

City of East Lansing

Climate Sustainability Plan: Meeting our Climate Action and Green Community Goals



City of East Lansing

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Commission on the Environment

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Executive Summary

East Lansing has a history of leadership in implementing environmentally conscious policies and programs, and the adoption of a Climate Sustainability Plan (CSP) both continues that tradition and provides a framework for continued advances in the future. The CSP sets forth the City's broad sustainability goals, and then provides a useful blueprint for achieving these goals by targeting more specific actions within five program areas: Waste Management, Energy Efficiency, Renewable Energy, Transportation, and Water Management. Within each program area, the CSP highlights successful programs and practices already in place, and proposes actions or policies that will strengthen and build upon the City's existing efforts in that program area.

In the area of Waste Management, the City's comprehensive recycling and waste-reduction efforts are summarized, and activities for building on those efforts are proposed for households and for City facilities. The CSP provides a range of options for the City to implement, from greater outreach and education to policy-oriented ordinance changes to specific program modifications or expansions.

Next, the Plan notes the City's considerable progress in energy efficiency and provides over a dozen proposed actions to make further advances. The proposed actions cover City facilities and East Lansing businesses and residents, and seek to enhance environmental quality while reducing energy costs. The CSP proposes the promotion of renewable energy programs in the City, which would put the City at the forefront of efforts to tap into solar, wind, and other renewable energy resources to achieve long-term cost savings and reduce emissions.

In the Transportation arena, the Plan provides proposals for continued development of non-motorized transportation infrastructure and supporting policies. The CSP also provides several options for actions to reduce petroleum use within the City in both the public and private sectors.

Last, the Plan reviews existing sustainable water management practices in the City and proposes a range of actions to improve management of storm water, waste water, sewage treatment, and wetlands.

Introduction

In 2007, the City of East Lansing (the “City”) became a signatory to the U.S. Conference of Mayors’ Climate Protection Agreement. As part of our commitment to meeting the climate change emission reduction targets in the Agreement, the City will strive to meet or exceed Kyoto Protocol targets for reducing global warming pollution by taking actions in our own operations and our community. The actions identified in the Agreement include, but are not limited to:

1. Inventory global warming emissions in City operations and in the community, set reduction targets and create an action plan;
2. Adopt and enforce land-use policies that reduce sprawl, preserve open space, and create compact, walkable urban communities;
3. Promote transportation options such as bicycle facilities, commuter trip reduction programs, incentives for car pooling, and public transit;
4. Increase the use of clean, alternative energy by, for example, investing in “green tags,” advocating for the development of renewable resources, recovering landfill methane for energy production, and supporting the use of waste to energy technology;
5. Make energy efficiency a priority through building code improvements, retrofitting city facilities with energy efficient lighting and urging employees to conserve energy and save money;
6. Purchase only Energy Star equipment and appliances for City use;
7. Practice and promote sustainable building practices using the U.S. Green Building Council’s Leadership in Energy & Environmental Design (LEED) program or a similar system;
8. Increase the average fuel efficiency of municipal fleet vehicles; reduce the number of vehicles; launch an employee education program including anti-idling messages; convert diesel vehicles to bio-diesel;
9. Evaluate opportunities to increase pump efficiency in water and wastewater systems; recover wastewater treatment methane for energy production;
10. Increase recycling rates in City operations and in the community;
11. Maintain healthy urban forests; promote tree planting to increase shading and to absorb CO₂; and
12. Help educate the public, schools, other jurisdictions, professional associations, business and industry about reducing global warming pollution.

In addition, the City signed onto the Michigan Municipal League’s (MML) Green Communities Challenge in 2009, which is a program designed to reflect the City’s commitment to adopt policies and programs for energy efficiency and conservation.

Since making these commitments, the City’s Commission on the Environment has been working with the Department of Public Works to evaluate the City’s current energy and water use, municipal emissions, and environmental policies to identify opportunities for reducing our community’s environmental impact and create an even more livable, sustainable City for our residents.

This Sustainability Plan sets forth the City’s plan for achieving our Climate Action greenhouse gas (GHG) reduction targets and commitments under the MML Green Community Challenge. The Plan articulates the City’s sustainability goals, and contains recommendations broken down into five (5) program areas that will help the City to achieve its sustainability and climate reduction goals:

1. Waste Management
2. Energy Efficiency
3. Renewable Energy
4. Transportation
5. Water Management

Background

The East Lansing Community

Demographics

The City of East Lansing has a population of 46,610 residents. The City’s geographic area encompasses 8,700 acres or 13.5 square miles. Twenty percent of this area is Michigan State University’s campus. The City is situated in the northwest portion of Ingham County in the south central section of the State. It is located in the mid-Michigan “Tri-County Area” which includes Ingham, Eaton and Clinton Counties and has a population of 454,000.

