

City of Topeka, Kansas

Energy Efficiency & Conservation Strategy

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Final Report

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The development of the City's Energy Efficiency and Conservation Strategy (EECS) was overseen by the Sustainability Advisory Board (appointed by the City Council) and managed by Michael E. McGee, Deputy Director of the Department of Public Works (DPW). Vermont Energy Investment Corporation (VEIC) was selected through a competitive bidding process to serve as consultants to the City during development of the EECS.

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*Christine Donovan & Shawn Enterline, VEIC
July 2010*

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Executive Summary

Introduction & Background: Topeka's Foundation for Progress

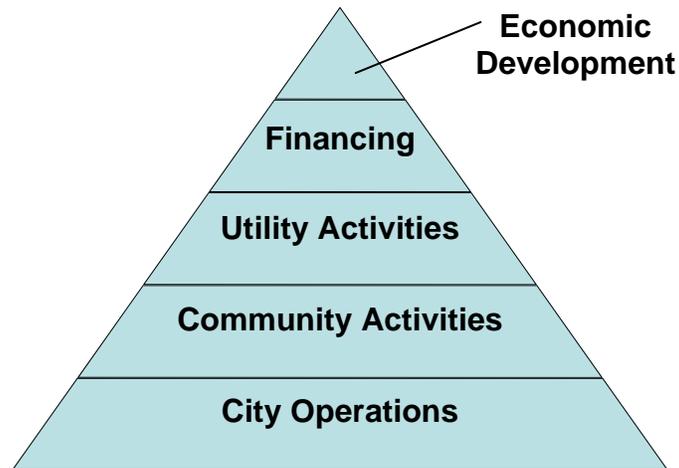
The City of Topeka, Kansas is well positioned to become a national leader in energy efficiency, conservation, and sustainability in the U.S. and to drive future economic development based on that leadership. The city is located at the cross roads of the transportation system in the mid West and features the innovative new Kanza Fire Commerce Park, a 1,000+ acre sustainability mega park seeking to attract manufacturers of green technologies and products from around the world. The city is host to a Frito Lay plant which has achieved zero landfill waste and is the first manufacturing facility in Kansas (and the second in the nation) to be awarded the LEED Gold Certification for Existing Buildings. Topeka's Housing and Neighborhood Development Office recently received the prestigious Energy Star Award for Excellence from the U.S. Environmental Protection Agency. And more!

Building upon the sustainability efforts already underway in Topeka, in 2009 the City applied for and was awarded \$1.24 million from the U.S. Department of Energy (DOE) Energy Efficiency and Conservation Block Grant monies as part of the federally funded American Recovery and Reinvestment Act of 2009 (ARRA). Later that year, the City commissioned development of a comprehensive Energy Efficiency and Conservation Strategy (EECS), as required by the federal funding. The EECS developed for Topeka is described in detail in this report. The EECS was created over a year-long process that involved selecting a planning consultant through a national competitive solicitation, holding over two dozen meetings with public and private sector stakeholders throughout the city, convening two professionally facilitated meetings with the general public, and working in close collaboration with the nine-member Sustainability Advisory Board appointed by the City Council.

Organization

The Energy Efficiency and Conservation Strategy for Topeka presented in this report consists of a progression of actions that begin with City Operations, and which then move through other key sectors of the community. This progression begins with efficiency and conservation activities already underway in the community, and continues with new programs and activities recommended as a result of the planning work completed for this document. By making the City's own operations energy efficient and sustainable, the City puts itself in a strong position to promote additional actions by the wider community. Once the City sets an example with its own energy efficient operations, it can help create a portfolio of community activities that are coordinated with existing utility activities and available financing. This portfolio will enable an ongoing stream of investments by the residents and business owners of Topeka that support the EECS objectives on a community wide scale. As the portfolio matures and Topeka publicizes the results of its EECS, the ultimate objective is to create an environment in which new economic development opportunities arise based, in part, on the City's commitment to sustainability.

Progression of Topeka's Energy Efficiency & Conservation Strategies



Topeka's Energy Savings Goal: 10% by 2020

Key to the Energy Efficiency and Conservation Strategy developed for Topeka is the strong recommendation that the community, both at the City Operations level and at the Community Wide level, establish the goal to save 10% of overall energy use by 2020. Articulating and promoting this goal sends a strong policy message to civic and community leaders, and provides an important focus for a variety of municipal and community planning and implementation activities. Similar goals have been set in other communities, and can vary widely. For example:

- The City Council of Austin, Texas passed a resolution to "Make all City of Austin facilities, fleets, and operations totally carbon neutral by 2020."
- The City of Eugene, Oregon developed a Climate and Energy Action Plan that established a goal to "...reduce total, current, community-wide fossil fuel consumption by 50% by 2030."
- The City of Lawrence, Kansas developed a Climate Action Plan that seeks an "...80% reduction in greenhouse gas emissions ... by 2050, using baseline data from 2005."

Determining the right goal for a community is not an exact science. Some communities prefer to set very aggressive long-term goals, and then struggle to achieve them over a relatively long period of time. Other communities prefer to set more immediate goals that they are confident can be achieved. For Topeka, this EECS recommends a goal of saving 10% of energy use by 2020. This goal represents a substantial change from business as usual and will require important and significant changes in policy, regulation, and behavior in municipal operations and throughout all sectors of the community. That said, the goal is modest enough to be achievable, especially in a community such as Topeka that has strong and defined municipal and civic leadership, vibrant business and community organizations, and an increasingly "can do" spirit (as evidenced by the recent Heartland Visioning strategic planning work, the innovative sustainability plans of Go Topeka, and the recent community organizing work of Think Big Topeka for the national Google fiber optics challenge, among others).

Topeka's Energy Use & Costs: Buildings and Transportation are Key

Topeka's pattern of energy use is similar to other cities in the Midwest. From a cost perspective, about one half of the community's energy costs are associated with building energy use (i.e. electricity and natural gas) and one half is associated with transportation (gasoline and diesel fuel). At the city operations level, energy use in buildings accounts for three quarters of the City's annual energy costs, and transportation accounts for about one quarter. This indicates that building energy use is an important strategic focus for Topeka's EECS. From an emissions perspective, electricity use accounts for over 50% of all emissions at the community wide level and over 80% of all emissions at the city operations level. This is due to the high percentage of coal fired power plants in the region, and makes strategies that focus on reducing electricity use a priority if greenhouse gas emission reductions are desired.

Sources of Energy Savings: Conservation, Efficiency, and Renewable Energy

There are three major categories of energy saving strategies:

1. Conservation – Demand less energy by driving less, turning off lights, etc.
2. Efficiency – Demand less energy by buying and building more efficient cars, lights, appliances, electronics, and buildings.
3. Renewable Energy – Supply more energy using wind, solar, geothermal and biomass.

Conservation strategies typically have the lowest direct cost because they involve behavioral changes on the part of the consumer, and require relatively little or no direct investment in technology. For this reason, conservation strategies are usually the first steps taken to save energy. However, conservation strategies involve reducing the level of service previously enjoyed by a consumer. As a result, efficiency improvements often becomes the core strategy used to reduce energy use (rather than conservation) since increased efficiency saves energy while simultaneously preserving the level of service to consumers. Efficiency strategies typically have a higher direct cost (than conservation) since they usually require a greater level of investment in new measures or technology. Hence, increased efficiency is often the second step (compared to conservation) in priority. Finally, switching to clean, renewable energy strategies are often the third step. The replacement of traditional energy sources with renewables typically involves no reduction in the level of service but tends to have the highest direct cost compared to conservation and efficiency as a result of renewable technology and installation costs. These costs are going down over time, however, as global and national markets for renewable energy technologies increase and economies of scale are reached in manufacturing, distribution, sales, and installation.

Strategies and Actions to Achieve 10% Energy Savings by 2020

The goal to achieve 10% energy savings in Topeka established in this EECS is aggressive yet achievable, and will require substantial changes in policy, regulation, and behavior compared to business as usual. The implementation plan recommended for achieving the goal includes a wide range of strategies and actions, listed in order of priority based on relative ease of implementation, cost, and impact. The strategies and actions include increased participation in existing voluntary:

- Education and Recognition Programs, such as the national LEED building certification program and the federal Energy Star building and appliance programs;
- Stand Alone, Single Incentive Programs, such as the Efficiency Kansas loan program and Westar's WattSaver free programmable thermostat program; and

- Coordinated, Bundled Incentive Programs, such as the Facility Capital Improvement Program, Efficiency Works Program, and other incentives provided the Kansas Corporation Commission (the State Energy Office).

They also include new voluntary and (in some cases) mandatory initiatives including:

- Various ordinances and/or zoning changes;
- Building codes and efficiency goals and standards; and
- Building labeling, audits, inspections, reporting, and enforcement.

These items represent a comprehensive range of strategies and actions that, taken together, will move Topeka toward the EECS goal of reducing energy use by 10% by 2020

Range of Energy Saving Strategies and Actions

Status Quo	Education & Recognition Programs	Stand Alone Incentive Programs	Coordinated Incentive Programs	Laws, Ordinances & Codes	Inspections & Enforcement
0	1	2	3	4	5
Voluntary				Mandatory	
Examples...	LEED Energy Star	Efficiency Kansas WattSaver	State Energy Office Efficiency Works	Building Codes Efficiency Stds.	Building Inspections Audits / Reporting

Topeka is already benefiting from the first three strategies through a variety of existing education and recognition programs, stand-alone incentive programs, and coordinated incentive programs. A clear and straightforward way to move towards achieving the EECS goals is to work hard to increase participation in those programs. This can be done using any of the strategies themselves, from promoting existing educational and recognition programs to providing funds to incentivize greater participation in them. However, a more direct way to achieve the EECS goal is to pass ordinances and building codes and to create enforcement mechanisms to ensure compliance.

Achieving 10% Energy Savings in Buildings by 2020: Highest Impact Actions

Municipalities can have a direct influence on building energy use through their ability to establish and enforce building codes, issue building permits, and assess property taxes. Some municipalities also have their own electric and gas departments, or in Topeka’s case, can partner with the local electric and gas utilities to establish efficiency programs for buildings. As a result, municipalities have a range of strategies available to encourage conservation and efficiency in buildings – both for city operations and for the community as a whole. The actions that would do the most to achieve the 10% energy savings goal for buildings include the following.

1. Adopt and enforce the most current building energy codes within one year of their publication.
2. Retrofit 25% of Topeka’s residential buildings using the EPA’s Home Performance with Energy Star Program.
3. Upgrade all municipal building square footage to Energy Star standards.

Experience nationwide indicates that it is common for homes participating in the EPA’s Energy Star and Home Performance with Energy Star programs to achieve 20-30% energy savings. Similarly, municipal and commercial buildings can be recognized by Energy Star for being in the top 25% of their peer group

in terms of energy efficiency and use. This is accomplished through a comprehensive approach to building efficiency that commonly includes;

- Sealing air leaks, sealing ductwork, and adding insulation;
- Improving heating and cooling systems;
- Upgrading lighting, appliances, and electric motors; and
- Installing high performance windows.

Achieving 10% Energy Savings in Transportation by 2020: Highest Impact Actions

At the municipal level of jurisdiction, transportation related strategies and actions are more limited than they are for buildings, and typically include investments in public transportation infrastructure (such as bus lines and light rail) and roadway design (such as street lights and roundabouts). Because municipalities typically do not license or tax automobiles and there is no “transportation utility” to partner with, transportation related strategies for reducing energy use through local initiatives are more limited than those that address building energy use. That said, a range of applicable transportation strategies are included in this EECS and are recommended for action in Topeka in the future. Actions that would do the most to achieve the 10% energy savings goal for transportation include the following:

1. Establish a fleet MPG fleet efficiency standard similar to the State of Kansas for the municipal fleet.
2. Establish a vehicle purchasing policy that requires the City to purchase cost effective alternative fuel vehicles.
3. Adopt a Sustainable Transportation Plan for the community.

Conclusion

The EECS recommended for Topeka features a pragmatic mix of existing and new initiatives carefully selected to include a mixture of “carrots” to inspire market transformation and “sticks” to ensure consistent, solid progress towards achieving the 10% energy saving goal. The EECS builds upon the community’s strong and defined municipal and civic leadership, vibrant business and community organizations, and increasing “can do” spirit. Implementation of the EECS will require tapping the political will and leadership evident already in all sectors of the community, building upon the commitment to sustainability demonstrated by the numerous accomplishments already throughout the City.

1. Why Develop an EECS?

Energy is the lifeblood of the American economy. We use electricity, heating fuels, and transportation fuels everyday to heat and cool our buildings, provide lighting, power our computers, operate our manufacturing and equipment, and fuel our transportation system. Using energy efficiently and conserving the natural resources used to produce energy reduces costs for both consumers and business owners, alleviates the environmental impacts of energy use, and conserves natural resources for future generations.

Developing an energy efficiency and conservation strategy (EECS) for a community is both a good planning practice and a sound business practice. Preparing such a strategy requires developing a comprehensive understanding of current energy use and costs, provides insight into efficiency and conservation strategies already underway, and reveals new and exciting opportunities for further reducing energy costs through new programs and Activities in the future.

In 2009, the City of Topeka had the opportunity to apply for and accept \$1.24 Million from the U.S. Department of Energy (DOE) Energy Efficiency and Conservation Block Grant monies, as part of the federally funded American Recovery and Reinvestment Act of 2009 (ARRA). As a recipient of the funds, the City is required to develop an EECS, since it did not already have one. In May 2009, Topeka issued a competitive Request for Proposals (RFP) for consulting services to assist the City in preparing its EECS. Nine proposals were submitted, interviews were conducted with the leading proposers, and the Vermont Energy Investment Corporation (VEIC) was selected and hired to begin work on the EECS in November 2009.

As required by DOE, this Energy Efficiency and Conservation Strategy is designed to accomplish the following objectives:

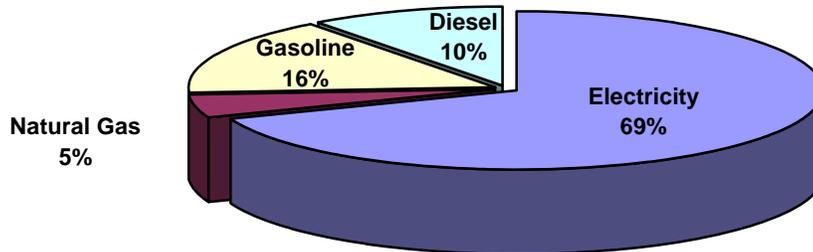
- Estimate current energy use and greenhouse gas emissions in the City;
- Establish energy efficiency, renewable energy, resource conservation, and greenhouse gas reduction goals and strategies for the City;
- Identify and prioritize near-term policies and practices that can be implemented by City Government to reduce energy costs, improve energy efficiency, stimulate renewable energy use, and reduce greenhouse gas emissions associated with energy use in city-owned buildings and in the municipal vehicle fleet; and
- Develop and recommend community-wide efficiency and renewable energy Activities that reduce greenhouse gas (GHG) emissions, stimulate local economic development, and create jobs.

