



# Creating A Sustainable City

A Master Plan to Move the City of Appleton Towards Sustainability

3/14/2021 Update

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## SECTION 1: Introduction — The Issue.

From concerns over climate change, to drought-related water shortages, to air quality, society faces serious environmental issues locally, regionally, nationally and globally. These issues will affect the quality of life today and for generations to come.

There is a growing body of evidence that a shift in human behavior is necessary to counter the tides of over-consumption and environmental degradation; and work for a better future for ourselves, our children and the numerous species that share our planet. Our existing economic systems, agricultural systems and automobile-oriented infrastructure are inherently unsustainable.

### DEPENDENCE ON NON-RENEWABLE RESOURCES

Our economy and lifestyle are dependent on vast supplies of non-renewable resources, primarily derived from fossil fuels. As these resources are consumed, they will become increasingly scarce and more expensive, thus increasing operating budgets and affecting the quantity and quality of services provided. We must plan for this eventuality to prevent a crisis in supply vs. demand. In addition, reducing our dependence on non-renewable fossil fuels reduces greenhouse gases and gives us greater energy independence.

### OVER & EXCESSIVE USE OF NATURAL RESOURCES

We are using some renewable resources faster than nature can replenish them. Examples of this are consumption of water, lumber, wood and paper products, over fishing and soil depletion. Over-consumption of some renewable resources potentially could cause damage and collapse of some ecosystems.

### POLLUTION

Unintended by-products of manufacturing, consumption, and combustion of resources end up in our air, water, soil, and food. Many of these by-products are toxic. Material from consumption is left over as “waste” and buried in landfills. This leads to numerous negative impacts, including consumption of valuable land for landfills, pollution of that land and associated lands and waters with potentially toxic materials, and removal of resources (such as carbon and nitrogen) from natural cycles. Our existing economic systems built environments and cultures are inherently unsustainable. Achieving sustainability in contemporary times will require a major paradigm shift, essentially reversing long-standing trends of consumption and traditional development, and changing our philosophies and behaviors.

## SECTION 2: What is Sustainability?

Sustainability is a broad term that generally means a community or society lives within the means of what the Earth can provide over a long term. When a process is sustainable, it can be carried out over and over without negative effects on the environment or without high costs. The definition of Sustainability for the purposes of this Master Plan is:

“Sustainability meets the needs of the present without compromising the ability of future generations to meet their own needs.”

— United Nations World Commission on Environment and Development.



A sustainable society does not rely extensively on non-renewable resources as a basis for its economy. A sustainable society reduces consumption of renewable resources to levels that can be replenished by nature.

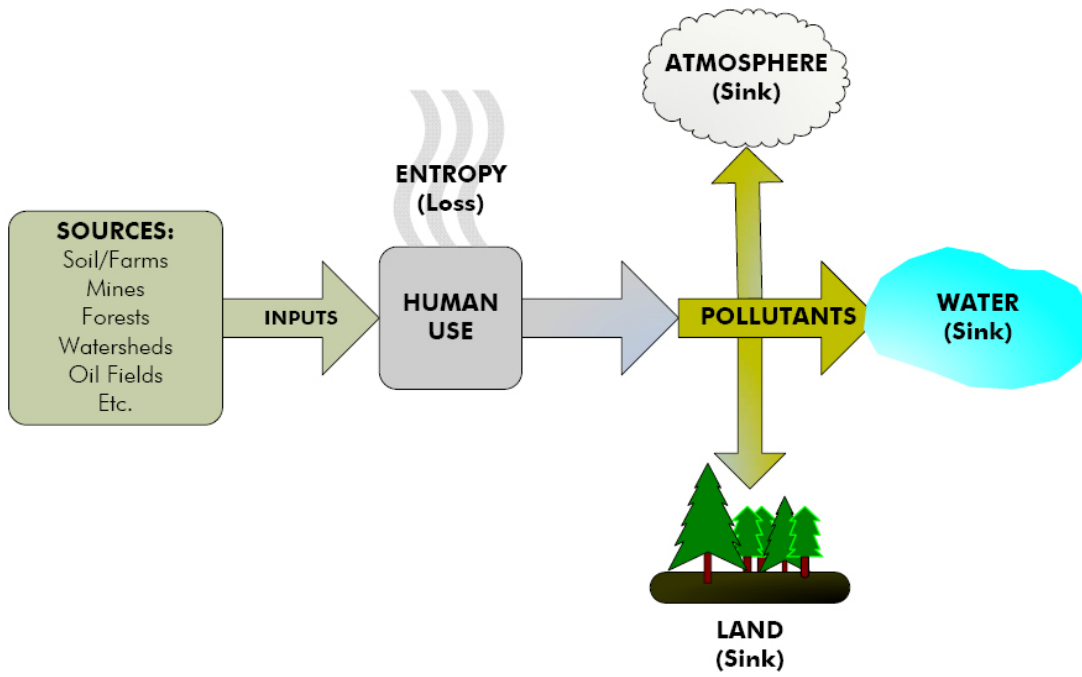
The “Triple Bottom Line” is a common theme for decision-making in a sustainable society. The Triple Bottom Line refers to the consideration of economic stability, environmental sustainability and social equity aspects of a particular decision.

A sustainable society uses non-toxic and/- or biodegradable materials and products and develops “cradle-to-cradle” processes to replace “cradle-to-grave” conventional processes of post-industrial society.

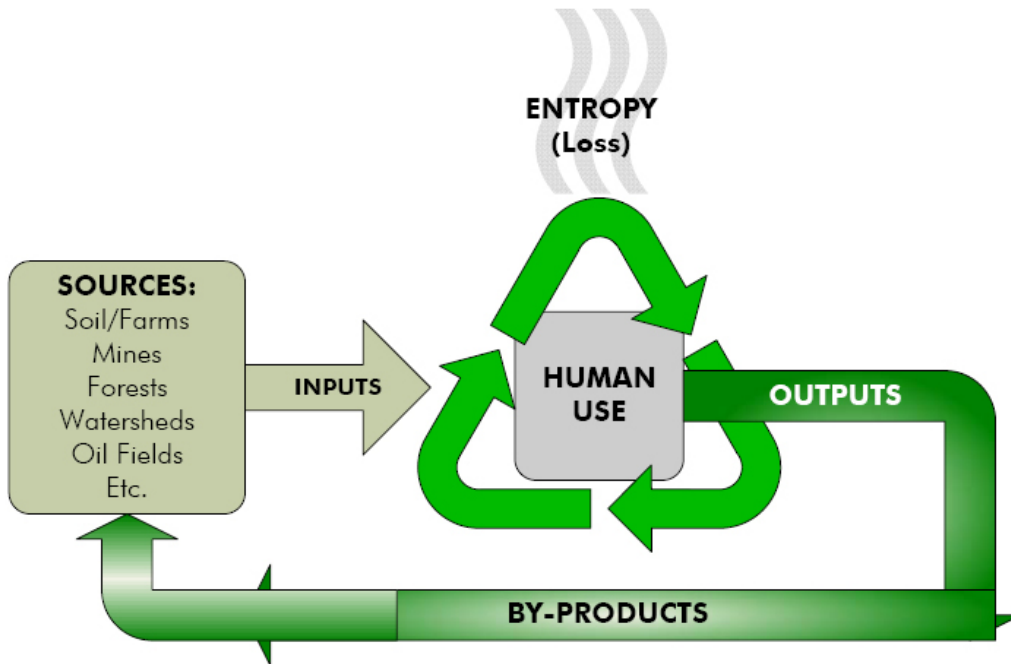
In a “cradle-to-grave” process, materials are moved in a linear fashion rather than through one of nature’s endless cycling and recycling processes. The linear process moves materials that support life from their sources through human consumption that ultimately pollute the sinks (atmosphere, rivers, lakes, ocean, and landscape). Eventually, this one-way process also depletes and destroys the natural landscape on which it depends.

A sustainable or “cradle-to-cradle” process is one that is continually self-renewing. Linear one-way processes must be replaced by cyclic flows, continually regenerating materials that support life. The two diagrams on the next page graphically represent the “cradle-to-grave” and the “cradle-to-cradle” concepts.

“CRADLE-TO-GRAVE”



CRADLE-TO-CRADLE”



## SECTION 3: Creating a Sustainable City

### Why a Sustainability Master Plan?

As a major landowner, employer, building manager, fleet operator, utility owner and operator, consumer of goods and services, and service provider, the City of Appleton has both the opportunity and the capacity to bring about significant improvements in environmental quality in and around the region.

By integrating environmentally sustainable practices into City policies, procedures, operations, and fostering collaboration across City government, the City's Sustainability Master Plan- *Creating a Sustainable City*, will work to protect and enhance the quality of life for present and future generations in the City of Appleton. Leading by example, the Sustainability Master Plan promotes responsible management and effective stewardship of the City's built and natural environments; transforming the City of Appleton into a model government agency that is clean, healthy, resource-efficient, and environmentally conscientious.

What are some things the City can do?

- Practice "Conservation"
- Practice "Restorative Redevelopment"
- Increase the resource efficiency of City facilities.
- Reduce pollution from City vehicles.
- Build and Buy Green.
- Work towards reducing Greenhouse Gas Emissions.
- Reduce the City's use of pesticides.
- Protect and restore the City's Urban Waterways.
- Promote Environmental Stewardship.
- Encourage City employees to drive less.
- Improve and optimize Transportation/Multimodal Infrastructure.
- Improve and expand the City's Green Infrastructure.

Moving towards sustainability will require a new consciousness and commitment to do things differently. It will require the City to: (1) develop new programs and/- or change existing programs, (2) establish new priorities, (3) commit resources to sustainable causes, and (4) collaborate with other jurisdictions within the region to achieve sustainability.