There are 14,970 housing units in the City. Of these, 9,412 are renter occupied and 4,600 are owner-occupied. The average household size of renter-occupied housing is 2.17 persons and the average for owner-occupied is 2.29 persons. The median age for East Lansing residents is 21.7 years old.

East Lansing residents are highly educated. More than 96% of the population over age 25 have a high school diploma and more than 70% have a bachelor’s degree or higher. Nearly 40% of the population has a graduate or professional degree.

Governing Body

The City is governed by an elected City Council which is the legislative and policy-making body for the City. The City Council is elected at-large for overlapping four-year terms. The Mayor and Mayor Pro Tem are elected by the Council from among the Council. The City Council appoints the City Manager and City Attorney. Day to day operations are overseen by a City Manager who is the Chief Administrative Officer for the City.

Community Values - University Town

East Lansing was settled in 1849 by Robert Burcham. In 1855, the world's first agricultural college, Michigan Agriculture College, was founded in the City. At the time, the City was known as "Collegeville." It was incorporated as a City in 1907, and officials changed the name to East Lansing.

The Michigan Agriculture College changed its name to Michigan State College in 1925 and became Michigan State University in 1955. Today, the University is an integral part of the City. It is known for its exceptional academics, enthusiastic students and picturesque campus. Michigan State offers more than 200 programs of academic study in addition to more than 200 study abroad programs.

Environmental Protection and Leadership

East Lansing has been a leader among Michigan municipalities in the adoption and implementation of environmentally conscious policies and programs for years. As a community, we have made significant strides in protecting our natural resources and reducing our environmental impact, in both our municipal operations and through the actions of our City's residents and businesses. The City was a trailblazer in the early adoption of curbside recycling, and recently adopted an innovative, new Green Building Policy, making East Lansing the first city to condition economic incentives (such as tax increment financing) upon LEED certification for development projects.

These efforts, and the others described below, are the product of forward-thinking leadership, an educated, diverse and younger population, cooperation with Michigan State University and the contributions of the City Commission on the Environment, which partners with City staff and residents to aid in developing and sustaining environmentally friendly policies and programs. The City's continued leadership in this area is also evidenced by the inclusion of several environmental policies and goals in the City Council's Strategic Priorities.

Below is a summary of some the City's key environmental accomplishments and programs to date:

- ❖ The City was one of the first communities in the state to initiate a comprehensive curbside and drop-off recycling program. It began operation in 1990; since that time the City has recycled over 70 million pounds of recyclables.
- ❖ The City Council adopted a Green Building Policy in 2009, which requires the attainment of LEED-Silver certification for future municipal construction that is more than 5,000 square feet, and requires LEED or other energy-efficient design practices be applied to renovations on municipal facilities to the maximum extent practicable. The new policy also requires the attainment of LEED-Silver certification or ICC-700 Silver (the National Green Building Standard) certification for new construction of any single building which receives municipal incentives in the amount of 15% of the total project cost, and requires LEED certification for private building renovations that receive any level of municipal incentives. Projects with multiple buildings are required to attain either silver certification under the LEED for Neighborhood Development (LEED-ND) rating system and at least one point under the Green Infrastructure & Building Credit 1, or a minimum of LEED-NC silver certification or ICC-700 Silver certification for each individual building in the project.

- ❖ The city passed a Green Building Incentive Policy in 2010 to provide financial incentives for private buildings (not covered by the Green Building Policy) to achieve LEED certification. Owners that achieve LEED certification or Silver rating are eligible for a \$1,300 rebate, and those achieving Gold or Platinum are eligible for a \$2,600 incentive.
- ❖ The City annually hosts and participates in numerous special recycling events in the community and region, such as the regional electronics, books and agricultural plastics collections. In addition, the City provides recycling services at City events such as the Art Festival and Folk Festival.
- ❖ The City annually hosts the Project Pride Community Clean-up and Recycling Event which provides an outlet for residents to recycle, or donate for reuse, common household items. Project Pride collects items such as bikes, electronics, scrap metal, wood waste, polystyrene, rechargeable batteries, athletic shoes, appliances, usable clothing, utensils, housewares, and more. The event began in 1994 and annually collects approximately 45 tons of material for reuse and recycling.
- ❖ The City is a signatory to the U.S. Conference of Mayors' Climate Protection Agreement and the International City/County Management Association Sustainable Communities Commitment, and has accepted the Michigan Municipal League's Green Communities Challenge.
- ❖ The City has a Commission on the Environment that, among other duties, (1) studies issues and makes recommendations to City Council on a variety of matters pertaining to environmental protection; (2) reviews, studies and makes recommendations on policies and legislation necessary to implement programs for the protection of the environment; and (3) studies existing and proposed programs and assists in the development of new programs.
- ❖ The City has completed three rounds of energy audits on City buildings since the late 1990's. These audits have led to the installation of energy efficient fixtures, lighting and mechanical equipment resulting in reduced energy usage and cost savings.
- ❖ The City has established an internal, cross-departmental Green Team to pursue energy initiatives and efficiency efforts. The team successfully applied for and was awarded over \$200,000 by the Department of Energy for an Energy Efficiency Conservation Block Grant to upgrade lighting in City Hall and other municipal buildings.
- ❖ The City has been named a "Tree City USA" by the National Arbor Day Foundation for the past 22 years. Trees are an important component of the urban landscape and are valued for their many environmental benefits. The City manages over 9,000 trees along City streets.
- ❖ The City has a comprehensive water protection education program through the Storm Water Pollution Prevention Initiative and Wellhead Protection Programs.
- ❖ The City became one of the first "Earth Hour" Cities in Michigan, a program adopted by City Council resolution on March 17, 2009. Earth Hour is a global initiative, led by the World Wildlife Fund, which encourages individuals, families, businesses and governments to turn off