The strategies and actions described in this document for Topeka meet these objectives and provide a framework for ongoing energy efficiency and conservation planning in the City moving forward.

2. Topeka's Energy Use and Greenhouse Gas Emissions

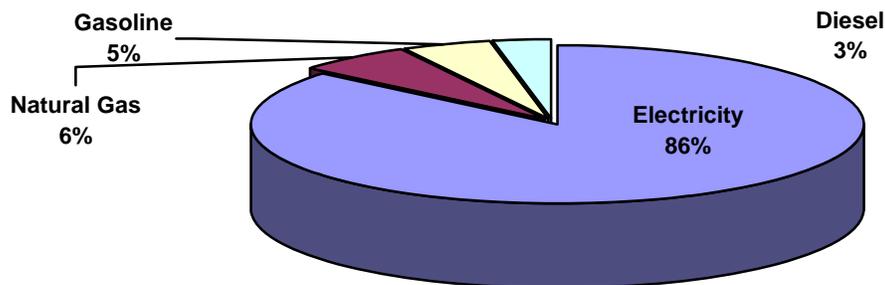
Presented below is information on the types and amounts of energy used in Topeka in 2008, and the resulting greenhouse gas emissions. Estimates are provided both for city operations and for the community overall, and are useful for a variety of reasons. First, they allow the City to understand where the bulk of its energy dollars are being spent and to prioritize its conservation and efficiency strategies accordingly. Second, the analysis indicates which sectors of the city's economy use the most energy and how much greenhouse gas is emitted as a result. This information provides the basis for City policymakers to prioritize actions (by creating policies, programs, and ordinances) that reduce energy costs and greenhouse gas emissions through increased conservation, efficiency, and utilization of clean energy resources. See Appendix A for more detailed calculations.

Energy Expenditures for City Operations



In 2008, the City spent approximately \$6.5 million on energy, and electricity represented 69% (\$4.5 million) of the total. This is not surprising because the City owns and operates over 746,000 square feet of building space¹, and buildings primarily consume electricity because of their lighting, computer, and HVAC equipment. The City's fleet of vehicles consumed transportation fuels representing about 26%, or \$1.7 million of the City's energy budget. This represents about 550,000 gallons of gasoline and diesel fuel in 2008. Natural gas represented the final 5% (\$300,000) of the City's energy budget and is used almost exclusively for space heating.

Greenhouse Gas Emissions for City Operations



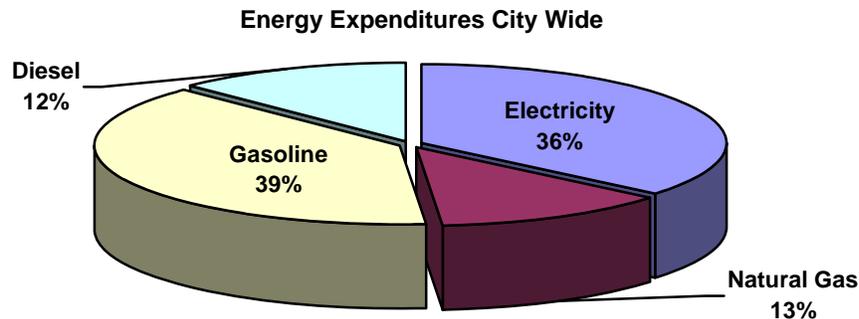
Coal-fired power plants generate about three quarters of the electricity in Kansas.² As a result, electricity use produces the majority (86%) of the greenhouse gas emissions associated with the City's operations. Transportation fuel and natural gas consumption account for the remainder. This percentage is

¹ Source: City of Topeka, COT Facilities/Square Footage Report

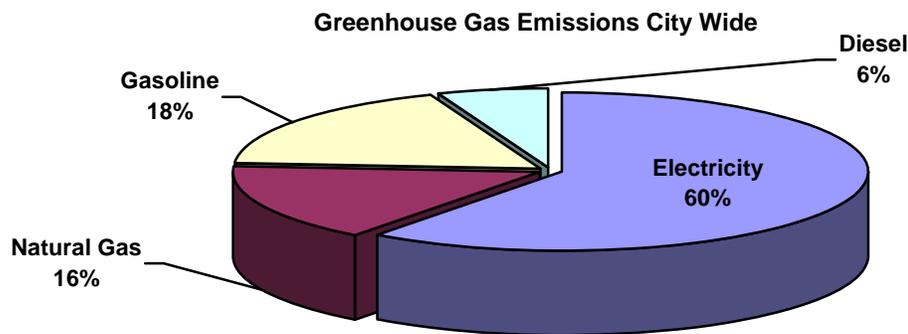
² Source: Energy Information Administration. Generation_state.xls, 2007

comparable to municipal operations in neighboring cities where electricity use was responsible for 65% of Johnson County's 2007 GHG emissions³ and for 55% of Lawrence's 2005 GHG emissions.⁴⁵

At the city-wide level, both Westar and Kansas Gas provided information on the electricity and natural gas usage within Topeka's city limits. In addition, Kansas-specific information from the Federal Highway Administration was used to arrive at estimates for the amount of city-wide transportation fuel consumption. When combined with average price information for each of these fuels, the resulting energy expenditures were on the order of \$513 million in 2008. The following pie chart shows how these dollars were spent.



Transportation fuel use represents the largest portion of the city-wide energy budget at just over 50%. Electricity use accounts for a little over a third of the city-wide energy budget, and natural gas makes up the remainder. However, these percentages translate into a different outcome in terms of carbon emissions. Because electricity use is inherently more carbon intensive in the Midwest than transportation fuel use is, electricity remains the largest contributor to carbon emissions at the city-wide level. Transportation fuels are the second largest proportion at about a quarter, with natural gas making up the remainder.



It is instructive to compare these percentages for those for other communities or regions. For example, in 2005, 51% of Johnson County's GHG emissions were associated with electricity use, 25% were associated with transportation, and 14% were associated with fuel use in buildings (natural gas primarily).⁶⁷ In Lawrence in 2005, the same percentages were 64% for electricity, 19% for transportation, and 15% for natural gas.⁸

³ Source: Government of Johnson County, Kansas, Greenhouse Gas Inventory for Government Operations, August 2009, Figure ES2, pp ES-3

⁴ Source: Climate Protection Plan: Climate Protection Task Force, Report to Lawrence City Commission, Table 1.3, pp 33

⁵ Note that the completeness of the City's natural gas usage data could not be firmly established, and may be partly responsible for the relatively high percentage of electricity use compared to Johnson County and Lawrence.

⁶ Note that these numbers do not sum to 100%, as Johnson County included emissions specifically from wastewater treatment, solid waste management, industrial processes, and agriculture.

3. How Topeka's Energy Use Affects the EECS

Topeka's pattern of energy use is similar to other cities in the Midwest. From a cost perspective, about one half of the community's energy costs are associated with building energy use (i.e. electricity and natural gas) and one half is associated with transportation. At the city operations level, energy use in buildings accounts for three quarters of the City's annual energy costs, and transportation accounts for about one quarter. This indicates that building energy use is an important strategic focus for Topeka's EECS. Implementing strategies that reduce energy use in buildings typically create long lasting effects which endure for future generation since buildings typically are used for many decades. Municipalities can have a direct influence on building energy use through their ability to establish and enforce building codes, issue building permits, and assess property taxes. Some municipalities also have their own electric and gas departments, or in Topeka's case, can partner with the local electric and gas utilities to establish efficiency programs for buildings. As a result, municipalities have a range of strategies available to encourage conservation and efficiency in buildings – both for city operations and for the community as a whole.

Strategies that focus on transportation are important as well. However, the range of effective options for reducing transportation energy through programs and Activities conceived and launched at the local level is narrower than it is for buildings. In general, transportation related strategies at the municipal level are more limited to investments in public transportation infrastructure (such as bus lines and light rail) and roadway design (such as street lights and roundabouts). Because municipalities typically do not license or tax automobiles and there is no "transportation utility" to partner with, transportation related strategies that are available to reduce energy through local initiative are more limited than those that address building energy use. That said, a range of applicable transportation strategies are included in this EECS and are recommended for action in Topeka in the future.

From an emissions perspective, electricity use results in more than half of all emissions at the community wide level and over 80% of all emissions at the city operations level. This is due to the high percentage of coal fired power plants in the region, and makes strategies that focus on reducing electricity use a priority if greenhouse gas emission reductions are desired.

Regardless of whether the focus is on reducing energy cost or reducing GHG emissions, the same strategies typically address both issues. For instance, air sealing and adding better insulation to residential buildings are among the most cost effective ways to reduce both heating (natural gas) and air conditioning (electricity) energy use, and both of these outcomes naturally create corresponding reductions in GHG emissions. As a result, the two metrics (cost reductions and GHG emissions reductions) are complementary. Reductions in one metric usually lead to reductions in the other.

⁷ Source: Government of Johnson County, Kansas, Greenhouse Gas Inventory, County Wide Activities, November 2009, Figure ES – 1, pp ES-3

⁸ Source: Climate Protection Plan: Climate Protection Task Force, Report to Lawrence City Commission, Figure C, pp 10

4. Barriers to Energy Efficiency & Conservation Investments

Investments in energy efficiency and conservation have several characteristics that create a range of barriers to their adoption. EECS investments:

1. **Require capital** – As with any investment, EECS actions typically require an upfront expense.
2. **Are fragmented** – The opportunities to implement EECS actions are spread across thousands of buildings and across hundreds of different devices.
3. **Have a low mind-share** – Investing in EECS actions is not the primary focus of most organizations.
4. **Are difficult to measure** – Measuring saved energy is inherently more difficult than measuring energy consumption.⁹

As a result, strategies in an EECS must address these barriers and create an environment in which efficiency and conservation investments are made. The types of strategies found in other jurisdictions that help alleviate these barriers include:

1. **“Information and Education:** Increasing awareness of energy use and knowledge about specific energy saving opportunities ...enable end-users to act more swiftly in their own financial interest. Options include...use of in building displays, voluntary standards...building labeling schemes, audits and assessments, and awareness campaigns.”
2. **“Incentives and Financing:** Given the large upfront investment needed to capture [United States] efficiency potential, various approaches could reduce financial hurdles that end-users face. Options include traditional and creative financing vehicles... monetary incentives and/or grants...and price signals...”
3. **“Third Party Involvement:** A private company, utility, government agency, or non-governmental organization could support a “do-it-for-me” approach by purchasing and installing energy efficiency improvements directly for the end-user... When coupled with monetary incentives, this solution strategy could address the majority of barriers...”
4. **“Codes and Standards:** ...some form of mandate may be warranted to expedite the process of capturing the [energy efficiency] potential, particularly where end-user or manufacturer awareness and attention are low. Options include mandatory audits and/or assessments, equipment standards, and building codes, including improving code enforcement.”¹⁰

The EECS presented in this document includes all of these types of strategies, and is designed to create an environment in Topeka that leads to increased investment in energy efficiency and conservation over time.

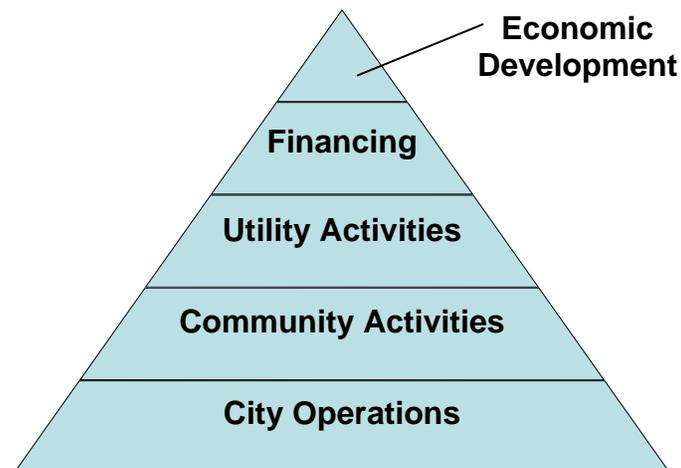
⁹ Source: Unlocking Energy Efficiency in the US Economy, McKinsey & Company, January 2010

¹⁰ Source: Unlocking Energy Efficiency in the US Economy, McKinsey & Company, January 2010

5. Topeka's EECS Framework

The Energy Efficiency and Conservation Strategy for Topeka presented in this report consists of a progression of actions that begin with City Operations, and which then move through other key sectors of the community. This progression begins with efficiency and conservation Activities already underway in the community, and continues with new programs and Activities recommended as a result of the planning work completed for this document. By making the City's own operations energy efficient and sustainable, the City puts itself in a strong position to promote additional actions by the wider community. Once the City sets an example with its own energy efficient operations, it can help create a portfolio of Community Activities that are coordinated with existing Utility Activities and available Financing. This portfolio will enable an ongoing stream of investments by the residents and business owners of Topeka that support the EECS objectives on a community wide scale. As the portfolio matures and Topeka publicizes the results of its EECS, the ultimate objective is to create an environment in which new economic development opportunities arise based, in part, on the City's commitment to sustainability.

Progression of Topeka's Energy Efficiency & Conservation Strategies



There is another progression of strategies that is important to development of an EECS.

1. Conservation – Demand less energy by driving less, turning off lights, etc.
2. Efficiency – Demand less energy by buying and building more efficient cars, lights, appliances, electronics, and buildings.
3. Renewable Energy – Supply more energy using clean renewable wind, solar, and biomass resources.

Conservation strategies typically have the lowest direct cost because they involve behavioral changes on the part of the consumer, and require relatively little or no direct investment in technology. For this reason, conservation strategies are usually the first steps taken to save energy. However, conservation strategies involve reducing the level of service that was previously being enjoyed by a consumer. Efficiency strategies, on the other hand, involve no reduction in the level of service, but do have a higher direct cost because they require a greater level of investment in new technology. As a result, efficiency strategies are often second to conservation in terms of priority. From a practical perspective, efficiency is the core strategy used to reduce energy use today, primarily due to the fact that it preserves the level of service that consumers have come to expect. Finally, renewable energy strategies involve no reduction

in the level of service but typically have higher direct cost compared to efficiency measures as a result of technology and installation costs.

There are a variety of ways to organize action around the progression of strategies for an EECS. One approach that has gained great respect and adoption in the energy efficiency profession is provided in the Sustainability Tool Kit available from the International Council for Local Environmental Activities (ICLEI). ICLEI's Tool Kit includes a list of 10 items that are considered key elements in sustainability planning, and the EECS recommended for Topeka in this report addresses all 10. As articulated by ICLEI they include:

1. "Hire a Sustainability Coordinator to run the show.
2. Obtain buy in from a big wig.
3. Form teams that build bridges across city departments and beyond City Hall.
4. Develop a Greenhouse Gas Inventory.
5. Define clear and measurable goals.
6. Get regular people to tell you what sustainability goals are important to them.
7. Develop implementation plans within your plan.
8. Take a deep breath and release a draft plan for public comment.
9. Obsessively track the implementation status of your measures.
10. Remain accountable to the public."¹¹

6. Stakeholder Engagement

Stakeholder engagement is central to the development of the Energy Efficiency and Conservation Strategy. An EECS needs to build upon what has already been accomplished in the community before it can establish goals and actions that reflect the community's needs and aspirations for the future. Under the leadership and direction of Mike McGee, Deputy Director of Public Works, a wide variety of stakeholders participated in development of this strategy, including local government officials, business leaders, industrial manufacturers, City employees, environmental organizations, neighborhood representatives, community activists, students, and senior citizens. In total, more than two dozen stakeholder groups were engaged during the development of this strategy.

