2014 GTLC Annual Report

for Appleton's participation in the Sustainability Component of the Green Tier Legacy Communities Charter

MISSION STATEMENT:
The City of Appleton is dedicated to meeting the needs of our community and enhancing the quality of life.

STRATEGIC PLAN (KEY STRATEGIES):
#6 – Encourage Sustainability

TRANSPORTATION

- Added three miles of sidewalks where they currently did not exist along Apple Hill Boulevard, Meade Street, Plank Road and Richmond Street.
- Added one mile of new bike lanes as part of the City's On-Street Bike Lane Plan.
- Implemented City's new Sidewalk Poetry Program.

LAND USE

- Completed new GIS Tree Inventory Program.
- Worked with the Timber Rattlers and Appleton Little League to plant trees as part of the "Broken Bats for Trees" Program.
- Implemented first year of our Urban In-fill Tree Planting Program.
- Biosolids Composting Facility – The wastewater treatment and public works departments continue to study the feasibility of a biosolids composting facility. The current pilot project is located at the Outagamie Department of Solid Waste. The yard brush, leaves, and biosolids windrow composting takes place on an engineered and WDNR regulatory approved five acre pad. The program successfully completed a number of demonstration projects with Outagamie County (Land and Water Conservation, Solid Waste, and Highway), various public and private redevelopment sites, landscape and terrace projects, including a public give away at the City's yard waste site.
- Remediated buckthorn on Trails and in Telulah Park.

ENERGY

- Replaced all light poles and fixture with LED lighting at Arbutus Park. Total of eleven poles and fixtures.
- Replaced all exterior wall pack lighting with LED lighting at the Water Plant.
- Replaced alley lighting at City Hall drive-up windows with LED lighting.
- Replaced boilers at the Library with new energy efficient replacements.
- Replaced boiler at the Municipal Services Building with a new energy efficient replacement.

- Wastewater Treatment Plant – An engineering study was conducted to determine the feasibility of an alternate modes of mixing the (2) 2.2 million gallon process tanks. The tanks require a significant amount of energy. The study concluded with a review of technology applications and determined that sliding vein compressors with valve and gas metering upgrades will reduce energy consumption by 1,300 kWh/day.
- Water Plant - Ultraviolet Light Process Project – the city's water treatment plant is undergoing a $5.8 million dollar project to upgrade to an ultraviolet light process. The process effectively reduces water borne pathogens and eventually will replace the ultrafiltration process. The upgrade will reduce electrical consumption 21.2 kW in a peak water production when compared to the existing ultrafiltration process.

WATER

- Staff from the Department of Public Works participated in Fox River Cleanup Day held on Saturday, April 26, 2014.
- Appleton's first full year installing Advanced Metering Infrastructure system for water meter reading and residential cross connection survey.
- Relayed 3 miles of old, leaking watermain.
- 2014 Phosphorus Reduction Project – Engineering study of wastewater treatment capacity to treat phosphorus and suspended solids. The engineering study bench tested iron salts and polymers prior to a full scale demonstration project. The study which will be completed in 2015 is also tasked to evaluate a number of "outside the plant" alternatives to in plant treatment. The objective of the project is to reduce current phosphorus discharges by an order of magnitude.

WASTE

- Purchased and delivered a smaller recycling cart option for residents interested in that option.
- Purchased automated recycling carts for College Avenue in Downtown Appleton.

LEGACY COMMUNITIES SUSTAINABLE STRATEGIES

A copy of the Legacy Communities Sustainable Strategy Spreadsheet (aka Appendix 3 of the Legacy Communities Charter) is included as an attachment to this report for years 2011, 2014 and 2015 (goal). The baseline year (2011) was ~152 out of 322 points. We increased to 211 points in 2014. Our goal for 2015 is 253 points.