nonessential lights and electronics for one hour to express support for substantive action on global warming and climate change.

- ❖ The City recently collaborated with a private developer to establish its first green roof atop the new Albert Place Condominiums in downtown East Lansing.

City of East Lansing Sustainability Goals

The City of East Lansing seeks to integrate sustainability into all aspects of City management, and to meet its Mayor’s Climate Protection Agreement and MML Green Communities Challenge commitments through a wide range of municipal and private sector programs aimed at reducing GHG emissions and energy and water use, and protecting our natural resources. East Lansing’s sustainability goals are:

- To lead by example in reducing energy use, GHG emissions, water use, and environmental protection
- Provide opportunities and incentives for East Lansing citizens to make changes in their homes, businesses, and lifestyles that will lead to reductions in waste, energy and water use and GHG emissions
- Integrate sustainability efforts with opportunities to improve the health our citizens and livability of our community

In order to meet these goals, East Lansing has established specific objectives and activities in five broad program areas. The City has already made great progress in improving our protection of natural resources, reducing energy and water use, and reducing GHG emissions in these program areas in the last several years. The City intends to build on the strong work to date, and both continue and expand these efforts in order to realize significant improvements in our community’s sustainability and contribution to reducing greenhouse gas emissions and the impact on global climate change.

Climate Sustainability Plan Process

Emissions Inventory

As a first step in identifying opportunities for reducing our environmental impacts, particularly our contribution to global climate change, the City conducted an emissions inventory of our municipal operations. This is a critical step identified by the Mayors Climate Agreement and ICLEI¹ Local Governments for Sustainability. Using ICLEI Clean Air and Climate Protection software specifically

¹ ICLEI was founded in 1990 as the “International Council for Local Environmental Initiatives,” but was renamed in 2003 and is now known as “ICLEI - Local Governments for Sustainability.”

tailored for local governments, City staff completed an emissions inventory for municipal operations based on the 2007 calendar year.

During this period, the City emitted 502,694 equivalent tons of carbon dioxide. The vast majority of emissions, 90.8% were from water/sewage operations. Buildings generated 7.8% of these emissions with the remainder of emissions resulting from the City’s fleet, employee commute, streetlighting and solid waste.

East Lansing Emissions Inventory, 2007

	Equiv CO2 (tons)	Equiv CO2 (%)	Energy (MMBtu)	Cost (\$)
Buildings	39,072	7.8	583.174	384,259
Vehicle Fleet	1,507	0.3	18.616	360,223
Employee Commute	2,344	0.5	27,462	
Streetlights	3,420	0.7	10,654	640,448
Water/Sewage	456,326	90.8	7,222,565	676,980
Waste	24	0.0	0	0
Total	502,694	100	7,862,470	2,061,909

Development of the East Lansing Sustainability Plan

The City’s Commission on the Environment (COE), in conjunction with Department of Public Works, has lead efforts to develop the Climate Sustainability Plan (CSP). The Department of Public Works completed the emissions inventory, and the COE used this data to identify initial gaps and program opportunities for reducing energy and GHG emissions. The COE also evaluated existing environmental programs, including their impacts on sustainability, overall costs, and effectiveness in meeting program objectives. In addition, the COE did extensive research on sustainability best practices developed and implemented by other communities to evaluate their applicability to East Lansing.

From these efforts, the COE identified initial sustainability goals, focused program areas, and drafted sustainability policies and programs. The initial draft was shared with relevant City departments, including the Green Team for initial feedback and refinement, the Planning Commission and Parks & Recreation Advisory Commission and the East Lansing City Council. The COE also made the draft CSP available for public review, and hosted public input/comment on the plan at its January, 2012 meeting. Input from these processes was used to refine the goals and specific policies and program activities. The Plan was adopted by City Council on April 17, 2012.