Every stakeholder was engaged with an eye for soliciting their cooperation and with an ear for what they have already accomplished in terms of energy efficiency, conservation, and sustainability. What quickly became apparent is that Topeka has a strong base of motivated, conservation minded citizens who have successfully established a broad range of projects and Activities that both save energy and money throughout the community already. These efforts provide a terrific starting point for implementing new and expanded efficiency, conservation, and renewable energy Activities in the future.

"Topeka has a strong base of motivated, conservation minded citizens who have successfully completed a broad range of projects and Activities that have saved both energy and money throughout the community already."

The EECS Team consisted of Mike McGee and Scott Alisoglu from the City of Topeka, and Christine Donovan and Shawn Enterline from the Vermont Energy Investment Corporation (VEIC). These are the primary people who scheduled and participated in the stakeholder outreach process that took place over the course of a four month period from December 2009 to March 2010.

¹¹ Source: www.icleiusa.org/action-center/planning/ICLEI_10%20Keys%20to%20Sustainability%20Planning%20Success.pdf

6.1. Stakeholder Meetings: December 3-4, 2009

Stakeholder	Major Focus
City of Topeka, Development Services, M. Burke	Introduction & Permits and Inspections
City of Topeka, DPW, M. McGee & S. Alisoglu	Introduction & Tour of City Facilities
City of Topeka, Fleet Management, R. Raines	Introduction & Fleet / Transportation Issues
City of Topeka, Housing and Neighborhood Development, W. Woodruff	Introduction & Energy Star Housing Projects
Heartland Visioning	Introduction & Community Engagement Plan
Kansas Gas Corp., M. Curtin	Introduction & Gas Related Programs
Shawnee County Commission	Introduction & Recycling Issues
Sustainability Advisory Board	Introduction & Process
USD 501 School District, C. Albert	Introduction & Schools Related Plans
Westar Energy, S. Kramer	Introduction & Electricity Related Programs

The initial series of stakeholder meetings focused on introducing the EECS project to several of the major energy and conservation policy stakeholders in the City. Heartland Visioning (HV) is one such organization, and they described the vision that the community has articulated through its efforts over the past two years. At this meeting it became clear that parts of the “Infrastructure Foundation” in HV’s Strategic Plan includes references to “green environmental practices” and “environmental sustainability”. Both of these concepts are central to the development of an EECS, and as a result of this commonality, HV offered to engage its leadership and to work in partnership with the City to solicit and achieve public participation in the EECS process. Discussion of the link between development of an EECS and the Heartland Visioning Strategic Plan subsequently became a regular part of each stakeholder meeting. In addition, Heartland Visioning was instrumental in setting up two public stakeholder meetings that took place during March 2010.

The City of Topeka’s Sustainability Advisory Board (SAB) was also a regular part of the stakeholder outreach process. As a subcommittee of the City Council, its members are charged with promoting environmental awareness and advocating for policies that support sustainability including (but not limited to) waste reduction, recycling, energy conservation, and resource conservation. As the EECS team reported to the SAB each month, its members served as a sounding board for the strategies in this EECS and guided the development and prioritization of the actions that recommended in the EECS. As with the leadership of Heartland Visioning, many members of the SAB also served as liaisons to the wider community, which led to additional stakeholder meetings with organizations and business ranging from the Sierra Club to Hallmark Cards Inc.

At the initial stakeholder meeting with the Shawnee County Commission, Mike McGee introduced the consulting team who outlined the EECS work underway on behalf of the City of Topeka. At this meeting, information was shared about the existing voluntary, drop off recycling station operated by the county in Topeka, and the exciting new proposal to launch a voluntary single stream recycling program for the entire County.

Both of the energy utilities who offer service in Topeka were engaged during the initial series of stakeholder outreach meetings. Westar Energy described a series of ongoing energy efficiency programs and renewable energy projects they currently offer - ranging from their Efficiency Works programs (such as WattSaver) to the acquisition of wind energy farms and participation in Waste Management’s landfill gas to energy project at the Rolling Meadows landfill. Kansas Gas Service also outlined their intent to offer energy efficiency Activities in the future, but due to an ongoing regulatory proceeding, was unable to provide details of their anticipated efforts. As with Westar, the Kansas Gas Service website includes a substantial and informative section dedicated to informing customers about ways to conserve energy and use energy efficiently.¹²

¹² Please visit www.westarenergy.com and www.kansasgasservice.com for more details.

The meeting with Chris Albert, Facilities Director for the USD 501 school district, was especially enlightening and exciting. Chris described a successful 15-year history of energy related retrofits in cooperation with companies such as Honeywell and Chevron that included HVAC equipment improvements, efficient lighting retrofits, and high efficiency window retrofits at various school buildings throughout the City. The USD 501 School District's marquee achievement thus far is the installation of an internet-based, district-wide energy management system that allows the school district to measure, monitor, and manage its energy use across the entire school system. In addition, several renewable energy projects are planned for the near future, including a solar hot water pre heater demonstration for the swimming pool at the Topeka West High School and a 2.7 kW wind generator at Hope Street Academy.

“The USD 501 School District’s marquee achievement thus far is the installation of an internet-based, district-wide energy management system that allows the school district to measure, monitor, and manage its energy use across the entire school system.”

In addition to the community level stakeholder engagements, the EECS Team focused an equal amount of time and effort on meeting with managers of various City departments and facilities. The goal was to identify strategies and actions that can save taxpayers money by making Topeka's municipal operations more energy efficient. This effort began with a tour of many City buildings and facilities, during which it was quickly determined that Topeka's municipal operations are already quite energy efficient, due in part to a 2005 – 2006 Comprehensive Energy Analysis from Chevron Energy Solutions (CES).

The City of Topeka worked with CES due in part to the Kansas Corporation Commission's (KCC) Facility Conservation Improvement Program (FCIP), which provides financial assistance to municipalities who pursue energy saving capital projects. The CES analysis started by completing an inventory of the City's entire building stock. Based on this information, CES analyzed potential cost saving opportunities, and concluded by recommending a series of energy and cost saving investments. According to the CES Analysis, “By installing state-of-the-art, premium efficiency equipment, the City of Topeka will reduce utility expenditures, increase the value of the property, and demonstrate good environmental stewardship to the community through energy conservation.”¹³ As a result, the City invested the following energy and cost saving equipment.

“By installing state-of-the-art, premium efficiency equipment, the City of Topeka will reduce utility expenditures, increase the value of the property, and demonstrate good environmental stewardship to the community through energy conservation.”

¹³ Comprehensive Energy Analysis, Chevron Energy Solutions Company, February 2005, pp 1-3.

City of Topeka Energy Conservation Investments, 2006

Energy Conservation Measure ¹⁴	Implementation Cost (\$)	Annual Cost Savings (\$)
Implement Thermostat Setback Schedules (City Hall and Topeka Performing Arts Center (TPAC))	\$22,140	\$21,860
Lighting Retrofits (City Hall, TPAC, Fire Academy, and Fire Station #3)	\$142,440	\$11,044
Install Centrifugal Solids Separators (City Hall)	\$62,370	\$1,500
Replace Air Handlers (City Hall)	\$99,120	\$500
Total	\$326,070	\$34,940

The City continued to look for energy and cost saving opportunities since 2006. In 2009, the City commissioned a report that evaluated the feasibility of using flared biogas (methane) at its Oakland Wastewater Treatment Plant (WWTP) for pipeline, compressed natural gas (CNG), process, or cogeneration purposes. Although the study concluded that the investment opportunities at the Oakland WWTP are not currently cost effective this is another example of a cost conscious, conservation minded action within the City of Topeka.

Finally as part of the City's \$1.24 million dollar Energy Efficiency and Conservation Block Grant (EECBG) from the U. S. Department of Energy, Topeka is presently implementing six energy and cost saving projects including:

1. Creating this Comprehensive Energy Efficiency and Conservation Strategy.
2. Creating an Energy Star / Energy Conservation Education Initiative through the City's Housing and Neighborhood Development (HND) Department.
3. Installing motion activated shutoff switches in conference rooms and rest rooms in City buildings.
4. Upgrading street lights on the Washburn/Lane Corridor with highly efficient LEDs.¹⁵
5. Installing a solar pre-heater for domestic water at Topeka West High School.
6. Installing adaptive traffic signals at 22 intersections throughout the City.

The EECS Team also met with the manager of the City's vehicle fleet. During the meeting, it was learned that the City recently evaluated the feasibility of adding hybrid vehicles to the fleet, and already has two electric vehicles in use for parking enforcement. It was also learned that biodiesel fuels have been evaluated as an option for diesel powered vehicles in the fleet, and reports are available from an impressive database application that tracks the mileage, fuel use, and maintenance requirements of the entire fleet.

Equally impressive was the stakeholder meeting with Warren Woodruff from the City's Department of Housing and Neighborhood Development (HND). Because HND's mission is to provide services that support affordable housing opportunities, it has chosen to create 38 Energy Star qualified low income housing units since 2007. As a result, Topeka's HND Department received the Energy Star Award for Excellence¹⁶ from the EPA this year, recognizing that its Energy Star housing units keep utility bills for the

¹⁴ Source: Table 4.1, City of Topeka Project Recommendations, Comprehensive Energy Analysis, Chevron Energy Solutions Company, October 2006.

¹⁵ LED stands for Light Emitting Diode. LEDs are among the most efficient forms of lighting available today.

¹⁶ Source: http://www.energystar.gov/index.cfm?fuseaction=pt_awards.showAwardDetails&esa_id=3716

tenants of these units 52% lower than the utility bills for standard units. In addition to the monetary and environmental benefits, this achievement serves as an example for what can be done in the rest of the community. If Energy Star standards can be met for low income housing, this indicates strongly that the same or similar standards could be achieved throughout other components of Topeka’s building stock.

After the initial stakeholder meetings were completed, the EECS Team worked with Topeka’s Fleet Services Department, Westar Energy, and Kansas Gas to gather energy use information. This information was gathered at both the city operations level (fleet, buildings, wastewater, etc.) and at the city wide level (zip code), and was used to determine Topeka’s energy use, costs and GHG emissions. The results of this analysis were presented during the second set of stakeholder meetings, which took place in early February.

“Topeka’s Housing and Neighborhood Development office received the Energy Star Award for Excellence from the EPA this year...keeping utility bills for the tenants of these units 52% lower than the utility bills for standard units.”

6.2. Stakeholder Meetings: February 4-5, 2010

Stakeholder	Major Focus
City Manager, N. Bonaparte Council Woman, D. Swank	Introduction & overview of stakeholder and City Council processes.
City of Topeka, Water & Wastewater Utilities, D. Rankin & B. Sample	Energy & water cost saving opportunities
Heartland Visioning, Leadership Team	Solicit Support from HV for community outreach
Kansas Corporation Commission, R. Hammerlund	State wide energy efficiency programs
Sierra Club, Topeka Chapter	Introduction & overview of EECS strategies
State Facilities Management, M. Jacobson	Introduction & overview of state activities
Sustainability Advisory Board	Update & Prioritization of EECS Strategies
Topeka Homebuilder’s Association, D. Wright	Introduction & building codes
Topeka Metropolitan Transit Authority, J. Nesbitt-Tucker	Introduction & transportation / biogas activities

During this round of stakeholder engagement, the EECS Team focused on gaining the support of key stakeholders. We met with the leadership of Heartland Visioning to describe the common elements of the EECS and the community’s vision. We also held a similar meeting with the City Manager and Councilwoman Swank to enlist their support. Both meetings were successful in gaining support for the EECS process. The local chapter of the Sierra Club was also a part of this round of engagement, as was the Sustainability Advisory Board who was given an update on the Team’s progress to date.

The majority of energy use in most communities is centered on the buildings we inhabit. As a result, the first stakeholder meeting held during the second round of outreach was with Dawn Wright, the President and CEO of the Topeka Homebuilder’s Association (THBA). Established in 1954, THBA has approximately 270 members who work not just within Shawnee County, but also in the four neighboring counties. We came away from the meeting the THBA with a number of insights.

- Several THBA members are trained in the National Green Building Standards¹⁷ and two Topeka homes have been built to these specifications already.
- The annual Home Show is increasingly populated by vendors who offer green building products.

¹⁷ The National Green Building Standard is a program of the National Association of Homebuilders. For more information, visit www.nahbgreen.org.

- The Topeka Professional Remodelers Council, a 50 member subdivision of THBA itself, has a relatively deep knowledge of green building practices thanks to the boost that federal tax incentives¹⁸ have given their business over the past several years.

The consumption of transportation fuels is another major source of energy use, and one of the most straightforward ways for a community to reduce transportation fuel use is through public transit. As a result, the EECS team met with Janlyn Nesbett-Tucker, the CEO and General Manager of the Topeka Metropolitan Transit Authority (TMTA), and her Strategic Planner, David Billam, to better understand Topeka's public transit system and future plans. We also came away from the TMTA meeting with a number of insights.

- TMTA has started replacing their fleet of 30 diesel busses with busses that are fueled with compressed natural gas (CNG), which is expected to reduce the fleet's fuel costs as well as particulate and nitrous oxide emissions.
- TMTA is promoting the concept of using anaerobic digester technology to convert municipal solid waste into methane gas for use in TMTA's bus fleet, and has garnered the support of TMTA's Board of Directors and the Topeka Chamber of Commerce.

“Executive Directive No. 07-373, [has] allowed energy conservation to become the driving force in making a positive change in how State agencies conduct business and in making the State become greener.”

As a Capitol City, many of Topeka's buildings are dedicated to State government, so the EECS team set up a stakeholder meeting with Marilyn Jacobson who is the Director of Facilities Management for the State of Kansas. In our meeting Marilyn explained that, “Executive Directive No. 07-373, [has] allowed energy conservation to become the driving force in

making a positive change in how State agencies conduct business and in making the State become greener.”¹⁹ As part of this Directive, all state agencies must conduct an energy audit at least every five years on all state-owned property, and all property owners who lease their property to the State must submit an energy audit in order to renew the lease. Furthermore, landlords are directed to make use of the EPA's Portfolio Manager Program to determine the Energy Star rating for their building.

Marilyn subsequently provided a copy of the State's 2009 Energy Conservation and Management (ECM) Report, which explains the Directive in greater detail. The Directive sets energy efficiency standards for the State's fleet vehicles, new and renovated state buildings, and products and equipment purchased by the State. The vehicle fuel efficiency standard requires all vehicles purchased in 2011 to be at least 10% more efficient in terms of average fuel economy than standard state-owned vehicles purchased in 2008. The energy performance standard for new and renovated buildings requires that all construction be built to ASHRAE²⁰ or IECC²¹ standards. Finally, the products and equipment standard requires state agencies to purchase products such as appliances, lighting fixtures, bulbs and computers that meet Energy Star specifications. The only caveat to these requirements is that the investments must be cost effective over the life cycle of the building, vehicle, or product in question.