CITY OF APPLETON PERSONNEL POLICY	TITLE: ENERGY CONSERVATION/SUSTAINABILITY	
ISSUE DATE: 2014	LAST UPDATE: 2007	SECTION: Parks, Recreation & Facilities Management
POLICY SOURCE: Parks, Recreation & Facilities Management	AUDIENCE: All Departments	TOTAL PAGES: 5
Reviewed by Attorney's Office Date: August 12, 2014	Finance Committee Approval Date: July 23, 2014	Council Approval Date: August 6, 2014

I. PURPOSE

The purpose of this policy is to establish the requirements for an energy management program:

A. to realize the greatest return from every dollar expended on energy resources and increase the efficient use of energy, water and heating fuels;
B. to increase energy awareness, conservation and efficient management among facilities' occupants with regard to natural gas, fuel oil, electricity and water;
C. and to be an example to the community of progressive environmental stewardship.

The resulting efficiency increase and monetary savings will help offset rising energy costs and provide resources for further energy conservation initiatives.

II. POLICY

Faced with continually increasing energy costs and limited operating funds, we must use all available means to reduce our energy costs and increase efficiency. In addition, the City will consider the use of sustainable products when feasible in an effort to reduce environmental impacts.

III. DISCUSSION

The City of Appleton consumes significant amounts of energy in its operation of facilities and equipment. The Parks, Recreation and Facilities Management Department is committed to supporting and adding emphasis to energy management and conservation initiatives.

The Parks, Recreation and Facilities Management Department will attempt to maintain a reasonable balance between operational requirements and energy conservation. The City's

ability to maintain this balance through investments in energy efficient equipment and building systems is somewhat constrained by available resources. Accordingly, the following guidelines for utility management will be implemented to best support the mission and key strategies of the City of Appleton. The Parks, Recreation and Facilities Management Director will review any deviations from these guidelines.

A. Reduce energy costs, eliminate waste, and conserve energy resources by using energy-efficient and cost-effective technology.

B. Incorporate energy efficiency into the decision-making process during the design and acquisition of facilities and equipment emphasizing the use of renewable energy sources. Projects/systems with payback periods of less than five (5) years will be considered feasible as an energy-wise project.

C. Increase energy efficiency through capital investment and/or improved operations.

D. Establish partnerships with local utilities and state resources to provide technical assistance and to share costs on energy conserving initiatives to the extent possible.

E. Procure Energy Star rated appliances when feasible.

IV. DEFINITIONS

Commissioning – is the process for achieving, verifying and documenting the performance of a facility or facility equipment. It is used to determine whether the systems within the facility meet the design intent, but also the functional and operational needs of the personnel it serves.

Recommissioning – is a type of commissioning that occurs when a building that has already been commissioned undergoes another commissioning process. The decision to recommission may be triggered by a change in building use or ownership, the onset of operational problems, or some other need.

Retrocommissioning – is the application of the commissioning process to existing buildings. Retrocommissioning is a process that seeks to improve how building equipment and systems function together. Depending on the age of the building, retrocommissioning can often resolve problems that occurred during design or construction, or address problems that have developed throughout the building's life. In all, retrocommissioning improves a building's operations and maintenance (O&M) procedures to enhance overall building performance.

Relative Humidity (RH) – is a ratio, expressed in percent, of the amount of atmospheric moisture present relative to the amount that would be present if the air were saturated. Since the latter amount is dependent on temperature, relative humidity is a function of both moisture content and temperature. A higher RH will make it feel warmer than a lower RH.

Sustainability – means seeking solutions that simultaneously improve social, economic, and environmental vitality by meeting the needs of the present without compromising the ability of future generations to meet their own needs.

PROCEDURES

A. Operations

In many instances temperature management of indoor environments is governed by central controls monitored by the Facilities Management Division staff. Building occupants can, however, contribute to their own comfort by wearing seasonal clothing and by making sure that windows, shades and blinds work and are positioned according to the season. The human sense of comfort changes seasonally. According to the Northwest Energy Efficiency Council, 10% of occupants are likely to be dissatisfied as a result of the variance in a person's comfort level, regardless of the conditions.