The COE will develop a step by step action plan, develop milestones and timetables to implement the plan. This implementation plan will be reported to the East Lansing City Council by August 8, 2012. Going forward, the COE will annually review the CSP and report progress to the City Council.

Existing goals will be evaluated and updated to track progress, set new targets and to keep up with best practices.

Sustainability Plan Programs and Policies

In order to meet its Sustainability Goals, the City has identified programs and policies in five key environmental areas, including continuation or expansion of existing efforts and identification of new activities that will help East Lansing improve its overall sustainability.

I. Waste Management Programs

The City has been a leader in developing and adopting waste management programs. East Lansing was one of the first communities in Michigan to implement a residential curbside and drop off recycling program which began operation in 1990. To date, East Lansing residents have recycled over 35,000 tons of material and diverted nearly 65,000 compacted cubic yards of waste from the landfill.

The City's Sanitation Division, a part of the Public Works Department, operates the City's solid waste collection programs and manages fleet operations. Through this Division, the City provides curbside and drop off recycling services, curbside refuse and yard waste collection, and bulk refuse collection to the residential sector. Refuse, yard waste and recyclable materials collected by the Division are transported to local private facilities for processing or proper disposal. In coordination with the Parks, Recreation & Arts Department, Building Maintenance Division, the Sanitation Division provides recycling services to several City offices and buildings. The business community in the City receives refuse services through private hauling companies. Business recycling needs are met by the City's drop off recycling program or through private contractors. Refuse and recycling services on the campus of Michigan State University (MSU) are provided by MSU Recycling.

In collaboration with neighboring municipalities, local businesses, and non-profit groups, the City participates in regional activities which promote waste reduction, reuse and recycling opportunities as well as educate community members. One such collaboration is the City's participation in the Regional Recycling Coordinating Committee (R2C2), which pools resources to provide public outreach and special programs.

Current Waste Management Efforts

The City annually collects about 1,600 tons of recyclables, 14,000 compacted cubic yards of refuse and 2,100 compacted cubic yards of yard waste. The Sanitation Division operates two year-round public recycling drop-off sites and one seasonal drop off site. Curbside recycling, refuse and bulk item collection is offered to residents on a weekly basis. Yard waste collection is provided on a weekly basis through the spring, summer and fall seasons. Internal recycling is provided at municipal facilities for employee uses. Additional recycling opportunities are provided to residents at major City facilities such as the Hannah Community Center and City Hall for items such as rechargeable batteries and compact fluorescent light bulbs.

In addition to these regularly scheduled services, the City provides or collaborates on several unique events which provide additional opportunities for residents, including:

1. Pack Up, Pitch In

Pack Up, Pitch In is a recycling event offered to off-campus MSU students during spring move-out. Students can come anytime during the hours of the two-day event to recycle or donate for reuse the following items: clothing, shoes, non-perishable food, carpet, electronic waste, sofas, other furniture, mattresses, blankets, pillows, household items and regularly collected recyclables (i.e. glass, paper, plastic bottles, etc.). The program began in 2008 and annually collects approximately 10 tons of material. Many of the items collected are donated to local charities such as the Haven House and St. Vincent Catholic Charities. All other items collected are recycled by the City's Department of Public Works and MSU.

2. Project Pride

Since 1995, the City has held the Project Pride event, an annual community recycling event geared toward helping East Lansing residents clean up their homes and yards by recycling, or donating for reuse, common household items. This event annually collects about 45 tons of material for reuse or recycling and about 7 tons of material for proper disposal.

3. R2C2 Compost Bin and Rain Barrel Program

The City participates in the annual Rain Barrel and Compost bin sales which is sponsored by the Regional Recycling Coordinating Committee (R2C2). Since these sales began, more than 4,600 rain barrels and compost bins have been sold to local residents. The City also stocks and sells compost bins and rain barrels to residents at wholesale prices in order to promote water conservation and home composting of yard waste.

4. R2C2 Special Collections

The R2C2 group sponsors several special collection events such as annual electronics, books and clothing collections. Over the past ten years, these special events have collected over 800 tons of material for recycling.

Recommended Waste Management Actions

The objectives, policies and actions listed below are aimed at meeting the City's sustainability goals, by reducing GHG emissions through increased recycling opportunities and participation, reducing the amount of waste produced, and by composting. The actions build upon existing programs and services.

Objective 1.1: Increase internal recycling at City facilities.

Policy: Support recycling efforts at City facilities.

Implementing Actions:

- Expand on the City’s existing bottle recycling program and offer bottle recycling at the Hannah and Bailey Community Centers. Install recycling containers at each facility. Utilize existing building recycling infrastructure and staffing.
- Enhance participation in employee recycling program by developing outreach and education for all employees, especially new hires.

Objective 1.2: Increase residential recycling in multi-family facilities.

Policy: Support recycling efforts in the community.