¹⁸ For more information on federal tax credits for energy efficiency, visit www.energystar.gov.

¹⁹ Source: Energy Conservation and Management Annual Report, State of Kansas Department of Administration, February 3, 2010.

²⁰ ASHRAE stands for the American Society of Heating, Refrigeration and Air-Conditioning Engineers. States who accepted DOE's ARRA monies are required to adopt and enforce the ASHRAE 90.1-2007 commercial building standard.

²¹ IECC stands for International Energy Conservation Code. States who accepted DOE's ARRA monies are required to adopt and enforce the IECC-2009 residential building standard.

Energy Efficiency Standards for State Agencies

Buildings

- *Must conduct energy audit every 5 years.*
- *Must be built and renovated to current building standards.*

Fleet Vehicles

- *New vehicles must be 10% more efficient than standard 2008 models.*

Products

- *Must be Energy Star qualified.*

The State's ECM Report also details the energy use and savings achieved by the State's vehicles fleet Capitol Complex buildings. It makes special mention of House Bill 2369, which allowed expansion of wind energy use by customers throughout Kansas. As a result of this Bill, the Department of Administration evaluated the possibility of siting a wind turbine at the Governor's mansion this past year. However, these efforts were tabled in August after Topeka's City Council adopted a series of limitations on small wind development.

Whatever strategies Topeka chooses to adopt, they will be implemented within the context of existing state wide energy strategies. As a result, the EECS Team met with Ray Hammarlund, Director of the State Energy Office, to better understand the energy efficiency and conservation programs that exist at the state level. Here we gathered additional information about the State's energy efficiency and renewable energy programs, including²²:

1. [Efficiency Kansas](#): A \$34 million loan program provides financing for energy-efficiency improvements in homes and small businesses.
2. [Facility Conservation Improvement Program \(FCIP\)](#): Assists public entities in accessing performance contracting for use in financing energy-efficiency upgrades in public buildings.
3. [Energy Manager Grants](#): Grants provide \$50,000 annual stipend to local government coalitions to hire energy managers.
4. [Renewable Energy Incentives Grants](#): Up to \$250,000 in grant funding to help state agencies, local governments, and educational institutions finance 25% of alternative energy projects.
5. [Public Projects Grant](#): Up to \$150,000 in grant funding to help cities and counties implement energy-efficiency improvements in public facilities.
6. [Energy Efficiency Building Codes Working Group](#): Established to ensure timely progress towards the energy codes requirement for all recipients of federal Recovery funds.

This round of stakeholder engagement concluded with a meeting with the City's Water and Wastewater Utilities to follow up on what we had learned about the Biogas Evaluation in December, and to gather their input into the EECS.

²² Source: <http://www.kcc.state.ks.us/energy/index.htm>

6.3. Stakeholder Meetings: March 16-19, 2010

Stakeholder	Major Focus
Topeka Housing Authority, J. Johnston	Introduction & New Housing Project
Topeka Parks & Recreation Department, T. Bertels	Introduction & P&R Conservation Issues
Metropolitan Topeka Airport Authority, E. Johnson	Introduction & Aviation Issues
Frito Lay, A. Moore	Introduction. Frito Lay's Sustainability Efforts
Del Monte, J. Breitbart	Introduction. Del Monte's Sustainability Efforts
Heartland Visioning Organization, W. Beteta	Preparation for Public Meetings
Chamber of Commerce, S. Jenkins	Introduction. Kanza Fire Business Park
Hallmark, K. Grover	Introduction. Hallmark's Sustainability Efforts
St. Francis Hospital, J. Christian	Introduction. Hospital's Sustainability Efforts
Public Stakeholder Meeting @ Library	Public Education & Input into EECS
Public Stakeholder Meeting @ Holliday Room	Public Education & Input into EECS
Think Big Topeka, A. Sheley	Introduction & Google Project

The final round of stakeholder meetings focused on engaging Topeka's business community, and also included other stakeholders that had not yet been engaged including the City Council and the Topeka Housing Authority (THA). At the March 16th City Council meeting, Kate Grover, supported by other members of the Sustainability Advisory Board updated the City Council on the SAB's recent actions and on the EECS process to date. The following day, the EECS Team met with the Topeka Housing Authority (THA).

Similar to Topeka's Housing and Neighborhood Development (HND) Department, THA's mission is to provide accessible, affordable housing, and part of this mission involves keeping the utility bills of its tenants as low as possible. To this end, THA applied for \$10 million in federal grant monies under ARRA in 2009, and was among 16 applicants nationwide who received grant money to develop new affordable housing projects.

"The Topeka Housing Authority is committed to incorporating a variety of green building approaches and features in its new affordable housing project."

In keeping with their conservation minded counterparts at HND, the Topeka Housing Authority has committed to incorporating a variety of green building approaches and features in its new affordable housing project. This means that the 69 new housing units on SE California Avenue will be energy efficient, and will also incorporate sustainable building practices. Examples of green features being considered include the use of ground source heat pumps for the building's heating and cooling needs and incorporation of permeable walkways, open space, and other strategies that minimize the project's environmental impacts. Construction is expected to begin later this year.

The meeting with Topeka's Parks and Recreation Department began with a discussion of the lighting retrofits and programmable thermostats that the Community Centers received during the implementation of the Chevron Energy Solutions recommendations. We learned that there is an ongoing effort to expand Topeka's trail network through a Bike Route Study that is presently underway. However, the most current sustainability related project that Parks and Recreation is involved in involves the City's yard waste recycling operation. As part of a unique public sector – private sector collaboration, the City has transferred the operation of its yard waste recycling facility to Garrick LLC whose machinery is turning the City's yard waste into a value added commodity; wood chips that will be sold to Frito Lay for use in their newly constructed biomass boiler.

The subsequent meeting with Frito Lay uncovered the fact that the biomass boiler is only one part of the plant's larger sustainability goals. Allen Moore, Frito Lay's Plant Manager, explained that the plant is the first manufacturing site in Kansas, and the second food manufacturing site in the nation, to be awarded LEED Existing Building Gold Certification.²³ Highlights of Frito Lay's accomplishments as it pursued LEED Gold certification at its Topeka facility include:

- Electricity and natural gas consumption reductions of 27% and 39% since 1999;
- Water consumption reductions of nearly 52% per pound since 1999; and
- Landfill solid waste reductions of 99%.

"The Frito Lay plant is the first manufacturing site in Kansas, and the second food manufacturing site in the nation, to be awarded LEED Existing Building Gold Certification."

Subsequent meetings with Del Monte, Hallmark, and the St. Francis Hospital confirmed that Frito Lay's accomplishments are part of a larger trend in Topeka's business community. Efforts to reduce energy use, recycle wastes, and to become more sustainable are pervasive. For instance, Del Monte has a series of goals that are tied to its corporate sustainability policy that call for 10% - 20% reductions in greenhouse gases, fresh water use, and solid wastes going to landfills by 2016.²⁴ St. Francis' is planning to build its new hospital to LEED standards, and Hallmark has landscaped the grounds at its facility using native plants and sustainable landscaping techniques.

"The Kanza Fire Commerce Park is slated to include 130 acres of green space, walking trails, landscaped boulevard-style streets, and shared energy sites which are designed to encourage renewable energy development at the park."

After meeting with Topeka's Chamber of Commerce, the EECS Team learned about plans to develop a sustainable business park on 1,018 acres along Route 75 in southwest Topeka. The Kanza Fire Commerce Park is slated to include 130 acres of green space, walking trails, landscaped boulevard-style streets, and shared energy sites which are designed to encourage renewable energy development at the park.

The final stakeholder meetings were held in partnership with Heartland Visioning to solicit public input into the EECS. Two meetings were held; one in the evening at the Topeka & Shawnee County Public Library and one the following morning at the City's offices at 620 SE Madison. The meeting began with an introduction from William Beteta of Heartland Visioning, and moved into an educational presentation from VEIC about the EECS Team's progress to date. The presentation concluded by posing two questions to the public.

1. What overarching energy efficiency / conservation goal would inspire Topeka?
2. What are the top three things our community can take to move towards this goal?

After the presentation, members of the public were invited to ask questions and to comment on what they would like to see in the EECS itself. The following page illustrates the community's needs and aspirations, as articulated during the meetings. These thoughts and reflections informed the development and selection of recommendations included in the EECS for future implementation in the City.

²³ Source: Frito Lay Press Release, April 9th, 2010 <http://www.fritolay.com/press-release-20100409.html>

²⁴ Source: http://www.delmonte.com/cr/cr_sustainabilitypolicy.aspx

Community Needs and Aspirations for Topeka's Energy Efficiency & Conservation Strategy

Ideas

- "Work with Shawnee County to develop county wide energy codes."
- "Pursue national recognition for efficiency efforts."
- "Establish/Encourage an Energy Star benchmark for all commercial facilities."
- "Make the downtown redevelopment a green project."
- "Partner with a Sister City to share ideas about efficiency."
- "Set a goal for Topeka to be the most sustainable capitol city in the nation."
- "Create assessable educational materials and programs for every segment of the population. Use simple approaches."
- "Have the City and County set an example with their own efficient investments."
- "Create an ongoing set of information outlets for Topeka's existing accomplishments and efficient activities to inform the community."
- "Create educational outlets for individuals to let them know what to do and why to do it with respect to efficiency."
- "Show people what they will save by taking efficient actions. Example = leaky faucet."
- "Establish financial incentives & rebates for new construction and retrofit projects to be energy efficient. "Put money where your mouth is." Example = Property tax reductions or freezes."
- "Publicize the state-wide net metering opportunity."
- "Create collaboration amongst the existing green fair and demonstration and educational activities taking place in Topeka. Eliminate silos."
- "Create a neighborhood champion program to educate the community."
- "Increase student (Washburn, high schools, etc) involvement in City government activities to energize and inspire future leaders."
- Create personal involvement and a sense of community surrounding these issues. Emphasis is to engage a group to carry out the plan in cooperation with the government. "Pay attention to the social structure of it all."
- "Get Topeka involved with the County and the State to further efficient efforts and policies."
- "Make Topeka a benchmark for other Kansas communities because of its capitol city status."

Concerns

- "Leaving our world a livable, even better place for future generations"
- "Filling up landfills if recycling efforts fail which will increase costs in the long run."
- "Recycling is presently inconvenient. Adopt curbside recycling to alleviate this."

Questions & Responses

- "What can individual Topekans do to act on the EECS once the consultants are finished?"
 - "I can do commercial energy audits, building benchmarking, etc."
 - "Help building owners keep their energy savings to invest in more efficiency."
 - "Advocate for smart, sustainable development policies in Topeka."
 - "Make it more attractive to developers to redevelop existing properties instead of new cornfields. "In fill development"
 - "Represent the residents of the Stone Nature Center monthly to discuss actions on these issues."
- What does this EECS mean to you personally and professionally?
 - "It's my future."
 - "Makes me proud of Topeka."

7. Portfolio of Energy Efficiency Activities for City Operations

As the EECS Team discovered during the stakeholder outreach process, the City of Topeka has already implemented a series of energy efficiency and conservation activities that have reduced energy costs and conserved resources. However, there is more that can be done. Presented below is a description of the key activities and Activities already under way as well as new ones recommended for the future. Combined, they represent a portfolio of diverse and complementary approaches for saving energy and increasing sustainability in City Operations. Note that Chapter 11 presents an overall energy saving goal for City Operations as well as strategies and actions for achieving the goal that draw upon this portfolio.

7.1. Existing Portfolio for City Operations

Created a Sustainability Board

- Who:** City Council, City of Topeka
- What:** Created and appointed a Sustainability Advisory Board, who reports to the City Council. The Board is charged with promoting environmental awareness and advocating for policies that support sustainability including (but not limited to) waste reduction, recycling, energy conservation and resource conservation.
- When:** Established in 2009, the SAB is a standing advisory body with 9 members appointed by the City Council for a three-year term.
- Why:** To help identify and pursue sustainability practices for the City.
- Next steps:** Oversee implementation of the City's Energy Efficiency and Conservation Strategy.

Signed the US Conference of Mayor's Climate Protection Agreement and Established Topeka as a "Cool City"

- Who:** Mayor, City of Topeka
- What:** Signed the US Conference of Mayor's Climate Protection Agreement and established Topeka as a "Cool City" participating in the Sierra Club's national Cool Cities Program. Under the agreement, cities commit to reduce greenhouse gas emissions by 7% compared to 1990 levels by 2012.²⁵ Cool Cities is collaboration between community members, organizations, businesses, and local leaders throughout the U.S. to implement clean energy solutions that save money, create jobs, and help curb global warming.²⁶
- When:** 2006
- Why:** The City signed a formal commitment to reduce greenhouse gases as part of its Cool Cities participation, and is on the path toward achieving the next two Cool Cities Milestones: Initial Solution Steps and Advanced Smart Energy Solutions.
- Next Steps:** Implement Initial Solution Steps Milestone.

²⁵ Source: <http://www.usmayors.org/climateprotection/revise/>

²⁶ Source: <http://www.coolcities.us/about.php?sid=627ce0f8227cf7000e25338c0970849f>

Implemented Efficient Lighting Retrofits & Controls

- Who:** Department of Public Works Department
- What:** Installed energy efficient lighting and motion sensor controls.
- When:** 2006
- Where:** City Hall, TPAC, Fire Academy, and Fire Station #3
- Why:** Phase 1 of the Chevron Energy Audit identified approximately \$500,000 of cost-effective energy and water conservation measures, which were implemented between 2006 & 2007.
- Next Steps:** Continue to deploy efficient lighting in all City buildings, and conduct regular energy audits to identify more energy and cost saving projects.

Implemented Building Setback Schedules

- Who:** Department of Public Works
- What:** Implemented setback schedules which automatically reduce HVAC requirements when the building is unoccupied.
- When:** 2006
- Where:** City Hall, Topeka Performing Arts Center & the Holliday Building
- Why:** Phase 1 of the Chevron Energy Audit identified approximately \$500,000 of cost effective energy and water conservation measures, which were implemented between 2006 & 2007.
- Next Steps:** Continue to maintain setback schedules in all City buildings, and conduct regular energy audits to identify more energy and cost saving projects.

Implemented HVAC Improvements

- Who:** Department of Public Works
- What:** Replaced the air handler and installed centrifugal separators at City Hall.
- When:** 2006
- Where:** City Hall
- Why:** Phase 1 of the Chevron Energy Audit identified approximately \$500,000 of cost effective energy and water conservation measures, which were implemented between 2006 & 2007.
- Next Steps:** Continue to make HVAC improvements in all City buildings, and conduct regular energy audits to identify more energy and cost saving projects.