City of Appleton thermal comfort targets (ASHRAE Standard 55-2010) are as follows:
Winter – (68-74 degrees) 30-40% RH
Summer – (73-79 degrees) 40-60% RH

Heating Season: The targeted temperature for most workspaces is 72 degrees Fahrenheit. Due to building characteristics and control limitations, actual temperatures will vary. Temperatures in storerooms, hallways, stairwells and other unoccupied areas will be kept closer to 68 degrees Fahrenheit to the extent possible. In cases where central heating cannot meet targets, electric heaters are allowed with the authorization of the Parks, Recreation and Facilities Management Director or his/her designee. These devices can be dangerous when misused, and will be allowed only under controlled circumstances. Windows will not be opened during the winter to cool spaces. The Parks, Recreation and Facilities Management Department should be notified as soon as possible when heating equipment is not performing adequately and will make the repair as quickly as possible.

Cooling Season: In areas where air conditioning systems have been installed, the targeted temperature will be 74 degrees Fahrenheit. In areas where large numbers of people may assemble, the pre-event target may be reduced to facilitate the occupant heat load. Due to building characteristics and control limitations, actual temperatures may vary from the target.

Electric fans to supplement central cooling are allowed only with the authorization of the Parks, Recreation and Facilities Management Director or his/her designee. These devices can pose additional hazards, and will be allowed only under controlled circumstances.

Ventilation: Areas equipped with ventilation systems will be operated in the most economical way possible, consistent with the Occupational Safety and Health Administration's requirements and the comfort and safety of building occupants. During times of reduced occupancy, the cycling of fans or the reduction of fan speeds will be employed whenever possible to conserve energy. If possible, systems will be shut off entirely during periods of minimal or no use.

Lighting: Adequate lighting for interior and exterior use is essential, but must be provided in an energy efficient manner. Fluorescent and LED lighting will be used whenever possible employing the latest energy efficient technology feasible. Desk lamps are not supplied to every work area, but are acceptable for use as needed. Lighting in all cases will be turned off whenever it is no longer required by the room or facility occupants. The occupants of the facility are responsible for turning off energy consuming devices whenever possible to conserve resources. Occupancy sensors will be deployed where feasible.

Water Usage: Individuals will take care to use water sparingly, and to be sure to completely turn off water spigots after use. Report leaking taps or valves to the Facilities Manager.

Transportation: Bicycle racks will be provided at stand-alone facilities to promote the use of bicycles to reduce the need for additional parking, promote health and to consider the effects on the environment.

B. Sustainability

City facilities must be financially viable to operate, easy to maintain, durable, and they must contribute to the productivity and well-being of occupants and visitors. City facilities should model the responsible stewardship of natural and financial resources with the goal of long-range thinking that leads to facilities that minimize environmental impact, save operation and maintenance costs, and promote health and well-being. When facility renovations and/or construction are necessary, the City will consider the following through all stages of design, construction and operation:

1. Economic Impact
    a. Total cost of occupancy
    b. Durability, flexibility and maintenance needs

2. Environmental Impact
    a. Site, water and material resources
    b. Energy and atmosphere

3. Social Impact
    a. Human health and potential (productivity)

b. Community impact

C. Commissioning

On major new construction projects commissioning will be implemented. An independent commissioning agent not provided by the contractor will conduct commissioning.

D. Retrocommissioning

On major new renovation projects retrocommissioning will be implemented. An independent commissioning agent not provided by the contractor will conduct commissioning.

E. Recommissioning

Recommissioning will take place on existing buildings as determined by the Director of Parks, Recreation and Facilities Management to improve the performance of a facility not operating efficiently.

1000 Friends of Wisconsin & Legacy Communities - a Green Tier Charter

COWS center on wisconsin strategy — building a high road economy in Wisconsin and beyond.

GREEN TIER

WISCONSIN DEPT. OF NATURAL RESOURCES

Wisconsin Legacy Communities Strategy Options

(Last Revised 12-17-2014 by Dean Gazza)

The purpose of the strategy options matrix is to provide a broad list of best management practices that encompass several elements of sustainability including transportation, energy, land use, water, and waste. This list is not inclusive.

Prospective signatories should use the strategy options to gauge environmental performance and then use this baseline to strive for superior results.