The strategy for moving the City of Appleton toward sustainability focuses first on changes the City has control over. The City has the most control over its internal operations. In addition, the City has jurisdiction over changes to the built environment (land use, infrastructure, and building materials and systems through permitting) within its boundaries.

The Sustainability Master Plan is intended to be a means for creating a sustainable community, not an end. The plan is a roadmap to guide future operational and policy decisions. To proceed in a sensible way to change long-standing environmental practices, it is necessary to develop focus areas, goals, and targets to be achieved.

This Master Plan (Plan) provides the policy framework for how the City will operate in a sustainable manner over the next generation. This Plan also has the potential to:

- Increase local and regional job production, thus keeping money in the Appleton regional economy;
- Reduce health care costs, and
- Create public/private partnerships.

The City's Goals and Targets are common to many municipalities within the State, thus having a clearly stated intent the City will be able to create these partnerships to implement this plan.

## SECTION 4: How to Read this Document.

The Sustainability Master Plan is meant to serve as a operating framework for the City of Appleton to ensure sustainability concerns are incorporated into the City's decision-making processes.

The Focus Areas, Goals, and Targets are based on the following Operating Principles:

1. The City will include fiscal responsibility and environmental sustainability in its decision-making processes.
2. The City of Appleton intends to conduct its business in a way that increases the sustainability of this and future generations.
3. The City will use its jurisdiction over the built environment (land use, infrastructure, and building permits) to improve the sustainability of the City.
4. The City will adopt a General Plan that contains key sustainability policies and practices, and recognizes direction provided by this Plan.
5. The City will be a leader and advocate for sustainability efforts at the regional, state, and federal level.

Sustainability for the City of Appleton has been separated into ten Focus Areas. This Plan are comprised of one-page summaries of each Focus Area. Each summary page includes:

Background: Why the City should be concerned about the Focus Category.

Goals: A concise description of the City's objectives that reflects the City's values regarding sustainability.

Targets: Measureable and achievable targets will ultimately be developed to correspond to each Goal. Progress by year is listed annually. When feasible, targets will indicate "the measure" of what improvements has occurred.

Note: This plan does not covert energy savings and/or improvements to CFC's. Though this can be a means of measuring reductions in carbon gas emissions, the conversion factors are arbitrary and estimated. For the purposes of this plan measurements utilized are those than can be accurately accounted such as therms, kWh's, miles, etc.

References:

This sustainability plan is not intended to duplicate the myriad of sustainable efforts City-Wide. Please reference these additional documents for additional resources outlining the comprehensive umbrella of the City's sustainable goals and achievements.

1. City of Appleton Comprehensive Plan
2. City of Appleton Trail Master Plan
3. Health in all Policies Ordinance
4. Parking Study
5. Complete Streets Policy
6. Methane Gas Utilization Plan
7. City of Appleton Strategic Plan
8. Departmental Strategic Plans



# 1. Energy Independence

**Background:** The United States is dependent on foreign oil; the country imports 60% of its supply and that percentage increases each year. World demand for oil continues to increase each year. Oil supplies are finite and at some point, will decline. These facts could eventually translate into a worldwide shortage of gasoline and diesel fuels, negatively affecting the federal trade deficit, harming local job creation, and increasing national security concerns. In addition, the use of carbon-based fossil fuels creates greenhouse gas emissions.

It is estimated that it will take many years to transition from a fossil fuel economy to a renewable fuel's economy. This time lag between the demands and supply of fuel technology and availability could create challenging market conditions. A gradual transition towards renewable energy is prudent, recognizing that technological advances in renewable energy sources are encouraging.

The City must continue to support more sustainable land use patterns such as transit-oriented development (TOD), green building design, energy efficiency, alternative transportation options and the use of renewable energy sources for both public and private developments and support local and regional job creation through development of renewable energy production facilities.

## **Goals:**

1. Significantly reduce the use of fossil fuels.
2. Improve the availability of locally and regionally produced renewable energy.
3. Improve overall energy efficiency.
4. Reduce peak electrical demand.
5. Replace or renovate obsolete systems, structures, etc. that conflict with this sustainability plan (buildings, facilities, systems, vehicles fleets, etc.).
6. Encourage and recruit green technology companies to locate in the City.

## **Targets:**

1. Reduce energy consumption (electricity, natural gas, motor fuels) of City facilities on a unit basis to a level lower than the year before.

## **Actions:**

1. Remain and actively participate as a WI Green Tier Legacy Community.

Green Tier Legacy Communities demonstrate leadership in improving the economy, the environment, and the quality of life in their communities. Moving forward, we will be

continuously working to increase the number of municipalities participating in this innovative program.

1000 Friends of Wisconsin announced the formation of the Charter in December 2010. It was signed by the DNR; 1000 Friends of Wisconsin; League of Wisconsin Municipalities; Municipal Environmental Group – Wastewater; Center on Wisconsin Strategy and Wisconsin Energy Conservation Corp. They aligned their efforts in support of Sustainable Community development.

Communities participating in the charter will have direct access to a Wisconsin DNR resource team that will provide technical assistance to communities and act as a single point of contact for all interactions between the community and the department. Other nongovernmental partners in the charter will also provide technical assistance to participating communities.

- 2010 - The City of Appleton became one of the first five Communities to become a Green Tier Legacy Community in Wisconsin.
- Annually – The City of Appleton attends or hosts meetings for Green Tier.
- Annually – The City of Appleton provides a report and report card to Green Tier.
- 2020 – Marks the 10-year Anniversary of Green Tier. 28 Communities are now Legacy Community members.

## 2. Adopt and begin to implement a City Wide on-street bike lane plan.

- 2010 - Common Council adopted Appleton's On-Street Bike Lane Plan (September 2010). To date 7.83 centerline miles of bike lanes were implemented.
- 2012 – Installed bike lanes on Newberry Street.
- 2012 – Installed bike routes on Packard Street.
- 2012 – Installed bike routes on State Street.
- 2012 – Approved design to “Road Diet” Ballard Road from 4 lanes to 3 lanes and add bike lanes when road reconstructed in 2013. Also added 0.83 miles of side-paths on Ashbury Drive.
- 2014 – Added 1.0 mile of new bike lanes as part of City's On-Street Bike Lane Plan.
- 2014/2015 – 1.94 centerline miles of bike lanes installed. Also added 0.67 miles of side-paths on Apple Hill Boulevard.
- 2015 – Added 2.0+ miles of new bike lanes (Badger Avenue) as part of the City's On-Street Bike Lane Plan. Also added 0.37 miles of side-paths on Newberry/Riverheath Drive.
- 2016 – Added 1.25 miles of new bike lanes (John Street) as part of the City's On-Street Bike Lane Plan
- 2017 – Added 1.27 miles of new bike lanes (Eisenhower Drive, Lawrence Street and CTH JJ) and 1.77 miles of shared use lanes (Washington Street, Drew Street, Franklin Street and Water Street) as part of the City's On-Street Bike Lane Plan. Also added 1.09 miles of side-paths on CTH JJ and Eisenhower Drive.
- 2018 - Added 2.67 miles of new bike lanes (Oneida St, Olde Oneida St, Calumet St, Roeland Av, Valley Rd, Midway Rd, Lake Park Rd) as part of the City's On-Street Bike Lane Plan. Also added 0.79 miles of side-paths on Lake Park Rd and Oneida St.
- 2018 - S. Oneida Streets was converted into a complete street with bike lanes, bus route shelters and the Marigold Mile.
- 2018 - Implemented 1st year of new Crosswalk Marking/Enhancement Policy for Uncontrolled Intersection Crossings.
- 2019 – Implemented 2<sup>nd</sup> year of Crosswalk Enhancement Program upgrading 5 crossings.

- 2019 – Added 2.17 miles of new bike lanes on Appleton St, Evergreen Dr and Telulah Av.
  - 2020 – Implemented 3<sup>rd</sup> year of Crosswalk Enhancement Program upgrading 5 crossings.
  - 2020 – Added 1.01 miles of new bike lanes on Prospect Avenue.
  - 2020 – Implemented tenth year of the adopted City-Wide Bike Lane Plan.
3. Replace all city-owned streetlight with LED fixtures.
- 2012 – Retrofitted 50 HPS streetlights to LED lights.
  - 2013 – Have 810 city-owned lights of which 280 are now LED.
  - 2017 – Have 1094 city-owned lights of which 680 are now LED.
  - 2017 – Worked with We Energies to convert 315 leased lights to LED.
  - 2018 - Continued streetlight LED conversion project. 1250 city-owned lights of which 706 are now LED.
  - 2019 – Continued streetlight LED Conversion Project. 1124 of the 1290 lights are now LED.
  - 2019 – Worked with We Energies to convert 313 leased lights to LED.
  - 2020 – Completed City-owned streetlight conversion to LEDs. Total of 1,290 lights.
  - 2020 – Worked with WE Energies to convert 25% of leased streetlights to LEDs.
4. Install GPS units on (100) CEA vehicles.
- 2012 – Purchased (10) additional GPS units to monitor vehicle idling and improve vehicle routing.
  - 2013 – Total of 27 CEA vehicles equipped with GPS to minimize travel times.
  - 2017 – Total of 108 CEA vehicles equipped with GPS units.
  - 2018 - Total of 146 CEA vehicles equipped with GPS units.
  - 2019 – Total of 151 CEA vehicles equipped with GPS units.
  - 2020 – Continued to maintain 151 CEA vehicles equipped with GPS units exceeding original goal by over 50%
5. Utilize methane expelled from the Wastewater Treatment Plant process to heat the facilities.
- 2011 Installed (2) methane boilers and a storage tank which utilized the expelled methane as fuel to heat facilities versus the purchase of natural gas from the utility.
  - 2017 Working with engineers to analyze and design a third methane boiler.
  - 2017 Engineering an additional high efficiency turbine that will ensure a reduction of 180 kW at the facility. This will be a second-high efficiency turbine installation.
  - 2018 - The City's wastewater plant is designing a third biogas boiler that uses methane gas production from the anaerobic digestion process.
  - 2018 - Wastewater Plant - Installing an additional high efficiency turbine that will ensure a reduction of 180 kW at the facility. This will be a second-high efficiency turbine installation.
  - 2020 Wastewater Plant installs and commissions a third waste gas boiler that provides building heat to the remaining half of the 17 buildings on site. Additionally, the heat will be used in the anaerobic digestion process to bring 4.4 million-gallon digesters to a constant mesophilic temperature range.
  - 2020 Wastewater Plant completes contract project to install and begin operating high efficiency turbine that addresses pollutant loading to the plant
6. Reduce electrical consumption in City facilities.
- Annually – Manage peak demands at facilities. Facilities Management and Operations Staff

have been trained.