Increased Wastewater Biogas Utilization

- Who:** City of Topeka Water Pollution Control
- What:** Installed two methane powered engines that power aeration blowers at the Oakland Wastewater Treatment Plant (WWTP).
- When:** 1990
- Where:** Oakland Wastewater Treatment Plant
- Why:** All wastewater treatment plants produce waste biogas (methane) which can be flared, converted to electricity, and/or used to produce process heat.
- Next Steps:** In 2009, the City commissioned a report that evaluated the feasibility of using flared methane from the WWTP for pipeline gas, compressed natural gas (CNG), process heat, or cogeneration purposes. The study concluded that such an investment is not currently cost effective without some sort of grant or outside funding source to help pay for some of the upfront capital cost. Efforts to find such an outside funding source are underway, but have not been successful yet.

7.2. New Portfolio for City Operations

The following new activities are recommended to expand the portfolio of energy savings and sustainability activities for City Operations.

Pass a Sustainability Resolution

- Who:** City Council
- What:** Develop a general statement of support for increased energy efficiency, conservation, recycling, and other cost-effective sustainability practices in City Operations and seek to have the resolution passed by the City Council.
- When:** 2010
- Where:** City Operations
- Why:** Adopting a resolution codifies the City's commitment to the principle of sustainability, and can enable further action toward sustainability related goals.
- Next Steps:** Develop a draft resolution as part of the Sustainability Advisory Board's role, and solicit a City Council Member(s) support and to introduce it to the Council. The core statement of principle included in the Resolution could be as straightforward and simple as something like: "The City of Topeka is committed to reducing the energy costs incurred by the City through increased efficiency and conservation, and to encouraging waste minimization, recycling, resource conservation, and sustainability practices by City Operations and community wide." See Appendix E for an example of what the State of Kansas has done to encourage sustainability in State Operations.

Participate in the American Public Works Association's (APWA) Center for Sustainability Initiative

Who: City of Topeka

What: APWA recently established a Center for Sustainability recognizing that, "...new challenges such as shrinking local budgets, increased cost of materials, more engaged and better informed public and stakeholders and new regulatory mandates, are confronting public works professionals and making their daily jobs even more challenging. These new challenges require a new approach to public works management. This new approach must focus on innovative, collaborative and whole systems thinking. The next generation public works professional must look at the problem at hand in its broadest context and ensure that decision makers, government and private, are aware of the consequences and opportunities of a wide variety of possible solutions."²⁷

When: 2010

Where: City Operations

Why: To further deepen and demonstrate the City's commitment to sustainability in its operations and practices.

Next Steps: Review the APWA recommendations once they are available, and if practicable, establish city policy to adopt the recommendations.

Appoint a Sustainability Coordinator

Who: City Manager

What: Appoint a staff member to be responsible for developing sustainability projects at least within City Operations and potentially within the broader community, should funding become available to support such a broad effort.

When: 2010

Where: Applicable to City Manager's Office and/or Human Resources

Why: This is the first recommendation that International Council for Local Environmental Initiative (ICLEI) makes for communities who wish to become more sustainable. However, given the budgetary constraints facing municipalities nationwide (including Topeka), it may be most realistic in the short term to create a job description for the Sustainability Coordinator, and to assign those responsibilities to an existing employee(s). Once these responsibilities have been created, the employee or employees who are responsible will need to leverage their own personal efforts by increasing awareness of the EECS across the city and enlisting actions by others.

Next Steps: Request that Human Resources obtain copies of similar positions in other cities, and use them to draft a job description and fill this role for the City of Topeka.

²⁷ Source: APWA, <http://www.apwa.net/sustainability/centerforsustainability.aspx>

Adopt Policies that Require Cost Effective Investments in Conservation and Energy Efficiency

- Who:** City Council
- What:** Adopt policies that are similar to Executive Directive No 07-373, which requires Kansas State Agencies to make cost effective investments in buildings, vehicles, and products that are energy efficient and sustainable, and to report the results annually.
- When:** 2010
- Where:** Applicable to City Operations.
- Why:** By following the State's example and collaborating with their Facilities Management staff, the City of Topeka can quickly and cost effectively realize cost and energy savings in City buildings, fleet vehicles, and product purchasing decisions.
- Next Steps:** Customize the State's Executive Directive No. 07-373 for the City of Topeka, as part of the Sustainability Advisory Board's role, for implementation in Topeka, and solicit support from a City Council Member(s) who can introduce it to the Council. The Directive is presented in Appendix E of this document.

Benchmark City Buildings Against their Peers Using the EPA's Portfolio Manager

- Who:** City of Topeka Public Works Department
- What:** The EPA awards Energy Star recognition to buildings that are in the top quartile of peer buildings that use the Portfolio Manager tool. The Portfolio Manager tool is free and available on line. It will enable the City to benchmark the energy use of its buildings to other municipalities around the nation. And once those buildings achieve 25% energy savings compared to the benchmark, EPA will recognize the achievement by awarding the Energy Star designation.
- http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager
- When:** 2010
- Where:** All City Buildings
- Why:** Benchmarking is a valuable discipline that can illuminate energy saving project opportunities as buildings age and technology improves.
- Next Steps:** Designate the Sustainability Coordinator to be responsible for using the Portfolio Manager tool to benchmark building energy use. Train the employee to use the tool and request that the results be reported annually to the City Council and the public. Use results of the tool as a performance measurement for the employee's position.

Adopt a Goal to Upgrade Existing Municipal Buildings to Energy Star Levels by 2020

- Who:** City Council, Department of Public Works
- What:** It is recommended that the Sustainability Advisory Board request that the City Council adopt this goal, and thereby commit to achieving Energy Star standards in all existing municipal buildings by 2020. By using information obtained from the EPA's Portfolio Manager to identify efficiency achievements and to prioritize the next round of improvements, Topeka could become an "All Energy Star Capital City" over the next 10 years.
- When:** From 2011 to 2020
- Why:** To reduce City energy usage and costs and to further demonstrate Topeka as a leading Capital City on energy efficiency, conservation, and sustainability.
- Where:** City Buildings
- Next Steps:** Establish this goal as City policy and implement it.

Ensure any New City Facilities Meet LEED Standards

- Who:** Department of Public Works
- What:** Design and build any new municipal buildings to meet LEED standards.
- When:** Long Term
- Where:** Applies to future municipal building plans.
- Why:** LEED represents the highest standard available today in terms of sustainability and energy efficiency, and LEED certified buildings are becoming more common throughout the US. As a municipality whose building infrastructure investments are expected to last 50 years or more, building to these standards in all new construction is not only sustainable, but also is a financial hedge against rising energy costs in the future.
- Next Steps:** Identify and review any plans to construct new municipal buildings and determine which ones are at a stage of development for which designing and building to meet LEED certification is achievable and practical.

Evaluate the use of Compressed Natural Gas (CNG) or Other Alternative Fuels in the City's Fleet

- Who:** City of Topeka, Fleet Operations
- What:** Evaluate the use of CNG or other alternative fuels in the City's fleet vehicles.
- When:** 2011
- Why:** A CNG fueling facility is already available in Topeka, and CNG has the potential to eventually become a renewable transportation fuel.
- Next Steps:** Fleet Operations staff should discuss how to proceed with the evaluation of CNG or other alternative fuels in the City's fleet.

Evaluate Adoption of a 4-day Work Week

Who: City Manager / City Council

What: Evaluate adoption of a 4-day work week for eligible City staff.

When: 2011

Where: Applicable to all City Departments.

Why: 4-day work weeks have been implemented around the country as a way to reduce costs, and have the potential to be a win-win-win action. The City stands to save money by operating some office buildings one less day each week. Employees save time and money on commuting, and the community can take pride in the fact that their City is cost conscious, employee friendly, and environmentally friendly.

Next Steps: The Human Resources and the Public Works Departments can collaborate to identify circumstances within the City where it is cost effective to implement a 4 day work week.

Adopt an Energy Efficiency and Conservation Policy for City Employees

Who: City Council / City Manager

What: Develop and adopt a prescriptive list of energy efficiency, conservation, recycling, and other sustainable practices that is a requirement for all City Departments. Presented on page 28 are examples of such practices. The list presented on the page is representative and is expected to expand and grow over time.

When: 2010

Where: Applicable to all city employees.

Why: Behavioral changes can make immediate and lasting contributions to the goal of reducing energy use by 10%. Adopting policies that support conservation behaviors support habits that conserve energy and resources.

Next Steps: Adopt the prescriptive policies presented on page 28 for all City Departments and establish a mechanism to expand the list as new ideas and opportunities emerge.

Establish Green Teams for Each Municipal Building to Reduce Energy Use and Landfill Waste

Who: City Manager

What: Establish Green Teams for each municipal building.

When: 2010

Where: City Operations

Why: Green Teams can support and develop additional actions that can become part of the City's Energy Efficiency and Conservation Policy over time.

Next Steps: DPW work with the City Manager to develop operating procedures to achieve this.

Energy Efficiency & Conservation Policy for City Departments

- 1. Create an Employee Awareness Program.**
Ensure that progress toward reducing energy and resource costs continues by keeping the following requirements top-of-mind for all employees.
- 2. Reduce Computer, Office Equipment, and Electronics Loads.**
Replace conventional power strips with controllable power strips and install Microsoft System Center Configuration Manager which automatically powers down network computers during non business hours.
- 3. Reduce Computer Printer and Toner Use.**
Set the defaults on all computers and printers to print double-sided, to use draft mode, and to use Century Gothic fonts which use 30% less ink than Arial. Enable all copiers to scan paper document and install PDF print drivers on all PCs to enable employees to share documents electronically.
- 4. Require all City Departments to Purchase and use Paper Containing at least 90% Post-Consumer Recycled Content.**
In addition, encourage the use of soy-based inks for printing jobs requiring the use of color.
- 5. Require all City Departments to Participate in Shawnee County's Recycling Programs.**
This includes paper, newspaper, magazines, cans, plastics, cardboard, oil, tires, etc.
- 6. Require Facility Managers to Participate in Westar's Building Operator Certification Program.**
Westar is licensed to offer this nationally recognized competency-based program for building operators and maintenance staff who are responsible for the day-to-day maintenance and operation of large buildings with complex heating, mechanical, and electrical systems.
- 7. Stop Electric Space Heater Use in City Office Buildings.**
Electric space heater use is a sign that the building's HVAC systems are not operating properly and increase overall energy costs.
- 8. Require all City Departments to set Thermostats to 68 Degrees during the Heating Season and 75 Degrees during the Cooling Season.**
- 9. Require all City Departments to Turn Off Lights when Rooms are not in use.**
Ensure that all office and non essential lighting is turned off when not in use, particularly at the end of the work day.
- 10. Adopt a Purchasing Policy that Requires Products such as Appliances, Light Bulbs, and Computers to Meet Energy Star® as a Minimum Standard.**
ENERGY STAR is a trusted, government-backed symbol for energy efficiency that makes it easy for consumers to identify and purchase energy saving products without sacrificing performance.
- 11. Adopt a No Warm Up and No Idling Policy, as well as other Fuel Efficient Driving Practices for all City Departments.**
With fuel injected engines, it is not necessary to warm up the vehicle before driving it, and it is more fuel efficient to stop the engine and restart it if the vehicle will be stopped for more than one minute.
- 12. Report Annually on the Results of the EPA's Portfolio Manager Benchmarking Tool.**
Taking actions based on benchmarking information is most effective when the results are made public.

8. Portfolio of Energy Efficiency Activities for the Community

The Topeka community has been actively pursuing energy efficiency, conservation, and renewable energy projects for years. Presented below is a description of the key activities already under way as well as new ones recommended for the future. Combined, they represent a portfolio of diverse and complementary approaches for saving energy and increasing sustainability within the community. Note that Chapter 11 presents an overall energy saving goal for the community as well as new strategies and actions for achieving the goal that draw upon this portfolio.

8.1. Existing Portfolio for the Community

Implemented Topeka's Energy Star Homes Program for Low Income Housing

Who:	Department of Housing and Neighborhood Development
What:	Energy Star Homes for low income families.
When:	Ongoing.
Where:	City of Topeka
Why:	Inefficient heating equipment and leaking construction cause heating bills for low income housing to be extremely high, reducing the ability of Community Housing Development Organizations capacity to provide housing. ²⁸
Next Steps:	Support the EPA's Energy Star Homes and Home Performance with Energy Star programs City wide. Support the adoption of energy efficient residential building codes such as IEE 2009.

Implemented Energy Efficiency Improvements in the 501 School District

Who:	501 School District
What:	The School District has a 15 year history of working with Honeywell and Chevron to conduct energy audits and to implement energy saving projects such as: <ul style="list-style-type: none">• Trane HVAC upgrades and replacements installed.• High efficiency windows installed.• Online facility management system installed and in operation.• 20 panel solar hot water preheater system to be installed in 2010.• Small wind turbine to be permitted and installed in 2010.
When:	Ongoing.
Where:	Various schools throughout the City.

²⁸ City of Topeka Energy Star Case Study,
http://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/case_study_topeka.pdf

Why: School and other public buildings have long useful lives and a low cost source of funding through the municipality which enables a long-term perspective on energy investments.

Next Steps: Complete the solar hot water preheater system and identify funding for future projects. Conduct building envelope energy audits to find air sealing and building insulation opportunities. Use the experience of the 501 School District and apply it to other School Districts in Topeka.

Launched the Frito Lay Biomass Boiler Project

Who: Frito Lay

What: Install a biomass / wood chip boiler at the company's facility to produce process steam.

When: Under construction during 2010

Where: City of Topeka

Why: "A state-of-the-art biomass boiler that creates steam to heat the oil to manufacture the chips. The biomass boiler uses wood waste and is an innovative pilot project that will reduce natural gas consumption at the facility by 85 percent. A majority of the wood waste comes from the City of Topeka's Yard Materials Recycling Center at I-70 and MacVicar Avenue. This project is line with Frito-Lay's sustainability efforts, which includes reducing the use of key resources such as fuel. These efforts are another measure to help reduce the company's overall environmental footprint."²⁹

Next Steps: Identify other biomass waste streams that may be used to produce process steam for local uses.

Implemented Shawnee County's Free Composting Bin Program

Who: Shawnee County

What: Free compost bins are available to County residents who pledge an effort to organic waste reduction.³⁰

When: Ongoing

Where: KSU/Shawnee County Extension office at 1740 SW Western, Topeka, KS.

Why: Composting not only reduces municipal waste, but also produces a useful product that increases the yield of vegetable and flower gardens.

Next Steps:

1. Support and participate in Shawnee County's recycling programs.
2. Support and participate in single stream recycling.