Superior environmental performance may be achieved when municipalities use the strategy options to develop a sustainability plan that reduces their overall negative impact on the environment.

*Please note that these numbers are estimates made by Dean Gazza, Director of Parks, Recreation and Facilities Management, Paula Vandehey, Public Works Director and Karen Harkness, Community Development Director on Oct. 12, 2011 for initial comparisons against other Green Tier Legacy Communities. Please do not cite these numbers without first consulting Dean Gazza at (920) 832-5572 or dean.gazza@appleton.org

Field	Value		City of Appleton 2011 Baseline*	City of Appleton 2014	City of Appleton 2015 Goal*
TRANSPORTATION		**TRANSPORTATION DEMAND MANAGEMENT:** **Transportation demand management strategies aim to reduce GHG emissions and VMT by influencing change in individual behavior. These strategies encourage walking, bicycling, and transit as modes of transportation within a community and seek to curb the number and length of trips by vehicle.**			
		Bicycle and Pedestrian Programs/Projects			
	2	Require bike parking for all new non-residential and multifamily uses.	0	0	2
	1	Set standards for placement and number (as function of intensity of use) for bike parking spaces.	0	1	1
	3	Commuter bike routes identified and cleared.	3	3	3
	5 to 10	League of American Bicyclists certification. (Bronze 5, Silver 7, Platinum 10)	0	5	5
	3	Funded and operating SRTS program (or functional equivalent) covering at least 10 percent of students.	0	3	3
	1	Conduct annual survey of students' mode of transport to school.	0	0	1
		Employer-Based Programs			
	5	Require large employers seeking rezoning to set a price signal (cash-out or charge).	0	0	0
	5	Require large employers seeking rezoning to provide subsidized transit.	0	0	0
	5	Require large employers seeking rezoning to provide a TDM plan that would reduce trips by 20 percent over business as usual.	0	0	0
		Traffic Volume			
	3	Track VMT or traffic counts and report on efforts at reduction (including those on this list).	1	2	2
	3	Eliminate parking minimums from non-residential districts.	0	0	0
	5	Set parking maximums at X per square feet for office and retail uses.	0	0	0
	5	Scheduled transit service at basic level (hour peak service within half-mile of 50 percent of addresses).	0	0	0
	10	Scheduled transit service at enhanced level (half-hour peak service within 75 percent of addresses).	0	0	0
		TRANSPORTATION SYSTEM MANAGEMENT **Transportation system management strategies aim to reduce GHG emissions and VMT by improving the overall performance of a transportation system. These strategies improve existing infrastructure, introduce new technology, and plan for the future of the system.**			
		Preservation and Improvement			
	3	Develop and fully fund comprehensive maintenance program for existing roads.	3	3	3
	1 to 5	Charge impact fees for new roads.	0	1	2
	5	Calculate lane-miles per capita for arterials and collectors, and show reductions	5	5	5
	5	Prepare a plan identifying disconnections in bike and pedestrian networks, prioritizing fixes and identifying potential funding sources for the most important projects.	3	4	5
	5	Any proposal to add lanes to a two-lane roadway shall be evaluated for a center turn lane, the preferred option over an expansion to four lanes.	0	5	5
	3	Identify four-lane roadways with fewer than 20,000 vehicles per day (AADT) and evalute them for "road diets" with bike lanes or on-street parking	2	3	3
		Electric Vehicles			
	1	Allow NEVs on appropriate roadways.	1	1	1
	2	Provide public charging stations	0	0	1
		Vehicle Idling			
	2	Ban idling (more than 5 minutes) with local government vehicles.	2	2	2
	5	Ban idling (more than 5 minutes) community-wide.	0	0	2