- Annually - Water Treatment Facility is projected to reduce electrical by 15% in 2017. The reduction is a result of the addition of the ultraviolet light process. This reduction equates to 970,000 kWh annually.
- Annually - The water plant is now completed two full years of ultraviolet light disinfection. This process, in part, replaced the City ultrafiltration process. In doing so, the City has reduced chemicals, and energy costs by close to \$1M or a reduction of 970,000 kWh annually.
- Annually – Since 2005 have reduced by 6.24 million kWh's (23.6%) annually totaling over 53.9 million kWh's.

7. Reduce natural gas consumption in City facilities.

- Annually - The water plant is expected to reduce gas usage by 27% in 2017. This equates to a reduction of 48,000 therms. This change in use is a result of the transition to the ultraviolet light process.
- Annually – Since 2005 have reduced by 265,332 therms (27.1%) annually totaling over 2.49 million therms saved.

8. Reduce motor fuel consumption in City facilities.

- 2015 – Purchased new style garbage truck chassis that is more fuel efficient.
- 2015 – Implemented an automatic idle reduction program for all heavy trucks (Class 7 & 8).
- 2018 - GIS worked with Transit to support a new bus route App.
- 2018 - Partnered with Outagamie and Calumet Counties on a signal optimization project for the Calumet Street corridor.
- 2018 - Replaced one City bus with a new clean diesel model expected to be 90% cleaner regarding emissions.
- 2019 - Replaced nine City buses with a new clean diesel model expected to be 90% cleaner regarding emissions.
- 2020 – Replaced nine City busses with new clean diesel models expected to be 90% cleaner regarding emissions. In 2021 it is anticipated the entire fleet of 23 will have been replaced resulting in a significant amount of carbon emission reduction.

9. Analyze alternative fuel sources for CEA fleet.

- Various - New vehicles purchased are E85 compatible.
- Various - Met with propane supplier to analyze feasibility of using propane for refuse vehicles.
- Various - Met with Compressed Natural Gas supplier to analyze feasibility of using CNG for CEA fleet vehicles.

10. Evaluate opportunities for employees to work from home (Certain staff were approved to work from home).

- 2016 –Community & Economic Development
- 2017 – Department of Public Works
- 2018 – Work from Home Program expanded, and a Policy was Developed.
- 2019 – Implemented flexible work from home options for staff and have seen greater participation.
- 2020 – Significant amount of staff throughout the City worked from home due to COVID-19.

## 2. Climate Protection

**Background:** Human activities may be altering Earth's climate by emitting greenhouse gases such as carbon dioxide into the earth's atmosphere. Some believe that over the next century the earth's average temperature will increase between 2° F and 10° F. Predicted local impacts under this scenario include, but are not limited to the following:

- Heat waves will be more intense, will occur more frequently, and will be sustained for longer periods.
- Since more precipitation will fall as rain rather than snow, the risk of winter flooding may increase.

We are already committed to addressing climate change, however, the sooner we act, and the more we do, the better the outcome. The City has greatest control over its own operations, however, there is potential for the greatest emissions reductions through the City's jurisdiction over the built environment. Furthermore, by providing a positive example of what can be accomplished, the City may influence other jurisdictions to achieve their own climate protection goals. However, the second leg of the "Triple Bottom Line", economic stability must be considered when determining the voracity at which climate impacting decisions are made.

In 2019 the City of Appleton passed a resolution to create a Climate Change Task Force.

### **Goals:**

1. Reduce Greenhouse Gas Emissions through Goals, Targets and Actions as outlined in the other (9) Focus Areas of this plan.

# 3. Air Quality

**Background:** Air quality is a major environmental health issue for Appleton, particularly in the summer when an inversion layer traps pollutants close to the ground. Vehicles and other mobile sources powered by combustion (such as lawnmowers) cause 70% of our air pollution. Although ozone in the upper atmosphere protects us from harmful ultraviolet rays, at the ground level it is an irritant that causes the eyes to burn, and it can damage lung tissue. Other problematic air pollutants include carbon monoxide, hydrocarbons, sulfur dioxide, and oxides of nitrogen (NOx).

The air quality in the Appleton region has likely improved in the last decade due to cleaner cars, reformulated gasoline, vapor recovery systems on gasoline dispensers, and state and federal regulations for solvents in paints and other consumer products. However, in the future the combined impact of more people, more cars, and more hot days due to global warming will make meeting air quality standards a greater challenge.

It is expected that our community will continue to grow. If present trends continue, residents will drive many more miles annually and spend more time in their cars, which will have a negative effect on air quality. In addition, the increase in energy demand accompanying projected population increases will create the demand for additional power plants; this will further threaten our air quality.

## Goals:

1. Encourage City Employees to drive Internal Combustion Engine (ICE) powered vehicles less and engage in clean air practices.
2. Utilize fuels that are friendly to the environment.

## Targets:

1. Reduce sulfur levels in diesel and gasoline fuels, concurrent with using advanced emission controls on all buses and fleets to reduce particulate matter and smog-forming emissions from those fleets when economically feasible.
2. Reduce vehicle idle times and consider efficiencies in operation of equipment utilizing gasoline fuels.
  - Annual - Employees are trained on taking direct routes to work sites.
  - Annual - Mowing is limited to areas that are high in early and late season.
  - Annual - Workers and equipment have been stationed closer to work sites and work out of three different sites reducing fuel consumption and emissions.
  - 2015 – Implemented an automatic idle reduction program for all heavy trucks (Class 7&8).

## Actions:

1. Increase the quantity of bike paths, bike storage, etc.
  - 2010 – Common Council adopted Appleton’s On-Street Bike Lane Plan (September 2010).

To date 7.83 centerline miles of bike lanes were implemented.

- 2011 - Added fenced area for employees to park bikes within the Blue Ramp.
  - 2012 – Installed bike lanes on Newberry Street.
  - 2012 – Installed bike routes on Packard Street.
  - 2012 – Installed bike routes on State Street.
  - 2012 – Approved design to “Road Diet” Ballard Road from 4 lanes to 3 lanes and add bike lanes when road reconstructed in 2013.
  - 2013 - Added Apple Hill Trail (0.75 miles)
  - 2013 – Installed bike posts as part of the Houdini Park Project. Working with Lawrence University students to design and fabricate bike posts to be installed in Soldier Square and Library parking lot.
  - 2014 – Added 1.0 mile of new bike lanes as part of City’s On-Street Bike Lane Plan.
  - 2014/2015 – 1.94 centerline miles of bike lanes installed.
  - 2015 – Added 2.0+ miles of new bike lanes as part of the City’s On-Street Bike Lane Plan.
  - 2016 - Added Bike Fix-It Station at Library. Donated by ADI and Fox Cities Cycling Association.
  - 2016 – Added 1.25 miles of new bike lanes as part of the City’s On-Street Bike Lane Plan (John Street).
  - 2016 – Adopted a Complete Streets Policy in July 2016.
  - 2016 – Created the Fox Trot Trail connecting downtown to the riverfront.
  - 2017 - Acquired (3) Train Trestles to covert to trails. Two will be connecting trails.
  - 2018 - Added 2.67 miles of new bike lanes (Oneida St, Olde Oneida St, Calumet St, Roeland Av, Valley Rd, Midway Rd, Lake Park Rd) as part of the City’s On-Street Bike Lane Plan. Also added 0.79 miles of side-paths on Lake Park Rd and Oneida St.
  - 2019 – Added 2.17 miles of new bike lanes (Appleton St, Evergreen Dr and Telulah Av) as part of the City’s On-Street Bike Lane Plan. Also added 0.6 miles of side-paths on Evergreen Dr and Cedar St. Trail connects Alicia and Lutz parks.
  - 2019 – Completed design for Ellen Kort Park Trail.
  - 2019 - Completed trail at Vulcan Heritage Park to Water Street.
  - 2019 – Completed design for Appleton Memorial Park to McDonald Street trail connection.
  - 2020 – Installed bike lanes on Prospect Avenue.
  - 2020 – Updated the City of Appleton Trail Master Plan for additional development on the northside of Appleton.
  - 2020 – Completed the trestle conversation connection between the North Island Trail and the Eagle Point Development.
  - 2020 – Completed trail connection from the Appleton Memorial Park to McDonald Street.
  - 2020 – Implemented Wayfinding Signage on the Lawe Street Trail and Bridge Project.
2. Install additional sidewalk to provide alternative means of transportation resulting in less creation of carbon dioxide emissions.
- 2012 – Reconstructed/repaired \$600,000 of sidewalk to maintain our walkable community.
  - 2012 - Total of 0.5 mile of new sidewalk added.
  - 2013 - Total of 1.0 mile of new sidewalk added.
  - 2014 – Total of 3.0 miles of sidewalks added along Apple Hill Boulevard, Meade Street, Plank Road and Richmond Street.
  - 2014 - Implemented City’s new Sidewalk Poetry Program
  - 2015 - Total of 1.0 mile of new sidewalk added along Glendale Avenue and other locations.
  - 2015 - Implemented second year of City’s new Sidewalk Poetry Program
  - 2016 - Implemented third year of City’s new Sidewalk Poetry Program
  - 2016 - Pedestrian improvements constructed along Midway Road.