Implementing Actions:

- Make on-site recycling collection mandatory for multi-family facilities. Existing City ordinance requires new multi-family facilities containing more than 20 units to provide on-site recycling services. Modify the existing ordinance to require facilities that were approved prior to this ordinance who are seeking site plan modifications to provide on-site recycling, unless deemed technically unfeasible by the City Engineer at the time of site plan modification.

Objective 1.3: Increase residential recycling.

Policy: Expand incentives for residential recycling.

Implementing Actions:

- Explore the feasibility of modifying the City’s existing source-separated recycling program to a single-stream recycling program.
- Explore the feasibility of utilizing incentive programs such as Recycle Bank, to increase public participation.
- Provide larger recycling bins for curbside recycling to increase ease of use of City program and increase amount of material collected.
- Increase convenience of obtaining City recycling bins by developing a bin order system where residents can order bins via the internet or by phone.
- Offer compact fluorescent bulb (CFL) recycling at the four major city facilities: City Hall, Hannah Community Center, DPW, and Library.
- Offer rechargeable battery recycling curbside and at drop off locations in the City at the four major facilities; City Hall, Hannah Community Center, DPW, and Library.
- Explore opportunities to expand eligible items for curbside and drop off recycling.
- Expand recycling and reuse opportunities at Project Pride, including the collection of pharmaceutical waste.
- Evaluate the options and the benefits/cost for recycling green glass such as working with Granger to get single stream recycling, finding other opportunities for utilizing glass (in pavement), or partnering with MSU, who has recently begun offering green glass recycling.
- Improve student participation in Pack Up Pitch In

Objective 1.4: Increase residential composting.

Policy: Expand incentives and programs for residential composting.

Implementing Actions:

- Increase the efficiency of the City's existing yard waste collection system, including evaluating the feasibility of providing "Easy Carts" for combined yard and food waste collection.
- Expand outreach and education on the importance of "backyard" grass cycling, food composting, and fall leaf mulching.
- Reestablish wholesale purchasing program for compost bins for purchase by City residents.

Objective 1.5: Increase source reduction.

Policy: Develop policies, programs or procedures for reducing waste at its source.

Implementing Actions:

- Adopt office practices that reduce the volume of waste such as setting default copying and printing programs for City equipment to reduce paper and ink use, encouraging the use of electronic media in filing and in written communications and manuals, and exploring the use of electronic filing.
- Develop electronic payroll program for City employees.
- Investigate and consider adoption of a City operations Green Purchasing Program

II. Energy Efficiency Programs

Energy efficiency measures are among the most cost effective and straightforward ways to reduce energy costs, enhance environmental quality, improve building comfort, and enhance economic vitality. The City of East Lansing will focus on augmenting and expanding energy efficiency programs in both its own municipal facilities, as well as fostering opportunities for residents and businesses to implement energy efficiency measures in their properties. These measures are discussed below.

Current Energy Efficiency Efforts

1. Energy Efficient Lighting in City Buildings

The City received a \$213,200 Energy Efficiency Conservation Block Grant in order to install energy-efficient lighting in all City buildings. The project was completed in the fall of 2010. The installment of energy-efficient lighting will not only substantially minimize the City's carbon footprint, but will also save an estimated \$20,000-\$30,000 per year in energy costs and reduce energy usage by about 203,000 kWh per year.

2. Energy Efficiency Audits on City Municipal Facilities

The City has conducted energy audits on several buildings in order to get baseline energy use information, and guide decisions on energy efficiency upgrades. Audits have been completed on each of the City's major buildings.

Ultimate energy savings will depend on the number of upgrades that are identified and implemented, but are likely to be significant for some of the City's older facilities. For example, projected energy reductions from the audit done on the Hannah Community Center building was 96,100 kWh/annually, resulting in an average savings of \$7,150.

Information from the audits will be used as the baseline to monitor the energy and GHG reduction impacts as efficiency projects are implemented, and to refine the Climate Action Plan as needed.

3. LED Holiday Light Exchange Program

Since 2008, the City has partnered with the Lansing Board of Water and Light (BWL) Hometown Energy Savers Program to provide free holiday light emitting diode (LED) Christmas lights. BWL residential electric customers are eligible to exchange a string of their old, working incandescent holiday lights for a new box of LED lights, which are safer, brighter, last longer and provide up to 90 percent in energy savings. The City also accepts Christmas tree lights for recycling on an annual basis.

4. CFL Distribution and Recycling

In 2009, the City helped create a unique partnership with Eaton County and Delta Township which was awarded a grant to supply energy efficient compact fluorescent light bulbs (CFL) to Lansing area residents and collect burned out CFLs for recycling. The "Brighten and Enlighten Your Home" campaign has distributed over 90,000 CFL bulbs to area residents, including 12,000 to East Lansing households.