ZONING AND DEVELOPMENT		**ZONING AND DEVELOPMENT** **Zoning and development strategies work toward improving the overall environmental, economic, and social health of a community by promoting mixed-use and infill development, walkable neighborhoods, and an overall sustainable lifestyle.**			
		Infill Development			
	5	Identify priority areas for infill development, including those eligible for brownfields funding.	5	5	5
	1	Create land bank to acquire and assemble priority infill sites	0	0	0
	1	Develop an inventory of known contaminated properties for reuse planning, with possible GIS application	1	1	1
		Walkscore			
	10	Measure Walkscore at 10 random residential addresses per Census tract, compute average, and improve upon overall score	0	2	5
		Zoning			
	5	Adopt traditional neighborhood design ordinance (If population is less than 12,500)	0	5	5
	5	Zoning for office and retail districts permits floor-area ratio > 1, on average.	3	3	3
	8	Zoning for office and retail districts requires floor-area ratio > 1, on average.	0	0	0
	5	Zoning code includes mixed use districts	10	10	10
	8	Mixed-use language from Smart Code TBA.	0	5	5
		NATURAL RESOURCE MANAGEMENT **Natural resource management strategies seek to conserve, preserve, protect and promote a community's greenspace, wildlife, wetlands and waterways for this and future generations by promoting pervious surfaces and adequate setbacks.**			
		Canopy			
	3	Adopt tree preservation ordinance per GTLC standards.	0	1	3
	4	Set a tree canopy goal and develop a management plan to achieve it	1	1	3
	2	Require trees to be planted in all new developments	2	2	2
	2	Certification as Tree City USA	2	2	2
		Mowing			
	2	Local government rights of way mown or cleared only for safe sightlines and/or to remove invasive species.	1	1	2
		Water Protection			
	10	Establish 75-foot natural vegetation zone by surface water.	10	10	10
	5	Inventory wetlands and ensure no net annual loss.	2	3	5
ENERGY		**COMMUNITY ENERGY USE** **Community energy use strategies encourage energy efficiency and the use of renewable fuels to reduce total energy consumption throughout the community**			
		Community Energy Use Policies			
	6	Use PACE financing	0	0	0
	1	Watt meters available to the public	1	1	1
	10	Adopt Residential Energy Conservation Ordinance (time-of-sale certification and upgrades).	0	0	0
		Measuring Community Energy Use			
	4	Work with local utilities to calculate total electricity and natural gas consumption annually, beginning with the fifth year before entering the program.	4	4	4
	1	State of Wisconsin Energy Independent (EI) Community designation.	0	1	1
		MUNICIPAL ENERGY USE **Municipal energy use strategies encourage municipal employees to conserve energy, preserve the environment, and decrease greenhouse gas emissions from municipal facilities, services, and vehicle fleets.**			
		Government Energy Use Policies			
	5	Include transportation energy/emissions as criterion in RFPs for purchases of goods over $10,000.	0	0	3
	3	Develop list of lighting, HVAC and shell improvements to raise Energy Star Portfolio Manager or LEED EBO&M score	3	3	3
	3	Reduce motor fuels use for non-transit activities --	1	2	3
	6	Provide transit passes at 50 percent or more off the regular price and/or provide parking cash-out options for local government employees.	0	0	0
	5	Streetlights operate at 75 lumens/Watt or higher	5	5	5
	3	Stoplights are LED or functional equivalent	3	3	3
	5	Municipal electricity purchases are at least 5 percentage points higher in renewable content than the statewide renewable portfolio standard requires. Calculation may include self-generated power and purchased offsets.	0	3	5
		Measuring Government Energy Use			
	5	Complete EPA Energy Star Portfolio Manager spreadsheet for government energy use. Or score existing buildings with LEED EBO&M.	0	3	5
	2	Calculate annual government fleet use of motor fuels, in gallons of petroleum and biofuels, beginning with the fifth year before entering the program.	1	1	2
	10	All new and renovated municipal buildings must meet LEED Silver or greater.	0	5	10