- 2016 - Constructed Jackman Street stairs connecting Prospect Avenue to Water Street.
- 2016 - Completed Downtown Mobility Study approved by Council in August 2016.
- 2016 - Total of 1.0 mile of sidewalk added along Lake Park Road, Plank Road and other locations.
- 2017 - Implemented fourth year of City's new Sidewalk Poetry Program
- 2017 - Total of 1.0 mile of sidewalk was added along Edgewood Drive and various other locations, for a total of 444 miles of sidewalk.
- 2018 - Total of 1.0 mile of sidewalk was added along various locations, for a total of 451 miles of sidewalk.
- 2018 - Implemented fifth year of City's new Sidewalk Poetry Program.
- 2019 – Implemented sixth year of City's Sidewalk Poetry Program.
- 2019 – Total of 1.0 miles of sidewalk was added along various locations, including Evergreen Drive, for a total of 452 miles of sidewalk.
- 2019 – Completed design to convert abandoned trestle to trail with construction in 2020.
- 2019 – Implemented the second year of the Trail Master Plan.
- 2019 – Created an improved pedestrian connection between Rocky Bleier Run and Appleton Street (Riverfront and Downtown).
- 2020 – Total of 3.0 miles of sidewalk were added for a total of 455 miles of sidewalk.
- 2020 – Implemented seventh year of City's Sidewalk Poetry Program.

3. Install bike racks in downtown area.

- 2014 – Converted one parking stall for an on-street bike corral at 231 E. College Avenue during the non-winter months.
- 2015 - Added fenced area for employees to park bikes within the Blue Ramp.
- 2016 – Added bike posts on the State Street bump out south of College Avenue.
- 2016 – Placed bike rack on the bump out at the Johnston/Morrison intersection.
- 2017 – Collaboration with Lawrence University on their class “Environmental Studies 300: Bicycling & Sustainable Communities” Class project deliverables are (1) Count bike parking facilities in the downtown, (2) Map bike parking facilities, (3) Draft survey about bike parking for downtown business owners.
- 2019 – Created a secured bicycle & motorcycle parking area in the Green Ramp.
- 2019 – Added two bike fix-it stations along Apple Creek and Newberry trails.
- 2019 – Continued program to utilize bike racks on City busses to promote multi-modal transportation.
- 2020 – Promoted the new secured bicycle and motorcycle parking in the Green Ramp.

4. Obtain designation of being a Bicycle Friendly Community by the League of American Bicyclists.

- 2013 – Obtained designation of Bronze Level.
- 2017 – Obtained designation of Silver Level.
- 2018 – Maintained designation of Silver Level for Bicycle Friendly Community by the League of American Bicyclists.
- 2019 – Maintained designation of Silver Level for Bicycle Friendly Community by the League of American Bicyclists.
- 2020 – Maintained designation of Silver Level for Bicycle Friendly Community by the League of American Bicyclists.

5. Analyze the potential for incentives provided to downtown parking for those driving hybrid or low emission vehicles.



6. Analyze the potential for the procurement of hybrid or low emission vehicles.
  - 2012 – Purchased two hybrid Ford Fusions to replace traditional gas-powered staff vehicles.
  - 2019 – Valley Transit utilizing two hybrid vehicles for staff transportation.
  - 2019 – Purchased new Fire Truck with lower emissions discharge.
  - 2019 – Replaced nine City busses with new clean diesel. Projected to be 90% cleaner regarding emissions over previous busses replaced.
  - 2019 – GIS worked with Transit to create a new bus route app.
  - 2019 – Installed new scheduling software to reduce greenhouse gas emissions.
  
7. Optimize traffic signals throughout the City.
  - 2013 – Optimized signal phasing and timing at the Ballard/Capital/Glendale intersections.
  - 2017/2018 - City partnered with Outagamie and Calumet Counties on a signal optimization project for the Calumet Street corridor.
  
8. Modify City Ordinance to eliminate minimum parking stall requirements.
  - Annually – Development Projects located within the Central Business District Zoning are not required to install off-street parking spaces. Regulation 23-172 (d)(1) is enforced.

# 4. Material Resources

**Background:** Landfills have historically been the lowest cost alternative for eliminating waste, however many factors are causing this traditional method to become less attractive:

- Global warming: decomposing organic waste emits carbon dioxide and methane from landfills, both negatively affect global warming
- Diminishing resources; many useable, valuable resources are now buried in existing landfills
- Overuse of non-renewable resources: improved recycling can reduce stress on renewable resources and increase the life of existing landfills
- Land values: Landfills consume valuable land and diminish surrounding land values
- Transportation costs: Increased regulation and land values combine to cause many cities to ship their waste to landfills hundreds of miles away
- Energy production: The energy content from a typical residential waste stream could possibly provide 25 to 50% of a home's energy needs
- Water quality: Rain and landfills combine to create leachates, which can cause local groundwater contamination concerns

In addition, the use of toxic materials to meet the needs of citizens and businesses frequently causes unintended consequences, e.g., mercury in fish and DDT causing a decline in bird birth rates. Recycling and composting are more sustainable alternatives to landfills. Both reuse materials that would otherwise be wasted. Recycling is economical, saves energy, metals and forests.

## Goals:

1. Reduce consumption.
2. Encourage the reuse and local recycling of materials.
3. Reduce the use of pesticides and other toxic materials.

## Targets:

1. Implement an Environmentally Preferred Purchasing (EPP) policy which may include bid preferences to suppliers that meet minimum sustainability criteria as defined by the City of Appleton.
2. Reduce the use of pesticides in City parks and facilities relative to an established baseline year.
3. Work to reduce the use of disposable, toxic, or non-renewable product categories within the City limits.

## Actions:

1. Increase fees for 35, 60- and 90-gallon residential refuse containers.
  - 2011 - Fees last increased.

- 2018 - Council approved fee increases to be implemented 1-1-2019 for refuse carts to help promote recycling and reduce waste to the landfill.
  - 2019/2020 – Council approved fee increase for 30-gallon carts to be implemented 1-1-2020 to help promote recycling and reduce waste to the landfill.
2. Maximize landfill diversion given reasonable cost effectiveness of constraints.
- 2012 – Recycling containers placed in all City parks.
  - 2013 – Worked with stakeholders to maximize landfill diversion given reasonable cost effectiveness of constraints. City increased diversion rate from 18.8% to 21.7% with the implementation of new 96-gallon automated recycling cart program.
  - 2014 – Purchased and delivered smaller recycling cart option for interested residents.
  - 2014 – Purchased automated recycling carts for College Avenue in Downtown area.
  - 2015 – Purchased 10 additional automated recycling carts for College Avenue in Downtown area.
  - 2016 - Diversion rate increased to 23.7%
  - 2018 - All plastic bottles and containers are now accepted as part of the County's residential recycling program.
  - Annually - Performed recycling in all City parks.
3. Develop a process to provide City's leaf mulch to organizations, groups, etc. that are gardening and potential for satellite locations in neighborhoods to have these materials available for better convenience and transport.
- Annually - DPW has provided wood chips and mulch for Rock the Block over the past several years.
  - 2018 - WDNR issued Appleton's wastewater plant a WPDES permit for biosolids composting. A good portion of the City's leaves, brush, and digested biosolids from the wastewater plant, are composted and then offered up to residents and projects.
4. Reuse City storm damaged and disease damaged trees as playground and landscape mulch.
- Annually – utilize mulch from damaged trees. Have used on playgrounds and various landscaping.
5. Utilize biosolids-compost to reduce the use of petroleum-based fertilizers.
- 2020 Planned the relocation of biosolids composting from Outagamie County site to treatment plant. Planning will be integral with the future design of the biosolids storage facility addition in 2021.
  - 2020 – Over 90,000 cubic yards of the City's leaves, brush and digested biosolids have been composted and offered to residents and projects.
  - Annually – Utilize biosolids-compost to top-dress athletic fields reducing needs for fertilizers.
6. Work with stakeholders to Investigate the potential to recycle other plastics not currently collected curbside (i.e., #5, most prevalent).
- 2013 – Worked with Outagamie County and stakeholders towards a capital project to add new plastics and cartons to their recycling stream with a targeted implementation in 2014.

- 2017- All plastic bottles and containers are now accepted as part of the County's residential recycling program.

7. Implement an Environmentally Preferred Purchasing (EPP) policy which may include bid preferences to suppliers that meet minimum sustainability criteria as defined by the City of Appleton.

Annually – Utilize Procurement and Contract Management Policy to include Environmentally Preferable Procurement guidelines.

8. Reduce the use of pesticides and herbicides in City parks and facilities relative to an established baseline year.

- 2008 – A Turf Management Policy was approved by Common Council to manage the use of chemicals to manage City turf. Several reductions have occurred since to minimize the use of pesticides and herbicides on parkland and at Reid Golf Course. There is no specific measurable for this currently. Note that phosphorus is no longer being utilized.
- Annually - Incorporated horticultural vinegar for weed control in park playgrounds.
- 2019 – A Turf Management Policy was updated and approved by Common Council.

# 5. Public Health and Nutrition

**Background:** The City currently has wellness programs, community gardens, trails and exercise facilities. By improving public health, health care costs can be reduced, thus assisting to improve overall City quality of life.

Recent research has connected public health and smart growth. A report for the US Green Building Council concludes that such smart development factors such as density, mix of uses, access to recreation facilities and even population and income diversity can be directly related to improved health and fitness of the population.