²⁹ Greater Topeka Chamber Press Release, [Frito Lay Announces Topeka Expansion](#), June 18th, 2008

³⁰ Shawnee County Recycling Services, <http://www.snco.us/recycling/composting.asp>

Adopted Zoning to Allow Wind Turbines on Commercial Properties

- Who:** City of Topeka
- What:** A new zoning ordinance, No. 19310, was passed in Topeka in September, 2009 that allows the siting of small wind energy systems (or turbines) to be located in non-residential locations, with tower heights up to, but not more than, 62 feet, with a maximum capacity of 50 kilowatts (kW) per turbine.
- When:** 2009
- Where:** Topeka Planning Commission and City Council
- Why:** Topeka can position itself to take full advantage of the State's new net metering law by adopting zoning modifications that allow residents to erect wind turbines to capture the available wind and invest in other renewable energy technologies such as solar hot water and photovoltaics (PV), and that allow taller tower heights.
- Next Steps:** Modify the current zoning to allow wind turbines to be located at residential sites (in addition to the non-residential sites currently allowed) and to allow a tower height of at least 100 feet (which would be an increase from the existing 62 foot tower height limit).

8.2. Future Portfolio for the Community

Adopt and Enforce Building Energy Codes

- Who:** City Council
- What:** Adopt the 2009 International Energy Conservation Code (IECC) and section 90.1 of the 2007 ASHRAE commercial building codes.
- When:** December 2010
- Why:** Recipients of ARRA monies like Topeka are required to adopt current building energy codes and to achieve 90% compliance by 2017.
- Next Steps:** The Development Services Department should purchase copies of the energy codes, and solicit support from a City Council Member to introduce them to City Council. See Appendix C & D for a more detailed discussion of the value of building energy codes and how to measure compliance with them.

Retrofit 25% of Residential Buildings under the Home Performance with Energy Star Program

- Who:** Permitting & Zoning
- What:** Retrofit 25% of residential buildings under the Home Performance with Energy Star Program. Such retrofits will typically include sealing air leaks and adding insulation; sealing ductwork; improving heating and cooling systems; upgrading lighting and appliances; and installing high performance windows.
- When:** 2011

Why: Energy use in existing buildings is the single largest energy use in the community.

Next Steps: Approach Westar, the Topeka Home Builders Association, and others to partner with and promote participation in the Home Performance with Energy Star Program.

Require Mandatory Use of the Kansas Energy Efficiency Disclosure Form for all New and Existing Home Sales

Who: City Council

What: Require mandatory use of the Kansas Energy Efficiency Disclosure Form for all new or existing home sales.

When: 2011

Why: Currently, under KSA 66-1228³¹, builders or owners of new residential structures are “required” (upon request) to fill out and provide the Kansas Energy Efficiency Disclosure Form during a showing or prior to a closing. This is an important first step towards energy efficiency disclosure. It is recommended that this requirement be expanded to include existing homes (at the time of sale) and that provision of the form be mandatory and automatic, and not limited to only those situations in which potential buyers seek such information “upon request.” This will ensure greater transparency in Topeka about the energy efficiency of both new and existing homes, and will enable buyers to compare features in a consistent manner across multiple buildings. Instituting this requirement at the municipal level would help Topeka residents become more aware of home energy efficiency when purchasing homes, and could help stimulate investments in efficiency during both residential new construction and home retrofits. The current Kansas Energy Efficiency Disclosure Form is provided in Appendix B, for reference.

Next Steps: The Development Services Department should solicit support from a City Council Member to introduce the benefits of this action to City Council.

Adopt a Mandatory Recycling Ordinance

Who: City of Topeka

What: Adopt an ordinance at the City level that requires recycling by City residents and businesses, building upon the voluntary recycling initiative underway by Shawnee County.

When: 2011

Why: Many states and communities around the nation require recycling. This saves landfill space and can provide feedstock for the manufacturing of products made from recycled materials. If the City of Topeka joined the State of Kansas who already requires recycling at its facilities in Topeka, this would provide the critical mass of recycling customers likely to enable a long-term, sustainable program.

Next Steps: Develop an ordinance mandating recycling and seek a City Council Member(s) to introduce the ordinance to the City Council for discussion and vote.

³¹ Source: Kansas Corporation Commission, <http://www.kcc.state.ks.us/energy/index.htm>

Adopt a Sustainable Transportation Plan for the City

- Who:** City of Topeka
- What:** Develop a sustainable transportation plan that includes the concept of complete streets and that interconnects city parks with recreational paths.
- When:** 2011
- Why:** Many states and communities around the nation have established plans and found that they have not only reduced transportation energy costs, but also improved air quality and the livability of the community.
- Next Steps:** Obtain examples of sustainable transportation plans from other cities and develop a proposal for consideration by the City Council. See Appendix H for an example of sustainable transportation planning from the State of California.

Evaluate Greater use of CNG or Other Alternative Fuels in Topeka's Commercial Vehicles

- Who:** The Community Overall
- What:** The economics of using CNG or other alternative fuels in commercial vehicles is likely to improve in the future, as more businesses seek to use the fuels in their fleets and as greater economies of scale are achieved in alternative fuel production, distribution, and sales.
- When:** 2011
- Why:** A CNG fueling facility is already available in Topeka, and CNG has the potential to eventually become a renewable transportation fuel. Fueling facilities could be developed for other alternative fuels, such as biodiesel, etc, as well.
- Next Steps:** The City of Topeka's Sustainability Coordinator should seek out other fleet managers in Topeka to discuss expanding the use of CNG or other alternative fuels in commercial fleet vehicles throughout the city and to help stimulate market demand, and therefore improved economies of scale in distribution and sales.

Establish a Goal to Retrofit 100% of Topeka's Low Income Housing to Comply with Current Energy Codes by 2020

- Who:** Topeka Housing Authority
- What:** Establish a goal to retrofit 100% of Topeka's low income housing to comply with current energy codes by 2020. To ensure a successful glide path for achieving the overall goal, establish interim and incremental milestones that are aggressive yet achievable. For example, the interim milestones might be to retrofit:
- 2% of low income housing in Year One;
 - 3% in Year Two;
 - 5% in Year Three;
 - 10% in Years Four, Five and Six; and
 - 15% in Years Seven, Eight, Nine, and Ten.

When: 2020

Why: Low income residents spend a disproportionate share of their income on energy.

Next Steps: Work with the Topeka Housing Authority to identify and prioritize housing that need major retrofit work.

Expand Existing Zoning to Allow Wind Turbines on Residential Properties

Who: City of Topeka

What: Expand the existing zoning that allows the siting of small wind energy systems (i.e. turbines) up to 50 kW in non-residential locations to also allow wind turbines at residential locations. In addition, modify the existing zoning to allow a tower height of at least 100 feet (which would be an increase from the existing 62 foot tower height limit in the current zoning).

When: 2010

Where: Topeka Planning Commission and City Council

Why: Expansion of this zoning will further enable Topeka to position itself to take full advantage of the State's new net metering law and will help enable residents to erect wind turbines to capture the available wind.

Next Steps: Develop draft language for modifying the existing zoning and submit the modification to the Topeka Planning Commission and the City Council for approval.

9. Portfolio of Utility Activities

Topeka is fortunate to be the corporate headquarters of its electric utility, Westar Energy and to be served by Kansas Gas Service. Since 2007, Westar has been implementing energy efficiency programs, as well as a variety of related sustainable energy efforts which the City and its citizenry may participate in. Kansas Gas is currently designing and planning to offer efficiency services to its customers in the near future. Presented below is a description of key utility and regulatory activities already under way as well as new ones recommended for the future. Combined, they represent a portfolio of diverse and complementary approaches for saving energy and increasing sustainability within the community. Chapter 11 presents an overall energy saving goal for the community as well as strategies and actions for achieving the goal that draw upon the utility and regulatory portfolio.

9.1. Existing Portfolio of Utility Activities

Implemented Westar's "Efficiency Works" Programs

- Who:** Westar Energy
- What:** Consumer education and programmable thermostat and heat pump programs and incentives to use electricity more efficiently.
- When:** Since 2007.
- Where:** Throughout Westar Energy's service territory, including all of Topeka.
- Why:** Energy efficient products such as programmable thermostats and compact florescent light bulbs (CFLs) offer their users the same level of service, but use less energy in the process. Programmable thermostats can save up to 20% on a home owners heating bill, and CFLs typically use 75% less energy than a standard incandescent light bulb.
- Next Steps:**
1. Participate in Westar's Efficiency Works programs and incentives.
 2. Support expanded electrical efficiency programs such as CFL rebates, Energy Star appliance rebates, and energy audits.

Developed the Rolling Meadows Landfill Gas-to-Electricity Project

- Who:** Waste Management & Westar Energy
- What:** Landfill Gas Generation Project
- When:** July 2009
- Where:** Rolling Meadows Landfill, Topeka
- Why:** "Landfill gas, produced when microorganisms break down organic material in the landfill, is composed of approximately 50-60 percent methane and 40-50 percent carbon dioxide. At most landfills in the United States, the methane is simply burned off. Landfill Gas to Energy (LFGTE) facilities use methane gas to power generators offsetting power

otherwise generated from fossil fuel.”³² The facility will produce up to six megawatts of energy – enough to power the equivalent of up to 6,000 homes. The facility is expected to deliver electricity to Westar by 2010.

Next Steps: 1. Use the facility as an educational site, demonstrating the potential for LFGTE at other landfill locations.

Implemented Westar’s Renewable Energy Program Rider

Who: Westar Energy

What: This tariff rider allows any Westar customer to elect 100 kwh blocks of renewable energy for \$1/block or \$0.01 / kwh.

When: Ongoing

Where: Any Westar customer may participate.

Why: The Renewable Energy Program Rider gives customers the opportunity to participate in Westar's voluntary energy tariff.

Next Steps: Customers may purchase blocks of energy under this rider by contacting Westar at 1-800-383-1183.

Launched Westar’s Interruptible Tariffs Program

Who: Westar Energy

What: Utility controlled energy supply.

When: Ongoing.

Where: Commercial and Industrial Westar customers who can tolerate service interruptions may participate.

Why: Customers typically get a lower electric rate in return for allowing the utility to interrupt their electric service during defined periods, usually during the summer peak.

Next Steps: Identify City facilities that have backup generators and could tolerate service interruptions.

Passed the State of Kansas Net Metering Law

Who: State of Kansas

What: Legislation enacted in May 2009 (HB 2369) established net metering for customers of investor-owned utilities in Kansas. The rules allow residential systems up to 25 kilowatts

³² Westar Energy & Waste Management Press Release, [Waste Management and Westar Energy Announce New Landfill Gas to Energy Facility](#), July 15th, 2009.

(kW) and non-residential systems up to 200 kW to offset onsite electricity consumption. A net-metered system must be appropriately sized so as not to exceed expected load.³³

When: 5/22/2010

Where: Any Westar customer may participate.

Why: Electricity customers who wish to install their own Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Small Hydroelectric, or Fuel Cells using Renewable Fuels may offset their electricity bill kwh for kwh and roll any net excess generation (NEG) forward for as long as one calendar year at the prevailing retail price of electricity.

Next Steps:

1. Participate in the net metering opportunity by installing customer sited renewable energy systems.
2. Promote higher participation limits (presently capped at 1% of the utility's peak demand) and a cash out provision for any NEG at the end of the calendar year.

9.2. Future Portfolio for Utility Activities

Set a Goal to have Topeka Achieve the Highest Participation Rate in Westar's WattSaver Program

Who: Think Big Topeka or a similar organization

What: Partner with Westar to promote the WattSaver Program, and help Topeka achieve the highest participation rate in Westar's territory.

When: 2011

Why: Westar's WattSaver Program can enable the community to mobilize around the concept of creating a "virtual power plant" by enrolling in the program.

Next Steps: Recruit community organizations interested in promoting Westar's WattSaver Program.

Adopt an Efficient Street Lighting Ordinance

Who: City Council

What: Adopt an ordinance requiring new and replacement street lights and fixtures to comply with minimum energy efficiency standards.

When: 2011

Where: Applies to the Public Works Department who maintains City-owned street lights.

Why: Street lights are a significant part of the City's electricity consumption, and new technology can cost effectively improve energy efficiency and reduce costs.

³³ Source: Database of State Incentives for Renewables & Efficiency, Updated 5/29/09, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=KS08R&re=1&ee=1

Next Steps: Designate a Public Works employee to work with Westar to identify mutually beneficial lighting options. Based on results of this collaboration, draft an ordinance and solicit support from a City Council Member(s) who can introduce it to the City Council.

Set a Goal to have Topeka Achieve the Highest Participation Rate in Westar's Heat Pump Program

Who: Think Big Topeka or a similar organization

What: Partner with Westar to promote the Heat Pump Program, and help Topeka achieve the highest participation rate in Westar's territory.

When: 2011

Why: Heat Pumps are a highly efficient alternative to natural gas heat.

Next Steps: Recruit community organizations that are willing to promote Westar's Heat Pump Program.

Set a Goal to have Topeka Achieve the Highest Net Metering Participation Rate in Kansas

Who: Think Big Topeka or a similar organization

What: Partner with Westar to promote net metering, and help Topeka achieve the highest participation rate in Westar's territory.

When: 2011

Why: Net metering allows electric customers to install their own wind or solar generators and to reduce their utility electricity consumption.

Next Steps: Recruit community organizations that are willing to promote net metering.

Develop a Community Mobilization Energy Project to Increase Participation in Utility Efficiency Programs

Who: Westar, One or More Neighborhood Associations

What: Experience in several pilot programs offered in Vermont and Massachusetts (for example) indicates that participation rates in existing utility efficiency programs increase dramatically when a "community energy approach" is taken that targets marketing and delivery of multiple programs simultaneously, using professional staff and trained volunteers focused on a geographic area for a concentrated period of time. Examples of such programs and guidance on how to set them up is provided in Appendix H. This EECS recommends a pilot program be launched in the fall of 2010, involving the engagement of one or more neighborhood groups in Topeka. Topeka could set an example for the state by achieving the highest participation rates for Westar's WattSaver and Heat Pump programs in the utility's service territory. Outside funding may be needed to stimulate this. Staff for the initiative might be obtained through the Environmental Intern Program offered by Kansas State.

When: 2010

Where: One or more neighborhoods in Topeka.

Why: To increase participation in existing utility programs, to capitalize on the interest and enthusiasm of the participating neighborhood association, and to further build momentum around the community's commitment to reducing energy costs, improving efficiency, and conserving natural resources.

Next Steps: Assess interest and support for this approach by the local utility and one or more neighborhood associations. Seek start-up funding to help launch. See Appendix F for an example of a Community Mobilization Project.

Redevelop Key Account Relationships for City Departments

Who: City of Topeka, Westar

What: Re-establish past practice of having utility bills sent directly to City Department or Facility managers, prior to payment.

When: 2010

Where: City Administration

Why: Due to an administrative change a few years ago, managers of City Departments and facilities no longer receive and review their department's or facility's utility before it is paid by the City, and as a result are not typically interacting on an ongoing basis with an Account Manager at the utility. Several Department managers note that re-establishing relationships between City managers and a utility Account Manager would quickly and efficiently increase awareness of energy usage and cost within City Operations.

Next Steps: Discuss internally the ability to modify this practice.

10. Portfolio of Financing Activities

Presented below is a description of key energy efficiency finance activities and Activities already under way as well as new ones recommended for the future. Combined, they represent a portfolio of diverse and complementary approaches for saving energy and increasing sustainability within the community. Chapter 11 presents an overall energy saving goal for the community as well as strategies and actions for achieving the goal that draw upon the finance portfolio.