		WATER USE CONSERVATION **Water Conservation strategy options set baselines and goals for water and energy performance in municipalities. They measure progress and promote water conservation by the government, business, and the community at-large.**			
WATER		***Water Conservation***			
	5	Track water and sewer use annually, beginning with fifth year before entering program, and develop plan for reductions.	5	5	5
	4	Develop a water loss control plan with targets below the 15% required by the state and include a system-wide water audit implementation and time table	4	4	4
	2	Join EPA's WaterSense Program for water utilities or the Groundwater Guardian Green Sites program and promote them to local business.	2	2	2
	6	Use block rates and flat rates to encourage water conservation among residential, commercial, and industrial users.	5	5	5
	1	Financial assistance for sewer lateral replacements.	0	0	0
	2 to 6	Upgrade water utility equipment (e.g., variable frequency drive motors) to achieve energy efficiency.	6	6	6
	3	Infiltration and inflow reduction by 10%	3	3	3
	5	Wastewater biogas captured and used in operations.	5	5	5
	5	Plan for replacing all toilets using > 1.6 gpf and annual progress sufficient to reach 90 percent replacement in 10 years.	3	3	5
		Local Government Use			
	2	Install waterless urinals in men's restrooms at municipal facilities (city hall, parks, etc.)	0	0	0
	3	All outdoor watering by local government, excluding parks and golf courses, from rain collection.	2	3	3
	4	Develop a water efficiency and conservation plan for municipal buildings	1	2	4
		STORMWATER MANAGEMENT **Stormwater Management strategy options encourage the use of best management practices to achieve a reduction in the amount of harmful pollutants introduced to our streams, rivers, and lakes.**			
	3	Develop a regular street sweeping program to reduce total suspended solids	3	3	3
	3	Stormwater utility fees offer credits for best management practices such as rain barrels, rain gardens, and pervious paving	3	3	3
	2	Inventory all paved surfaces (e.g., by GIS mapping), and develop a plan for reduction	2	2	2
	2	Work with commercial or light industrial businesses to develop stormwater pollution plans	1	1	2
		WATER AND DEVELOPMENT **Water and Development strategy options link water conservation and the preservation of land, wetlands, and wildlife habitat while promoting compact development, restoration and rehabilitation efforts, and long-term planning.**			
		Land Development			
	5	Identify key green infrastructure areas during plan development and/or implement a plan to acquire and protect key green infrastructure areas	5	5	5
		Waters, Wetlands, and Wildlife			
	1 to 6	Replace concrete channels with re-meandered and naturalized creeks, wetlands, or swales	6	6	6
	3	Develop a system for identifying culverts that obstruct fish migration and install fish friendly culverts where needed	1	3	3
	4	Provide incentives for protection of green infrastructure, sensitive areas, important wildlife habitat, or for the restoration or rehabilitation of wetlands or other degraded habitats such as credit towards open space or set-aside requirements	2	3	4
		WASTE MANAGEMENT AND REDUCTION **Waste Management and Reduction strategy options encourage municipalities and their citizens to divert organics and recyclables from landfills and properly dispose of hazardous materials in an effort to reduce waste in a community.**			
	3	Community waste stream monitored at least annually . Waste reduction plan prepared and updated annually	3	3	3
	4	Waste and materials management plan based on "zero-waste" principles, with specific goals, prepared and updated annually	2	4	4
WASTE	3	Construction/deconstruction waste recycling ordinance	2	3	3
	3	Mandatory residential curbside recycling pickup that covers paper, metal cans, glass and plastic bottles	3	3	3
	5	Develop a municipal collection program that encourages the diversion of food discards, yard materials, and other organics from landfills to composting or anaerobic digestion with energy recovery	2	3	5
	3	Develop and promote programs that dispose of household hazardous, medical, and electronic waste	3	3	3
	4	Use anaerobic digesters to process organic waste and produce energy	0	4	4
	3	Implement municipal ordinances requiring manufacturer takeback for fluorescent bulbs, thermostats and other mercury-containing devices	0	0	1
	2	Ordinances in place to reduce the usage of phone books as well as single-use shopping bags, styrofoam food containers and other disposable packaging	0	1	2
	2	Pay-as-you-throw system implemented by municipality or required of private waste haulers	2	2	2
	1	Use public education and outreach to promote recycling, backyard composting, product re-use and waste reduction	1	1	1
	322		**152**	**211**	**253**
			47%	66%	79%