## Goals:

1. Improve the health of residents through access to a diverse mix of wellness activities and locally produced food.
2. Promote “greening” and “gardening” within the City.
3. Create “Healthy Urban Environments” through Restorative Redevelopment.
4. Implement Health in All Policies

## Targets:

1. Work to maximize the quantity of roads in the City that are “Complete Streets,” efficient and safe for all modes of travel.
  - 2015 – Badger Avenue complete street project completed in 2015.
  - 2016 – Adopted a Complete Streets Policy in July 2016.
  - 2016 – John Street complete street project completed in 2016.
  - 2017 – Lawrence Street complete street completed in 2017.
  - 2018 – S. Oneida Street complete street project will be constructed in 2018.
2. Redevelop or rehabilitate areas within the City or aged city facilities based on old, wasteful and/or dysfunctional designs to achieve better results for people and the environment.
  - Ongoing – continue to update Facilities Management Master Plan to address facility deficiencies.
  - Ongoing – continue to update work environments and workstations as budget allows for City employees.
  - Annually – ARA was established in 1972 to promote Urban Renewal & Eliminate Blight. Initiatives/projects include: RiverHeath, Foremost – Eagle Point, Eagle Flats, Eagle Plastics & Supply, Union Square Apartments and Woolen Mills.
  - 2018 - The Department of Community and Economic Development participates in the InDevelopment seminar each year to promote economic development and investment in our City. Appleton will be the host community for the 2019 InDevelopment seminar and will be

invited to showcase current development projects and future development opportunities as part of the formal presentation.

- 2018 - Updated the zoning code to allow residential uses on the first floor within CBD Central Business District zoning if the property is 120-feet off College Avenue.
  - 2018 - Staff analyzed and shorten the annexation process.
  - 2018 - New waterfront/riverfront development has included trails along to the river to provide access and recreational opportunities to the public. Recent projects that include river front trails are: Eagle Flats, Eagle Point, Riverheath and the anticipated Navigational Authority Visitors Center. The docks at Riverheath are also being utilized by a tour boat company to allow access to the river.
  - 2018 - Completed all improvements required for the Council approved R/R Quiet Zone Plan to be implemented in 2019.
  - 2019 - Downtown Appleton saw the announcement and commencement of several new residential and mixed-use developments, furthering the City's goal of creating over 465 new residential units in the downtown per the City's Comprehensive Plan 2010-2030. These projects included the historic renovation and new construction at the site of several dilapidated buildings such as Gabriel Lofts (21 units), the former Northshore Bank Building (28 units), on Durkee Street of Avant Apartments (38 units), the Crescent Lofts (69 units), the Zuelke Building (10 units) and the 800 Block (20 units) .
  - 2019 - Utilization of the Central Business District (CBD) zoning in other areas of the City.
  - 2019 - Updated the Historic Preservation Ordinance in response to Wisconsin State Statue Amendments.
  - 2019 - Historic Preservation Commission recommended approval of the Appleton Post-Crescent Building to the National Register of Historic Places.
  - 2019 - Construction start on a new 28-unit memory care facility at Eagle Point.
  - 2019 - Completed the 2020-2025 Analysis of Impediments to Fair Housing report.
  - 2019 - Assessors now utilize the NE Wisconsin Multiple Listing service to validate property sales as arms-length transactions. This has reduced the number of trips to residences and reduced mailings.
  - 2019 - The Transit Development Plan finalized and recommended for approval by the TDP Steering Committee.
  - 2019 - Other infill / redevelopment projects that we worked on in 2019 include the former Kmart site, Evergreen Credit Union, and Aldi.
  - 2019 - Two building additions for industrial uses that went through site plan review – 1000 S. Perkins Street and 2400 N. Sandra Street.
  - 2019 - Improved service and efficiency from an energy use standpoint at the new We Energies substations (like the one at 139 N. State Street).
3. Work with community partners to ensure each neighborhood in the City has safe and efficient access to quality food sources and vendors.
- 2016 - Provided continued support to Riverview Gardens which includes 15 acres of certified organic farmland with 20 passive solar greenhouses providing locally grown, healthy produce through Community Supported Agriculture (CSA) shares, as well institutional and retail sales. The urban farm supports job training, youth programming and community volunteers.
  - Ongoing – Partnership with Appleton Downtown Incorporated for a successful farm market.
  - Annually – Economic Development Strategic Plan includes this initiative.

- 2019 - Police Department continued to implement Crime Prevention Through Environmental Design (CEPTED) and Active Threat Planning to make public spaces crime free.
  - 2019 - Police Department encouraged and/or partnered with others, such as the Chamber of Commerce to advance workplace wellness programs.
4. Work to maximize the number of amenities (e.g., Park, Restaurant, Grocery, Shops, and Theatre) that are located within ½ mile of all residents. Ultimately all Citizens should have walkable access to six or more amenities.
- 2010 - The Comprehensive Plan reviewed service area for parks identifying service area needs. Four areas were considered inadequate. In some cases, areas may be served by schools. We continue to monitor opportunities for future opportunities.
  - 2010 – Purchased home in Arbutus Park and razed it adding to the parkland and access.
  - 2017 - Purchased two homes in Memorial Park per Parks Master Plan.
  - 2017 - Updated Comprehensive Plan and which covers ways to maximize amenities.
  - 2018 - Updated City Comprehensive Plan 2010 – 2030. Began implementation.
  - 2019 – Staff is developed a tool to track implementation and progress on accomplishing the goals and recommendations within the City's *Comprehensive Plan 2010-2030*.
  -
5. Promote and support community gardening. In addition, research and identify potential, feasible "Market" garden sites (2 acres max.)
- 2012 – Assisted COTS in security a significant grant for Riverview Gardens.
  - 2013 - Have provided support to Sustainable Fox Valley with their initiatives.
  - Annually – There is a Community Garden in the Southpoint Commerce Park.
  - 2018 - The Appleton Public Library provided the following educational opportunities:
    - Healthy Food Access
    - Seed Library (If they let us count it twice, it also fits here.)
    - Seed Packing Program
    - Film screening and discussion of seed saving documentary "Deeply Rooted."
    - Heirloom Tomato Tasting & Seed Saving Workshop
    - Edible Wild Plants Workshop
    - Fermentasting Workshop
    - Outagamie County Master Gardeners workshops on various gardening topics
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    - Seed Packing Program
    - Film screening and discussion of seed saving documentary "Deeply Rooted."
    - Heirloom Tomato Tasting & Seed Saving Workshop
    - Edible Wild Plants Workshop
    - Fermentasting Workshop
    - Outagamie County Master Gardeners workshops on various gardening topics
6. Cleanup, redevelop, and reuse areas that are brownfields.
- 2006 - Present – RiverHeath property redeveloped.
  - 2012 – Zoning ordinances developed that support community garden activities in PI, M-1, M-2 and Agricultural zoning districts.
  - 2015 - Present – Pierce Truck property redeveloped.
  - 2015 – Union Square

- 2017 – Woolen Mills
  - 2018 – Foremost (Eagle Point) property redeveloped.
7. Utilize alternative methods to reduce any potential for health concerns as a result of chemicals used for weed control on public property.
- 2016 – Incorporated horticultural vinegar for weed control in park playgrounds.
  - 2017 - Incorporated horticultural vinegar for weed control in park playgrounds.
  - 2018 - Incorporated horticultural vinegar for weed control in park playgrounds.
  - 2019 - Incorporated horticultural vinegar for weed control in park playgrounds.
8. Promote breast feeding friendly workplaces.
- 2016 – Dedicated a Mother’s Room at City Hall.
9. Promote community wide obesity prevention strategies.
- Annually - Weight of the Fox Valley exists to help residents in Calumet, Outagamie and Winnebago Counties achieve and maintain a healthy weight, a goal that takes on new significance when you look at the current facts. 75% of Adults in our tri-county region are clinically measured as being either overweight or obese. To achieve its vision, Weight of the Fox Valley has adopted an innovative approach to creating social change called collective impact. Collective impact works by creating a shared approach to solving a community problem. City of Appleton and other organizations from all sectors of the community participate to focus existing and new, collaborative efforts on achieving the vision. Participating organizations share a vision, activities, outcomes, data and more!
  - 2018 - The Appleton Public Library provided the following educational opportunities:
    - Physical Activity and Access
      - Yoga & Writing
      - Children’s programs that focus on movement, learning and literacy for different developmental stages
  - 2018 – Parks and Recreation continued to provide and expand opportunities that promote healthy living. In addition, trails and sidewalks continue to be added.
  - 2019 – Parks and Recreation continued to provide and expand opportunities that promote healthy living. In addition, trails and sidewalks continue to be added.
10. Promote Health in all Policies.
- 2019 – The City of Appleton is an active participant in the Legacy Community Alliance for Health.
11. Promote Racial Equity for All.
- 2018 – The City of Appleton joined the Government Alliance for Race Equity (GARE).
  - 2019 – The City of Appleton developed an internal GARE team to work on various initiatives.



# 6. Urban Design, Land Use, Green Building and Transportation

**Background:** In shaping the places in which we live, we shape the patterns of our own behavior. We have built sprawling cities that require long commutes, streets that discourage pedestrians and bicycles, and building methods that waste resources and contribute to pollution and climate change. From the human scale to the regional scale, we should take a different approach to designing the built environment.

The City can implement more sustainable development types mostly through jurisdiction over land use, issuance of building permits, and provision of transportation infrastructure.

## **Goals:**

1. Establish and continuously improve “green” building standards for both residential and commercial development--new and remodeled.
2. Reduce dependence on the private automobile by working with community partners to provide efficient and accessible public transit and transit supportive land uses.
3. Reduce long commutes by providing a wide array of transportation and housing choices near jobs for a balanced, healthy City.

## **Targets:**

1. Encourage buildings to be constructed using Energy and Environmental Design best practices.
2. Work with community partners to develop and implement a policy that expands affordable public transportation coverage to within one-quarter mile of all city residents.
3. Plan for the safe and efficient movement of vehicles on local and regional roads.