Recommended Energy Efficiency Actions

The following objectives, policies and actions will help the City and our residents reduce energy usage by increasing the efficiency of both municipal and private facilities, increase the efficiency of City equipment and machinery, encourage the use of advanced technologies for street lighting, and increase the use of energy efficient lighting in the private sector.

Objective 2.1: Increase energy efficiency in City facilities.

Policy: Implement energy efficiency upgrades at City facilities.

Implementing Actions:

- Based on recommended efficiency upgrades identified through energy audits, the City will develop a plan for implementing highest energy and cost saving measures.
- Complete top 5 priorities for municipal energy upgrades within 5 years, and remaining priority measures as budget resources allow.
- Create an internal fund and/or tracking mechanism from utility savings realized from energy efficiency upgrades to fund energy efficiency projects for the next 5 years.

Objective 2.2: Use energy efficient office equipment in all City operations.

Policy: All new office equipment purchased by the City should be ENERGY STAR compliant. ENERGY STAR labeled copiers, for example, are equipped with a feature that allows them to automatically turn off after a period of inactivity, reducing a copier's annual electricity costs by over 60%. High-speed copiers that include a duplexing unit set to automatically make double-sided copies can reduce paper costs by \$60 a month and help to save trees.

Implementing Actions:

- Commission on the Environment will draft and work with Council to approve an Energy Star purchasing policy.
- East Lansing Purchasing Department staff will only approve the purchase of Energy Star rated equipment for new office equipment purchases, unless approved by the Department Director.

Objective 2.3: Use more LED street lighting throughout the City.

The City of East Lansing, in partnership with the Lansing Board of Water & Light, has been awarded a \$115,000 Energy Efficiency and Conservation Block Grant (EECBG) from the State of Michigan Department of Energy, Labor, and Economic Growth to be used for installation of LED street lights in the Bailey Neighborhood. The grant makes it possible for the City to replace all of the old incandescent street bulbs in the Bailey Neighborhood with LED (Light Emitting Diode) bulbs. The replacement of these bulbs will result in lower annual maintenance costs, lower daily energy costs and will also cut back on long-term replacement costs over the life of the bulb.

Policy: Replace at least 15% of the total street lights in East Lansing with LED lights by 2015.

Implementing Actions:

- Upon completion of the pilot program in Bailey Neighborhood, the City will evaluate opportunities for expanding LED street lights to other neighborhoods as well.
- The City will seek opportunities to partner with Lansing Board of Water and Light and apply for grant funding for additional LED replacement work.

Objective 2.4: Achieve greater market penetration of CFL bulbs and LED holiday lights within East Lansing's business and residential community.

Policy: Provide financial incentives to businesses and homeowners to switch out their incandescent and regular holiday lights for CFLs and LED holiday lights.

Implementing Actions:

- Continue to participate in the Tri-County CFL give-away program, and explore opportunities for expanding the bulb types as the program advances.
- Continue to work with Lansing Board of Water and Light on the holiday LED give away program.
- Work with local retailers to encourage them to provide educational information to customers on the environmental and financial benefits of energy efficient lighting.

Objective 2.5: Provide opportunities for City businesses and residents to access lower cost energy efficient equipment and services.

Policy: Encourage the purchase and installation of energy efficiency appliances.

Implementing Actions:

- Create an Energy Efficiency Appliance/Energy Audit Services Aggregated Purchasing Program for City residents and businesses. The City will design and implement an aggregated purchasing program for common small household appliances and/or energy audit services that are high energy consuming products, by issuing a request for proposals for up to 5 different household/small business appliances in an effort to get bulk purchasing prices and pass those low costs onto its residents and businesses.
- The City will annually review the bids for equipment and services offered through the program for cost and quality issues.
- The City will promote and market the program through the City website.

Objective 2.6: Encourage the incorporation of green building and energy efficiency techniques into new or renovated residential and commercial properties to reduce community energy use and GHG emissions.

Policy: Continue to promote sustainable building practices and energy efficiency by providing incentives to businesses and residents.

Implementing Actions:

- Provide developers with other building incentives, such as increased density, for projects in which LEED certification is achieved.
- Promote and provide information to homeowners and developers about the advantages of green building on the City's website and at relevant City events.

Objective 2.7: Encourage energy efficiency improvements in East Lansing rental housing properties.

Policy: Improve energy efficiency in East Lansing rental housing properties by creating incentives for property owners and residents to make improvements to rental properties.

Implementing Actions:

- Explore means of encouraging energy efficiency improvements in rental residential housing.
- Develop incentives and a "Green Star" recognition program for property owners and renters who improve the efficiency of rental residential housing units.
- Create an education and outreach program for renters and property owners that provides information on energy efficient products and practices, as well as energy saving programs and incentives offered by energy providers.