10.1. Existing Portfolio of Financing Activities

Created a Renewable Energy Property Tax Exemption

- Who:** Kansas Corporation Commission, State Energy Office
- What:** Kansas law, “exempts renewable energy equipment from property taxes. Renewable energy includes wind, solar thermal electric, photovoltaic, biomass, hydropower, geothermal, and landfill gas resources or technologies that are actually and regularly used predominantly to produce and generate electricity.”³⁴
- When:** 1999
- Where:** Statewide.
- Why:** To encourage renewable energy development statewide.
- Next Steps:** Educate Topeka residents about the availability of this exemption.

Created the Efficiency Kansas Revolving Loan Program

- Who:** Kansas Corporation Commission, State Energy Office
- What:** “Using money made available to the state through the federal American Recovery and Reinvestment Act (ARRA), the Efficiency Kansas *revolving loan program** allows homeowners and small businesses to receive financing to pay for energy improvements and renewable energy systems for their existing homes and buildings... Homeowners may borrow up to \$20,000 and small businesses may borrow up to \$30,000, but monthly loan repayments may not exceed the estimated monthly energy savings. Participants will have up to 15 years to repay the loan.”³⁵
- When:** 2009
- Where:** Statewide
- Why:** To encourage energy efficient retrofits and renewable energy development.
- Next Steps:** Educate Topeka residents and businesses about the availability of this loan program.

³⁴ Source: http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=KS02F&re=1&ee=1

³⁵ Source: http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=KS20F&re=1&ee=1

Utilized Energy Savings Performance Contracting through the Facility Conservation Improvement Program (FCIP)

- Who:** Kansas Corporation Commission, State Energy Office
- What:** The City of Topeka applied for and utilized energy savings performance contracting through the state's FCIP. FCIP does not provide financing directly. However, as noted in the program literature:
"The FCIP is a streamlined program enabling public agencies (state, municipalities, counties and schools) to use a tool known as energy savings performance contracting (ESPC) to access financing for planning and implementing projects quickly and easily. Tax-exempt financing with a very attractive interest rate makes [the] project more economical and reduces the pay-back period. Financing can be customized to meet the particular cash flows associated with [the] projects."³⁶
- When:** 2009
- Where:** Statewide
- Why:** To encourage energy efficient retrofits in the public sector, and to enable energy efficiency investments the City could not afford on its own.
- Next Steps:** Continue to identify City projects that could benefit from energy savings performance contracting and apply for and access such financing, as appropriate.

10.2. Future Portfolio of Financing Activities

Establish a Goal to Have the Highest Participation Rate in Efficiency Kansas in the State

- Who:** City Council
- What:** Achieve the highest Efficiency Kansas participation rate of any municipality in Kansas.
- When:** 2012
- Where:** City of Topeka
- Why:** The Efficiency Kansas loan program enables greater levels of investment in energy efficiency and renewable energy, and by having the highest participation rate in the program, Topeka can set an example statewide for what can be achieved through the program.
- Next Steps:** The Development Services staff should contact the State Energy Office to explore how the idea could be implemented and reported statewide.

³⁶ Source: <http://www.kcc.state.ks.us/energy/fcip/>

Create Priority Permitting and/or a Rebate for the Permitting Cost of Energy Efficient Buildings

- Who:** City Council
- What:** Allow builders to get priority or streamlined permitting consideration, and give builders a discount or rebate on the cost of permitting buildings that meet minimum energy efficiency standards as defined by either Energy Star or LEED.
- When:** 2011
- Where:** City of Topeka
- Why:** Permitting lead times and costs can be a significant obstacle for builders, and creating incentives to overcome these obstacles can help create more efficient buildings.
- Next Steps:** The Development Services Department should draft a proposal for priority permitting and permit cost rebates and seek the support of a City Council Member to introduce the proposal to the City Council.

Establish a Policy that Enables City Departments to Retain a Portion of the Cost Savings Resulting from EECS Improvements in their Department

- Who:** City Council
- What:** Set aside a portion of energy cost savings achieved by a City Department or Facility Manager, and allow those savings to flow back to the Department to reinvest in future energy and cost savings measures.
- When:** 2010
- Where:** City Administration
- Why:** Department and facility managers are more likely to seek out and implement energy cost savings measures if their own facilities and budgets stand to benefit.
- Next Step:** Develop and pass the policy.

Create a Property Assessed Clean Energy District (PACE)

- Who:** City Council
- What:** PACE Districts use municipal bond funds to lend money to commercial and residential property owners to finance energy retrofits. PACE loans are repaid over 20 years by placing a property tax assessment on the property tax bill.
- When:** 2012
- Where:** City of Topeka
- Why:** Building and home owners frequently sell their property before an energy efficient retrofit investment can pay for itself. PACE financing attaches the repayment for such investments to the property, not the initial owner, which allows the initial owner who made

the energy efficient investment to realize cost savings without the risk that they will sell the property before the accumulated savings can repay the cost of the investment.

Next Steps: Circulate the Guide to Energy Efficiency & Renewable Energy Financing Districts to City Council for their consideration. The Executive Summary appears in Appendix G.

Encourage the KCC to Adopt Incentives for Energy Star Products Statewide

Who: Sustainability Coordinator or Designated Staff

What: Encourage the KCC to Adopt Incentives for Energy Star Products Statewide

When: 2012

Where: City of Topeka

Why: Many Energy Star products are available and cost effective ways to reduce energy consumption over the life of the product. Consumers often need financial incentives to reduce the payback period, however.

Next Steps: Arrange to meet with Westar and the KCC on the issue.

Monitor Financing Resources Quarterly

Who: Sustainability Coordinator or Designated Staff

What: There are a number of established resources available at the federal, state, and local level to help identify new funding opportunities.

When: 2010

Where: City of Topeka

Why: Funding sources and programs change frequently based on the availability of government and foundation grant money, and monitoring the status of known outlets for this information will alert Topeka to future funding opportunities.

Next Steps: Monitor the following web sites quarterly and report new funding opportunities to City Management.

Federal, State and Local Financing Resources

Federal Financing Resources

- **Environmental Protection Agency, Green Building**
 - <http://www.epa.gov/greenbuilding/tools/funding.htm#guides>
- **Energy Star, Federal Tax Credits for Consumer Energy Efficiency**
 - http://www.energystar.gov/index.cfm?c=tax_credits.tx_index
- **Home Star Energy Efficiency Retrofit Program**
 - <http://www.whitehouse.gov/the-press-office/fact-sheet-homestar-energy-efficiency-retrofit-program>
 - <http://www.encyfirst.org/home-star/>
- **U.S. Department of Energy, Energy Efficiency & Renewable Energy**
 - <http://www1.eere.energy.gov/financing/>

State Financing Resources

- **Kansas Corporation Commission, State Energy Office**
 - <http://www.kcc.state.ks.us/energy/index.htm>
- **Kansas Department of Health and Environment, Bureau of Waste Management Grants Program**
 - http://www.kdheks.gov/waste/about_grants.html

Non Profit Financing Resources

- **Enterprise Green Communities**
 - <http://www.greencommunitiesonline.org/>
- **Funders Network, For Smart Growth and Livable Communities**
 - <http://www.fundersnetwork.org/>
- **Kansas Grants Clearinghouse**
 - <http://www.kansasgrants.org/>
- **Kansas Non Profit Association, Directory of Kansas Foundations**
 - <http://www.mainstreaminc.net/knpa/directory.html>
- **Local Government Commission**
 - <http://www.lgc.org/freepub/energy/funding.html>

11. Topeka EECS Goals, Strategies, and Actions

Presented below is an explanation of the specific energy savings goal recommended for Topeka in this EECS, an assessment of the level of effort it will take to meet the goal, and a detailed implementation plan that identifies the high impact strategies and actions recommended for achieving the goal. The strategies and actions are presented in order of priority, based on their relative ease of implementation, cost, and overall impact.

11.1. Topeka's Overall Energy Savings Goal

Increasingly, communities throughout the U.S. are setting specific energy savings, sustainability, and/or greenhouse gas reduction goals. Articulation and promotion of the goals send a strong policy message to civic and community leaders, and provide an important focus for a variety of municipal and community planning and implementation activities. The goals being set vary widely among communities:

- The City Council of Austin, Texas passed a resolution to “Make all City of Austin facilities, fleets, and operations totally carbon neutral by 2020.”
- The City of Eugene, Oregon developed a Climate and Energy Action Plan that established a goal to “...reduce total, current, community-wide fossil fuel consumption by 50% by 2030.”
- The City of Lawrence, Kansas developed a Climate Action Plan that seeks an “...80% reduction in greenhouse gas emissions ... by 2050, using baseline data from 2005.”

Determining the right goal for a community is not an exact science. Some communities prefer to set very aggressive long-term goals, and then struggle to achieve them over a relatively long period of time. Other communities prefer to set more immediate goals that they are confident can be achieved. For Topeka, this EECS recommends a goal of saving 10% of energy use by 2020.

“For Topeka, this EECS recommends a goal of saving 10% of energy use by 2020.”

This goal represents a substantial change from business as usual and will require important and significant changes in policy, regulation, and behavior in municipal operations and throughout all sectors of the community. That said, the goal is modest enough to be achievable, especially in a community such as Topeka that has strong and defined municipal and civic leadership, vibrant business and community organizations, and an increasingly “can do” spirit (as evidenced by the recent Heartland Visioning strategic planning work, the innovative sustainability plans of Go Topeka, and the recent community organizing work of Think Big Topeka for the national Google fiber optics challenge, among others).

11.2. Achieving 10% Energy Savings in Buildings by 2020

Experience nationwide indicates that it is common for homes participating in the EPA's Energy Star and Home Performance with Energy Star programs to achieve 20-30% energy savings. This is accomplished through a comprehensive approach to building efficiency that commonly includes;

- Sealing air leaks and adding insulation;
- Sealing ductwork;
- Improving heating and cooling systems;
- Upgrading lighting and appliances; and
- Installing high performance windows.

Although the Energy Star process differs somewhat between new and existing buildings, overall they are quite similar. For new buildings, the process begins when a home builder chooses to partner with Energy Star. Then the Builder works with a Home Energy Rater to select appropriate energy efficient features for the home. After the design is completed, the builder constructs the home and the Home Energy Rater verifies the features and performance of the home. Once this process has been completed successfully, the Home Energy Rater qualifies the Home as being Energy Star and issues an Energy Star label.

Commercial buildings can achieve the Energy Star label by being in the top 25% of all buildings in their benchmark category. This is accomplished using the EPA's Portfolio Manager. The efficient features that make this possible vary among building type and use, but commonly include upgrading motors, heating and cooling systems, and lighting.

The following table shows how Topeka can begin to achieve 10% building energy savings. The table indicates the range of energy savings that Topeka can expect at various levels of energy savings per building by assuming different levels of building stock penetration rates. For example, by using an energy savings per building estimate of 20%, and assuming that 25% of the existing building stock in Topeka can be retrofitted to Energy Star standards by 2020, Topeka can expect to save 5% on its community wide energy use. This would represent a sizeable energy savings and would require retrofitting about 1,400 homes per year for 10 years. This level of retrofit activity is on par with cities such as Austin, Texas whose Home Performance with Energy Star program retrofits an average of 1,000 – 1,200 homes per year.

Community Wide Energy Savings from Buildings

		Building Stock Penetration Rate						
		1%	5%	10%	25%	50%	75%	100%
Savings/Bldg	10%	0.1%	0.5%	1.0%	3%	5%	8%	10%
	15%	0.2%	0.8%	1.5%	4%	8%	11%	15%
	20%	0.2%	1.0%	2.0%	5%	10%	15%	20%
	25%	0.3%	1.3%	2.5%	6%	13%	19%	25%
	30%	0.3%	1.5%	3.0%	8%	15%	23%	30%

Using the same logic, Topeka's municipal buildings could save city taxpayers 5% of the municipal energy bill by 2020 if 25% of the municipal square footage was brought up to Energy Star standards by 2020. As shown in the table, more ambitious goals are possible. For instance, achieving 10% of municipal energy overall would require retrofitting 50% of Topeka's building stock. Alternatively, conservation and/or renewable energy strategies could be employed in conjunction with building retrofits to achieve 10% savings.

Retrofitting 25% of the building stock to Energy Star standards is an ambitious goal in and of itself. However, a goal of saving 10% of building energy use by 2020 is recommended at both the municipal operation and the city-wide level. This will require Topeka to employ the full range of EECS strategies, from conservation to efficiency to renewable energy.

11.3. Achieving 10% Energy Savings in Transportation by 2020

The upper limit on what can presently be achieved in terms of vehicle energy efficiency savings is well known; a Toyota Prius is the most fuel efficient, commercially available vehicle today. However, since a Prius is not a practical vehicle for every purpose, reaching 50 miles per gallon (MPG) is not a practical goal for the City to pursue. However, it is useful to put this number into the context of Topeka's average fleet vehicle MPG. Based on 2008 data, the City's gasoline powered fleet vehicles averaged 24.3 MPG and its diesel powered fleet vehicles averaged 7.3 MPG. If the City set a goal to improve its fleet average

fuel efficiency by 10% by 2020, its vehicles would average about 27.5 MPG and 8.25 MPG for gasoline and diesel powered vehicles respectively.

Community Wide Energy Savings from Fleet Efficiency

		Fleet Average MPG			
		7.5	15	20	25
Savings Goal	5%	7.88	15.75	21.00	26.25
	10%	8.25	16.50	22.00	27.50
	15%	8.63	17.25	23.00	28.75
	20%	9.00	18.00	24.00	30.00
	25%	9.38	18.75	25.00	31.25
	30%	9.75	19.50	26.00	32.50

What would a goal like this mean to the City of Topeka's Fleet Manager? Imagine that the City's fleet is made up of 100 vehicles, half of which get 20 MPG and half of which get 30 MPG. The average fleet efficiency will be about 25 MPG, which is close to the 2008 average fleet efficiency. To achieve the 10% goal, 75% of all fleet vehicles would have to get 30 MPG by 2020, leaving only 25 vehicles at the 20 MPG level. As with the building energy saving goal, more ambitious outcomes are possible. However, a goal of saving 10% of transportation energy use by 2020 is recommended at both the municipal operation and the city-wide level. This will require a significant change in behavior and purchasing patterns. .

The two goals, 10% building energy and 10% vehicle energy savings, equate to a 10% CO2 savings by 2020. Assuming 2008 levels of energy usage, the result of saving 10% of all energy use is shown in the following tables.