## **Actions:**

1. Create ordinance requiring all businesses with 30 or more employees to provide bike accommodations.
  - 2011 - The City of Appleton developed an ordinance to provide bike accommodations for all new or expanded businesses.
2. Encourage “Green Alley” design and installation as alley’s come up for reconstruction.

- The City of Appleton has two pilot locations for the “green Alley” design. One location is in the Drew Street Fire Station Lot (2015) and the other location is a portion of the parking lane on Sandra Street (2016).
3. Construct City facilities with utilizing Energy and Environmental Design best practices.
    - 2014 – Constructed restroom pavilion in Appleton Memorial Park. Utilized natural materials, light tubes, LED lighting and other sustainable materials.
    - Annually – All City maintenance and facility upgrades take into consideration energy efficiency, pollution, material waste, health, etc.
  4. Adopt City Policies to encourage multi-modal transportation.
    - 2010 - Adopted Mid-block Crosswalk Policy in July 2010.
    - 2016 – Adopted Complete Streets Policy.
    - Adopted Crosswalk Marking/Enhancement Policy for Uncontrolled Intersection Crossings in February 2017.

# 7. Parks, Open Space and Habitat Conservation

**Background:** A City's quality of life is greatly enhanced by extensive parks and open space areas. From small urban parks to regional parks, to trails and parkways, to agricultural and, to golf courses, the presence of Nature, open space and habitat areas are essential. The preservation of open space and our rivers and creeks is essential to the health of our community. These areas provide opportunities for recreation, provide habitat for wildlife, and support alternative modes of travel. Parks and natural areas directly mitigate climate change by moderating temperatures from the urban heat island effect.

The urban forest is a key contributor to sustainability in a place named the City of Trees. Trees provide environmental and ecological benefits through improved air quality by storing carbon dioxide that might otherwise contribute to global warming, improving water quality by naturally filtering overland runoff, reducing flood risk through bank stabilization and increased water storage, and providing bird nesting habitat. The urban forest contributes economic benefits by increasing property values and lowering building energy use by providing incidental shade. Trees improve public health and well-being by reducing UV radiation exposure and converting CO<sub>2</sub> to oxygen.

## **Goals:**

1. Expand and/or preserve the number of City parks.
2. Improve public access to open space, particularly along the Fox River.
3. Maintain and expand the urban forest.
4. Preserve prime farmland and critical habitat resources.
5. Expand "green" park and golf course design and sustainable maintenance practices.

## **Actions:**

1. Acquire land for additional public green space in underserved neighborhoods and infill development target areas.
  - 2013 – Renovated Houdini Plaza
  - 2013 – Acquired and razed building in what is known as Washington Square.
  - 2015 – Acquired land and constructed Pioneer Park (0.52 acres).
  - 2016 – Acquired land for future Ellen Kort Park (3.38 acres).
  - 2016 – Acquired additional land for future northside park near Fire Station #6 (1.59 acres).
  - 2017 – Acquired additional land adjacent to Memorial Park (1.1 acres).
  - 2017 - Creating a reforestation area as part of the Leona Pond Project scheduled for construction in 2019.
  - 2017 – RiverHeath Development constructed public trail with private funds in conjunction with their development efforts along the Fox River. This trail connects to Telulah Park.

- 2018 – Eagle Point Development constructed public trail with private funds in conjunction with their development efforts along the Fox River.
- 2019 - Renovated Jones Park in downtown Appleton. Total project cost of \$4.5 million.
- 2019 - Renovated the riverfront in Telulah Park. Improved the shoreline and installed a kayak launch and fishing pier. Required significant environmental clean-up. Total project cost of \$765,000.

2. Construct and maintain a trail system.

- 2013 - Added Apple Hill Trail (0.75 miles)
- 2017 - Acquired (3) Train Trestles to convert to trails. Two will be connecting trails.
- 2017 – Re-paved the North Island trail.
- 2017 – Repaved 0.5 miles of the CE trail.
- 2018 - Began implementation of the City of Appleton Trail Master Plan.
- 2018 - Installed a paved ADA trail through Alicia Park.
- 2018 - Installed a concrete ADA trail in Vulcan Heritage Park.
- 2018 - Installed a paved trail along Lutz Drive to connect to Lutz Park.
- 2018 - Installed the Lower Telulah Park Trail
- 2018 - Installed the Jones Park trail to connect the downtown to the riverfront.
- 2018 - Re-paved the North Island trail.
- 2018 - Repaved 0.5 miles of the CE trail.
- 2018 - Hired an engineering firm to perform design and permitting to convert newly acquired train trestles to trails.
- 2019 - Installed Cedar Street trail connecting Alicia Park to Lutz Park.
- 2019 - Completed design for Ellen Korte Park Trail.
- 2019 - Completed trail at Vulcan Heritage Park to Water Street.
- 2019 - Completed design for Appleton Memorial Park to McDonald Street trail connection.
- 2020 - Completed construction for Appleton Memorial Park to McDonald Street trail connection.
- 2020 – Created an improved pedestrian stairway connection between Rocky Bleier Run and Appleton Street (Riverfront to Downtown)

3. Develop master plans for the City's parks and green spaces.

- 2015 – Master plan developed for Appleton Memorial Park.
- 2015 – Master plan developed for the Scheig Center.
- 2015 – Master plan developed for Erb Park.
- 2016 – Master plan developed for Ellen Kort Park.
- 2017 – Master plan developed for Jones Park.
- 2019 – Completed Comprehensive Outdoor Recreation Plan (CORP)

4. Work with community partners to achieve an urban tree canopy goal of 35%.

- 2012 – Received Tree City USA award for 22nd consecutive year.
- 2013 – Worked with community partners to achieve an urban tree canopy. Current canopy is 22%.
- 2013 – Received Tree City USA award for 23rd consecutive year.
- 2014 – Common Council approved a new Urban Tree Planting Infill Program with funding for 100 new trees.

- 2014 – Worked with the Timber Rattlers and Appleton Little League to plant trees as part of the “Broken Bats for Trees” program.
  - 2014 – Completed new tree inventory program utilizing GIS.
  - 2014 – Implemented first year of Urban In-fill Tree Planting Program.
  - 2014 – Received Tree City USA award for 24<sup>th</sup> consecutive year.
  - 2015 – Received Tree City USA award for 25<sup>th</sup> consecutive year.
  - 2015 – Implemented second year of Urban In-fill Tree Planting Program.
  - 2016 – Received Tree City USA award for 26<sup>th</sup> consecutive year.
  - 2016 – Implemented third year of Urban In-fill Tree Planting Program.
  - 2017 – Implemented 4<sup>th</sup> year of Urban In-fill Tree Planting Program.
  - 2018 - Received Tree City USA Award for 27<sup>th</sup> consecutive year.
  - 2018 - Implemented fifth year of our Urban In-fill Tree Planting Program.
  - 2019 – Received Tree City USA Award for 28<sup>th</sup> consecutive year.
  - 2019 – Implemented sixth year of our Urban In-fill Tree Planting Program.
  - 2020 – Implemented seventh year of our Urban In-fill Tree Planting Program.
  - 2020 – Received Tree City USA Award for 29<sup>th</sup> consecutive year.
  - 2020 – Received \$50,000 Urban Forestry Catastrophic Storm Grant to replace trees lost in 2019 storm.
5. Develop an implementation plan to incorporate sustainable principles and practices into golf course and park design and maintenance, including public education.
- 2014 – Utilized public golf course to address stormwater management requirements. Project was recognized for the utilization of public land to for stormwater retention.
  - Annually – All City mowers are equipped with mulching decks.
6. Engage community/neighborhood partners to donate their physical involvement such as applicable park maintenance items such as eradication of invasive species of vegetation and other small maintenance tasks.
- 2005 - 2017 – The City collaborates with numerous volunteers. The Master Gardener’s and friends, local companies and residents donate hundreds of hours annually in our parks for this purpose. On average we received 200 – 300 hours annually.
  - Annually – Remediate a buckthorn on the hillsides at Tellulah Park, Pierce Park. Appleton Memorial Park and various trails. Ongoing effort.
  - 2017 - Work with the community to plant marigolds within terraces of S. Oneida Street, Prospect Avenue and Jackman Street.
  - 2018 - Remediated invasive plants at Pierce Park, Telulah Park and various trails (multi-year initiative).
  - 2019 – Remediated invasive species in various parks and trails. Both in-house and contracted staff were utilized.
  - 2020 – Remediated invasive species in various parks and trails. Both in-house and contracted staff were utilized.
7. Develop and implement a Trail Master Plan.
- 2016 – A Trail Master Plan was developed and approved by City Council.
  - 2018 – Began implementation of Trail Master Plan
  - 2019 – Continued implementation of the Trail Master Plan (Year 2)

- 2020 – Updated the Trail Master Plan with an addendum for additional development on the northside of Appleton.

8. Develop an ADA transition plan for public parks.

- 2015 – An ADA transition plan was developed and implemented.
- Annually - \$50,000 of upgrades annually to public parks to improve accessibility.

# 8. Water Resources and Flood Protection

**Background:** Climate models indicate that some areas may experience an increased risk of water shortages in the future. On the other end of the spectrum, significant portions of the City are at risk from catastrophic flooding.

## **Goals:**

1. Conserve the use and protect the sources of water.
2. Work to provide exceptional flood protection.

## **Targets:**

1. Continuously protect the ecological integrity of the City's primary drinking water source.
2. Continue to reduce sanitary sewer overflows.