III. Renewable Energy Programs

Renewable energy programs are becoming more viable as technological advancements increase efficiency, system costs decrease, and the price of traditional power sources increase. The City of East Lansing will examine opportunities to install solar, wind and other renewable energy systems at City facilities and to foster installation at private developments.

Current Renewable Energy Efforts:

There are currently no known public or private renewable energy systems installed in the City.

Recommended Renewable Energy Actions

Renewable energy objectives, policies and actions will encourage the City and our residents to utilize clean, efficient and inexpensive power supplies; promote the proper balance between renewable energy and the need to protect public health and safety and provide leadership in the utilization of renewable energy sources.

Objective 3.1: Provide guidance and regulation for the installation of renewable energy systems within the City.

Policy: Develop an ordinance regulating residential and commercial renewable energy installations.

Implementing Actions:

- Draft and approve an ordinance which allows for installations of renewable energy systems while maintaining a proper balance between the need for renewable energy systems and the need to protect public health, safety and wellbeing.

Objective 3.2: Increase the use of renewable energy.

Policy: Install renewable energy systems at City facilities.

Implementing Actions:

- Evaluate the feasibility and seek grant funding as appropriate for the installation of solar panels, wind turbine(s) and/or solar hot water heaters at the Hannah Community Center and/or the Department of Public Works facility. Feasibility should be revisited every 2 years to account for advances in technology and improvements in cost structure.
- Install solar trash compactor systems along Grand River Avenue.
- Partner with East Lansing Public Schools to use renewable energy projects as an educational platform and curriculum tool.

Policy: Utilize existing renewable energy options.

Implementing Actions:

- Promote the use of local electric and gas service provider renewable energy options such as the Lansing Board of Water & Light Green Wise Energy Program.
- The City should set a goal to purchase 10% of city energy usage from a renewable energy source within 5 years. This could be direct purchase of Renewable Energy Credits, participation in Lansing Board of Water and Light's GreenWise Electric Power program, or other renewable energy source.

IV. Transportation

Each day, U.S. drivers consume millions of barrels of petroleum to fuel more than 250 million vehicles. Many alternatives to petroleum for transportation exist today and more are under development. Hydrogen, electricity, biofuels and fuels such as propane, compressed natural gas or liquefied natural gas are available. The most accessible alternative to petroleum is often overlooked, non-motorized transportation options, like walking and biking. The potential to shift travel to these lower-carbon modes is achievable. The 2001 National Household Transportation Survey found that 50% of all trips in metropolitan areas are three miles or less and 28% of all metropolitan trips are one mile or less – distances easily traversed by foot or bicycle.

Transportation fuel use reduction measures decrease emissions, reduce vehicle miles travelled and save the City and its residents money. These measures also enhance environmental quality, promote public health, and enhance economic vitality. The City will focus on implementing transportation measures in its own fleet, as well as fostering opportunities for employees, residents and businesses to implement fuel use reduction measures. These measures are discussed below.

Current Transportation Efforts:

1. Bike Sharing Program

In 2010 the City launched a new Employee Bike Sharing Program. With the help of a local bike advocacy organization, the City obtained eight donated bikes for employees to use when traveling to and from meetings, lunches and for other business needs.

2. Non-Motorized Transportation

The City completed and adopted a Non-Motorized Transportation Plan. The Plan identifies near-term opportunities to improve the physical environment, guides long-term development and makes recommendations on the policies and programs that promote and support non-motorized transportation.

3. Biodiesel Use

Between 2004 and 2008, the City operated all diesel fueled equipment on B20 biodiesel. More than 120,000 gallons of the fuel were used by the fleet during this time period. Biodiesel contains virtually no sulfur or aromatics, and use of biodiesel in a conventional diesel engine results in substantial reduction of unburned hydrocarbons, carbon monoxide and particulate matter.

Recommended Transportation Actions

Objective 4.1: Reduce petroleum use to reduce GHG emissions by implementing non-motorized transportation options.

Policy: Promote and support non-motorized transportation by creating a physical and social environment that is favorable to walking and bicycling.

Implementing Actions:

- Expand current bike sharing program to include residents.
- Implement recommended policies and programs in the City's Non-motorized Transportation Plan within the time frames specified in the plan.

Objective 4.2: Reduce petroleum use to reduce GHG emissions by promoting the wise use of motorized transportation options.

Policy: Promote and support City use of transportation options that reduce total vehicle miles traveled while maximizing the potential of the existing transportation system.

Implementing Actions:

- Institute a complete streets policy to ensure that City transportation planners consistently design and operate the entire roadway with all users in mind - including bicyclists, public transportation vehicles and riders, and pedestrians of all ages and abilities.
- Establish carpooling/ridesharing incentives for City employees.
- Encourage mass transit ridership by City employees & residents through financial incentives.
- Explore Car Share Program partnership with MSU.
- Provide training to City employees on environmentally responsible driving, including strategies for reducing engine idling.

