	9	1
6	Water audit	L	H	S	9	1
7	Child Outreach – TEEN (Energy Outreach Mascot ‘Otter’)	L	M	S	8	7
8	Continuation/expansion of utilizing available resources	L	M	S	8	7
9	Encourage TVA to re-implement Home Weatherization program	L	M	S	8	7
10	Public Education (Website Design, Branding Campaign w/ Logo, Billboards, Greenways)	L	M	S	8	7

11	Public Outreach-Community Outreach (U-Tube, Advertise 'How To's on Local Cable TV Channel', Down Spouts, Collection Barrels)	L	M	S	8	7
12	Usage Analysis (Audit) (Energy Assessment & Audit to determine efficiency, Lights, Water, Number of trips)	L	M	S	8	7
13	Work with TN Dept of Planning to determine Pros and Cons of zoning regulations	L	M	S	8	7
14	City purchase energy efficient equipment	M	H	S	7	14
15	Insert Conservation Literature in Utility Bills (Water) Public Service Announcements-PSAs	H	H	S	7	14
16	Institute Curbside Recycling Program	M	M	S	7	14
17	Purchase Tub Grinder for Recycling Center to Recycle Contractor Waste	H	M	S	7	14
18	Rebate Program for Energy Efficient Appliances; Low Flow Shower Heads	M	M	S	7	14
19	Smart House Credit on Building Permits (Energy Star)	M	M - H	S	6.5	19
20	Conduct free energy audit of all city buildings/infrastructure	L	H	M	6	20
21	Give recognition/awards to sustainable practitioners	L	H	M	6	20
22	Meetings to learn benefits of fuel cells	L	H	M	6	20
23	Signal lights (Coordinate during low volume traffic, Consult w/ City Engineer)	L	H	L	6	20
24	Urban Forestry Plan- Crossville Tree Board (parking lot vegetation)	L	H	M	6	20
25	Allow contract waste to be recycled – Develop program to encourage recycling waste from Developers	M	L	S	5	25
26	Become a cool city- adopt policies of cool cities	L	M	M	5	25
27	Develop local transportation management plan	H	L	S	5	25
28	Photo-voltaic Roof Tops (Solar Panels, City Demonstration Projects, Energy Audits)	L	M	M	5	25
29	Preservation/Restoration Tree Program (Pro-active Planting, Tree Board, Tree and Lawn Planting Program for Downtown)	L	M	S - M	5	25
30	Adopt Smart Growth	M	H	L	4	30
31	Bio-diesel School Buses (Invest in Hybrid Vehicles)	H	M	M	4	30

32	Create and encourage bike trail/use	M	M	M	4	30
33	Create city recycling program	H	M	M	4	30
34	Create sustainable energy plan (with citizen input)	M	M	M	4	30
35	Develop higher building standards for energy efficient homes – in particular for Manufactured Housing	L	L	M	4	30
36	Energy efficient education throughout the school system	M	M	L	4	30
37	Hazardous waste pick-up recycling center	H	M	M	4	30
38	LED Lights	M	M	M	4	30
39	More crosswalks to encourage walking (Pedestrian Walkways, Bike Lanes, Greenways, Ordinance?)	M	M	M	4	30
40	New Schools (Water Filtration System, Irrigation Pond)	L - H	M	S - M	4	30
41	Pass LEED Certification Standards	M	M	M	4	30
42	Purchase Energy Star appliances in bulk for municipal properties	M	H	M	4	30
43	Retrofit existing buildings to meet LEED standards	M	M	M	4	30
44	Skylights w/ Fiber Optics	M	H	M	4	30
45	Become a Bio-Diesel Depot through state funds	H	L	M	2	45
46	Design Greenways & Public Gardens thru Parks & Recreation	H	L	L	2	45
47	Financing Home Solar Panel Installation- Private Biz Front Cost, paid back from Residents in form of energy savings	H	L	M	2	45
48	Incentive Discount Program for Private Citizens and Community/Industries (Water Re-use and Resale @ Discount, Education (Compost, Non-biodegradable, Partnership w/ waste water utility, billing, OBED)	H	L	L	2	45
49	Ride Board (Park 'n' Ride Lot, Telephone Numbers	H	L	L	2	45

## Table 2 – Project Ideas Not Evaluated

Table 2 shows projects that workshop time and feasibility constraints prevented from being subjected to critical evaluation by the participants. They have been arranged in alphabetical order.

### Project #

### Project Idea

- 50 Encourage, Require dual-flush, low-flow flush toilets in New Housing

- 51 Non-profits develop education programs to inform citizens
- 52 TVA- Municipal Buildings Improvement Projects