Municipal Operations Savings / Yr @ 10% (2008)			
Energy Use	Fuel	CO2 (Tons)	CO2 % of 2008
-6,517,201	Elec. (Kwh)	-6,390	-10.0%
-7,585	Nat. Gas (MCF)	-448	-10.0%
-35,407	Gas (Gal)	-343	-10.0%
-20,594	Diesel (Gal)	-229	-10.0%
		-7,411	-10.0%

City Wide Savings / Yr @ 10% (2008)			
Energy Use	Fuel (Unit)	CO2 (Tons)	CO2 % of 2008
-200,000,000	Elec. (Kwh)	-196,100	-10.0%
-869,003	Nat. Gas (MCF)	-51,356	-10.0%
-6,076,050	Gas (Gal)	-58,940	-10.0%
-1,671,160	Diesel (Gal)	-18,606	-10.0%
-200,000,000		-325,002	-10.0%

11.4. Developing the Portfolio into an Implementation Plan Driven by Strategy

As mentioned in Chapter 5, there are three major categories of energy saving strategies; conservation, efficiency, and renewable energy:

1. Conservation – Demand less energy by driving less, turning off lights, etc.
2. Efficiency – Demand less energy by buying and building more efficient cars, lights, appliances, electronics, and buildings.
3. Renewable Energy – Supply more energy using wind, solar, and biomass.

For each of these, there is a progression of strategies and actions that can be taken to move toward the EECS goals. These correspond to the strategies and actions identified in Chapter 4, and vary from educational and recognition programs (such as LEED and Energy Star) to enforcing building codes and standards.

Range of Energy Saving Strategies and Actions

Status Quo	Education & Recognition Programs	Stand Alone Incentive Programs	Coordinated Incentive Programs	Laws, Ordinances & Codes	Enforcement
0	1	2	3	4	5
Voluntary				Mandatory	
Examples...	LEED Energy Star	Efficiency Kansas WattSaver	State Energy Office Efficiency Works	Building Codes Efficiency Stds.	Building Inspections Audits / Reporting

As shown in the table above, Topeka is already benefiting from the first three strategies through a variety of existing education and recognition programs, stand-alone incentive programs, and coordinated incentive programs. A clear and straightforward way to move towards achieving the EECS goals is to work hard to increase participation in those programs. This can be done using any of the strategies themselves, from promoting existing educational and recognition programs to providing funds to incentivize greater participation in them. However, the most direct way to achieve the EECS goals is to put them in the form of an ordinance or building code and to create enforcement mechanisms to ensure compliance.

While goals, strategies, and actions are helpful ways to organize and think about an EECS, progress is most tangible at the level of an individual action. The following tables categorize the range of energy saving actions that are available to Topeka, and offer individual examples of each category that have already been identified in the previous chapters. Information in the tables is prioritized beginning with actions expected to be the lowest cost, and then progress through actions that require increasingly higher levels of investment, such as renewable energy.

Categories of Energy Saving Actions

Buildings	Transportation	Wastes	
Design	Design	Design	Demand Side Actions
Conservation	Conservation	Conservation	
Efficient Products	Public Transport	Recycling	
Efficient HVAC Systems	Hybrids	Green Purchasing	Supply Side Actions
Efficient Bldg. Envelopes	Alt. Fuels		
Renewable Energy	Renewable Energy		
Net Zero Energy	Net Zero Energy	Zero Landfill	Ideal Outcome

Examples of Energy Saving Actions by Category

Buildings	Transportation	Wastes	
Enforce building codes. Build to Energy Star. Use HVAC Setpoints & Lighting Sensors Purchase Energy Star Products Use EPA Portfolio Manager Home Performance w/ Energy Star Adopt wind & solar friendly zoning ordinances	Design Complete Streets & New Public Transport Reduce miles traveled w/ telecommuting incentives Expand TMTA Service Purchase Hybrids Purchase Biodiesel, CNG, or Elec. Vehicles Support TMTA proposal & electric vehicles	Design municipal services to minimize wastes Use electronic communication over paper Use Shawnee County recycling programs Purchase green products	Demand Side Actions Supply Side Actions

12. EECS Implementation Plan

Presented below in tabular format is the implementation plan recommended to achieve the 10% savings goal by 2020. The table recommends specific goals, strategies, and actions for each of the four major areas identified in Chapter 5; Municipal Operations, Community Activities, Utility Activities, and Financing Activities. Items are placed (and numbered) in order of highest to lowest priority for each of the four major areas, based on relative ease of implementation, cost, and impact.

The tables show what metrics may be used to measure progress toward the goal, what organizations will need to be involved, and what the impact of the action is expected to be (relative to the goal). A timeline is also included, *suggesting* when action should begin taking place for each item. This is presented as a “living” document that is expected to be modified and updated regularly in response to progress toward the goals and to changing circumstances.

Implementation Plan and High Impact Items for Municipal Operations

#	Goal	Metrics	Strategy	Action	Leaders	Savings	Timeline
1	Reduce energy use in Topeka's municipal buildings by 10% by 2020.	Electricity = kwh/yr Natural Gas = therms/yr Or MMBtu equivalent per year. Baseline = 2010 kwh/yr & therms/yr	Upgrade all existing city buildings to Energy Star levels by 2020.	Benchmark city buildings against their peers using the EPA's Portfolio Manager.	DPW	N/A	2010-2020
				Identify buildings to upgrade in capital planning process.	DPW	5%	2011
			Topeka only purchases Energy Star qualified lighting, appliances, and electronics.	Adopt a city policy or ordinance to make Energy Star the standard for all new appliance and lighting purchases.	DPW, SAB	12.5%	2011
			Design and build all new city facilities to meet LEED standards.	Adopt a city policy to make LEED the standard for all new municipal buildings.	City Manager	25%	2010-2020
			Upgrade HVAC systems to new building energy code standards at major retrofit or replacement times.	Identify & quantify HVAC upgrades and target dates in the capital plan for all city buildings.	DPW	10%+	2011
			Reduce unnecessary energy use in city buildings.	Adopt a policy to stop electric space heater use.	City Manager	2%	2010
				Adopt a policy to turn off all lighting at the end of the day.	City Manager	1%	2010
				Install controllable power strips on all office equipment.	IT	1%	2011
			Redevelop key account relationships for City Departments.	Change administrative policy such that utility bills are approved by City managers before being paid.	Finance, City Managers		2011
Require facility managers to participate in Westar's Building Operator Certification Program.	M. McGee to propose to DPW Manager.	DPW	5%	2011			

Implementation Plan and High Impact Items for Municipal Operations							
#	Goal	Metrics	Strategy	Action	Leaders	Savings	Timeline
2	Reduce energy use in the City's fleet by 10% by 2020.	Gasoline = gallons/yr Diesel = gallons/yr Or MMBtu equivalent per year. Baseline = 2010 gallons/yr	Establish a fleet mpg fleet efficiency standard similar to the State of Kansas.	Draft a mutually agreed upon standard using the State of Kansas as a starting point.	SAB, Fleet, City Council	10%	2011
			Establish a vehicle purchasing policy that requires the City to purchase cost effective alternative fuel vehicles.	Require financial analysis of the cost effectiveness of alternative fuel vehicles at each vehicle procurement.	Fleet, Finance	10%	2011
			Adopt a no engine idling and warm up policy.	Draft policy for City Manager.	DPW	1%	2010
			Evaluate the use of CNG in the City's fleet.	Partner with TMTA to evaluate the use of CNG in the City's fleet vehicles.	Fleet		2011
			Reduce vehicle miles traveled.	Evaluate using teleconference services to reduce unnecessary trips.	IT, Fleet	10%	2010
3	Reduce landfill waste by 50% by 2020.	Tons/Yr	Require that All City Departments Participate in Shawnee County's Recycling Programs.	Require City Departments to budget for the cost of Shawnee County's Recycling Program.	City Manager	50%	2011
			Reduce printer and toner use.	Set print defaults to ink friendly fonts like Century Gothic.	IT	30%	2010
				Enable document scanning at all copiers	IT	5%	2010
				Enable PDF printing on all computers.	IT	5%	2010

Implementation Plan and High Impact Items for Community Initiatives							
#	Goal	Metric	Strategy	Action	Leaders	Savings	Timeline
1	Topeka adopts the most current building energy codes within one year of their publication. Presently, IECC 2009 residential and ASHRAE 90.1 - 2007 commercial building codes.	90% compliance as determined by Topeka building inspectors by 2017	Establish partnerships to educate the community about the benefits of adopting these energy codes.	Contact Topeka Homebuilders Association & the Kansas Building Science Institute to create educational opportunities.	SAB, DPW, City Council Sponsor	5.0%	2010
				Fund a baseline study to determine the energy efficiency of current building practises in Topeka.	THBA, City Manager, Codes & Permitting		2011
			Educate city building inspectors on code enforcement issues.	Participate in the Kansas State Energy Office's Energy Efficiency Building Codes Working Group.	DPW		2010
2	25% of Topeka's residential buildings are recognized as having participated in EPA's Home Performance with Energy Star Program by 2020.	% of buildings who invest in energy efficient retrofits.	Promote HP w/ ES participation with Topeka Homebuilders Association and Westar.	Set up tracking system to track data on which permits are being issued for projects participating in HP w/ ES.	Permitting	5.0%	2011
3	Require the Kansas Energy Efficiency Disclosure Form be used for all existing home sales.	Adoption of the requirement.	Educate City Council on the benefits of the disclosure form.	Seek City Councilor to sponsor the requirement.	Unknown		2010
4	Adopt a Mandatory Recycling Ordinance or achieve 90% participation in Shawnee County's recycling programs by 2020.	% of taxpaying entities enrolled in Shawnee County's recycling programs.	Reduce property tax bills by the amount of the recycling program fee for the first year for participating taxpayers.	Analyze the cost of this strategy and present results to City Council for consideration.	SAB, Shawnee County	50%	2010
5	Topeka adopts a Sustainable Transportation Plan.	Adoption of a Sustainable Transportation Plan.	Build on existing transportation planning staff to create a Sustainable Transportation Plan.	Seek City Councilor to sponsor the plan.	TMTA, DPW	10%	2011

Implementation Plan and High Impact Items for Utility Programs

#	Goal	Metric	Strategy	Action	Leaders	Savings	Timeline
1	Topeka achieves the highest penetration of controllable programmable thermostats of any City in Westar's service territory.	% of Westar customers in Topeka who are enrolled in the program.	Design and implement a neighborhood and city level challenge to promote participation and energy saving setpoint programming.	Get city councilor sponsorship and attend neighborhood meetings.	Westar	2%	2010
2	Topeka implements an energy efficient street lighting program with Westar	% of street lights using energy efficient fixtures and bulbs.	Create a stand alone program that allows Topeka to choose more efficient street lighting offerings from Westar.	Set up meeting with Westar Key Account Representative to discuss the program.	DPW, Westar	75%	2012
3	Topeka achieves the highest penetration of heat pumps of any City in Westar's service territory.	% of Westar customers in Topeka who are enrolled in the program.	Design and implement a neighborhood and city level challenge to promote installation of heat pump systems.	Get city councilor sponsorship and attend neighborhood meetings.	Westar	10%	2012
4	Topeka has the highest net metering participation rate of any City in Kansas.	% of taxpaying entities enrolled in net metering with Westar.	Change residential zoning to allow small wind and solar.	Revive the Governor's Mansion wind energy project.	Westar, SAB	0.5%	2011

Implementation Plan and High Impact Items for Finance

#	Goal	Metric	Strategy	Action	Leaders	Savings	Timeline
1	Topeka has the highest participation rate in the Efficiency Kansas Loan Program of any City in Kansas.	% of Topeka tax payers who have participated in the program.	Establish this metric within the Efficiency Kansas Program.	Set up meeting with the State Energy Office to determine how to measure this outcome.	Unknown	10%	2012
2	Create priority permitting and/or a rebate for the permitting cost of energy efficient buildings.	% of building permits participating in the priority permitting program.	Develop a proposed permitting process as part of the building code adoption.	Develop a proposed permitting process.	Permitting and Code Enforcement	1%	2011
3	Establish a policy that enables city departments to retain a portion of the cost savings resulting from EECS improvements in their department.	Adoption of EECS saving policy.	Lobby City Council to adopt the policy.	Seek out a City Council sponsor.	City Manager	1%	2011
4	Topeka adopts a PACE program to compliment Efficiency Kansas.	Adoption of PACE.	Educate City Council on the benefits of PACE programs.	Seek out a City Council sponsor.	Unknown	10%	2012
5	The KCC adopts incentives for Energy Star Products statewide.	KCC allocates funding for Energy Star rebates and incentives statewide.	Lobby the KCC.	Seek out a City Council sponsor.	Unknown	12.5%	2012

13. Summary & Conclusion

Topeka's EECS accomplishes all 10 elements of the ICLEI approach, and positions Topeka to be a national leader in sustainability once the EECS is fully implemented.³⁷

Key	<input checked="" type="checkbox"/>	ICLEI Action	Topeka's EECS
1	<input checked="" type="checkbox"/>	Hire a sustainability coordinator to run the show.	Requires reporting of energy use and cost, which requires management and employee coordination.
2	<input checked="" type="checkbox"/>	Obtain buy in from a big wig.	Engages the City Manager, City Council Members, and Heartland Visioning throughout the EECS development.
3	<input checked="" type="checkbox"/>	Form teams that build bridges across city departments and beyond city hall.	Recommends the formation of Green Teams for each City building and the creation of a City wide intranet.
4	<input checked="" type="checkbox"/>	Develop a greenhouse gas inventory	Develops both energy and carbon emission baselines using readily available information.
5	<input checked="" type="checkbox"/>	Define clear and measurable goals.	Provides goals for building, transportation, and waste related EECS actions.
6	<input checked="" type="checkbox"/>	Get regular people to tell you what sustainability goals are important to them.	Includes public meetings through Heartland Visioning to listen to what members of the public want in their EECS.
7	<input checked="" type="checkbox"/>	Develop implementation plans within your plan.	Features actionable steps for each goal that can be taken toward implementation.
8	<input checked="" type="checkbox"/>	Take a deep breath and release a draft plan for public comment.	Is posted on the City's web site and will continue to be discussed through Heartland Visioning and the City Council.
9	<input checked="" type="checkbox"/>	Obsessively track the implementation status of your measures.	Recommends tracking tools such as EPA's Portfolio Manager for City Operations.
10	<input checked="" type="checkbox"/>	Remain accountable to the public.	Ensures accountability to the public through the City Council's Sustainability Advisory Board oversight of the EECS implementation.

During the implementation of this EECS, Topeka is certain to encounter the barriers identified in Chapter 4. Most EECS actions require **capital**. The many EECS activities identified and recommended are **fragmented** and spread across a wide range of infrastructure and jurisdictional bodies. Because energy remains a relatively small part of individual taxpayer budgets, EECS actions may continue to have a **low mind share** in the public's eye. Finally, saving energy is inherently more **difficult to measure** than producing it.

Despite these barriers, the future for energy efficiency and conservation is brighter than ever. The public is more aware than at any other time of the impacts of energy use, and reducing these impacts while saving money at the same time promises to be a winning combination. This combination is the core of what energy efficiency and conservation is all about; reducing the impact, both monetary and environmental, of energy use.

³⁷ Source: www.icleiusa.org/action-center/planning/ICLEI_10%20Keys%20to%20Sustainability%20Planning%20Success.pdf