Objective 4.3: Reduce petroleum use to reduce GHG emissions from the City's fleet.

Policy: Choose the cleanest and most fuel-efficient vehicle that meets the department's needs.

Implementing Actions:

Establish a hybrid/alternative fuel vehicle acquisition policy that increases the percentage of new vehicles that will use hybrid/alternative fuel.

V. Water Management

The City strives to be on the forefront of environmentally sound water management practices and initiatives. The City undertakes and promotes efforts to reduce stormwater pollution and prevent it from entering our storm sewers, drainage-ways, rivers and streams.

The City's Public Works Department is responsible for the distribution of water to East Lansing residents and the collection and distribution of waste and stormwater. The Sewer Division maintains 700,000 feet of public sewers, manholes, catch basins and drainage gates. The City's sewer collection system is a combination of sanitary sewers, storm sewers and combined sewers.

The Water Division maintains over 400,000 feet of various size water mains and 988 fire hydrants throughout the City and installs, maintains and reads over 8,500 individual water meters. The Engineering Division is responsible for the design, construction and inspection of public infrastructure projects such as sanitary sewers, storm drainage and water distribution systems.

Current Water Management Actions

The City provides a wide variety of programs and services aimed at properly managing water resources, including:

1. Watershed Management Planning

The City falls within the Red Cedar and Looking Glass watersheds and has worked to develop management plans for each watershed. These plans include a comprehensive action plan to improve and protect the ecological, hydrological, and cultural resources of the watersheds. As a result of these plans, the City has developed Stormwater Pollution Prevention Initiatives (SWPPI) that specifically identify the City's commitment in addressing each of the individual action items listed in the Watershed Management Plans for the Red Cedar and Looking Glass watersheds.

2. Storm Drain Labeling

Storm drains in the City's separated sewer district were labeled with "No Dumping Flows to Waterways" curb markers. In addition, 1,000 door hangers were distributed to adjacent homeowners educating them on the connection of storm sewers and watersheds and the importance of not dumping contaminants into these sewers.

3. Wellhead Protection Planning

Wellhead protection planning is a voluntary program aimed at protecting public water supply systems (groundwater) from contamination. East Lansing participates in wellhead protection planning, which is accomplished by delineating areas which contribute groundwater to the public supply system, identifying potential sources of contamination within these areas, and minimizing threats to the system.

4. Wetland Ordinance

The City adopted a wetland protection ordinance that is more protective of wetlands than regulations provided by the State. The City's annually maintains a wetland inventory and incorporates wetland into the site plan review process, including setbacks from natural features such as wetlands.

Recommended Water Management Actions

The objectives, policies and actions listed below are aimed at meeting the City's GHG reduction goals by increasing efficiency, reducing water usage and decreasing stormwater runoff.

Objective 5.1: Reduce energy consumption of the wastewater treatment plant (WWTP) – the largest user of electricity in the City.

Policy: Increase energy efficiency of WWTP.

Implementing Actions:

- Complete energy audit of WWTP, and identify options for using better energy demand management at the facility.

- Implement energy saving practices identified in audit.

Objective 5.2: Decrease water usage at City facilities.

Policy: Choose the most water conservative devices that meet the facility's needs.

Implementing Actions:

- Utilize the City's existing building energy audits to determine which water fixtures to upgrade.
- Amend City's purchasing policy to require that when purchasing/replacing new toilets, showers, and faucets only low flow fixtures will be installed.
- Install waterless urinals where appropriate.
- Explore and implement, as funds allow, a system to capture and use rainwater and gray water for turf and landscape irrigation at municipal facilities such as Hannah Community Center or the Soccer Complex.
- Educate staff and building patrons on the importance of water conservation by creating signs or other outreach materials describing why we conserve water and what the City is doing to conserve water.

Objective 5.3: Reduce the amount of stormwater runoff entering the WWTP.

Policy: Adopt best management practices that help reduce runoff.

Implementing Actions:

- Increase the number of street trees to the optimal level as identified in the City's Street Tree Management Plan.
- Study appropriate uses and install porous pavement and/or other low impact development (LID) features as feasible in City construction and road projects.
- Encourage projects that reuse stormwater for irrigation purposes.

Conclusion

By setting forth a range of carefully considered proposed actions for the City to undertake to achieve its sustainability goals, the Climate Sustainability Plan takes broad and non-specific goals and makes them attainable through realistic and attainable steps. Consideration and implementation of these proposed actions will continue East Lansing's leadership in energy use and practices, will promote the adoption of sound energy and environmental practices by East Lansing citizens, and will improve the lives of our citizens and the East Lansing community.

The Climate Sustainability Plan will help guide East Lansing in our efforts to grow the City in a manner which reduces our impact on global climate change, improves the health and safety of our residents, creates opportunities for economic development, and creates a vibrant, highly livable community.

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