## **Actions:**

1. Identify flood areas and develop plans to mitigate damage to property and/or life.
  - 2012 – Started construction of (2) new stormwater ponds.
  - 2013 – Completed Phase I of the Theodore Street Floor Control Project at Appleton East High School.
  - 2013 – Utilized public golf course to address stormwater management requirements. Project was recognized for the utilization of public land to for stormwater retention. Replaced the concrete lined channel with a naturalized stream.
  - 2014 – Council approved Phase I for the West Wisconsin Avenue Floor Control Project
  - 2017 – A stormwater retention pond was constructed in Erb Park to mitigate flooding in adjoining neighborhoods and within the park.
  - 2017 – City now has a total of 40 wet ponds and 8 dry ponds to provide water quality and quantity benefits to the community.
  - 2018 - Created a reforestation area as part of the Leona Pond Project scheduled for construction in 2019.
  - 2018 - Installed (3) new bio-filters in the Lutz Park Trail project in conjunction with the Appleton Yacht Club parking lot project.
  - 2018 - Constructed a stormwater retention pond north of Northland Avenue to mitigate flooding in adjoining neighborhoods. City now has a total of 42 wet ponds and 12 dry ponds to provide water quality and quantity benefits to the community.
  - 2019 - Constructed Leona Street Pond. City now has a total of 45 wet ponds and 12 dry ponds. Included the planting of a reforestation area.
  - 2020- Renovated the riverfront in Telulah Park. Improved the shoreline and installed a kayak launch and fishing pier. This project required significant environmental clean-up.
  - 2020 – Continue to maintain the City's 45 wet ponds and 12 dry ponds to provide water quality and quantity benefits to the community.

2. Develop a program for rainwater harvesting for residential properties.
  - 2016 - Implemented a Rain Barrel Program and associated Stormwater Credit Policy for residential properties.
3. Enforce phosphorous bans, grass clippings in streets and existing ordinances.
  - Annually – We only use fertilizers without phosphorous. Regulation NR151 is followed.
  - 2013 - Increase grass clipping bag fee from \$2 to \$4.
  - Annually – All City mowers are now equipped with mulching decks. In addition, leaves are mulched in place on City properties.
4. Seek ways to reduce phosphorous entering the Fox River.
  - 2014 – Study conducted by utilities with the objective to reduce current phosphorus discharges by an order of magnitude.
  - 2016 - Phosphorus Reduction Project – Phosphorus is a nutrient that leads to algal blooms and reduced water quality. Appleton continues to optimize and remove phosphorus from the waste stream prior to discharge to the Fox River. The use of iron salts has proved successful. Utilizing this technology, 2016 saw a reduction of 350 lbs of phosphorus to the Fox River (i.e., 2016 vs 2015 phosphorus load).
  - 2016 - The plant staff continue to study “outside the plant” alternatives to further reduce phosphorus to the Fox River. Currently, staff are involved in the following programs and initiatives:
    - Lower Fox River Dischargers Association – service positions include president, treasurer, and secretary.
    - Fox Wolf Watershed Alliance – service position board of directors’ member
    - The Fox P Trade Initiative – participant in training exercises
    - Adaptive Management Assessments, w/Great Lakes Alliance – participant in training scenarios.
  - 2017 The Wastewater Plant is projected to reduce phosphorus discharges to the river by 4,290 pounds (i.e., 2017 vs 2016 discharge data).
  - 2018 - The Wastewater Plant reduced phosphorus discharges to the river by 165,775 pounds (i.e., 2018 discharge data).
  - 2019 – The Wastewater Plant removed approximately 160,000 pounds of phosphorus and reduced phosphorus discharges to the Fox River by nearly 50% from that in 2018.
  - 2020 - The Wastewater Plant removed approximately 150,000 pounds of phosphorus.
  - 2020 – Installed two bio-filters within the Scheig Center Parking lot.
5. Investigate ways to utilize biosolids from the Wastewater Plant.
  - 2012 – Conducting a research and development project to evaluate composting as an alternative treatment of biosolids to create a high quality “Class A” material that could be used as a soil conditioner, nutrient amendment, and/or erosion control product. Has the potential to greatly expand options for beneficial reuse beyond traditional land application to farm fields or landfilling while off-setting the need to expand on-site biosolids storage (180-day DNR requirement).
  - 2015 – Continued a composting demonstration project. Utilized 10,000 yards of yard waste (e.g., brush, leaves) from curbside collections. The compost was used by landscapers, the highway department, contractors, and public giveaways.



- 2016 – Appleton had a production of 6,750 cubic yards of compost. The mixture of yard waste and biosolids was placed into windrows and allowed to compost (and be biologically reduced). The material is turned and ultimately reaches temperatures in excess of 160 degrees F. The 6,750 cubic yards of finished compost was used by landscapers, contractors, and public giveaways.
- 2017 – WDNR issues Appleton a WPDES permit with biosolids composting. This elevates the biosolids composting initiative from a pilot to a permitted entity.
- 2020 – Begin planning for transition of biosolids compost processing from Outagamie County site to the Appleton Wastewater Plant

6. Maintain and upgrade City-wide water supply and lines.

- 2014 – Relayed 3 miles of old, leaking watermain.
- 2015 – Relayed 3 miles of old, leaking watermain.
- 2016 – Relayed 2.6 miles of old leaking watermain.
- 2015 – First full year of installing Advanced Metering Infrastructure for water meter reading and residential cross connection survey.
- 2016 – Replaced 32 lead services.
- 2014 – Appleton's first full year of installing advanced metering infrastructure system for water metering reading and residential cross connection survey.
- 2017 – Replaced 30 lead services
- 2017 – Relayed 2.9 miles of old leaking, undersized watermain.
- 2018 - Replaced 5 lead services.
- 2018 - Relayed 3.3 miles of old leaking, undersized watermain.
- 2019 - Implemented Aquahawk for customers to track their own water usage.
- 2019 – Relayed 4.3 miles of old leaking, undersized watermain.
- 2019 – Replaced 32 lead services.
- 2019 – Promoted Aquahawk Program for our customers to track their own water usage.
- 2019 – Completed pilot project on Carpenter Street replacing private sanitary laterals from sewer main to the home.
- 2020 – Replaced 6 lead services.
- 2020 – Relayed 3.8 miles of old leaking, undersized watermain.
- 2020 – Continued to promote our new Aquahawk Program for customers to track their own water usage.
- 2020 - Purchased a water correlator to proactive locate leaks to reduce overall water loss and damage to infrastructure.
- 2020 - Continued our new private sanitary laterals replacement program from sewer main to the home on selected streets.

# 9. Public Involvement & Personal Responsibility

**Background:** Ultimately, sustainability affects every level and scale of organization, from the entire planet to local neighborhoods and individuals. In addressing the global and regional issues facing Appleton, public involvement and personal responsibility is vital to effectively planning actions and implementing solutions. A central goal of this focus area is to facilitate communication, public outreach and civic engagement on sustainability. Although the City has an important role in addressing climate change, residents and business must be inspired to take actions to reduce greenhouse gas emissions as well. The City should take the opportunity to work with citizens, businesses and community groups to implement personal and business-oriented sustainability initiatives.

Through a wide variety of programs and a broad-based network of partner organizations, — in schools, in parks, in community centers, and in neighborhoods — the City can promote an ethic of conservation and stewardship and encourage and empower people to take actions that improve environmental quality and quality of life in and around their neighborhoods.

## **Goals:**

1. Adopt an action plan to support a regional vision that fosters a collaboration of citizens, businesses, and green-initiative groups to become engaged and contribute to a sustainable future.
2. Promote innovative programs to educate the public about climate change.
3. Commit to leading by example to foster behavioral change throughout the City.
4. Promote an ethic of conservation and stewardship.

## **Targets:**

1. Develop and maintain a City sustainability website to provide as a resource to the community.
  1. 2014 – Staff from the Department of Public Works participated in Fox River Cleanup Day on April 26, 2014.
  2. 2015 – Staff from the Department of Public Works participated in Fox River Cleanup Day on April 25, 2015.
  3. 2016 – Staff from the Department of Public Works participated in Fox River Cleanup Day on April 23, 2016.
  4. 2017 – Staff from the Department of Public Works participated in Fox River Cleanup Day on April 22, 2017.
  5. 2018 – Will develop links to Sustainability Plan and Green Tier documents.
  6. 2018 - Staff from Community & Economic Development served on State Brownsfield Committee.
  7. 2019 – Staff from the Department of Public Works participated in the Fox River Clean Up Day on April 27, 2019.

8. 2020 – Staff from Department of Public Works participated in the Fox River Clean Up Day on August 22, 2020.
2. Work with community partners to maximize the number of businesses within the City which incorporate sustainability into their daily operations.
  - 2016 – Worked with a company to exchange our wood chips for their labor and equipment to screen our pile of stump grinding material providing a nice topsoil type material for use on city projects.
  - 2016 – Developed Stormwater Supporter Pledge Form as part of the Residential Stormwater Credit Policy.
  - 2016 & 2017 – Partnered with Evergreen Credit Union on a Stormwater 101 Education Program.
3. Develop a network of green-initiative groups to share resources, foster partnerships and unify education and outreach efforts.
  - Continue to partner with Northeast Wisconsin Stormwater Consortium to share resources for joint public education efforts to meet our NR216 permit requirements.
4. Develop a Sustainability “report card” be published annually.
  - Annually – Provide report card titled Legacy Charter Appendix 3 to WI Green Tier as part of the annual reporting requirements.
5. Optimize opportunities to showcase Appleton’s environmental leadership through hosting conferences, workshops and events.
  - Annually – Host professional organizations and/or other municipalities to host meetings for organizations such as Green Tier, professional engineers or other governmental agencies.

# 10. Building Operation

**Background:** In shaping the places in which we live, we shape the patterns of our own behavior. We have built numerous facilities that waste resources and contribute to pollution and climate change. From the human scale to the regional scale, we need to take a different approach to protecting our work environments.

The City can implement sustainable practices through proactive maintenance; procurement of environment friendly products and by adopting the practice of ensuring new construction meets and or incorporates LEED (Leadership in Energy and Environmental Design) or equivalent standards.

## Goals:

1. Establish and continuously improve “green” building standards in City- owned and operated buildings.
2. Provide a healthy environment by incorporating green cleaning standards.
3. Use products and materials that have a long-term benefit to our community when cost effective.
4. Focus actions and select products that reduce greenhouse gas-emissions, reduce water consumption, electrical consumption, natural gas consumption and manage solid waste.

## Targets:

1. Annually adopt principles of LEED (Leadership in Energy and Environmental Design), Energy Star, Green Tier and/or equivalent for all new City-owned buildings.
2. Procure products that incorporate sustainability from cradle to grave.
3. Provide proactive maintenance, operations and upgrades of the facilities and equipment that will achieve the City’s goal to reduce natural gas and electric consumption by 10% by 2011.

## Actions:

1. Perform lighting, HVAC, building shell or other upgrades that have positive impacts on the economics, environment and people in our community.
  - 2010 – Upgraded lighting at Peabody Park.
  - 2012 – Updated numerous servers and redesigned servers with energy efficiency equipment. A new A/C unit was added to control run-time and reduce energy usage.
  - 2012 – Began process to improve water treatment processes using Ultraviolet light process for the removal of microbial contaminants.
  - 2013 – At Wastewater Treatment Plant constructed a new gas balancing process that will inject pressurized gas into the anaerobic digester tanks thus creating mix energy. (\$39,291 electrical savings annually).
  - 2014 – Upgraded boiler at Municipal Services Building (2,145 therms saved annually).

- 2014 – HVAC tune-up (2,403 therms saved annually)
- 2014 – Lighting upgrades in City facilities (56,100 kWh saved annually)
- 2014 - Replaced all light poles and fixtures with LED lighting at Arbutus Park. Total of eleven poles and fixtures.
- 2014 - Replaced all exterior wall pack lighting with LED lighting at the Water Plant.
- 2014 – Replaced alley lighting at City Hall drive-up windows with LED lighting.
- 2014 – Upgraded boilers at the Library. (4,553 therms saved annually).
- 2015 – Street lighting upgrades. (40,890 kWh saved annually).
- 2015 – Replaced fountain lighting in City Park to LED.
- 2015 – Replacing wall pack with LED fixtures at all 30 parks.
- 2015 – Installed LED lighting at skateboard park parking lot at Telulah Park.
- 2015 - Replaced all exterior wall pack and street pole lighting with LED lighting at the Wastewater Plant.
- 2015 – Completed a pilot project to retrofit existing high-pressure sodium light fixtures with energy efficient LED lights in a portion of the Green Ramp.
- 2016 – Project was completed to construct an alternate mode of mixing for the (2) 2.2 million gallon digesters resulting in sliding vane compressors with valve and gas metering upgrades (anticipated savings 1,300 kWh/day).
- 2016 – Completed Water Treatment Plant process to utilize UV that was initiated in 2012. The project resulted in decreased chemicals, labor and electrical costs totaling \$450,000 annually. (Anticipated savings of 21.2 kW in a peak water production scenario).
- 2016 – Upgraded various lighting in Telulah Park.
- 2016 – Installed new light poles and upgraded lighting to LED.
- 2016 – Relamped existing fluorescent fixtures with LED lamps throughout the entire vehicle garage at the Facilities & Grounds Operations Center.
- 2016 - Relamped existing fluorescent fixtures with LED lamps in various locations at Water Treatment Plant.
- 2016 - Installed (7) new LED light fixtures above softener tanks at the Water Treatment Plant.
- 2016 - Installed (4) new LED light fixtures above softener tanks at Reid Municipal Golf Course.
- 2016 - Completed second year of LED streetlight retrofit project. Installed new LED lighting throughout all of City Park.
- 2016 – Replaced all exterior lighting with new LED lighting at the Water Treatment Plant. Also completed a “right lighting” survey at the Water Treatment Facility that indicated we could remove 18 exterior fixtures that were not needed and causing excess light pollution.
- 2016 – Replaced all exterior lights with new LED lighting at the Facilities & Grounds Operations Center.
- 2016 – Installed a new high efficiency HVAC system for the office area at the Municipal Services Building.
- 2016 – Installed new LED lighting in the office area at the Municipal Services Building.
- 2017 – Installed new high efficiency HVAC system in the office area at the Facilities & Grounds Operations Center.
- 2017 - Installed new LED lighting in the office at the Facilities & Grounds Operations Center.
- 2017 – Installed new LED lighting throughout all of Alicia Park.
- 2017 – Installed new LED exterior lighting at the Municipal Services Building.
- 2017 – Installed motion sensors in the garage area at the Municipal Services Building.
- 2017 – Installed new LED lighting at Wastewater Treatment Facility. This is the first phase of a multi-phase project.

- 2018 - The City's wastewater plant is installing a third biogas boiler that uses methane gas production from the anaerobic digestion process. The wastewater plant can produce in excess of 500,000 cubic feet per day of this gas.
- 2018 - The water plant is now completed two full years of ultraviolet light disinfection. This process, in part, replaced the City ultrafiltration process. In doing so, the City has reduced chemicals, and energy costs by close to \$1M or a reduction of 970,000 kWh annually.
- 2018 - Wastewater Plant - Installing an additional high efficiency turbine that will ensure a reduction of 180 kW at the facility. This will be a second-high efficiency turbine installation.
- 2018 - Continued streetlight LED conversion project. 1250 city-owned lights of which 706 are now LED.
- 2018 - Worked with WE Energies to convert 316 leased lights to LED.
- 2018 - Installed new LED lighting in the Lutz Park parking lot.
- 2018 - Replaced 465 LED lamps that were previously fluorescent lamps throughout City facilities.
- 2018 - Installed LED lighting in the Red Parking Ramp.
- 2018 - Performed boiler tune-ups resulting in rebates of \$1,562.35.
- 2018 - Replaced six boiler circulation pumps, that operated at 100% during the heating season, with two variable speed high efficiency and maintenance free pumps.
- 2019 - Installed LED lighting in the Yellow Ramp. Total of 539 fixtures.
- 2019 - A third biogas boiler was installed at the Appleton Wastewater Treatment Plant which uses methane gas production from the anaerobic digestion process. The new boiler is a 5.5 million btu methane boiler which will eliminate the need for the Wastewater Plant to use utility gas for most of the time. Savings of are anticipated to reach \$400,000+ with the addition of the new boiler.
- 2019 - The Appleton Wastewater Treatment Plant has now completed three full years of ultraviolet light disinfection. This process, in part, replaced the City ultrafiltration process. In doing so, the City has reduced chemicals, membrane associated materials or consumables, and 1,300,000 kWh of energy each year that in total equates to an annual savings of nearly \$1M.
- 2019 - An ongoing construction improvements project at Appleton Wastewater Treatment Plant includes the installation of an additional high efficiency turbine that will ensure a reduction of 180 kW at the facility. Upon completion in 2020, this will be a second-high efficiency turbine installation.
- 2019 - Installed 211 LED replacement fixtures at the Wastewater Plant.
- 2019 - Installed all new LED exterior lighting fixtures at the Police Station (102 fixtures)
- 2019 - Installed new LED high bay garage lights at MSB (154 fixtures)
- 2019 - Installed new LED light fixtures for the entire Yellow Ramp (539 fixtures)
- 2019 - Installed LED fixtures at Facilities & Grounds Operations Center vehicle garage.
- 2019 - Jones Park Redevelopment includes LED facility and site lighting.
- 2019 - Lower Telulah Park trail and parking lot construction features LED lighting.
- 2019 - Performed a solar analysis for our Municipal Services Garage.
- 2020 - The Appleton Wastewater Treatment Plant has now completed four full years of ultraviolet light disinfection. This process, in part, replaced the City ultrafiltration process. In doing so, the City has reduced chemicals, membrane associated materials or consumables, and 1,300,000 kWh of energy each year that in total equates to an annual savings of nearly \$1M.
- 2020 - Completed the construction improvements project at Appleton Wastewater Treatment Plant that includes the installation of an additional high efficiency turbine that reduces 180 kW at the facility. This is the second-high efficiency turbine installation.
- Annually - Monthly energy data monitoring to analyze energy use enables timely adjustments and or deploy energy efficiency upgrades.

- 2020 - Installed insulated doors on Bay 9 and 10 for the heated bay on the MSB detached garage.
  - 2020 - Performed additional solar analysis for our Municipal Services Garage and obtained budget to install in 2021. Also, seeking grant for Electric Vehicle Charging Stations.
  - 2020 - 267 LED fixtures replaced existing fluorescent fixtures throughout City facilities (see table in the Green Tier Report).
  - 2020 - 54 LED fixtures installed throughout Parks and Trails. (see table in the Green Tier Report for details).
  - 2020 – Replaced fixtures in City Hall alley to LED.
2. Maximize equipment efficiency to reduce electrical, natural gas and water usage. When feasible perform retro commissioning of facilities.
- 2012 – Performed retro commissioning at the Wastewater Plant.
  - Annually - Perform boiler tune-ups.
3. Use Eco-Friendly flooring and perform carpet reclamation of existing product.
- Ongoing – Carpeting used is eco-friendly and generally recognized for recycling efforts of its composition.
4. Clean the facilities using Green housekeeping practices and products meeting Green Seal Certification.
- 2010 – Transitioned to utilizing Green Seal cleaning supplies to clean City facilities except for Fire Stations and Library.
  - 2012 – Expanded the use of Green Seal cleaning supplies to the Fire Stations and Library.
  - Annually – Utilize Green Seal cleaning supplies.
5. Modify the City’s procurement policy by the end of 2010 to allow purchases to be made not only based on low price, but also that are in alignment with the City’s Sustainability Strategic Objective.
- 2010 – Procurement and Contract Management Policy updated to include direction on Environmentally Preferable Procurement.
6. Recycle the maximum amount of waste feasible during demolition, renovation, and construction.
- 2017 – Donated material from demolition of bridge tender storage building to restore and bicycle to Riverview gardens.
  - Annually – Donate usable construction items to organizations such as Restore.